

3725  
Communication Controller

Operating Guide

System/370, 30xx, and  
4300 Processors



---

**3725**  
**Communication Controller**

---

**Operating Guide**

---

**System/370, 30xx, and  
4300 Processors**

---

Publication Number  
GA33-0014-3

File Number  
S/370/30xx/4300-09

---

#### **Fourth Edition (January 1984)**

This is a major revision of GA33-0014-2 and TNL GN33-7117, which are now obsolete.

References in this publication to IBM products, programs, or services does not imply that IBM intends to make these available in all countries in which IBM operates.

Any reference to an IBM program product in this publication is not intended to state or imply that only IBM's program product may be used. Any functionally equivalent program may be used instead.

The information contained in this manual is subject to change from time to time.

Any such changes will be reported in subsequent revisions or Technical Newsletters.

Publications are not stocked at the addresses given below. Requests for IBM publications should be made to your IBM representative or to the IBM branch office serving your locality.

A form for readers' comments is provided at the back of this publication. If the form has been removed, comments may be addressed to either of the following:

- International Business Machines Corporation, Department 812LG, 1133 Westchester Avenue, White Plains, New York 10604, USA
- IBM France, Centre d'Etudes et Recherches, Dept. 0798, 06610 La Gaude, France

IBM may use and distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

© Copyright International Business Machines Corporation 1982, 1983, 1984

This manual is designed to help:

- The *customer operator* to perform daily 3725 operations -- that is power on and initialization. Initially, he needs to read chapters 1 through 4.
- The *customer teleprocessing specialists* to identify and fix 3725 problems.

This manual is divided into eight chapters and two appendixes, as follows.

- Chapter 1. Introduction  
Gives an overview of the 3725 Communication Controller. A more complete description is given in *Introduction to the IBM 3725 Communication Controller*, GA33-0010.
- Chapter 2. Operator Console Keyboard and Screen Layout  
Describes each key of the 3727 Operator Console keyboard and the layout of the screen. A complete description of the 3727 Operator Console is given in *3727 Operator Console Reference and Problem Analysis Guide*, GA33-0015.
- Chapter 3. Control Panel  
Describes each lamp and switch of the 3725 control panel.
- Chapter 4. Power and Initialize the 3725 Communication Controller  
Gives the procedures for powering and initializing the 3725 Communication Controller.
- Chapter 5. 3725 Functions  
Describes how to select and perform each 3725 function, except:
  - The Wrap Test function that is documented in *3725 Communication Controller Wrap Tests*, GA33-0027.
  - The Stand-Alone Link Test function that is documented in *3725 Communication Controller Stand-Alone Link Tests*, GA33-0028.
- Chapter 6. How to Execute NCP and EP Functions  
Gives the procedure for performing each function used with the Network Control Program (NCP) and the Emulation Program (EP).
- Chapter 7. Control Program Procedures  
Describes 3725 tools to be used to deal with control program procedures. It also describes five precataloged procedures and shows how to create five other procedures.
- Chapter 8. Problem Determination  
Tells you what to do when a problem occurs. From the problem determination start page, you are led through the manual to identify and fix the problem.
- Appendix A. Machine Status Area  
Describes each field of the machine status area.
- Appendix B. Correspondence Between Line Addresses and Scanners  
Gives the correspondence between line addresses, line interface addresses, LIC positions, and scanner numbers.





# Contents

<b>Chapter 1. Introduction</b> .....	1-1
3725 Highlights .....	1-1
Control Programs .....	1-1
3725 Component Parts .....	1-1
Control Subsystem .....	1-2
Central Control Unit (CCU) .....	1-2
Storage .....	1-2
Channel Adapter (CA) .....	1-3
Transmission Subsystem (TSS) .....	1-3
Maintenance and Operator Subsystem (MOSS) .....	1-3
Conventions Used in This Manual .....	1-3
<b>Chapter 2. Operator Console Keyboard and Screen Layout</b> .....	2-1
Powering On The Operator Console .....	2-2
Operator Console Keyboard .....	2-3
Repeat-Action Keys .....	2-3
Alphanumeric and Numeric Keys .....	2-3
Space Bar .....	2-3
Shift and Lock Keys .....	2-5
SHIFT Keys .....	2-5
LOCK Key .....	2-6
PF1 through PF5 Keys .....	2-6
Non-Labeled Keys .....	2-7
Operator Console Screen Layout .....	2-10
Machine Status Area (MSA) .....	2-11
Primary Menu Area .....	2-11
Secondary Menu Area .....	2-12
Work Area .....	2-14
Selection Area .....	2-14
Alarm Area .....	2-14
MOSS Message Indicator .....	2-15
Operator Control Message Area .....	2-15
Operator Information Area .....	2-15
Arrow Signs .....	2-15
Cursor Rest Position .....	2-15
<b>Chapter 3. Control Panel</b> .....	3-1
Lamps .....	3-2
Switches .....	3-3
Hex Display .....	3-5
<b>Chapter 4. Power and Initialize the 3725 Communication Controller</b> .....	4-1
Auto-Restart .....	4-1
Channel-Attached 3725 Power On and Initialization from the Control Panel .....	4-1
Channel-Attached 3725 Re-Initialization from the Control Panel and the Host .....	4-3
Channel-Attached 3725 Power On and Initialization from the Host .....	4-4
Link-Attached 3725 Power On and Initialization from the Host .....	4-5

Link-Attached 3725 Re-Initialization from the Control Panel and the Host . . . . .	4
Link-Attached 3725 Initialization from the Host . . . . .	4-6
3725 Initialization Indications . . . . .	4-7
MOSS IML . . . . .	4-8
MOSS IML Procedure . . . . .	4-9
MOSS IML Indications . . . . .	4-10
3725 Power Off . . . . .	4-16
<b>Chapter 5. 3725 Functions . . . . .</b>	<b>5</b>
Selecting 3725 Functions . . . . .	5-1
Entering 3725 Function Parameters . . . . .	5
Terminating 3725 Functions . . . . .	5-5
Switching Between CCU and Primary Menu Functions . . . . .	5-6
Example of a Complete Function Selection . . . . .	5-8
<b>Immediate Functions . . . . .</b>	<b>5-12</b>
CCU Start . . . . .	5-12
CCU Stop . . . . .	5-13
CCU Reset . . . . .	5-13
Query Date and Time . . . . .	5-17
Terminate . . . . .	5-17
<b>CCU Functions . . . . .</b>	<b>5-15</b>
Address Compare (AC) . . . . .	5-16
Address Compare Termination . . . . .	5-18
Simultaneous Address Compare and Branch Trace . . . . .	5-19
Address Compare PF Key . . . . .	5-19
Machine Status Area (MSA) . . . . .	5-19
Branch Trace (BT) . . . . .	5-2
Branch Trace Buffer . . . . .	5-2
Branch Trace Extra Records . . . . .	5-2
Example 1: Pending Lower Level Interrupt . . . . .	5-23
Example 2: Higher Level Interrupt During Exit Instruction . . . . .	5-24
Example 3: Back to Back Interrupts . . . . .	5-25
Simultaneous Address Compare and Branch Trace . . . . .	5-27
Branch Trace Termination . . . . .	5-27
Branch Trace PF Keys . . . . .	5-28
Machine Status Area (MSA) . . . . .	5-28
Display/Alter . . . . .	5-29
Display . . . . .	5-29
Display PF Keys . . . . .	5-31
Alter . . . . .	5-31
How to Alter . . . . .	5-32
Branch Trace Buffer Allocation . . . . .	5-33
Alter PF Keys . . . . .	5-34
Display/Alter Termination . . . . .	5-34
Display Long . . . . .	5-35
Differences between the Display/Alter and Display Long Functions . . . . .	5-37
Displaying Branch Trace Buffer . . . . .	5-38
Display Long Termination . . . . .	5-39
Display Long PF Keys . . . . .	5-39
System Control . . . . .	5-40
How to Clear the System Control Screen . . . . .	5-41
Set I-Step . . . . .	5-42
Reset I-Step . . . . .	5-42
CCU Level 3 Interrupt . . . . .	5-43
CCU Check Reset . . . . .	5-43
Set Bypass CCU Check . . . . .	5-44
Reset Bypass CCU Check . . . . .	5-44
Set IOC Check Stop . . . . .	5-44

Reset IOC Check Stop . . . . .	5-45
Reset IOC . . . . .	5-45
MOSS Online. . . . .	5-46
MOSS Offline. . . . .	5-47
Data Exchange . . . . .	5-48
Data Exchange Termination . . . . .	5-49
Data Exchange PF Key . . . . .	5-49
Address Compare and Branch Trace Parameter Display (AC/BT PARAM). . .	5-50
AC/BT PARAM Termination . . . . .	5-51
AC/BT PARAM PF Keys. . . . .	5-51
Cancel Address Compare (CANCEL AC) . . . . .	5-52
Cancel Branch Trace (CANCEL BT) . . . . .	5-52
Channel Adapter State And Register Display (CH ADAPT STATE). . . . .	5-53
Channel Adapter State Display . . . . .	5-53
Channel Adapter Register Display . . . . .	5-55
Channel Adapter State/Register Display Termination . . . . .	5-57
Channel Adapter State/Register Display PF Keys. . . . .	5-57
Reset CCU/LSSD . . . . .	5-58
Machine Status Area (MSA) . . . . .	5-59
Reset CCU/LSSD Termination . . . . .	5-59
IPL CCU/TSS (IPL Functions) . . . . .	5-60
One Scanner IML . . . . .	5-62
3725 IPL . . . . .	5-63
Line Functions . . . . .	5-65
Wrap Tests . . . . .	5-65
Link Tests . . . . .	5-65
Line Interface Block Display (LIBD). . . . .	5-66
LIBD PF Keys . . . . .	5-68
LIBD Field Description . . . . .	5-68
LIBD Termination . . . . .	5-72
GCF/IPL Port Functions . . . . .	5-74
Graphic Configuration File (GCF) . . . . .	5-75
GCF Initialization . . . . .	5-76
LIC Weight Calculation . . . . .	5-76
GCF Initialization PF Keys. . . . .	5-80
GCF Update . . . . .	5-80
GCF Update PF Keys . . . . .	5-81
GCF Termination . . . . .	5-82
IPL Ports . . . . .	5-83
Channel Adapter IPL Ports. . . . .	5-85
Link IPL Ports . . . . .	5-86
Common Options . . . . .	5-88
IPL Port PF Keys . . . . .	5-89
IPL Port Termination . . . . .	5-89
Error Log Function. . . . .	5-90
BER Summary . . . . .	5-91
BER List . . . . .	5-92
BER List PF Keys. . . . .	5-93
BER Detail. . . . .	5-94
BER Detail PF Keys . . . . .	5-94
Error Log Function Termination . . . . .	5-94
Maintenance Functions . . . . .	5-95

<b>Chapter 6. How to Execute NCP and EP Functions.</b> . . . . .	6-1
Functions . . . . .	6-1
Conventions . . . . .	6-2
NCP and EP Functions in an NCP Environment with PEP . . . . .	6-3
Switching Control to NCP Mode . . . . .	6-3
Switching Control to EP Mode . . . . .	6-4
NCP - Line Test . . . . .	6-5
NCP - Dynamic Store . . . . .	6-12
NCP - Display of Storage . . . . .	6-14
NCP - Display of Register . . . . .	6-15
NCP - Channel Discontact . . . . .	6-17
NCP - Address Trace . . . . .	6-18
Address Trace Table . . . . .	6-22
NCP - Channel Adapter Trace . . . . .	6-25
EP - Line Test . . . . .	6-26
Level 2 and Level 3 Display Codes . . . . .	6-30
EP/PEP - Display of Character Control Block (CCB) . . . . .	6-32
EP/PEP - Line Trace and Scanner Interface Trace (SIT) . . . . .	6-35
EP/PEP - Present Status on Channel . . . . .	6-38
EP - Display of Storage . . . . .	6-39
EP/PEP - Channel Adapter Reset (MSLA) . . . . .	6-40
EP - Subchannel Switching (MSLA) . . . . .	6-41
 <b>Chapter 7. Control Program Procedures</b> . . . . .	 7-1
3725 Procedure Tools . . . . .	7-2
Directory . . . . .	7-4
PF Keys . . . . .	7-4
Display . . . . .	7-5
PF Keys . . . . .	7-5
Create/Copy . . . . .	7-7
Set Immediate Instruction (SETI) . . . . .	7-9
Operator Set Instruction (OSET) . . . . .	7-9
GOTO, HALT, and WAIT Instructions . . . . .	7-9
GOTO Instruction . . . . .	7-11
HALT Instruction . . . . .	7-11
WAIT Instruction . . . . .	7-11
LOOP Instruction . . . . .	7-12
DISP Instruction . . . . .	7-13
END Instruction . . . . .	7-13
Copy . . . . .	7-14
Erase . . . . .	7-15
Modify . . . . .	7-16
PF Keys . . . . .	7-17
Execute . . . . .	7-18
PF Keys . . . . .	7-19
Catalog . . . . .	7-20
Precataloged Control Program Procedures . . . . .	7-21
CP01 - SDLC Test Frames (NCP) . . . . .	7-22
Detailed Description . . . . .	7-22
CP02 - 3270 BSC General Poll (NCP/EP) . . . . .	7-24
Detailed Description . . . . .	7-24
CP03 - 2740 Start/Stop Poll (NCP/EP) . . . . .	7-26
CP04 - Start Address Trace (NCP) . . . . .	7-28
Detailed Description . . . . .	7-29
CP05 - Stop Address Trace (NCP) . . . . .	7-31
Detailed Description . . . . .	7-32



Examples of Control Program Procedure Creation . . . . .	7-33
Conventions . . . . .	7-34
What to Do Once a Procedure is Created? . . . . .	7-34
FE01 - Install a ZAP (NCP or NCP/PEP) . . . . .	7-35
CE01 - Text to 3270 - BSC in EBCDIC (NCP) . . . . .	7-39
CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP) . . . . .	7-45
CE03 - Text to 2740 - S/S (NCP) . . . . .	7-52
CE04 - Text to 2740 - S/S (EP, PEP) . . . . .	7-57
<b>Chapter 8. Problem Determination.</b> . . . . .	8-1
Problem Determination Start Page. . . . .	8-1
MOSS Inoperative Lamp . . . . .	8-39
MOSS Message Lamp . . . . .	8-40
Power Check Lamp . . . . .	8-41
Operator Console Not Operational Indication . . . . .	8-42
Hexadecimal Codes Displayed on the Control Panel . . . . .	8-43
Messages . . . . .	8-48
Function Messages . . . . .	8-57
Common Messages . . . . .	8-57
Address Compare Messages . . . . .	8-61
Branch Trace Messages . . . . .	8-62
Cancel AC Messages . . . . .	8-63
Cancel BT Messages . . . . .	8-64
Channel Adapter State and Register Display Messages . . . . .	8-65
Control Program Procedure Messages . . . . .	8-68
Data Exchange Messages . . . . .	8-74
Display/Alter Messages . . . . .	8-75
Display Long Messages . . . . .	8-76
Error Log Messages . . . . .	8-77
GCF Messages . . . . .	8-78
IPL Port Messages . . . . .	8-80
Line Interface Block Display Messages . . . . .	8-82
One Scanner IML Messages . . . . .	8-84
Reset CCU/LSSD Messages . . . . .	8-87
System Control Function Messages . . . . .	8-88
3725 IPL Messages . . . . .	8-89
Operator Control Messages . . . . .	8-91
Operator Console Information Messages . . . . .	8-95
Alarms . . . . .	8-98
Alerts . . . . .	8-98
NPDA Messages . . . . .	8-98
Scanner Interface Trace (SIT). . . . .	8-117
File Transfer . . . . .	8-117
File Printing. . . . .	8-117
3725 Main Storage Dump . . . . .	8-117
GCF Printout. . . . .	8-118
BER File Printout. . . . .	8-119
Cataloged Control Program Procedure Printout . . . . .	8-120

<b>Appendix A. Machine Status Area</b> .....	<b>A-1</b>
Scanner Information .....	A-7
CCU/Scanner IPL Information .....	A-8
<b>Appendix B. Correspondence Between Line Addresses and Scanners</b> .....	<b>B-1</b>
LAB Position 1 (type A) .....	B-1
LAB Position 2 (type A) .....	B-2
LAB Position 3 (type A or B) .....	B-3
LAB Position 4 (type A or B) .....	B-4
LAB Position 5 (type A or B) .....	B-5
LAB Position 6 (type A or B) .....	B-6
LAB Position 7 (type A or B) .....	B-7
LAB Position 8 (type A or B) .....	B-8
<b>Abbreviations</b> .....	<b>1</b>
<b>Glossary</b> .....	<b>1</b>
<b>Index</b> .....	<b>X-1</b>

# Figures

<i>Figure</i>		<i>Page</i>
1-1.	3725 Simplified Block Diagram . . . . .	1-2
2-1.	3727 Operator Console . . . . .	2-1
2-2.	Operator Console Keyboard . . . . .	2-3
2-3.	Operator Console Screen Layout . . . . .	2-10
3-1.	Control Panel . . . . .	3-1
5-1.	3725 Functions . . . . .	5-2
5-2.	Selecting 3725 Functions . . . . .	5-3
5-3.	Unprotected Fields (shaded areas) . . . . .	5-4
5-4.	Unprotected Fields in Update Mode (shaded areas) . . . . .	5-5
5-5.	Branch Trace Options . . . . .	5-22
6-1.	Switching Control to NCP Mode . . . . .	6-3
6-2.	Switching Control to EP Mode . . . . .	6-4
6-3.	Line Test Procedure . . . . .	6-6
6-4.	Subroutines Used When Performing an NCP Line Test (Part 1 of 4) . . . . .	6-7
6-4.	Subroutines Used When Performing an NCP Line Test (Part 2 of 4) . . . . .	6-7
6-4.	Subroutines Used When Performing an NCP Line Test (Part 3 of 4) . . . . .	6-8
6-4.	Subroutines Used When Performing an NCP Line Test (Part 4 of 4) . . . . .	6-9
6-5.	Line Test Error Codes . . . . .	6-11
6-6.	MSA Field e and k Values for Dynamic Store . . . . .	6-12
6-7.	NCP - Dynamic Store . . . . .	6-13
6-8.	NCP - Display of Storage . . . . .	6-14
6-9.	MSA Field e and k Values for Display of Storage . . . . .	6-14
6-10.	NCP - Display of Register . . . . .	6-15
6-11.	AARR Bit Setting Codes . . . . .	6-16
6-12.	NCP - Channel Disconnect . . . . .	6-17
6-13.	NCP - Address Trace (Part 1 of 3) . . . . .	6-19
6-13.	NCP - Address Trace (Part 2 of 3) . . . . .	6-20
6-13.	NCP - Address Trace (Part 3 of 3) . . . . .	6-21
6-14.	Address Trace Block . . . . .	6-23
6-15.	Byte Expansion of Address Trace Block . . . . .	6-24
6-16.	NCP - Channel Adapter Trace . . . . .	6-25
6-17.	EP - Line Test . . . . .	6-27
6-18.	Subroutines Used When Performing a Line Test (Part 1 of 2) . . . . .	6-28
6-18.	Subroutines Used When Performing a Line Test (Part 2 of 2) . . . . .	6-29
6-19.	Level 2 Display Codes . . . . .	6-30
6-20.	Level 3 Display Codes . . . . .	6-31
6-21.	Level 3 Error Codes . . . . .	6-31
6-22.	EP/PEP - Display of Character Control Block (CCB) . . . . .	6-32
6-23.	CCB Areas and Byte Expansion (Part 1 of 2) . . . . .	6-33
6-23.	CCB Areas and Byte Expansion (Part 2 of 2) . . . . .	6-34
6-24.	EP/PEP - Line Trace and Scanner Interface Trace (SIT) . . . . .	6-36
6-25.	Display Codes for Line Trace and Scanner Interface Trace . . . . .	6-37
6-26.	EP/PEP - Present Status on Channel . . . . .	6-38
6-27.	MSA Fields e and k Values for Present Status on Channel . . . . .	6-38
6-28.	EP - Display of Storage . . . . .	6-39
6-29.	MSA Field e and k Values for Display of Storage . . . . .	6-39
6-30.	EP/PEP - Channel Adapter Reset (MSLA) . . . . .	6-40
6-31.	EP - Subchannel Switching (MSLA) . . . . .	6-41
6-32.	MSLA Function Error Codes . . . . .	6-42

<i>Figure</i>	<i>Page</i>
7-1.	CP01 Procedure (Part 1 of 2) . . . . . 7-22
7-1.	CP01 Procedure (Part 2 of 2) . . . . . 7-23
7-2.	CP02 Procedure (Part 1 of 2) . . . . . 7-24
7-2.	CP02 Procedure (Part 2 of 2) . . . . . 7-24
7-3.	CP03 Procedure (Part 1 of 2) . . . . . 7-26
7-3.	CP03 Procedure (Part 2 of 2) . . . . . 7-26
7-4.	CP04 Procedure (Part 1 of 2) . . . . . 7-29
7-4.	CP04 Procedure (Part 2 of 2) . . . . . 7-29
7-5.	CP05 Procedure . . . . . 7-32
7-6.	FE01 - Install a ZAP (NCP or NCP/PEP) (Part 1 of 3) . . . . . 7-36
7-6.	FE01 - Install a ZAP (NCP or NCP/PEP) (Part 2 of 3) . . . . . 7-37
7-6.	FE01 - Install a ZAP (NCP or NCP/PEP) (Part 3 of 3) . . . . . 7-38
7-7.	CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 1 of 5) . . . . . 7-40
7-7.	CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 2 of 5) . . . . . 7-41
7-7.	CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 3 of 5) . . . . . 7-42
7-7.	CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 4 of 5) . . . . . 7-43
7-7.	CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 5 of 5) . . . . . 7-44
7-8.	CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 1 of 6) . . . . . 7-46
7-8.	CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 2 of 6) . . . . . 7-47
7-8.	CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 3 of 6) . . . . . 7-48
7-8.	CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 4 of 6) . . . . . 7-49
7-8.	CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 5 of 6) . . . . . 7-50
7-8.	CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 6 of 6) . . . . . 7-51
7-9.	CE03 - Text to 2740 - S/S (NCP) (Part 1 of 4) . . . . . 7-53
7-9.	CE03 - Text to 2740 - S/S (NCP) (Part 2 of 4) . . . . . 7-54
7-9.	CE03 - Text to 2740 - S/S (NCP) (Part 3 of 4) . . . . . 7-55
7-9.	CE03 - Text to 2740 - S/S (NCP) (Part 4 of 4) . . . . . 7-56
7-10.	CE04 - Text to 2740 - S/S (EP/PEP) (Part 1 of 4) . . . . . 7-58
7-10.	CE04 - Text to 2740 - S/S (EP/PEP) (Part 2 of 4) . . . . . 7-59
7-10.	CE04 - Text to 2740 - S/S (EP/PEP) (Part 3 of 4) . . . . . 7-60
7-10.	CE04 - Text to 2740 - S/S (EP/PEP) (Part 4 of 4) . . . . . 7-61
8-1.	Codes Displayed on the Hexadecimal Display (Part 1 of 4) . . . . . 8-43
8-1.	Codes Displayed on the Hexadecimal Display (Part 2 of 4) . . . . . 8-44
8-1.	Codes Displayed on the Hexadecimal Display (Part 3 of 4) . . . . . 8-45
8-1.	Codes Displayed on the Hexadecimal Display (Part 4 of 4) . . . . . 8-46
8-2.	Message Areas . . . . . 8-48
8-3.	Alphabetical List of 3725 Messages (Part 1 of 7) . . . . . 8-50
8-3.	Alphabetical List of 3725 Messages (Part 2 of 7) . . . . . 8-51
8-3.	Alphabetical List of 3725 Messages (Part 3 of 7) . . . . . 8-52
8-3.	Alphabetical List of 3725 Messages (Part 4 of 7) . . . . . 8-53
8-3.	Alphabetical List of 3725 Messages (Part 5 of 7) . . . . . 8-53
8-3.	Alphabetical List of 3725 Messages (Part 6 of 7) . . . . . 8-55
8-3.	Alphabetical List of 3725 Messages (Part 7 of 7) . . . . . 8-55
8-4.	Operator Console Information Message Format . . . . . 8-95
8-5.	3725 Alarms . . . . . 8-99
8-6.	VTAM Alert Messages for 3725 . . . . . 8-99
8-7.	TCAM Alert Messages for 3725 . . . . . 8-100
8-8.	NPDA Messages . . . . . 8-100
A-1.	Machine Status Area with Scanner Information . . . . . A-1
A-2.	Machine Status Area with CCU/Scanner IPL Information . . . . . A-1
A-3.	How to Read MSA Field w SCANNER(S) NOT IMLED: xxxx. . . . . A-12

### 3725 Highlights

The IBM 3725 Communication Controller belongs to the same family as the IBM 3704 and 3705 Communication Controllers, but has improved performance, flexibility, and functions. These improvements result from an architecture based on the principle of "distributed intelligence."

Instead of one main processor executing all machine functions, many of the more dedicated functions are executed by microprocessors distributed throughout the machine. Each communication scanner in the 3725 has its own microprocessor, and the Maintenance and Operator Subsystem (MOSS) has another. The user does not have to program the communication scanners and the MOSS. A diskette, which forms part of the MOSS, contains the microcode for these microprocessors; it is loaded automatically at initialization time.

The MOSS uses an operator console that replaces all the control panel functions of earlier machines, and that can display much larger amounts of information. This facility makes it much simpler for the operator to control the 3725 and its attached network. It also gives the programmer many advantages, such as:

- Display large storage areas and all register contents at the same time.
- Change storage and registers.
- Trace program flow.
- Stop on selected instruction or data addresses.

### Control Programs

For scheduling and controlling the resources of the 3725, IBM provides a licensed program product, ACF/NCP (Advanced Communications Function/Network Control Program) Version 2.

IBM also provides a set of system support programs, called ACF/SSP (Advanced Communications Function/System Support Programs). These are host processor programs used primarily to generate or assemble a user's control program, and to provide IPL and dump facilities for the controller.

Also available is an IBM licensed program called the Emulation Program (EP). The EP can run only in a controller attached directly to a channel of the host processor. The EP emulates most of the functions of the IBM 2701 Data Adapter Unit, the IBM 2702 Transmission Control, and the IBM 2703 Transmission Control.

### 3725 Component Parts

Figure 1-1 shows a simplified block diagram of the 3725. The 3725 comprises:

- A control subsystem (CSS), consisting of a central control unit (CCU) with from 512K bytes to 1024K bytes of associated storage for the 3725



Model 1 and 512K bytes for Model 2, and, for channel-attached controllers, one or more channel adapters.

- A transmission subsystem (TSS), consisting of communication scanners and the associated line coupling hardware.
- A maintenance and operator subsystem (MOSS), with its diskette drive, control panel, and associated IBM 3727 Operator Console.

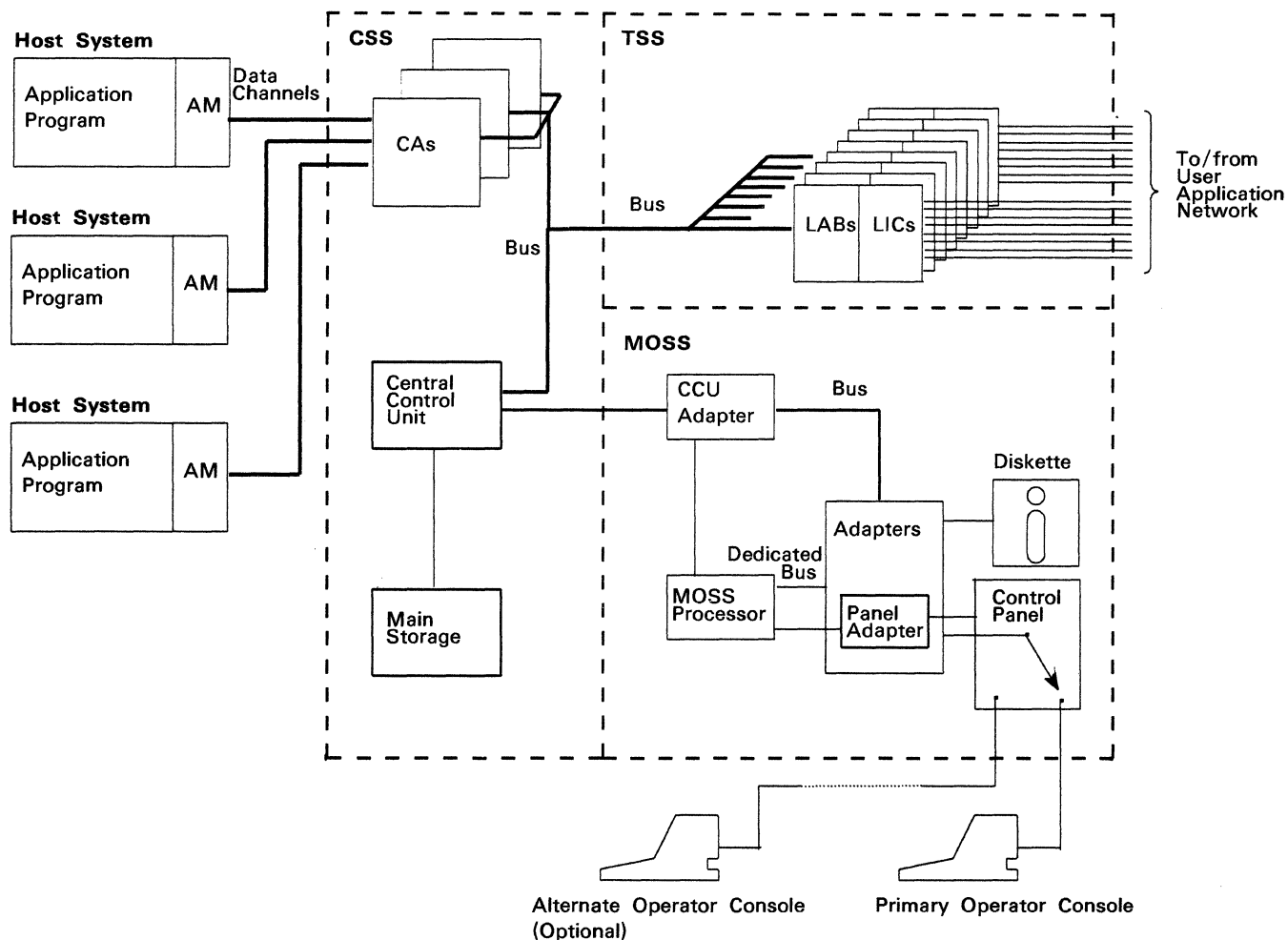


Figure 1-1. 3725 Simplified Block Diagram

## Control Subsystem

### Central Control Unit (CCU)

The Central Control Unit (CCU) contains the circuits and data flow paths to execute the instruction set, and to control the storage, the channel adapters, and the communication scanners. The CCU is interrupt driven, and can operate at five different interrupt levels under the control of the resident control program.

### Storage

The 3725 Model 1 includes from 512K bytes to 1024K bytes of main storage

by increments of 256K bytes. For the 3725 Model 2, the main storage is 512K bytes long. This storage is used to contain the control program. It is also used as a temporary storage area for data as it is being assembled or disassembled.

The storage error checking system detects and corrects all single-bit errors, and detects all double-bit errors.

### **Channel Adapter (CA)**

Previous communication controllers used several different types of channel adapters, but the 3725 has only one type. It adapts itself to the different types of channels (byte multiplex, block multiplex, selector).

The 3725 Model 1 may have a maximum of six channel adapters, or four channel adapters equipped with the two-processor switch, or any mix of the two provided no more than eight channel connections are used.

The 3725 Model 2 has a maximum of 2 channel adapters (without two-processor switch).

### ***Transmission Subsystem (TSS)***

For the 3725 Model 1, the transmission subsystem (TSS) consists of:

- The line attachment bases (LABs). Up to eight, each containing one or two communication scanners (CS). The maximum number of scanners is 14.
- The line interface couplers (LICs). Up to eight per scanner, depending on the configuration of the subsystem.
- Internal clock control (ICC).

The TSS does not include modems, as these are completely external to the 3725.

For the 3725 Model 2, TSS consists of:

- One line attachment base (C2LB) which contains one scanner.
- Up to 6 line interface couplers (LICs).
- Internal clock control (ICC).

### ***Maintenance and Operator Subsystem (MOSS)***

The maintenance and operator subsystem (MOSS) is used for loading and supervising the 3725, for running the problem determination procedures, and for program and hardware maintenance. It continually monitors the operation of the 3725, compiling and storing error data, executing recovery routines, and issuing alarm messages. It includes the following features:

- An independent processor, called the MOSS processor, and its microcode.
- An attachment for an IBM 3727 Operator Console. If required, the attachment may be switched to an optional remote 3727 Operator Console. This remote terminal may be located up to 150 meters (492 feet) from the communication controller.

The IBM 3727 Operator Console is used as the 3725's operator console.

- A magnetic diskette unit.
- A control panel.

## Conventions Used in This Manual

Throughout this manual, the following conventions are used:

- 3725 refers to the 3725 Communication Controller Models 1 and 2.
- Operator console refers to the 3727 Operator Console.
- The drawing of a key implies that you have to press that key. For example:



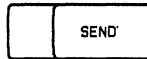
means that you must:

- press



- enter 1

- press



- Key letters, for example **A**, within a screen point to additional information in the paragraphs following the screen.
- Hexadecimal values are represented as X'n'.

For example: 16 is a decimal value

X'16' is a hexadecimal value

## Chapter 2. Operator Console Keyboard and Screen Layout

This chapter describes only the keyboard and the screen layout. For a complete description of the 3727 Operator Console, refer to *3727 Operator Console Reference and Problem Analysis Guide*, GA33-0015, normally stored under the keyboard of the console.

Most information you exchange with the 3725 is initiated from the operator console.

Characteristically, the operator console:

- Operates in *block mode*. That is, all characters entered from the keyboard are stored in a buffer, where they may be corrected and edited. They are transmitted to the 3725 when you press the SEND key.
- Operates in *uppercase mode*. The lowercase characters entered from the keyboard or received from the 3725 are converted to the corresponding uppercase characters before they are transmitted or displayed.
- Communicates in *half-duplex mode* at 2400 bits per second.
- Uses the *asynchronous line protocol* and the *US ASCII character set*.

Physically, as illustrated in Figure 2-1, the operator console consists of:

- The video element
- The logic element
- The keyboard element

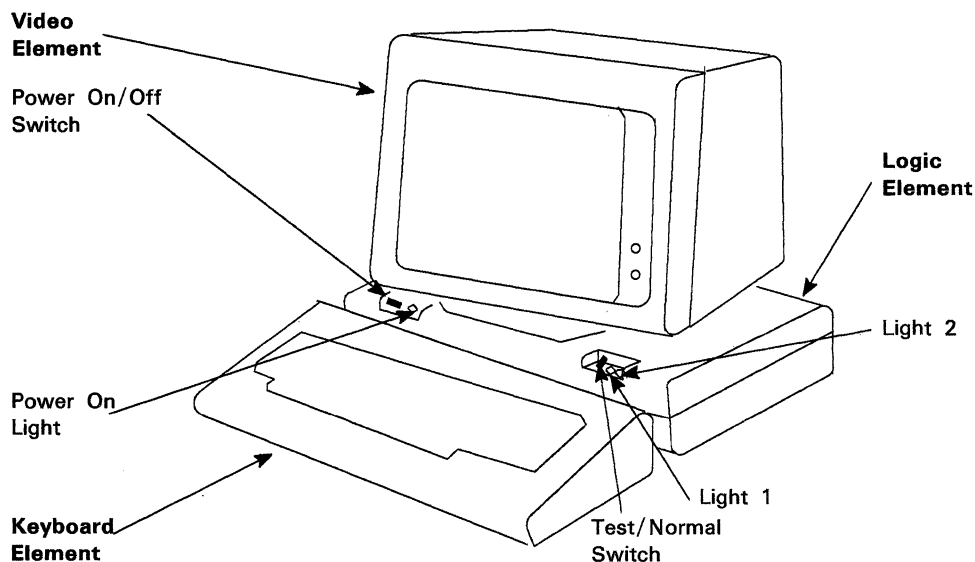


Figure 2-1. 3727 Operator Console

## Powering On The Operator Console

To power on the operator console, press the I position of the Power On/Off switch. The Power-On light remains lit until you power off the console, by pressing the O position. The complete 3727 power on procedure is described under "Preparation for Operation" in *3727 Operator Console Reference and Problem Analysis Guide*.

The operator console need not be powered on all the time. Power it on, for example, to read an alarm when the MOSS Message lamp on the control panel is on, or to perform a 3725 function. Then, you may power it off.

The Console switch on the control panel allows you to select the appropriate console: the primary or the alternate console. This switch is described in Chapter 3.



## Operator Console Keyboard

The operator console keyboard (Figure 2-2) is an English US ASCII keyboard. The keys are grouped as follows:

- Alphanumeric keys, space bar, and symbol and punctuation mark keys (basic keyboard)
- 12-key numeric keypad
- Program function keys (SELN AREA, CCU FNCTN, MSG, and PF1 through PF5)
- Control keys (SEND, RESET, SHIFT, LOCK, ATTN, ERASE, INS CHAR, DEL CHAR, and cursor-control keys)
- Non-labeled keys

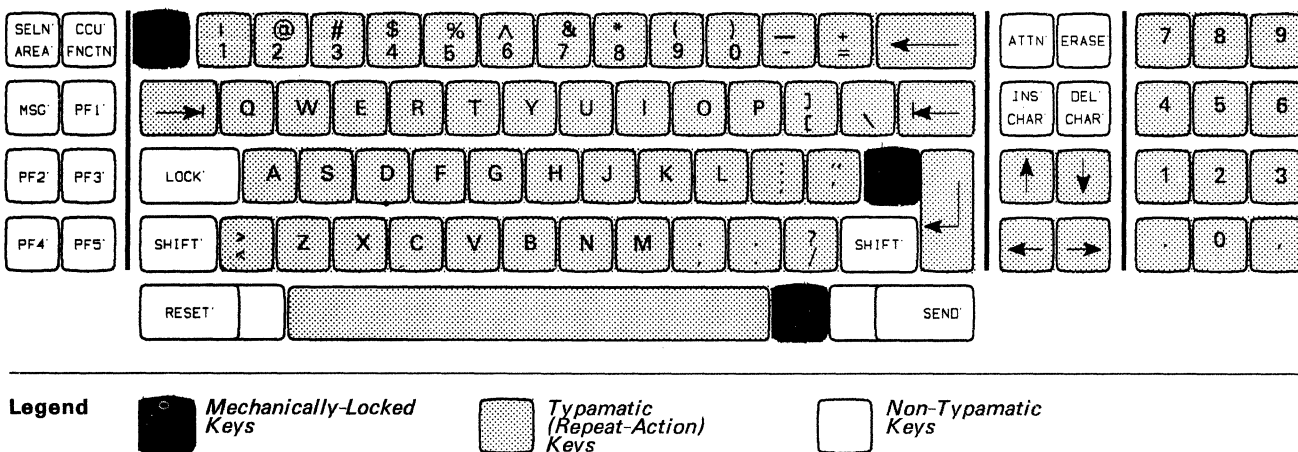


Figure 2-2. Operator Console Keyboard

### Repeat-Action Keys

When a repeat-action key is pressed, its action repeats as long as the key is held down. The repeat rate is 15 characters (or actions) per second.

### Alphanumeric and Numeric Keys

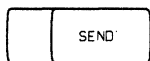
The alphabetic and numeric keys of the basic alphanumeric keyboard have the same function as on a typewriter. The alphabetic characters are always displayed in uppercase.

There is also a 12-key numeric keypad at the extreme right. It generates the same character codes as the numeric keys of the keyboard, but is not affected by the shift status.

### Space Bar

A space entered by the space bar is considered an actual character, and occupies a position on the screen. A space replaces whatever character was present in that position. For this reason, *the space bar should not be used to position the cursor* (use the tab key or the back tab key).

## **SEND Key**



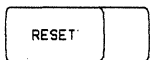
When you have entered or modified data on a screen, pressing SEND:

- Transmits the entire screen contents to the 3725 storage.
- Unless this is the last screen, moves the cursor to the first unprotected field of the *next screen*.
- If this is the last screen, causes the function to be performed. The cursor is positioned either at the selection area (if it is possible to select another function), or at the first position of the first line of the screen (if no action is possible).

When you have entered data or modified data on a screen, *you must press SEND* before doing anything else. If you call another screen or press a PF key before pressing SEND, the data you entered or modified is lost. (See the note under "PF1 Through PF5 Keys" later in this section.)

**Note:** *On very rare occasions, a few unexpected and erratically scattered characters may appear on the operator console screen. These characters do not affect normal processing. However, if you wish to clear them, power off then power on the operator console. This will cancel all active functions.*

## **RESET Key**



Recovers from keyboard-lock conditions.

## **ATTN Key**



Allows you to get control of the operator console.

- In refresh mode, pressing ATTN cancels the refresh.
- When a function is being performed for an unlimited period (for example, permanent wrap test), pressing ATTN gives you control of the operator console, so that you can stop the function.
- When a procedure is in wait state (for example, a control program procedure), pressing ATTN gives you control of the operator console, so that you can cancel the wait and take appropriate action.
- When you do not get a response from the CCU or when you suspect an error while executing a control program procedure (Chapter 7), the Wrap Test function, or the MOSS Online or MOSS Offline System Control function (Chapter 5), pressing ATTN gives you control of the operator console. You may either:
  - Select a CCU function and act appropriately (display, alter), or
  - Return to previous state.

**Warning:** Pressing and holding ATTN for a long period of time may disconnect the link between the operator console and the 3725.

## ***ERASE Key***



Clears all unprotected character positions from the screen, except the Operator Information Area.

## ***INS CHAR Key***



Allows you to insert one or more characters in an unprotected field, with a shift right of the character displayed at the cursor position and those at its right. INSERT is displayed in the operator information area (last line of the screen).




Before inserting any characters, you must delete as many trailing blanks or characters as you want to insert (use DEL CHAR). The new character(s) will be inserted to the left of the character identified by the cursor.

If there are no trailing blanks, you cannot insert a character; you can only replace a character of the field by a new one.

If you try to insert a character before deleting one, FORMAT CHECK is displayed in the operator information area (last line of the screen).

*Example:* If you wish to insert 4 between the 3 and 5: ==> 1235

do as follows:

1. Move the cursor to the first position after the 5
2.  to delete a trailing blank
3. Move the cursor under the 5
4.  to enter insert mode
5. Enter 4
6.  to exit from insert mode

## ***DEL CHAR Key***



Allows you to delete the character (including a blank character) located at the cursor position. The cursor does not move. The remaining characters to the right of the cursor and in the same field shift one position to the left.

## ***Shift and Lock Keys***

### **SHIFT Keys**

When a key with two characters is pressed with the SHIFT (or LOCK) key held down, the character that is on the top half of the key is entered. An alphabetic character is always entered and displayed in uppercase.

## **LOCK Key**

Locks the keyboard in shifted (uppercase) condition, freeing both hands for typing. To return to lowercase condition, press either of the two SHIFT keys.

### **Notes:**

1. *Upshift positions are never required when communicating with the 3725.*
2. *When the keyboard is in the shifted condition, UP-SHIFT is displayed on line 25 of the screen (operator information area).*

## **SELN AREA Key**



Pressing SELN AREA positions the cursor at the selection area, and allows you to select a function from either the primary or secondary menu.

## **CCU FNCTN Key**



If no function has been selected, pressing CCU FNCTN displays the list of CCU functions in the secondary menu, so you can select one of them.

If a function is already selected, pressing CCU FNCTN disconnects the function so that you can select and executes another one. (For more information, refer to "Switching Between CCU and Primary Menu Functions" in Chapter 5.)

## **MSG Key**



Pressing MSG causes a waiting alarm (if any) to be displayed, or clears the alarm area if no other alarms are waiting.

The alarm appears on line 24 and remains displayed until you press MSG again.

Alarms are also recorded in the box error record file (BER file). The BER file can be displayed using the Error Log function, described in Chapter 5. Alarms are described in Chapter 8.

## **PF1 through PF5 Keys**

Each PF key is assigned a command, which may differ from one function to another. Use the PF1 through PF5 commands only when you are requested to do so. The commands assigned to a PF key are preset. You can neither assign new commands nor modify existing ones.

The most commonly used commands assigned to PF keys are:

- FORWARD
- BACKWARD
- REFRESH
- QUIT
- UPDATE

These commands are described where needed.

**Note:** *If you enter parameters or modify data on a screen, and you are requested to press a PF Key, you must first press SEND to transmit what you entered, then press the PF key.*

**Example:** *Refer to "How to Alter" under Display/Alter function in Chapter 5. Assume you press PF1 (step 4) before pressing SEND (step 3), you would return to display mode, but the data that you altered in step 2 would be lost.*

### ***Non-Labeled Keys***

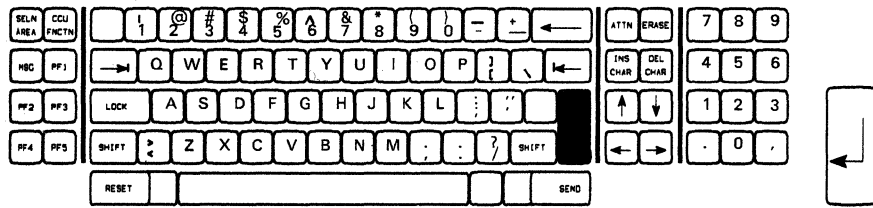
The three non-labeled keys, shown on Figure 2-2, are mechanically locked.

Also, the uppercase position of the reverse slash is not labeled. Pressing it causes the alarm to sound when the Test/Normal switch is set to Normal.



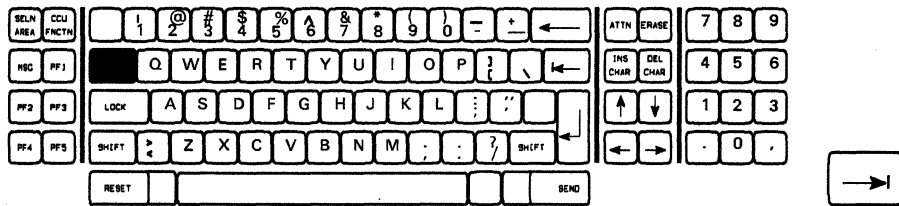
Following are descriptions of the eight keys that control movement of the cursor.

### New Line Key



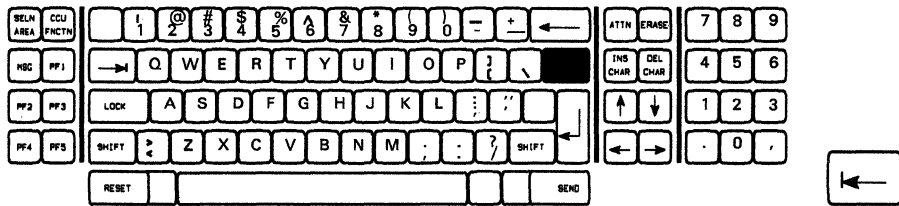
Moves the cursor down to the first character position of the next line. When the cursor is at the bottom line and this key is pressed, the cursor moves to the screen home position (first position of the first line).

### Tab Key



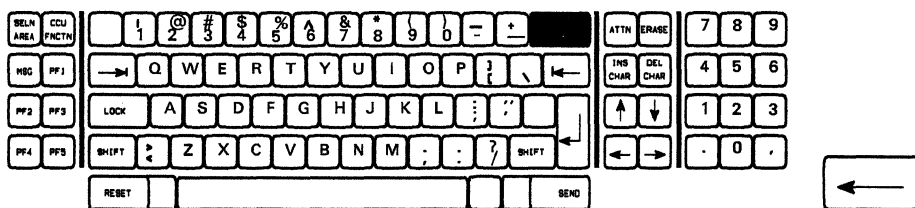
Moves the cursor to the start of the next unprotected input field.

### Back Tab Key

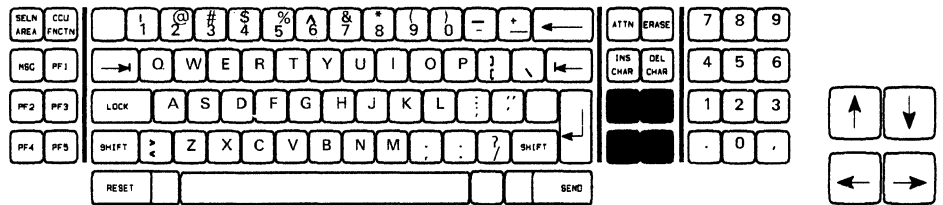


Moves the cursor to the start of the previous unprotected input field.

### Backspace Key



Moves the cursor one character position to the left.



***Move-Cursor-Left Key***



Moves the cursor one character position to the left. When the cursor is at the extreme left of the line and this key is pressed, the cursor reappears at the extreme right of the preceding line.

***Move-Cursor-Right Key***



Moves the cursor one character position to the right. When the cursor is at the extreme right of the line and this key is pressed, the cursor reappears at the extreme left of the next line.

***Move-Cursor-Down Key***



Moves the cursor down one line from its present position. When the cursor is at the bottom line and this key is pressed, the cursor reappears at the top line in the same character position.

***Move-Cursor-Up Key***



Moves the cursor up one line from its present position. When the cursor is at the top line and this key is pressed, the cursor reappears at the bottom line in the same character position.

# Operator Console Screen Layout

The operator console has a screen capacity of 2000 characters, organized in 25 rows of 80 characters. These 25 rows are divided into eight areas, each being reserved for specific information and actions.

The operator console screen layout is illustrated in Figure 2-3.

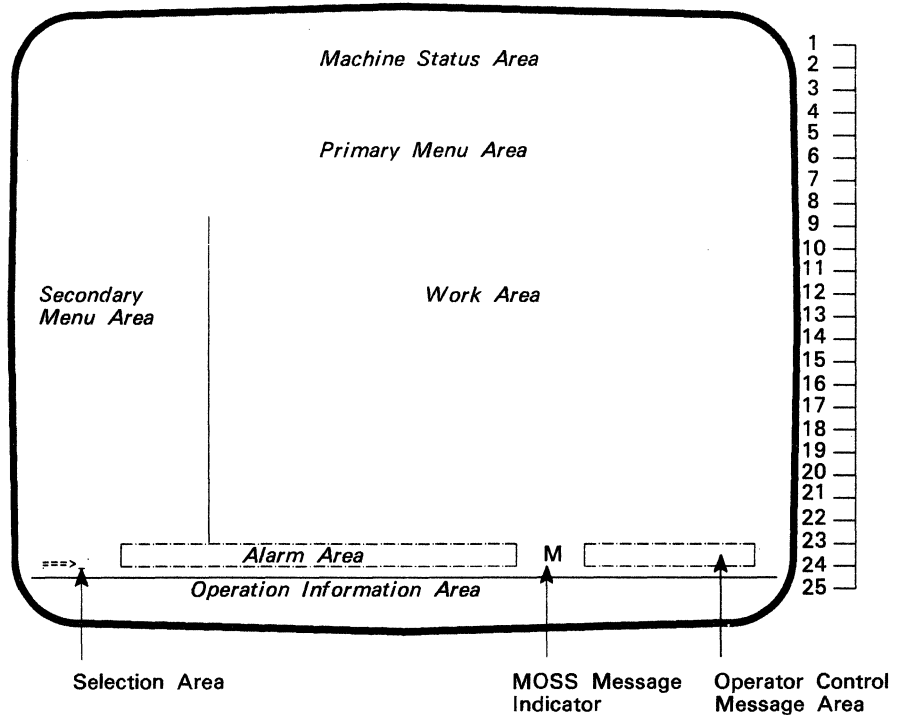


Figure 2-3. Operator Console Screen Layout

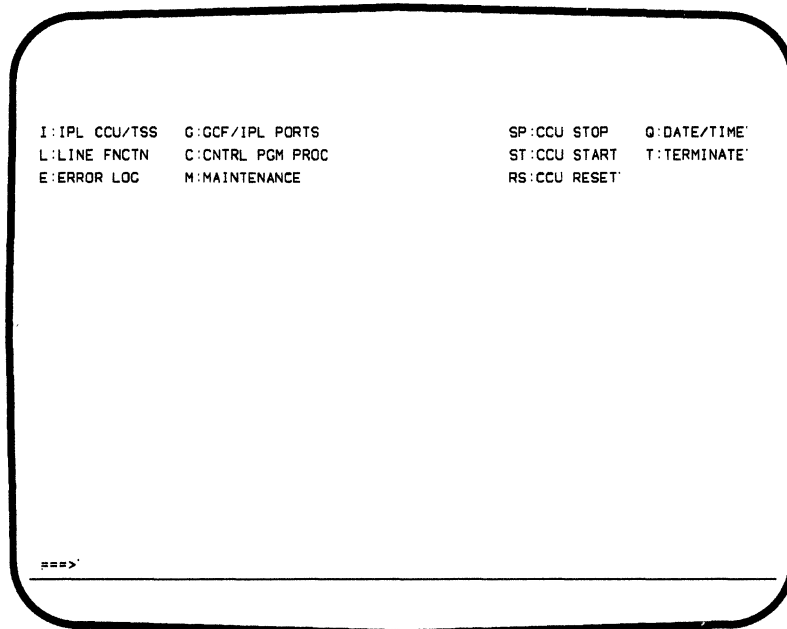
### ***Machine Status Area (MSA)***

The Machine Status Area (lines 1 to 3) shows the current status of the 3725. Temporary as well as permanent indications are displayed in this area. A complete description of the MSA is given in Appendix A.

### ***Primary Menu Area***

The primary menu (lines 5 to 7) lists permanently the 3725 functions (except the CCU functions) and their associated selection characters. Once selected, a function remains highlighted in the primary menu until you select another function.

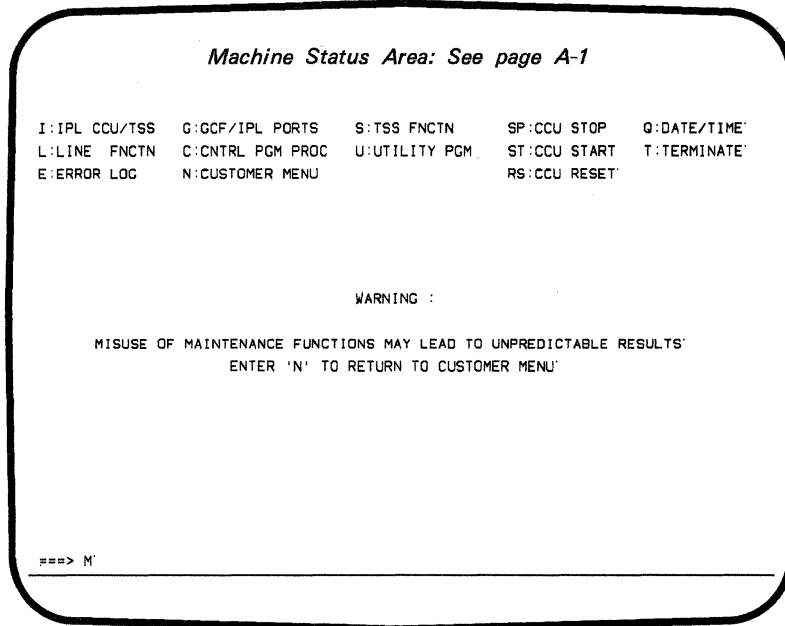
Two versions of the primary menu are available: a customer menu and a maintenance menu. When you turn on the operator console, the customer primary menu displays only the functions that you need to start and operate the 3725, and to perform the 3725 problem determination.



*Customer Primary Menu*

To display the functions available to service personnel, enter M.

This adds the maintenance functions to those already displayed in the primary menu:



### *Maintenance Primary Menu*

Maintenance functions are to be used only by service personnel.

The entry M=MAINTENANCE is overridden by N=CUSTOMER MENU in the primary menu. Selecting N restores the primary menu available to the customers. The maintenance functions are not described in this manual.

When you have selected the CCU functions, CCU FNCTN appears in the primary menu area.

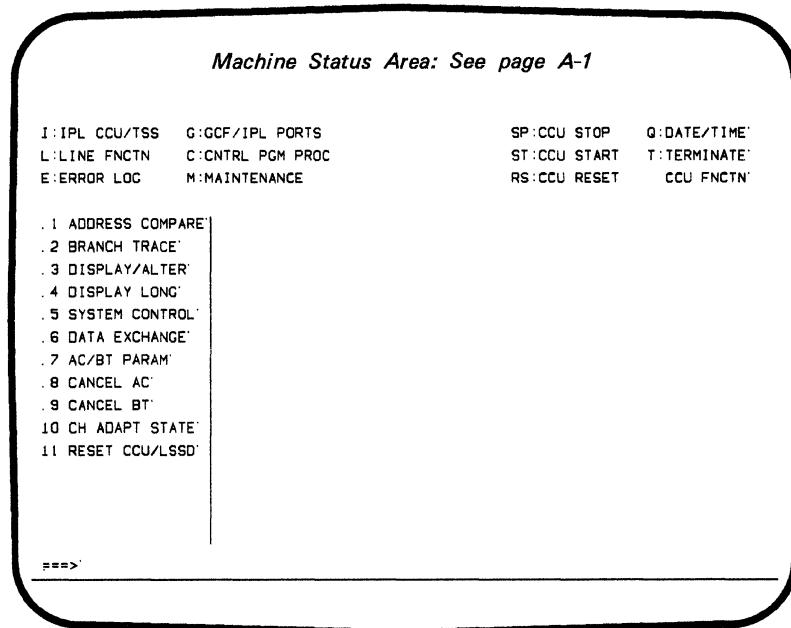
### *Secondary Menu Area*

When you have selected the CCU functions or a primary menu function, all the functions that belong to this group are displayed in the secondary menu (the first 20 characters of lines 9 to 23).

*Example:* If you press:



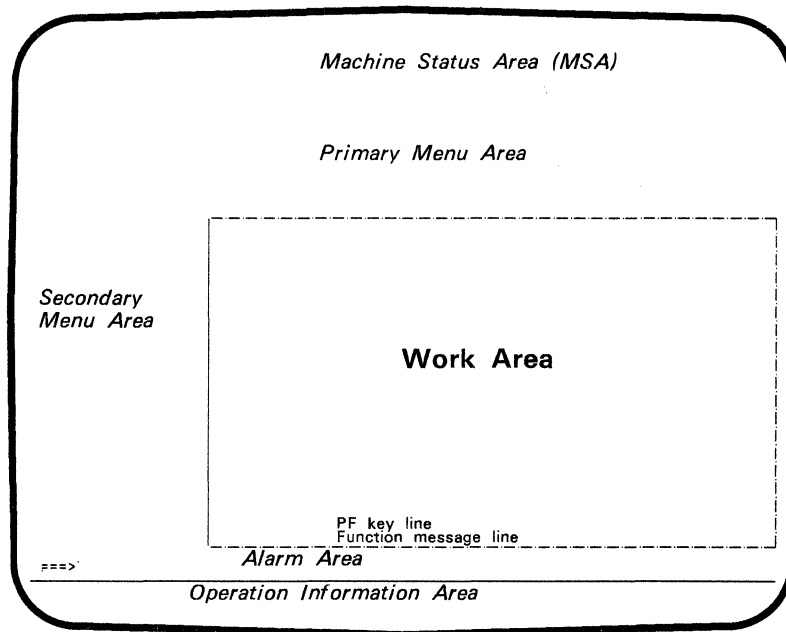
the following CCU functions are displayed in the secondary menu:



*Secondary Menu Area*

The number preceding each function is the selection number (1 or 2 characters) that you should enter in the selection area (line 24) to select the function. Once selected, the function remains highlighted in the secondary menu until you select another function.

## Work Area



The work area (the last 60 characters on lines 9 to 23) is used as:

- Input area for function parameters. It is also used to display tertiary menus (refer to "System Control" in Chapter 5).
- Output area for storage and register display.

The last two lines (22 and 23) of the work area are common to all functions.

- Line 22: Reserved to display PF1 through PF5 keys that can be used for that function. PF keys are individually described with the appropriate function in Chapter 5.
- Line 23: Reserved to display function messages.

## Selection Area

The selection area is used to select a function. It is permanently identified by the sign `====>` on line 24. This sign should not be confused with the sign `==>` that indicates the unprotected fields for entering data in the work area.

## Alarm Area

The alarm area, at the right of the selection area, is used to display the alarms. Alarms are described in Chapter 8.

Pressing:



clears the alarm area and displays the next alarm, if any.

### ***MOSS Message Indicator***

The MOSS Message indicator (letter M on line 24) indicates that alarms are waiting to be displayed.

When the operator console is switched off, you are informed that an alarm is waiting by the MOSS Message lamp on the 3725 control panel.

### ***Operator Control Message Area***

The last 17 characters on line 24 are reserved to display operator control messages. They signal invalid commands, and give information on the following primary menu functions: CCU Stop, CCU Start, and CCU Reset. The date and time are also displayed in this area (see the "Query Date and Time" immediate function in Chapter 5.) These messages are described in Chapter 8.

### ***Operator Information Area***

The operator information area (line 25 of the screen) is reserved for the display of:

- Operator console information messages in normal operation. They are described in Chapter 8.
- Test messages. They are documented in *3727 Operator Console Reference and Problem Analysis Guide*.

### ***Arrow Signs***

===> shows the selection area. This sign is always present on the 24th line of the screen.

==> shows where you have to enter parameters in the work area. In display mode, ==> is changed into the equal sign (=).

### ***Cursor Rest Position***

The cursor rest position is the home position of the screen (first position of the first line).

When the cursor is at its rest position, you can neither enter data nor select any function other than CCU functions. Depending on the current function, you may press SEND, TAB key, or one of the PF keys displayed on line 22, if any, or wait until the cursor moves to an unprotected field.

In case of error, the cursor moves to the first position of the field in error.





# Chapter 3. Control Panel

The control panel (Figure 3-1) consists of lamps, switches, and a hexadecimal display. It provides basic control functions, and some error indications.

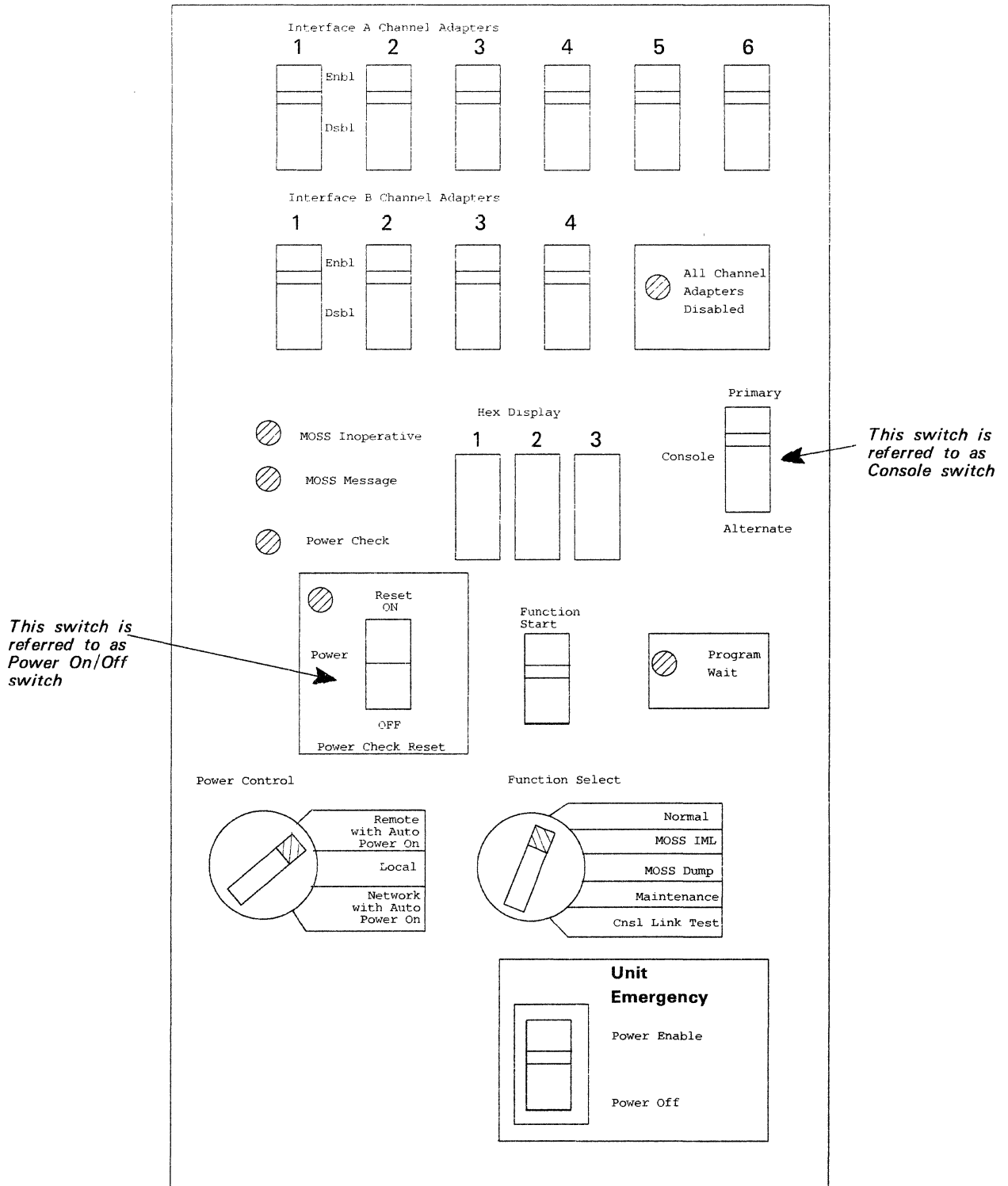


Figure 3-1. Control Panel

## Lamps

### All Channel Adapters Disabled

Indicates that all channel adapters are disabled.

This lamp is on when:

- All switches of interface A channel adapters are set to disable
- All switches of interface B channel adapters are set to disable
- The microcode has disabled all channel adapters

*Note: It is possible that the lamp will be lit although one of the switches of the channel adapters is set to enable. This means that the microcode has not yet enabled the corresponding channel adapter.*

### MOSS Inoperative

Indicates that MOSS is not operational. This lamp is lit for testing during the MOSS IML.

### MOSS Message

Indicates that an alarm is being displayed or is to be displayed (Chapter 8). It is switched off when the Alarm area is cleared by pressing MSG.

This lamp is lit for testing during the MOSS IML.

### Power Check

Indicates that one of the following power faults is detected:

- overvoltage
- undervoltage
- overcurrent
- thermal
- open circuit breaker chain
- clock fault

### Power On

Lights when the power-on sequence starts. It goes off when the 3725 is powered off.

### Program Wait

Indicates that the CCU control program is in WAIT state:

- No instruction is being performed,
- The program is in level 5,
- The level 5 is masked.

## Switches

### Interface A Channel Adapters

Six switches, to enable or disable each of these six channel adapters.

### Interface B Channel Adapters

Four switches, to enable or disable each of these four channel adapters.

**Note:** *For a channel adapter with a two-processor switch (TPS) running in a loosely coupled environment, only one of the interfaces may be enabled at any one time.*

*For a channel adapter with a TPS running in a tightly coupled or alternate path environment, both interfaces may be enabled simultaneously.*

### Console

To select either Primary or Alternate as the operator console.

Before operating this switch, you must properly terminate (page 5-6) any operation with the presently selected console.

When you operate the Console switch, any function in progress is canceled and the screen of the console to which you are now switched is initialized: the primary menu then the MSA are displayed.

If you operate this switch again before the screen is completely initialized, you may be unable to initialize the other screen. In this case, both keyboards are locked and the message LINE CHECK 2 is displayed on both screens. You should re-IML MOSS from the control panel (page 4-9).

### Power Control

To select how and from where the 3725 is powered on or off.

Remote with Auto Power On—the 3725 is powered on and off from the host.

Local—the 3725 is powered on and off from the Power On/Off switch on the control panel.

Network with Auto Power On—the 3725 is powered on from the Power On/Off switch on the control panel and powered off by a remote power off command.

The auto-restart depends on the Power Control switch position. See page 4-1.

### Power On/Off

To power on or power off the 3725 controller.

**Warning:** After a manual power off, wait at least five seconds before again pressing the Power ON position of the Power On/Off switch.

The switch setting causes one of four resulting actions (or no action), depending on the 3725 state:

If you press:		While the 3725 power is:	The resulting action is:
Power ON	Power OFF		
X		On (Power On lamp is lit)	General reset <sup>1</sup> and 3725 initialization
X		Off (Power On lamp is off)	Power on and reset, and initialize the 3725 depending on the position of the Function Select switch
	X	On	3725 power off
	X	Off, and the Power Check lamp is lit	Reset power check
	X	Off	No action

<sup>1</sup> The Power Control switch must be on Local and all channels must be disabled.

### Function Start

To initiate the operation selected on the Function Select switch.

### Function Select

**Normal** — to initialize the 3725, that is, the MOSS IML, the CCU IPL, the scanner IML, and the loading of the control program. (This is the normal position of the switch.)

**MOSS IML** — to perform the IML of MOSS only.

**MOSS Dump** — to dump MOSS on the diskette. To transfer the dump to the host, refer to "File Transfer" in Chapter 8. When the dump is taken, MOSS has to be IMLed. (Service personnel.)

**Maintenance** — to load the MOSS microcode and to enter in service mode. (Service personnel.)

**Cnsl Link Test (Console Link Test)** — to run a wrap test up to the end of the console cable. An external plug is required. (Service personnel.)

To initiate these operations, activate the Function Start switch.

### Unit Emergency

In an emergency, press Power Off to remove power from the machine. Only the IBM representative can reset this switch to Power Enable.

The normal position for this switch is Power Enable.

## Hex Display

This display shows three hexadecimal characters that indicate:

- 3725 initialization phases, when the Power Check lamp is off
- Checks, initialization (IPL/IML) errors
- Power errors, when the Power Check lamp is on

### Notes:

1. *After the normal completion of the initialization, the hexadecimal display shows 000.*
2. *After initialization, error codes flash on the Hex Display. These codes are explained in Figure 8-1, starting on page 8-44.*



## Chapter 4. Power and Initialize the 3725 Communication Controller

This chapter deals with the:

- 3725 power on and initialization from the 3725 control panel
- 3725 power on and initialization (or re-initialization) from the host
- 3725 re-initialization from the control panel
- 3725 power off
- MOSS IML

3727 power on/off is described in Chapter 2.

CCU IPLs and scanner IMLs from the operator console are described under "IPL CCU/TSS" in Chapter 5.

The 3725 may be automatically initialized under certain circumstances. This process requires no operator intervention from the 3725.

The progression of the 3725 initialization, whether it is automatic or not, is indicated in:

- The Hex Display of the control panel. (Hexadecimal codes are listed in Figure 8-1 of Chapter 8.)
- The third line of the Machine Status Area of the operator console (Appendix A).

**Warning:** The only 3725 functions that you can perform while IPLing the CCU are the CCU functions.

### Auto-Restart

Auto-restart is intended to power on and initialize the 3725 automatically after an ac input failure, without any operator intervention. Auto-restart depends on the Power Control switch position. If the Power Control switch is set to:

- Remote with Auto Power On: Auto-restart is effective.
- Local: Auto-restart is not effective. You have to power on and initialize the 3725 from the control panel.
- Network With Auto Power On:
  - The 3725 is automatically powered on and initialized, if it was already powered on when the ac input failure occurred.
  - The 3725 remains powered off, if it was already powered off by a Remote Power Off (RPO) command when the ac input failure occurred.
  - The 3725 is automatically powered on and initialized, if it was already powered off by a Remote Power Off (RPO) command issued after a disturbance, when the ac input failure occurred.

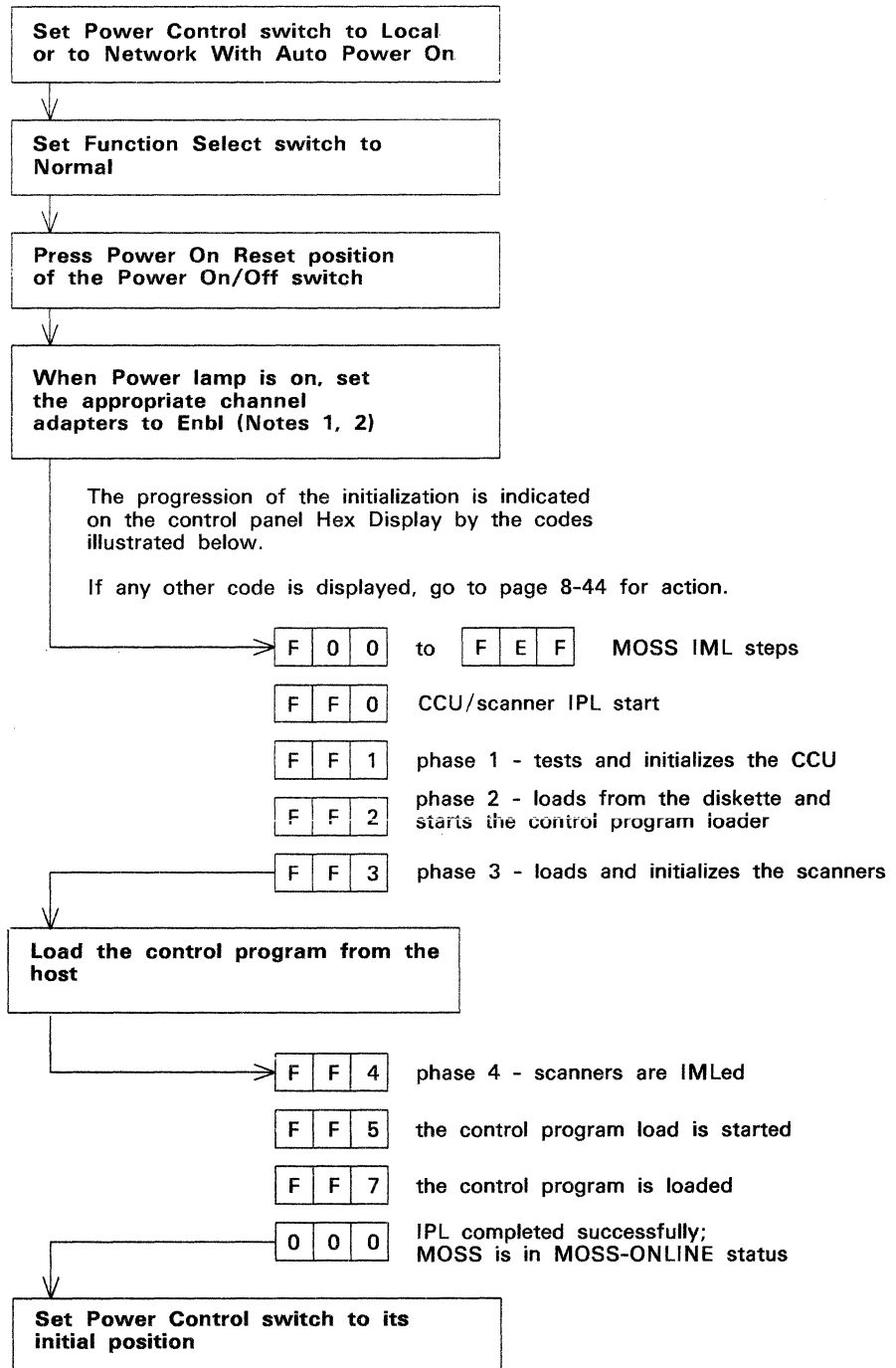
### Channel-Attached 3725 Power On and Initialization from the Control Panel

Before you power on and initialize the channel-attached 3725, make sure that the operator console, if powered on, is in normal mode. If it is not in normal



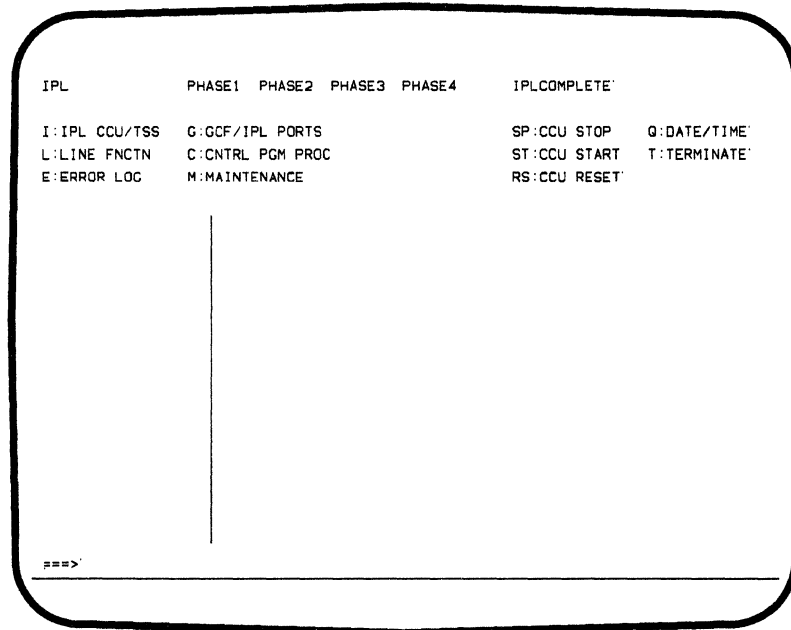
mode, set the Test/Normal switch located on the video element to **NORMAL**. Light 1 of the operator console should go off and Light 2 should remain on. See Figure 2-1 in Chapter 2.

The procedure for powering on and initializing the channel-attached 3725 from the *control panel* follows.



It takes about *4 minutes* to initialize the 3725.

When the initialization ends successfully, the following screen is displayed if the operator console is powered on:



**Notes:**

1. *The channel adapters to be enabled must be selected from among those that you defined in the 3725 configuration.*
2. *If, after power on, the initialization does not start:*
  - *Set Power Control switch to Local*
  - *Press Power OFF (Power Check Reset); wait 2 seconds; then*
  - *Press Power ON (Reset)*
  - *If the initialization does not start this time, or if X'FF4' is not displayed on the Hex Display, refer to the "Problem Determination Start Page" (page 8-1).*

### **Channel-Attached 3725 Re-Initialization from the Control Panel and the Host**

- To re-initialize the channel-attached 3725 *from the control panel:*
  - Make sure that the appropriate channel adapters are enabled.
  - Make sure that the Function Select switch is set to Normal.
  - Activate the Function Start switch.

The host operator is automatically notified when to load the control program.
- To re-initialize the channel-attached 3725 *from the host*, make sure that the appropriate channel adapter is enabled, *MOSS must be operational.*

The re-initialization hexadecimal codes are similar to those of the 3725 initialization from the control panel.

## **Channel-Attached 3725 Power On and Initialization from the Host**

To power on and initialize or re-initialize the channel-attached 3725 from the host, make sure that:

1. The Power Control switch is set to Remote with Auto Power On.
2. The Function Select switch is set to Normal.
3. The appropriate channel adapter is enabled.

The 3725 will be powered on and initialized with all other controllers under control of the same host.

Operator intervention at the host is not dealt with in this manual. Refer to your host documentation.

# Link-Attached 3725 Power On and Initialization from the Host

The procedure for powering on and initializing the link-attached 3725 *from the host* follows.

Set Power Control switch to Local Network With Auto Power On

Set Function Select switch to Normal

Press Power ON position of the Power On/Off switch

The progression of the initialization is indicated on the control panel Hex Display by the codes illustrated below.

If any other code is displayed, go to page 8-44 for action.

F 0 0 to F E F MOSS IML steps

F F 0 CCU/scanner IPL start

F F 1 phase 1 - tests and initializes the CCU

F F 2 phase 2 - loads from the diskette and starts the control program loader

F F 3 phase 3 - loads and initializes the scanners

F F 4 phase 4 - scanners are IMLed

Load the control program from the host

F F 6 the control program load is started

F F 7 the control program is loaded

0 0 0 IPL completed successfully; MOSS is in MOSS-ONLINE status

## Link-Attached 3725 Re-Initialization from the Control Panel and the Host

- To re-initialize a link-attached 3725 *from the control panel*:
  - Make sure that the Function Select switch is set to Normal.
  - Activate the Function Start switch.
  - When the Hex Display shows X'FF4', notify the host operator to load the control program.
- To re-initialize the link-attached 3725 *from the host*, no operation is required from the 3725 side. *MOSS and the control program must be operational.*

The re-initialization hexadecimal codes are similar to those of the link-attached 3725 initialization from the control panel.

## Link-Attached 3725 Initialization from the Host

A link-attached 3725 cannot be powered on from the host. To initialize a link-attached from the host, you must first power it on from the control panel. The power on and initialization procedure is similar to that described under "Link-attached 3725 Power On and Initialization from the Control Panel."

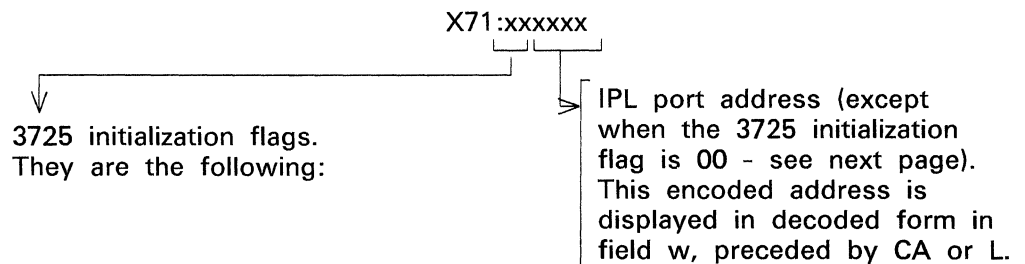
### 3725 Initialization Indications

The progression of the channel-attached or link-attached 3725 initialization, whether it is automatic or not, is indicated in:

- The Hex Display of the control panel. (Hexadecimal codes are listed in Figure 8-1 of Chapter 8.)
- The third line of the Machine Status Area of the operator console: field *w* (see Appendix A) and fields *e* and *k* (see below).

a	b	c	d	e	f		
g	h	i	j	k	l		
r		s	t	u	v	w	x

Field *e* displays:



- 01 = IPL request detected on a link-attached 3725
- 02 = IPL request detected on a channel-attached 3725
- 05 = dump in progress on a link-attached 3725
- 06 = dump in progress on a channel-attached 3725
- 09 = control program load in progress on a link-attached 3725
- 0A = control program load in progress on a channel-attached 3725
- 11 = Remote Power Off (RPO) command is detected
- 20 = control program loader/dump abend before an IPL request detected on a channel- or link-attached 3725
- 21 = control program loader/dump abend on an IPL request detected on a link-attached 3725
- 22 = control program loader/dump abend on an IPL request detected on a channel-attached 3725
- 25 = control program loader/dump abend on a link-attached 3725 dump
- 26 = control program loader/dump abend on a channel-attached 3725 dump
- 29 = control program loader/dump abend on a link-attached 3725 control program load
- 2A = control program loader/dump abend on a channel-attached 3725 control program load



## MOSS IML

The MOSS IML can be performed *only* from the control panel.

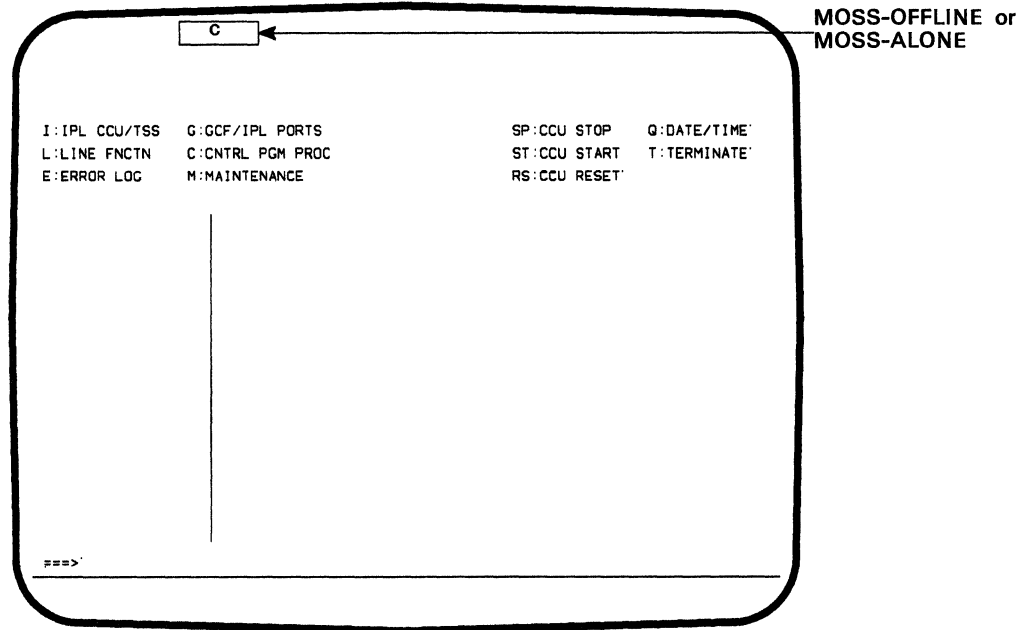
**Note:** Message LINE CHECK 2 on the bottom line of the screen is normal during MOSS IML.

### MOSS IML Procedure

1. Power on the operator console.
2. Set the Function Select switch to MOSS IML.
3. Activate the Function Start switch.

While MOSS is being loaded, the screen is cleared.

4. When the MOSS IML is completed, MOSS is in status MOSS-OFFLINE or MOSS-ALONE. The following screen is displayed:



5. Do not forget to:
  - Set MOSS online (page 5-46)
  - Set the Function Select switch back to Normal



## MOSS IML Indications

The progression and the termination of the MOSS IML are indicated on the Hex Display and the machine status area.

*Hex Display:*

F	0	0
---	---	---

 to 

F	E	F
---	---	---

 = IML phases. See page 8-44 for an explanation of these codes.

F	E	E
---	---	---

 indicates that MOSS IML is completed and the control program is loaded.

F	E	F
---	---	---

 indicates that MOSS IML is completed but the control program is not loaded.

*MSA Field c (Appendix A):*

If the control program was loaded, MOSS-OFFLINE is displayed to indicate that the MOSS IML is complete and that MOSS is in MOSS-OFFLINE status (that is, MOSS is not connected to the CCU control program). To set MOSS online, see page 5-46.

If the control program was not loaded, MOSS-ALONE is displayed to indicate that the MOSS IML is complete and that MOSS is in MOSS-ALONE status (that is, MOSS is operational but the CCU control program is not loaded or no longer operational).

When MOSS is online (MOSS-ONLINE in MSA field c), select the Terminate function, unless you want to select another CCU function:



## 3725 Power Off

- 3725 Power off from the control panel:
  - Position the Power Control switch to Local.
  - Position all channel adapter switches to Dsbl (to disable all channel adapters).
  - Press the Power Off PCR position of the Power On/Off switch.
- 3725 Power off from the host:

Position the Power Control switch to Remote with Auto Power On. The 3725 will be powered off automatically from the host when the host is powered off.
- 3725 Power off from the network:

Position the Power Control switch to Network with Auto Power On. The 3725 will be powered off by a remote power-off command.

**Note:** *Powering the operator console is described in Chapter 2.*

This chapter tells you how to select a 3725 function and how to enter parameters, gives an example of a typical function procedure, and describes individually each function.

### Selecting 3725 Functions

3725 functions are selected using two keys:

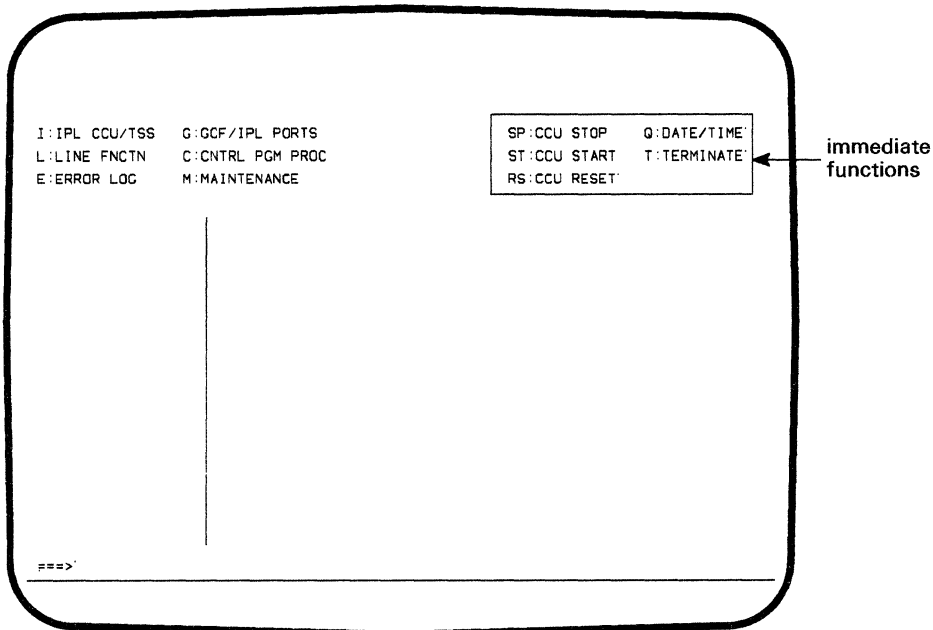
CCU  
FNCTN

to select the CCU functions.

SELN  
AREA

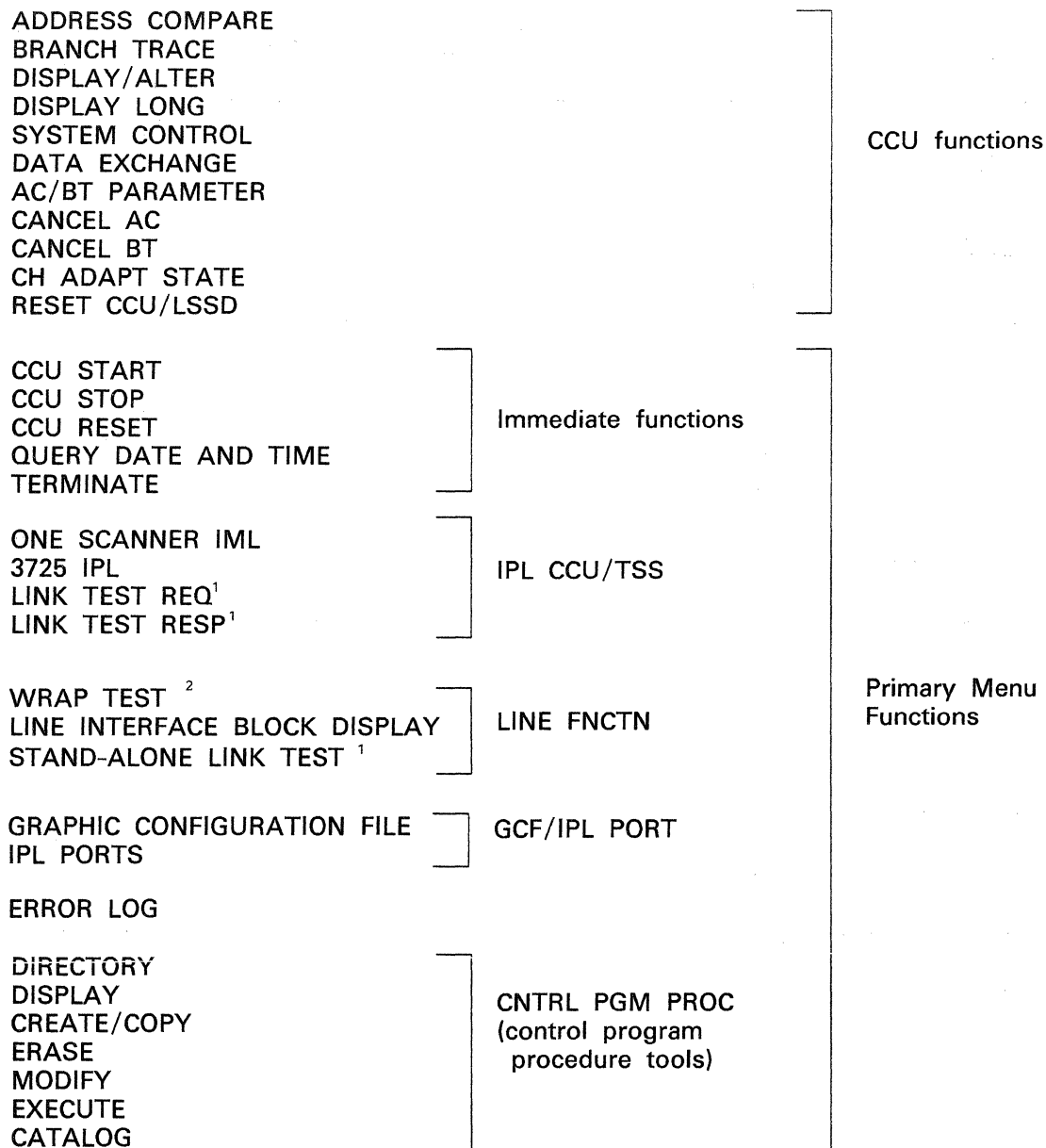
to select the functions permanently displayed on the primary menu.

Some primary menu functions are executed immediately after they have been selected; they are referred to as 'immediate' functions. These functions may be selected at any time.



Primary Menu Functions

Figure 5-1 lists the 3725 functions, and Figure 5-2 shows the general selection procedure for each type of function.



Maintenance functions are not described in this manual. They are intended for service personnel.

1. The Link Test and Stand-Alone Link Test functions are documented in *IBM 3725 Communication Controller Stand-Alone Link Tests, GA33-0028*.
2. The Wrap Test function is documented in *IBM 3725 Communication Controller Wrap Tests, GA33-0027*.

Figure 5-1. 3725 Functions

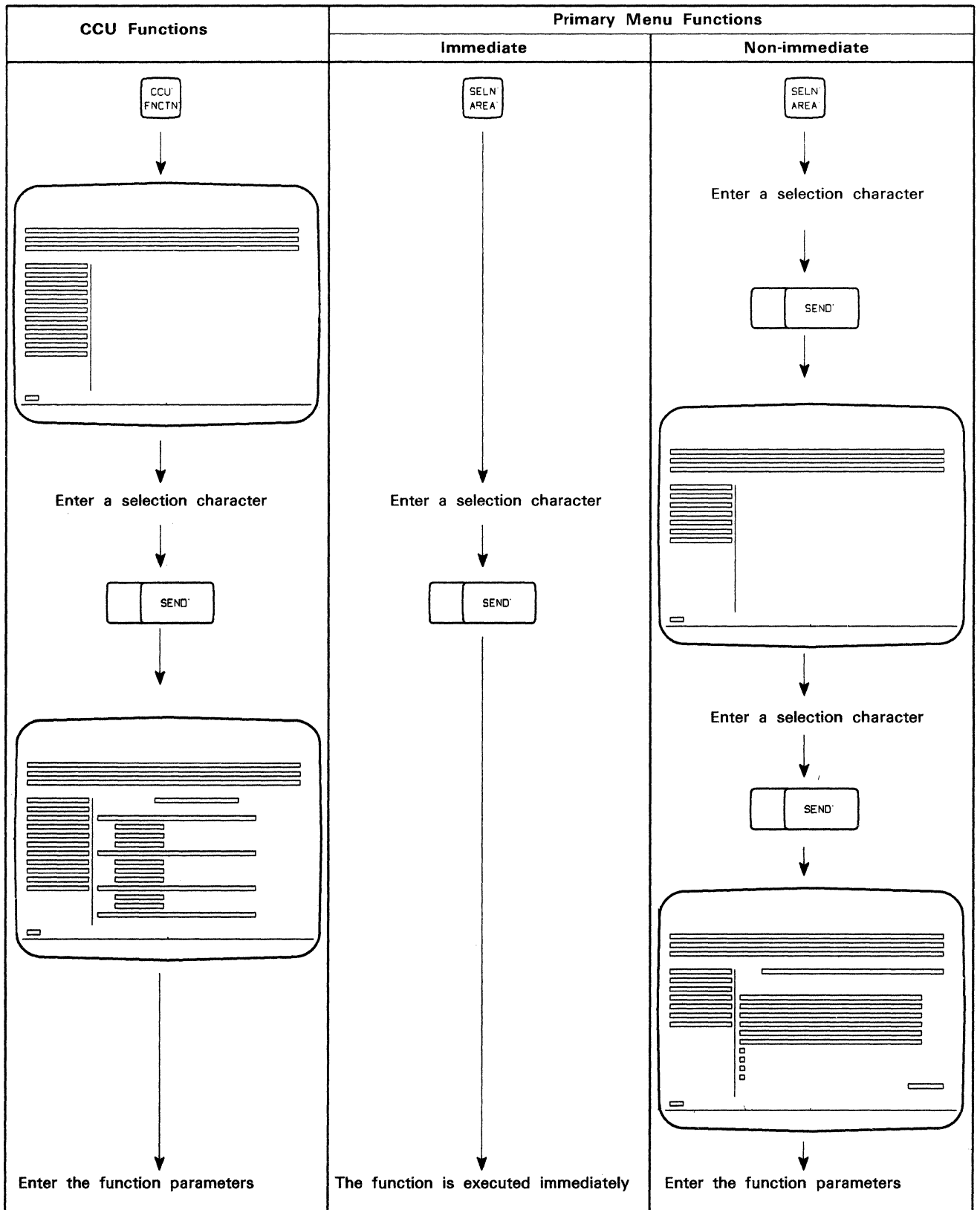


Figure 5-2. Selecting 3725 Functions

## Entering 3725 Function Parameters

The following does not apply to immediate functions, for which you are not required to enter parameters. Parameters refer to any type of input on a screen (options, addresses, data).

- Once you have selected a 3725 function (Figure 5-2), the cursor is automatically positioned at the first unprotected field of the work area, so that you may enter the first parameter.

The unprotected fields are the only fields in which you can enter data. They are identified by ==> in the work area, and ===> in the selection area. In update mode, data fields are unprotected.

If you try to enter data in any other fields, the keyboard locks and the message LOCK-FORMAT CHECK is displayed in the operator information area (see Chapter 8). To continue, press RESET, and enter data in the appropriate unprotected field.

Figures 5-3 and 5-4 illustrate two examples of unprotected fields.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE		
. 2 BRANCH TRACE	. ENTER Y FOR CCU STOP	==> N
. 3 DISPLAY/ALTER		
. 4 DISPLAY LONG	. ENTER N FOR NO WRAP	==> Y
. 5 SYSTEM CONTROL		
. 6 DATA EXCHANGE	. ENTER Y FOR BT STOP ON AC	==> N
. 7 AC/BT PARAM		
. 8 CANCEL AC	. ENTER LOWER LIMIT ADDRESS (1 TO 6 DIGITS)	==>
. 9 CANCEL BT		
. 10 CH ADAPT STATE	. ENTER UPPER LIMIT ADDRESS (1 TO 6 DIGITS)	==>
. 11 RESET CCU/LSSD	. BLANK THE UNWANTED LEVEL INTERRUPT(S)	==> 12345
	. PF1: LATEST SELECTED BRANCH TRACE VALUES	

===>

Figure 5-3. Unprotected Fields (shaded areas)

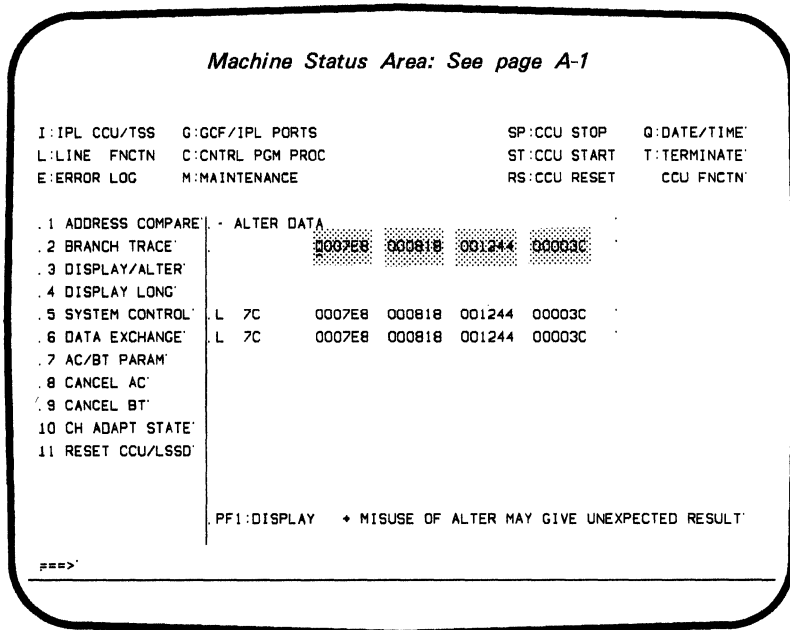


Figure 5-4. Unprotected Fields in Update Mode (shaded areas)

Some functions have preset parameters. These parameters, referred to as default parameters, are displayed automatically. For example, in Figure 5-3, parameters N, Y, N, 1, 2, 3, 4, and 5 are default parameters.

To accept a displayed default parameter, simply press



If a screen contains only default parameters, pressing SEND will accept them all and display the next screen, if any.

You may also override a default parameter with a parameter of your choice.

2. Once you have entered the first parameter:

- Move the cursor to the next field



- Enter the next parameter, and so on.

3. When you have entered all the parameters of a screen, *you must press SEND.*

**Note:** If you are requested to press a PF key, you must first press SEND to transmit what you entered on the screen, then press the PF key. (See the note under "PF1 Through PF5 Keys" in Chapter 2.)

4. The function may cover several screens. You must enter all the parameters (or accept default parameters) of *all* the screens. When you have entered the last screen parameters, pressing SEND transmits the function, which is then executed.

## Terminating 3725 Functions

Some 3725 functions (such as One Scanner IML) complete normally and message FUNCTION COMPLETE is displayed; others never complete (such as display functions). In both cases, you have to terminate the function. To terminate a 3725 function, do either of the following:

- Select the immediate function Terminate:



The function, as well as all other active functions from the secondary menu, is canceled. The secondary menu area and the work area are cleared. You can then select a function from the primary menu or a CCU function.

- Select another function from the *same secondary menu*. To do so, press SELN AREA and enter a selection character from the secondary menu.

**Note:** To terminate only the Address Compare and the Branch Trace functions, use the Cancel AC and Cancel BT functions.

## Switching Between CCU and Primary Menu Functions

It is possible to switch from a CCU function to one of the functions permanently displayed in the primary menu (*except the immediate functions*), and vice versa. To do so, use the CCU FNCTN key, as explained on the following page.

One of the following  
CCU functions is  
already selected:

ADDRESS COMPARE  
BRANCH TRACE  
DISPLAY/ALTER  
DISPLAY LONG  
SYSTEM CONTROL  
DATA EXCHANGE  
AC/BT PARAM  
CANCEL AC  
CANCEL BT  
CH ADAPT STATE  
RESET CCU/LSSD

CCU  
FNCTN

The CCU function is  
disconnected and frozen.

The work area is cleared.

The secondary menu is  
cleared. The cursor is  
at the selection area.

Select a primary menu  
function other than an  
immediate function.

One of the following  
primary menu functions  
or a function from the  
corresponding secondary  
menu is already  
selected:

IPL CCU/TSS  
LINE FNCTN  
ERROR LOG  
IPL PORT  
CNTRL PGM PROC

CCU  
FNCTN

The primary menu function  
is disconnected and frozen.

The work area is cleared.

The CCU functions are  
displayed in the secondary  
menu.

Select a CCU function  
from the secondary menu.

From now on, each time you press

CCU  
FNCTN

the active function is disconnected and frozen,  
and the disconnected one becomes active again  
and is displayed in the work area.

If you select the terminate function:

T SEND

the active function is canceled and the  
disconnected one becomes active.



## **Example of a Complete Function Selection**

Entering the function parameters is, in most cases, self-explanatory; therefore, giving the procedure for each function is unnecessary. To illustrate the procedure mechanism, however, following is an example of a typical function procedure.

## Selecting the Address Compare Function

**CCU FNCTN** To display CCU function menu.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE . 2 BRANCH TRACE . 3 DISPLAY/ALTER . 4 DISPLAY LONG . 5 SYSTEM CONTROL . 6 DATA EXCHANGE . 7 AC/BT PARAM . 8 CANCEL AC . 9 CANCEL BT . 10 CH ADAPT STATE . 11 RESET CCU/LSSD	
--	--

==>

**1** To select function address compare.

**SEND** To transmit the screen contents and call the next screen.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE . 2 BRANCH TRACE . 3 DISPLAY/ALTER . 4 DISPLAY LONG . 5 SYSTEM CONTROL . 6 DATA EXCHANGE . 7 AC/BT PARAM . 8 CANCEL AC . 9 CANCEL BT . 10 CH ADAPT STATE . 11 RESET CCU/LSSD	<p style="text-align: center;">ADDRESS COMPARE SELECTION</p> . - ENTER ADDRESS COMPARE TYPE (S, D, T) ==> S S = SINGLE D = DOUBLE T = TWO SINGLE . - ENTER CCU ACTION (I, S, N) ==> I I = LEVEL 1 INTERRUPT S = CCU STOP N = NO ACTION . - MOSS INTERRUPT (Y, N) ==> N N = NO Y = YES . PF1: LATEST SELECTED ADDRESS COMPARE OPTIONS
--	---

==>

**D** To select double address compare.

**→** To move cursor to next field.

**S** To select CCU STOP.

**→** To move cursor to next field.

**N** To select NO MOSS INTERRUPT.

**SEND** To transmit the screen contents and call the next screen.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	DOUBLE AC - CCU STOP OPTION - NO MOSS INTERRUPT
. 2 BRANCH TRACE	
. 3 DISPLAY/ALTER	- ENTER INSTRUCTION ADDRESS (1 TO 6 DIGITS) ==>
. 4 DISPLAY LONG	
. 5 SYSTEM CONTROL	- ENTER STORAGE ADDRESS (1 TO 6 DIGITS) ==>
. 6 DATA EXCHANGE	
. 7 AC/BT PARAM	- ENTER ONE STORAGE ACCESS (L OR S) ==>
. 8 CANCEL AC	L = LOAD
. 9 CANCEL BT	S = STORE
. 10 CH ADAPT STATE	
. 11 RESET CCU/LSSD	

PF1: LATEST SELECTED ADDRESS COMPARE VALUES

====>

To enter instruction address 1234.

To move cursor to next field.

To enter storage address 5678.

To move cursor to next field.

To enter storage access Load.

To transmit the last screen contents and start execution.

The following screen is displayed to summarize the address compare parameters that you entered.

```
AC
I:IPL CCU/TSS   G:CCF/IPL PORTS      SP:CCU STOP   Q:DATE/TIME
L:LINE FNCTN   C:CNTRL PGM PROC     ST:CCU START  T:TERMINATE
E:ERROR LOG    M:MAINTENANCE        RS:CCU RESET  CCU FNCTN

.1 ADDRESS COMPARE ADDRESS COMPARE PARAMETERS
.2 BRANCH TRACE   CURRENT VALUES
.3 DISPLAY/ALTER
.4 DISPLAY LONG   AC TYPE      = DOUBLE
.5 SYSTEM CONTROL CCU ACTION  = STOP
.6 DATA EXCHANGE MOSS ACTION = NO
.7 AC/BT PARAM
.8 CANCEL AC      ADDRESS 1   = 1234
.9 CANCEL BT      ACCESS 1    = I
10 CH ADAPT STATE
11 RESET CCU/LSSD ADDRESS 2   = 5678
                    ACCESS 2    = L

====>
```

## Immediate Functions

Immediate functions are:

- CCU Start
- CCU Stop
- CCU Reset
- Query Date And Time
- Terminate

**Note:** Messages relative to the immediate functions are displayed in the Operator Control Message area. They are described in Chapter 8.

### CCU Start

Use the CCU Start function to resume processing the control program. When the control program is in instruction-step mode, the CCU Start function causes the execution of the next instruction. To set the control program in instruction-step mode, use function Set I-Step, described under "System Control" functions, on page 5-42.

---

**Selection:**  To position the cursor

To select CCU Start

Once selected, this function is immediately executed. It requires no further action. When the CCU is started, MSA field g displays RUN (Appendix A).

The CCU Start function is not allowed to resume the CCU processing if the CCU is in STOP mode because of a hardcheck or a reset (MSA field g).

## CCU Stop

Use the CCU Stop function to stop the control-program processing just after the current instruction has been executed. MSA field g displays STOP-PGM.

**Warning: Stopping the CCU can interrupt your applications.**

---

**Selection:**   *To position the cursor*

*To select CCU Stop*

Once selected, this function is immediately executed. It requires no further action. To resume processing the control program, use the CCU Start function.

## CCU Reset

Use the CCU Reset function to stop the control program processing and the cycle steal mechanism. MSA field g displays RESET.

---

**Selection:**   *To position the cursor*

*To select CCU Reset*

Once selected, this function is immediately executed. It requires no further action.

The only way to restart the 3725 is to IPL it.

## Query Date and Time

Use the Query Date and Time function to display the date and time in the Operator Control Message area.

---

**Selection:**   *To position the cursor*

*To select Query Date and Time*

In an NCP environment, the date and time come from the host. In an EP environment, the date is not displayed (only 00/00/00 is displayed) and the time (hh:mm:ss) represents the period that elapsed since the last MOSS IML.

## Terminate

Use the Terminate function to *cancel* all active functions that are displayed in the secondary menu, and to clear the secondary menu and the work area. (See "Terminating 3725 Functions" on page 5-6.)

---

Selection:  To position the cursor

To select Terminate

Once selected, this function is immediately executed. It requires no further action.

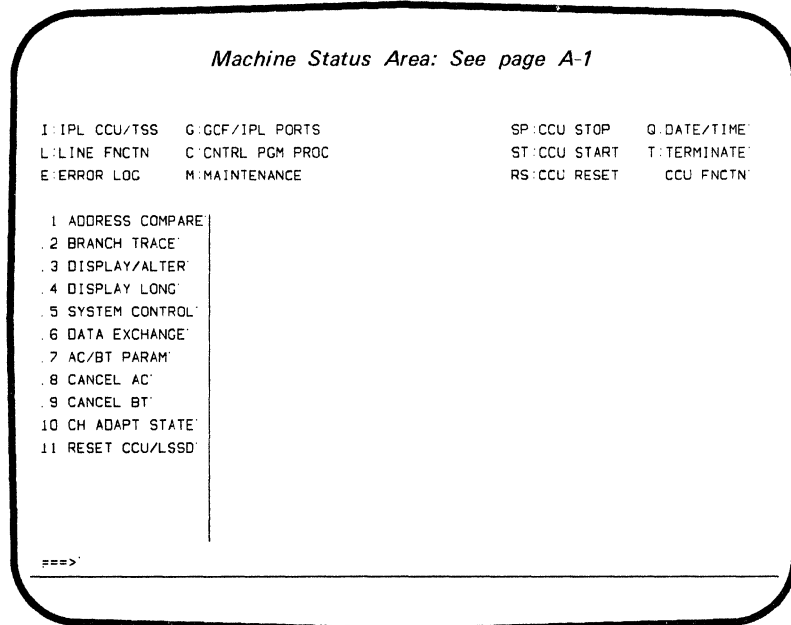
When switching between functions, the Terminate function has a slightly different meaning. (See "Switching Between CCU and Primary Menu Functions", page 5-6.)

## CCU Functions

To display the CCU functions in the secondary menu, press:



The following menu is then displayed:



The term CCU FNCTN appears highlighted at the rightmost position of the primary menu to indicate that the CCU functions have been selected.

To go from a CCU function to a primary menu function, refer to "Switching Between CCU and Primary Menu Functions," page 5-6.

If you cancel a CCU function (1 to 7, 10 and 11) using the Terminate function, *all* CCU functions are canceled. Default values are reset and the MSA is updated:

field a: PROCESS

field b: STOP-CCU-CHK (reset bypass CCU check)

field h: BYP-IOC-CHK (reset IOC check stop)

**Note:** CCU function messages are listed starting on page 8-50. The listing will direct you to the specific message description and action.



## Address Compare (AC)

Use the Address Compare 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" under "Branch Trace" and the description of line **C** of the first screen of the Branch Trace function.)

Selection:  To display CCU function menu

To select Address Compare

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	ADDRESS COMPARE SELECTION	
. 2 BRANCH TRACE		
. 3 DISPLAY/ALTER	- ENTER ADDRESS COMPARE TYPE (S, D, T) ==> S	<b>A</b>
. 4 DISPLAY LONG	S = SINGLE	
. 5 SYSTEM CONTROL	D = DOUBLE	
. 6 DATA EXCHANGE	T = TWO SINGLE	
. 7 AC/BT PARAM	- ENTER CCU ACTION (I, S, N) ==> I	<b>B</b>
. 8 CANCEL AC	I = LEVEL 1 INTERRUPT	
. 9 CANCEL BT	S = CCU STOP	
10 CH ADAPT STATE	N = NO ACTION	
11 RESET CCU/LSSD	- MOSS INTERRUPT (Y, N) ==> N	<b>C</b>
	N = NO	
	Y = YES	
	PF1: LATEST SELECTED ADDRESS COMPARE OPTIONS	

==>

### **A** Selecting the address compare type:

**SINGLE** (Single Address Compare) — 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** (Double Address Compare) — 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** (Two-Single Address Compare) — 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 the appropriate access operation, the CCU action (selected on line **B**) is executed.

**B** Selecting the CCU action:

LEVEL 1 INTERRUPT — CCU level 1 interrupt

CCU STOP — Control program stop and cycle steal stop

NO ACTION — No CCU action is required

**C** Selecting MOSS INTERRUPT:

- If you enter Y, a MOSS level 1 interrupt is requested to display address compare results in MSA field d.
- 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.

Once you have entered the different parameters on the screen, press SEND. The following screen is then displayed.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	TWO SINGLE AC - CCU STOP OPTION - NO MOSS INTERRUPT	<b>D</b>
. 2 BRANCH TRACE		
. 3 DISPLAY/ALTER	- ENTER FIRST STORAGE ADDRESS (1 TO 6 DIGITS) ==>	<b>E</b>
. 4 DISPLAY LONG		
. 5 SYSTEM CONTROL	- ENTER 1 TO 4 STORAGE ACCESSES (L, S, C, I) ==>	<b>F</b>
. 6 DATA EXCHANGE	L = LOAD	
. 7 AC/BT PARAM	S = STORE	
. 8 CANCEL AC	C = CYCLE STEAL	
. 9 CANCEL BT	I = INSTRUCTION	
. 10 CH ADAPT STATE	- ENTER SECOND STORAGE ADDRESS (1 TO 6 DIGITS) ==>	<b>E</b>
. 11 RESET CCU/LSSD	- ENTER 1 TO 4 STORAGE ACCESSES (L, S, C, I) ==>	<b>F</b>

PF1: LATEST SELECTED ADDRESS COMPARE VALUES

==>

**D** This line sums up the parameters that you selected on the preceding screen.

**E** The storage address must be in the range of the CCU storage.

**F** The storage accesses are:

**LOAD:** The selected action is performed after a load instruction has accessed the storage address that you selected on line **E**.

**STORE:** The selected action is performed after a store instruction has accessed the storage address that you selected on line **E**.

**CYCLE STEAL:** The selected action is performed after the cycle steal mechanism has accessed the storage address that you selected on line **E**.

**INSTRUCTION:** The selected action is performed after the execution of the instruction for which you specified the address on line **E**.

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 d and the following screen displays the parameters that you have selected.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	ADDRESS COMPARE PARAMETERS
. 2 BRANCH TRACE	CURRENT VALUES
. 3 DISPLAY/ALTER	
. 4 DISPLAY LONG	AC TYPE = TWO SINGLE
. 5 SYSTEM CONTROL	CCU ACTION = STOP
. 6 DATA EXCHANGE	MOSS ACTION = NO
. 7 AC/BT PARAM	
. 8 CANCEL AC	ADDRESS 1 = 001234
. 9 CANCEL BT	ACCESS 1 = L
10 CH ADAPT STATE	
11 RESET CCU/LSSD	ADDRESS 2 = 002345
	ACCESS 2 = L

====>

This screen remains displayed until you cancel the address compare or select another function.

**Notes:**



1. To set a new address compare when the CCU stops because of a previous address compare (AC-STOP in MSA field g), you need not select function CANCEL AC (8), but only do the following:



2. If, after an 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 (hit) on a store instruction that accesses the same data address if the store instruction immediately precedes or follows the load instruction. This is also true with a store instruction.

**Address Compare Termination**

You can terminate the Address Compare function from any screen. Do as follows:

- Cancel the address compare: 
- or
- Cancel all CCU functions: 
- or
- Select a CCU function

### Simultaneous Address Compare and Branch Trace

If you specify option CCU STOP in either the address compare or the branch trace when running simultaneously, the option applies only to the Address Compare function. For example, if you execute simultaneously these two functions with:

CCU STOP for BT

the CCU will stop if the address compare is successful but will not stop upon reaching the end of the branch trace buffer.

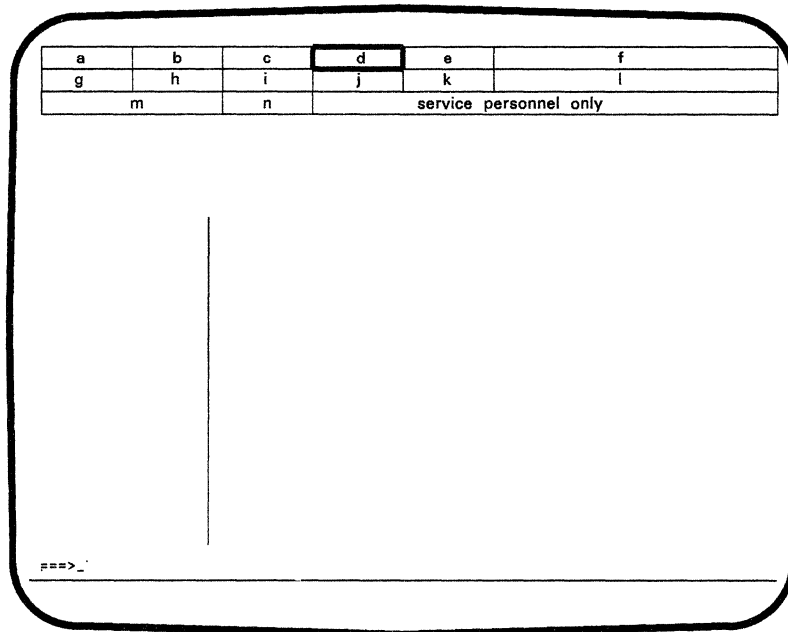
### Address Compare PF Key

Use the following PF keys only when they are displayed on the screen.

PF1:LATEST ADDRESS COMPARE VALUES, or

PF1:LATEST ADDRESS COMPARE OPTIONS — to display the parameters of the last address compare transmitted. This might be helpful if you want to execute an address compare several times with the same or nearly the same parameters.

### Machine Status Area (MSA)



MSA field d is reserved for the CCU address compare. It displays:

AC An Address Compare is set.

If you selected MOSS INTERRUPT==> Y or CCU STOP, the following information is added:

- HIT A single or double address compare is successful.
- HIT1 A two-single address compare is successful on the first address.
- HIT 2 A two-single address compare is successful on the second address.
- HIT12 A two-single address compare is successful on both addresses.

**Note:** *Field g displays STOP-AC when the CCU control program is stopped because of the address compare, and field f displays the address of the last executed instruction.*

## Branch Trace (BT)

Use the Branch Trace function to save in the branch trace buffer information about non-sequential instructions, such as, 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."

### Notes:

1. 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" under the "Display/Alter" function, page 5-33.
2. To prevent unwanted trace records due to 100-millisecond timer-level 3 interrupts to and from the Wait state:
  - The code traced should not include any level 3 code associated with the servicing of timer interrupts.
  - Local store register X'18' should be set to a storage address outside the range of the storage block being traced. Register X'18' must be set to this value only while the CCU is in the Wait state.

Selection:  To display CCU function menu

To select Branch Trace

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	- ENTER Y FOR CCU STOP	==> N	A
. 2 BRANCH TRACE	- ENTER N FOR NO WRAP	==> Y	B
. 3 DISPLAY/ALTER			
. 4 DISPLAY LONG			
. 5 SYSTEM CONTROL			
. 6 DATA EXCHANGE	- ENTER Y FOR BT STOP ON AC	==> N	C
. 7 AC/BT PARAM			
. 8 CANCEL AC	- ENTER LOWER LIMIT ADDRESS (1 TO 6 DIGITS)	==>	D
. 9 CANCEL BT			
10 CH ADAPT STATE	- ENTER UPPER LIMIT ADDRESS (1 TO 6 DIGITS)	==>	D
11 RESET CCU/LSSD	- BLANK THE UNWANTED LEVEL INTERRUPT(S)	==> 12345	E

PF1: LATEST SELECTED BRANCH TRACE VALUES

==>

You are requested to choose from among the following parameters:

- Ⓐ If you enter Y, the CCU stops when the buffer is full. See following description for line Ⓒ and Figure 5-5.  
**Warning: Option CCU STOP==> Y can interrupt your applications.**
- Ⓑ 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. (See Figure 5-5.)
- Ⓒ If you enter Y, the branch trace is deactivated when a simultaneous address compare is successful, and the CCU stops if you entered Y on line Ⓐ.
- Ⓓ Lower and upper limit addresses: 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 recorded starting at the specified lower limit address minus 4 or 2.

- Ⓔ To blank an interrupt level, use the DEL CHAR key or override the corresponding number by a blank character (space bar).

BT Options	When buffer is full:	Action(s)
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 CCU START 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 CCU START to restart the CCU.

**Note:** More information on CCU STOP is given under the description for line Ⓒ and under paragraph 'Simultaneous Address Compare and Branch Trace', page 5-27.

Figure 5-5. Branch Trace Options

Once you have entered all the parameters on the screen, press SEND. The branch trace is then started. BT appears in MSA field j and the following screen displays the parameters that you have selected.

```

BT
I:IPL CCU/TSS      G:GCF/IPL PORTS      SP:CCU STOP      Q:DATE/TIME
L:LINE FNCTN      C:CNTRL PGM PROC      ST:CCU START     T:TERMINATE
E:ERROR LOG       M:MAINTENANCE                          RS:CCU RESET     CCU FNCTN

. 1 ADDRESS COMPARE | BRANCH TRACE PARAMETERS
. 2 BRANCH TRACE    | CURRENT VALUES
. 3 DISPLAY/ALTER   |
. 4 DISPLAY LONG    | CCU STOP      = NO
. 5 SYSTEM CONTROL  | WRAP MODE     = YES
. 6 DATA EXCHANGE  | STOP ON AC    = NO
. 7 AC/BT PARAM     |
. 8 CANCEL AC       | LOWER LIMIT   = 001234
. 9 CANCEL BT       | UPPER LIMIT   = 023456
10 CH ADAPT STATE  |
11 RESET CCU/LSSD  | TRACE LEVELS = 1 2

===>_

```

### Branch Trace Buffer

The branch trace buffer is defined at control program generation. Its address and its length are provided by the control program to MOSS when the 3725 is initialized. The length is in local store register (LSR) X'7C', and the address of the first byte of data to be traced 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 is given in "Displaying Branch Trace Buffer" under the "Display Long" function, page 5-38.

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" under the "Display/Alter" function.

The branch trace buffer may be transferred to the host via a 3725 NCP dump. The procedure is described in *Advanced Communications Function for Network Control Program and System Support Programs Diagnosis Guide*, SC30-3171.



## Branch Trace Extra Records

Under certain circumstances, the branch trace buffer may contain records showing the entry and the exit of the CCU through some program level without instruction execution in that level. In order to recognize such records, it is necessary to understand the operation of the interrupt change mechanism and the exact contents of the branch trace record.

If the CCU is operating in some given level (call it level A) and an interrupt to a higher level (level B) occurs, the CCU will return to the original level (A) when an Exit instruction is executed in the new level (B).

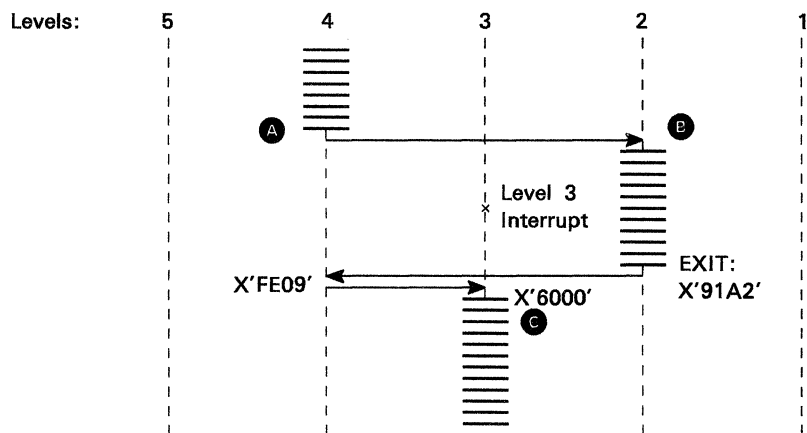
If an interrupt to another new level (call it level C), higher in priority than level A, is pending or occurs immediately after the Exit instruction in level B, the CCU will not execute instructions in the original level A, but will immediately go to the ultimate level (C) and begin instruction execution there.

This sequence occurs for example if an error condition occurs due to the I-fetch of the first instruction in level A. This error condition includes storage protect violation, address exception, invalid OP code, IN/OUT instruction in level 5.

The following examples should make this clear.

### Example 1: Pending Lower Level Interrupt

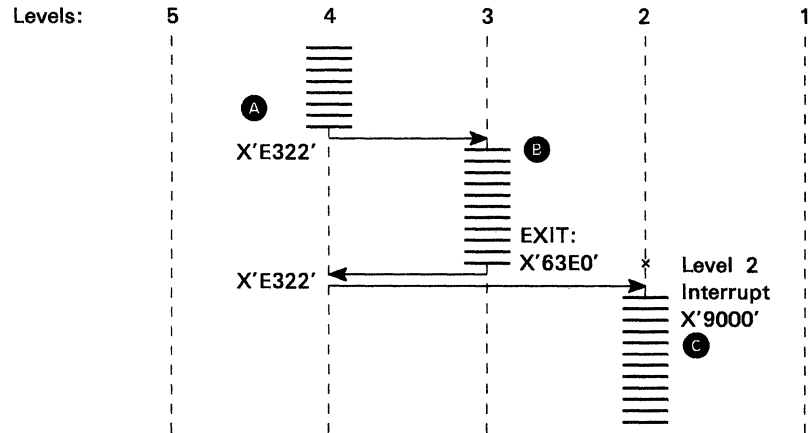
The CCU is executing at level 4 when a level 2 interrupt occurs. Before level 2 has finished executing, a level 3 interrupt occurs.



**Note:** Addresses are for example only.

**Example 2: Higher Level Interrupt During Exit Instruction**

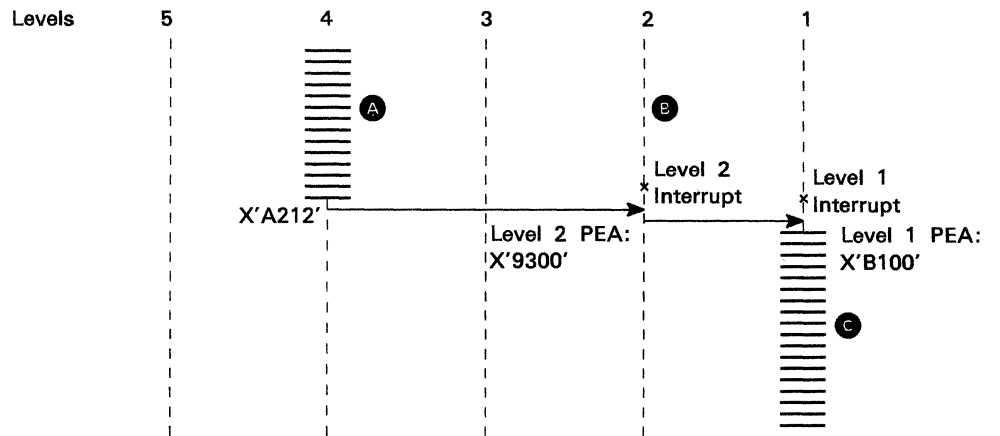
The CCU is executing an Exit instruction at level 3 when a level 2 interrupt occurs:



*Note: Addresses are for example only.*

**Example 3: Back to Back Interrupts**

The CCU is executing an interrupt to level 2 when a level 1 interrupt occurs.



*Note: Addresses are for example only.*

When the branch trace mechanism is active, for each branch (instruction with R field = 0, Exit instruction, or interrupts) a record is stored, including:

- The 'came from' program level
- The 'came from' instruction address, which is the address of the last instruction *executed*
- The 'went to' program level
- The 'went to' instruction address, which is the address of the next instruction to be executed *if no interrupt occurs*.

As a result, the branch trace records are as follows:

Example 1:	Came from	Went to
	A 0200 91A2	B 0400 FE09
	B 0400 91A2	C 0300 6000

Example 2:	Came from	Went to
	A 0300 63E0	A 0400 E322
	B 0400 63E0	C 0200 9000

Example 3:	Came from	Went to
	A 0400 A212	B 0200 9300
	B 0200 A212	C 0100 B100

From a user viewpoint, the only record of interest is the transition from A to C, since instructions are executed in these program levels only:

Example 1:	0200 91A2	0300 6000
Example 2:	0300 63E0	0200 9000
Example 3:	0400 A212	0100 B100

The other parts of the records do not show machine failures but are a natural consequence of the hardware implementation.

If certain program levels are not being traced, some or all of the above information may be missing. The resulting records are shown below:

Example 1:	Level 2 traced only:	
	0200 91A2	0400 FE09
	Level 3 traced only:	
	0400 91A2	0300 6000
	Level 4 traced only:	
	0200 91A2	0400 FE09
	0400 91A2	0300 6000
	Level 5 traced only:	No record
	Level 1 traced only:	No record

Example 2:	Level 3 traced only:	
	0300 63E0	0400 E322
	Levels 3 and 2 traced only:	
	0300 63E0	0400 E322
	0400 63E0	0200 9000

### 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 simultaneously these two functions with:

CCU STOP for BT

the CCU will stop if the address compare is successful but will not stop upon reaching the end of the branch trace buffer.

### Branch Trace Termination

You can terminate the Branch Trace function from any screen. Do as follows:

Cancel the branch trace:

or

Cancel all CCU functions:

or

Select a CCU function

The branch trace may be automatically canceled when:

- The buffer is filled up 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).

## Branch Trace PF Keys

Use the following PF key only when it is displayed on the screen.

PF1:LATEST SELECTED BRANCH TRACE VALUES - To display the parameters of the last BT transmitted. This might be helpful if you want to execute the same BT several times.

## Machine Status Area (MSA)

a	b	c	d	e	f
g	h	i	j	k	l
m		n		service personnel only	

====>\_

Field j displays BT whenever the branch trace is active.

## Display/Alter

Use the Display/Alter function to

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

The Display function screen is displayed.

Selection:  To display CCU function menu

To select Display/Alter

The display function screen is displayed.

## Display

After you have selected the Display/Alter function, you have to select the CCU data that you want to display.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	- ENTER: S	FOLLOWED BY STORAGE ADDRESS	==>
. 2 BRANCH TRACE	L	FOLLOWED BY LSR NUMBER	
. 3 DISPLAY/ALTER	W	(WORK REGISTERS)	
. 4 DISPLAY LONG			
. 5 SYSTEM CONTROL			
. 6 DATA EXCHANGE			
. 7 AC/BT PARAM			
. 8 CANCEL AC			
. 9 CANCEL BT			
. 10 CH ADAPT STATE			
. 11 RESET CCU/LSSD			

PF3: ST

====>

You may display, on one 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 PF5 to display the last four.

**Note:** You cannot use the Display Alter function to display the X'70' register.

Machine Status Area: See page A-1

```
I:IPL CCU/TSS      G:GCF/IPL PORTS      SP:CCU STOP      Q:DATE/TIME
L:LINE FNCTN      C:CNTRL PGM PROC     ST:CCU START     T:TERMINATE
E:ERROR LOG       M:MAINTENANCE         RS:CCU RESET     CCU FNCTN

.1 ADDRESS COMPARE - ENTER: S FOLLOWED BY STORAGE ADDRESS ==> W
.2 BRANCH TRACE    L FOLLOWED BY LSR NUMBER
.3 DISPLAY/ALTER   W (WORK REGISTERS)
.4 DISPLAY LONG
.5 SYSTEM CONTROL  S 001234 0800 0000 8800 0000 0800 0000 D200 4020
.6 DATA EXCHANGE  L 06 100010 000000 0BC9C6 0BC9C2
.7 AC/BT PARAM     W 00 00212A 000008 000000 02226C
.8 CANCEL AC
.9 CANCEL BT
10 CH ADAPT STATE
11 RESET CCU/LSRD

PF1:ALTER PF2:REFRESH PF3:ST PF4:BACKWARD PF5:FORWARD

==>
```

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 filled up, it wraps around. The latest displayed line (the current line) is *highlighted*.

Following is an explanation of the CCU data displayed (as shown on previous screen).

**CCU storage:**

```
S 001234 0800 0000 8800 0000 0800 0000 0200 4020
```

The letter S (for storage) is followed by the address of the first halfword displayed on this line. Each halfword is separated by two protected blanks.

**Local storage registers and work registers:**

```
L 06 100010 000000 0BC9C6 0BC9C2
W 00 00212A 000008 000000 02226C
```

The letter L (for LSR) or W (for work register) is followed by the number of the first register displayed on this line. Registers are separated by two protected blanks.

Once you have displayed one line, you may do one of the following:

- Press SEND to redisplay the current line
- Press PF2 to refresh the current line
- Press PF4:BACKWARD to display the preceding 16 bytes of storage or the previous four LSRs
- Press PF5:FORWARD to display the next 16 bytes of storage, the next four LSRs, or the next four work registers

- Enter more CCU data (S, L, or W)
- Press PF1:ALTER to alter data (see "Alter")
- Press PF3:ST to start the CCU

### Display PF Keys

Use the following PF keys only when they are displayed on the screen.

PF1:ALTER - To switch to alter mode. See "Alter."

PF2:REFRESH - To refresh data every 500ms. This allows you to view permanently the updated image of the data that you selected (CCU storage, LSRs, or work registers). To cancel the refresh, press ATTN.

Pressing SEND, in display mode, re-displays the selected CCU data once.

PF3:ST - To start the CCU without selecting function CCU Start.

PF4:BACKWARD - To display the preceding 16 bytes of storage, four LSRs, or four work registers.




PF5:FORWARD - To display the next 16 bytes of storage, four LSRs, or four work registers.

### Alter

To alter CCU data (storage, LSRs, and work registers), you must first select the Display/Alter function and display the CCU data that you want to alter (as explained under "Display").

To alter storage or LSRs, the control program may be either running or stopped; but, *to alter work registers, it must be stopped*. To stop the CCU, if you have already selected the Display/Alter function, do as follows:

 To position the cursor.


   To select the CCU Stop function.

If you try to alter while the CCU is not stopped, message FIRST STOP THE CCU is displayed.



## How to Alter

Assume the Display/Alter function is already selected and the CCU data to be altered is already displayed.

1.  To switch from display mode to alter mode.

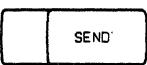
The addressed line is redisplayed on the line below and on the second line of the work area. The cursor is positioned at the first character that may be modified on that second line.

On the PF key line the following information is displayed:

MISUSE OF ALTER MAY GIVE UNEXPECTED RESULTS


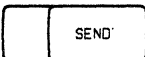
As an example, look at the screen used to allocate the branch trace buffer under "Branch Trace Buffer Allocation."

2. Alter the data.

3.  To transmit altered data. The altered line moves below its original position and the redisplayed line. It becomes the third line of data indicated for that address. The screen is now in display mode.

4. Select another address if you want to alter more data and switch to alter mode (go to step 1).

or

-   To cancel all CCU functions.

or

Select another CCU function.

**Note:** *If you alter data and redisplay it while the control program is running, the redisplayed data may not match with what you altered. (That is, the system may have altered the data before you redisplayed it.)*

## Branch Trace Buffer Allocation

The branch trace buffer address and length are provided by the control program after the 3725 initialization. However, if you execute a branch trace before the control program is loaded, you have to allocate the branch trace buffer, as follows:

1.    to display CCU function menu and select the Display/Alter function.
2. Enter L7C then  to display LSRs starting from LSR X'7C'.
3.  to select the Alter function.
4. Update LSR X'7C' with buffer length. The maximum buffer length is X'FFF0'. The last digit of the buffer length must always be 0.
5. Update LSR X'7D' with buffer address + X'18'
6.

**Note:** To alter only the buffer length, you just have to update LSR X'7C'.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

.1 ADDRESS COMPARE	-	ALTER DATA
.2 BRANCH TRACE		0007E8 000818 001244 00003C
.3 DISPLAY/ALTER		
.4 DISPLAY LONG		
.5 SYSTEM CONTROL	L 7C	0007E8 000818 001244 00003C
.6 DATA EXCHANGE	L 7C	0007E8 000818 001244 00003C
.7 AC/BT PARAM		
.8 CANCEL AC		
.9 CANCEL BT		
10 CH ADAPT STATE		
11 RESET CCU/LSSD		

PF1: DISPLAY \* MISUSE OF ALTER MAY GIVE UNEXPECTED RESULTS

===>

## Alter PF Keys

Use the following PF keys only when they are displayed on the screen.

PF1:DISPLAY - To cancel the alter request and return to display mode.

PF2:REFRESH - To refresh data every 500ms. This allows you to view permanently the updated image of the data you selected (CCU storage, LSRs, or work registers). To cancel the refresh, press ATTN.

Pressing SEND, in alter mode, redisplay the selected CCU data once.

PF3:ST - To start the CCU without selecting function CCU Start.

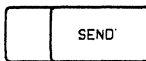
PF4:BACKWARD - To display the preceding 16 bytes of storage, four LSRs, or four work registers.

PF5:FORWARD - To display the next 16 bytes of storage, four LSRs, or four work registers.

## Display/Alter Termination

To terminate the Display/Alter function, do as follows:

Cancel all CCU functions:



or

Select a CCU function.

## Display Long

Use the Display Long function to display CCU storage, LSRs, work registers, or CCU input registers.

**Selection:**  To display CCU function menu

To select Display Long

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	ENTER: S	FOLLOWED BY STORAGE ADDRESS	==>
. 2 BRANCH TRACE	L	FOLLOWED BY LSR NUMBER	.
. 3 DISPLAY/ALTER	W	(WORK REGISTERS)	.
. 4 DISPLAY LONG	I	REGISTERS X'71' TO X'7F'	.
. 5 SYSTEM CONTROL			.
. 6 DATA EXCHANGE			.
. 7 AC/BT PARAM			.
. 8 CANCEL AC			.
. 9 CANCEL BT			.
. 10 CH ADAPT STATE			.
. 11 RESET CCU/LSSD			.

PF2: BT BUFFER PF3: CCU START

==>

You may 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'71' to X'7F'  
Enter only I to display all CCU input registers from X'71' to X'7F'.  
The following screen is then displayed.

**Note:** You cannot use the Display Long function to display the X'70' register.

*Machine Status Area: See page A-1*

```
I: IPL CCU/TSS      G: GCF/IPL PORTS          SP: CCU STOP      Q: DATE/TIME
L: LINE FNCTN      C: CNTRL PGM PROC       ST: CCU START     T: TERMINATE
E: ERROR LOG       M: MAINTENANCE          RS: CCU RESET     CCU FNCTN
```

```
. 1 ADDRESS COMPARE' - ENTER: S FOLLOWED BY STORAGE ADDRESS ==> I:
. 2 BRANCH TRACE'   L FOLLOWED BY LSR NUMBER
. 3 DISPLAY/ALTER'  W (WORK REGISTERS)
. 4 DISPLAY LONG'   I REGISTERS X'71' TO X'7F'
. 5 SYSTEM CONTROL' I 71      0000C0 000002 000000
. 6 DATA EXCHANGE'
. 7 AC/BT PARAM'   I 74      001E8C 000000 000000 3F0000
. 8 CANCEL AC'
. 9 CANCEL BT'     I 78      000000 000100 0522D1 000818
10 CH ADAPT STATE'
11 RESET CCU/LSSD' I 7C      0007E8 000000 000000 000000

PF2: BT BUFFER PF3: CCU START
```

==>

CCU storage, LSRs, and work registers are presented on the screen in a way similar to the data displayed by the Display/Alter function. The input registers are displayed as follows:

I 74 001E8C 000000 000000 3F0000

The letter I (for input register) is followed by the number of the first input register displayed on the line. Input registers are separated by two protected blanks.

## Differences between the Display/Alter and Display Long Functions

### DISPLAY/ALTER

- display on one line:  
16 bytes of storage; or  
four LSRs; or  
four work registers
- can alter displayed data
- can display on same screen CCU  
storage, LSRs, and work registers
- can use command Refresh

### DISPLAY LONG

- display on several lines:  
128 bytes of storage; or  
16 LSRs; or  
all work registers; or  
all CCU input registers from X'71'  
to X'7F'
- cannot alter displayed data
- cannot display on same screen CCU  
storage, LSRs, and work registers
- cannot use command Refresh

## Displaying 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 = non significant 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
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 where the recording starts (buffer address + X'18'), or resumes when the buffer is full, if you selected the WRAP option.
byte 16	reserved
bytes 17-19	address of the last used buffer entry when the branch trace stops
byte 20	reserved
bytes 21-23	address of the last entry in 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

## Display Long Termination

To terminate the Display Long function, do as follows:

Cancel all CCU functions:



or

Select a CCU function.

## Display Long PF Keys

Use the following PF keys only when they are displayed on the screen.

PF2:BT BUFFER - To display the branch trace buffer.

PF3:CCU START - To start CCU without selecting function CCU Start.

PF4:BACKWARD - To display the preceding 128 bytes of storage or 16 LSRs.

PF5:FORWARD - To display the next 128 bytes of storage or 16 LSRs.



## System Control

Select this function to execute any of the functions listed in the work area of the following screen.

Selection:  To display CCU function menu

To select System Control

A tertiary menu appears in the work area so that you can select a System Control function:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

<p>.1 ADDRESS COMPARE</p> <p>.2 BRANCH TRACE</p> <p>.3 DISPLAY/ALTER</p> <p>.4 DISPLAY LONG</p> <p>.5 SYSTEM CONTROL</p> <p>.6 DATA EXCHANGE</p> <p>.7 AC/BT PARAM</p> <p>.8 CANCEL AC</p> <p>.9 CANCEL BT</p> <p>10 CH ADAPT STATE</p> <p>11 RESET CCU/LSSD</p>	<p>·</p> <p>·</p> <p>·</p> <p>·</p> <p>·</p> <p>·</p> <p>·</p> <p>·</p> <p>·</p> <p>·</p> <p>·</p>	<p>· SELECT A SYSTEM CONTROL FUNCTION (1 TO 12) ==&gt;</p> <p>1 = SET I-STEP</p> <p>2 = RESET I-STEP</p> <p>3 = CCU LVL3 INTERRUPT</p> <p>4 = CCU CHECK RESET</p> <p>5 = SET BYPASS CCU CHECK</p> <p>6 = RESET BYPASS CCU CHECK</p> <p>7 = SET IOC CHECK STOP</p> <p>8 = RESET IOC CHECK STOP</p> <p>9 = RESET IOC</p> <p>10 = RESERVED</p> <p>11 = MOSS ONLINE</p> <p>12 = MOSS OFFLINE</p>
--	--	--

PF3: CCU START

====>

System Control functions are immediately executed.

While performing a System Control function, you may use the following PF keys:

PF1: IGNORE ATTN (see functions MOSS Online and MOSS Offline).

PF2: QUIT (see functions MOSS Online and MOSS Offline).

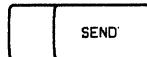
PF3: CCU START - To start the CCU without selecting the immediate function CCU Start.

Each System Control function is described individually in the following pages.

## How to Clear the System Control Screen

To clear the System Control screen, do as follows:

Cancel all CCU functions:



or

Select a CCU function.

## Set I-Step

Use the Set I-Step function to set the control program in instruction step mode; that is, the control program and the cycle steal mechanism stop after the current instruction has been executed (MSA field g = STOP-PGM). The next instruction is executed when the CCU Start function is selected (PF3:CCU START).

---

**Selection:**  *To display CCU function menu*

*To select System Control*

*To select Set I-Step*

This function is immediately performed. MSA field a displays I-STEP (see Appendix A). When the current instruction has been executed, STOP-PGM is displayed in field g. *To clear the screen refer to page 5-41.*

**Note:** *When the CCU is in instruction-step mode, if:*

*MSA field a = I-STEP, and*

*MSA field g = RUN*

*this means that the CCU is in WAIT state. The Program Wait lamp on the control panel is on.*

## Reset I-Step

Use the Reset I-Step function to reset the control program to normal processing.

---

**Selection:**  *To display CCU function menu*

*To select System Control*

*To select Reset I-Step*

This function is immediately performed. MSA field a displays PROCESS (see Appendix A). *To clear this screen, refer to page 5-41.*

## CCU Level 3 Interrupt

Use the CCU Level 3 Interrupt function to request a CCU level 3 interrupt. See bit 6 of byte 0 of the input X'7F' register in the 3725 *Communication Controller Principles of Operation*, GA33-0013.

---

- Selection:**  *To display CCU function menu*
- To select System Control*
- To select CCU Level 3 Interrupt*

This function is immediately performed. *To clear this screen, refer to page 5-41.*

## CCU Check Reset

Use the CCU Check Reset function to reset the CCU CHECK condition. The CCU remains stopped (HARDSTOP is displayed in MSA field g). To restart the CCU, press PF3.

---

- Selection:**  *To display CCU function menu*
- To select System Control*
- To select CCU Check Reset*

This function is immediately performed. *To clear this screen, refer to page 5-41.*

## Set Bypass CCU Check

Use the Set Bypass CCU Check function to let the CCU continue to run when a check condition occurs.

---

- Selection:**  *To display CCU function menu*
- To select System Control*
- To select Set Bypass CCU Check*

This function is immediately performed. MSA field b displays **BYPASS-CCU-CHK** (see Appendix A). *To clear this screen, refer to page 5-41.*

## Reset Bypass CCU Check

Use the Reset Bypass CCU Check function to negate the effect of the function Set Bypass CCU Check. The CCU stops when a CCU check condition occurs (default).

---

- Selection:**  *To display CCU function menu*
- To select System Control*
- To select Reset Bypass CCU Check*

This function is immediately performed. MSA field b displays **STOP-CCU-CHK** (see Appendix A). *To clear this screen, refer to page 5-41.*

## Set IOC Check Stop

Use the Set IOC Check Stop function to force the CCU to hardcheck when an IOC-detected level 1 interrupt occurs.

---

- Selection:**  *To display CCU function menu*
- To select System Control*
- To select Set IOC Check Stop*

This function is immediately performed. MSA field h displays STOP-IOC-CHK (see Appendix A). *To clear this screen, refer to page 5-41.*

## Reset IOC Check Stop

Use the Reset IOC Check Stop function to let the CCU continue to run when an IOC-detected level 1 interrupt occurs (default).

---

- Selection:**  *To display CCU function menu*
- To select System Control*
- To select Reset IOC Check Stop*

This function is immediately performed. MSA field h displays BYP-IOC-CHK (see Appendix A). *To clear this screen, refer to page 5-41.*

## Reset IOC

Use the Reset IOC function to generate a 'reset tag' pulse on the IOC bus.

---

- Selection:**  *To display CCU function menu*
- To select System Control*
- To select Reset IOC*

This function is immediately performed. *To clear this screen, refer to page 5-41.*

## MOSS Online

Use the MOSS Online function to set the MOSS online to the control program and reset the date and time.

---

**Selection:**

CCU FNCTN
--------------

*To display CCU function menu*

5		SEND
---	--	------

*To select System Control*

1	1		SEND
---	---	--	------

*To select MOSS Online*

This function is immediately performed. MSA field c displays MOSS-ONLINE (Appendix A), and the Hex Display is 000.

If you press ATTN while the function MOSS Online is in progress, (see "ATTN Key" in Chapter 2), the following two PF keys are displayed:

PF1:IGNORE ATTN - To return to the previous status.

PF2:QUIT - To be able to select another function although MOSS remains online.

*To clear this screen, refer to page 5-41.*

## MOSS Offline

Use the MOSS Offline function to set the MOSS offline (logical disconnection between MOSS and the control program).

---

**Selection:**   
                                      *To display CCU function menu*

                   *To select System Control*

                   *To select MOSS Offline*

This function is immediately performed. MSA field c displays MOSS-OFFLINE (Appendix A), and the Hex Display is FEE.

If you press ATTN while the function MOSS Offline is in progress, (see "ATTN Key" in Chapter 2), the following two PF keys are displayed:

PF1:IGNORE ATTN - To return to the previous status.

PF2:QUIT - To be able to select another function although MOSS remains offline.

*To clear this screen, refer to page 5-41.*



## Data Exchange

Use the Data Exchange function to transfer to the CCU control program, information necessary to select and execute NCP or EP functions and subroutines. These functions and subroutines are fully described in Chapter 6.

Selection:

To display CCU function menu

To select Data Exchange

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	DATA ==> _	FUNCTION ==>	CCU LVL3 ==>
. 2 BRANCH TRACE			
. 3 DISPLAY/ALTER			
. 4 DISPLAY LONG			
. 5 SYSTEM CONTROL			
. 6 DATA EXCHANGE			
. 7 AC/BT PARAM			
. 8 CANCEL AC			
. 9 CANCEL BT			
. 10 CH ADAPT STATE			
. 11 RESET CCU/LSSD			

PF1: LATEST DATA EXCHANGE VALUES

==>

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 will be transferred to the CCU via the CCU X'71' input register (operator address/data entry register). For example, xxxxxx may be a storage address, or a subroutine code.

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

If you enter no value, the last entered one 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 and letter R can be used to indicate a register address.

If you enter no value, the last entered one 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; then it is 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.

### Data Exchange Termination

To terminate the Data Exchange function, do as follows:

Cancel all CCU functions:



or

Select a CCU function.

### Data Exchange PF Key

Use the following PF key only when it is displayed on the screen.

PF1:LATEST DATA EXCHANGE VALUES - To display the contents of the CCU input X'71' and X'72' registers (values of the latest data exchange).

## Address Compare and Branch Trace Parameter Display (AC/BT PARAM)

Use the AC/BT PARAM function to display the parameters of the current Address Compare and Branch Trace functions.

Selection:  To display CCU function menu

To select AC/BT PARAM

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/1PL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

1 ADDRESS COMPARE 2 BRANCH TRACE 3 DISPLAY/ALTER 4 DISPLAY LONG 5 SYSTEM CONTROL 6 DATA EXCHANGE 7 AC/BT PARAM 8 CANCEL AC 9 CANCEL BT 10 CH ADAPT STATE 11 RESET CCU/LSSD	ADDRESS COMPARE PARAMETERS CURRENT VALUES AC TYPE = TWO SINGLE CCU ACTION = STOP MOSS ACTION = NO ADDRESS 1 = 001234 ACCESS 1 = L ADDRESS 2 = 023456 ACCESS 2 = L PF1: TO RESTART LATEST AC	BRANCH TRACE PARAMETERS CURRENT VALUES CCU STOP = NO WRAP MODE = YES STOP ON AC = NO LOWER LIMIT = 001234 UPPER LIMIT = 023456 TRACE LEVELS = 1 2 PF2: TO RESTART LATEST BT
--	--	---

===>\_

For a description of the displayed values, refer to "Address Compare" and "Branch Trace" functions earlier in this chapter.

### AC/BT PARAM Termination

To terminate the AC/BT PARAM function, do as follows:

Cancel all CCU functions:



or

Select a CCU function.

### AC/BT PARAM PF Keys

Use the following PF keys only when they are displayed on the screen.


**PF1:TO RESTART LATEST AC** - If there is no active address compare, starts an address compare with the displayed parameters.



**PF2:TO RESTART LATEST BT** - If there is no active branch trace, starts a branch trace with the displayed parameters.

## Cancel Address Compare (CANCEL AC)

Use the Cancel AC function to cancel the current Address Compare.

---

**Selection:**  *To display CCU function menu*


  *To select Cancel AC*



Once the address compare is canceled, the Address Compare Parameter screen is displayed. See "Address Compare and Branch Trace Parameter Display (AC/BT PARAM)."

## Cancel Branch Trace (CANCEL BT)

Use the Cancel BT function to cancel the current Branch Trace.

---

**Selection:**  *To display CCU function menu*

  *To select Cancel BT*

Once the branch trace is canceled, the Branch Trace Parameter screen is displayed. See "Address Compare and Branch Trace Parameter Display (AC/BT PARAM)."

## Channel Adapter State And Register Display (CH ADAPT STATE)

Use the Channel Adapter State and Register Display function to:

- Display the states of each channel adapter (enabled or disabled) as well as the current interface
- Display the registers of each channel adapter.

Selection:  To display CCU function menu

To select CH ADAPT STATE

The Channel Adapter State Display screen is displayed.

### Channel Adapter State Display

Once you have selected the CH ADAPT STATE function, the channel adapter state screen is automatically displayed. For the 3725 Model 1, the following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

<p>. 1 ADDRESS COMPARE</p> <p>. 2 BRANCH TRACE</p> <p>. 3 DISPLAY/ALTER</p> <p>. 4 DISPLAY LONG</p> <p>. 5 SYSTEM CONTROL</p> <p>. 6 DATA EXCHANGE</p> <p>. 7 AC/BT PARAM</p> <p>. 8 CANCEL AC</p> <p>. 9 CANCEL BT</p> <p>. 10 CH ADAPT STATE</p> <p>. 11 RESET CCU/LSSD</p>	<p style="text-align: center;">CHANNEL ADAPTER STATES</p> <p>INTERFACE A</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">CHANNEL ADAPTERS</td> <td style="width: 10%;">1</td> <td style="width: 10%;">2</td> <td style="width: 10%;">3</td> <td style="width: 10%;">4</td> <td style="width: 10%;">5</td> <td style="width: 10%;">6</td> </tr> <tr> <td>STATE</td> <td>ENBL</td> <td>DSBL</td> <td>DSBL</td> <td>DSBL</td> <td>DSBL</td> <td>DSBL</td> </tr> </table> <p>INTERFACE B</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">CHANNEL ADAPTERS</td> <td style="width: 10%;">1</td> <td style="width: 10%;">2</td> <td style="width: 10%;">3</td> <td style="width: 10%;">4</td> </tr> <tr> <td>STATE</td> <td>DSBL</td> <td>DSBL</td> <td>DSBL</td> <td>DSBL</td> </tr> </table> <p style="text-align: center;">STOP THE CCU THEN PRESS PF1 TO DISPLAY CA REGISTERS</p>	CHANNEL ADAPTERS	1	2	3	4	5	6	STATE	ENBL	DSBL	DSBL	DSBL	DSBL	DSBL	CHANNEL ADAPTERS	1	2	3	4	STATE	DSBL	DSBL	DSBL	DSBL
CHANNEL ADAPTERS	1	2	3	4	5	6																			
STATE	ENBL	DSBL	DSBL	DSBL	DSBL	DSBL																			
CHANNEL ADAPTERS	1	2	3	4																					
STATE	DSBL	DSBL	DSBL	DSBL																					

====>

For the 3725 Model 2, the following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	CHANNEL ADAPTER STATES
. 2 BRANCH TRACE	
. 3 DISPLAY/ALTER	
. 4 DISPLAY LONG	
. 5 SYSTEM CONTROL	CHANNEL ADAPTERS    1    2
. 6 DATA EXCHANGE	STATE                ENBL DSBL
. 7 AC/BT PARAM	
. 8 CANCEL AC	
. 9 CANCEL BT	
. 10 CH ADAPT STATE	
. 11 RESET CCU/LSSD	

STOP THE CCU THEN PRESS PF1 TO DISPLAY CA REGISTERS

===>

## Channel Adapter Register Display

**Warning: The Channel Adapter Register Display function should be performed only by trained personnel.**

When you display channel adapter registers, the channel adapter auto-selection mechanism is disabled, if it was initially enabled.

To display the input registers of the channel adapters, you must first display the channel adapter state. (Record the channel adapter state for later reference.)

Then:

To stop the CCU.

To display the following screen:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	O: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	CCU FNCTN

. 1 ADDRESS COMPARE	REG X'E' = 0000	SELECTED CA = 1	A
. 2 BRANCH TRACE			
. 3 DISPLAY/ALTER	ENTER A CA NUMBER ==> _		
. 4 DISPLAY LONG	OR PRESS SEND TO DISPLAY THE REGISTERS OF THE SELECTED CA		B
. 5 SYSTEM CONTROL			
. 6 DATA EXCHANGE			
. 7 AC/BT PARAM			
. 8 CANCEL AC			
. 9 CANCEL BT			
. 10 CH ADAPT STATE			
. 11 RESET CCU/LSSD			

===>

- A** Gives the contents of the input register X'E', which is common to all channel adapters.

SELECTED CA is the number of the channel adapter automatically selected by the control program.

NONE is displayed instead of SELECTED CA = x if there is no channel adapter automatically selected by the control program.

- B** Enter the number of the channel adapter whose registers you want to display, then press SEND;

or

only press SEND to display the registers of the channel adapter that has been automatically selected by the control program (SELECTED CA = on line A).

The CA registers are then displayed as illustrated in the next screen.



Machine Status Area: See page A-1

I: IPL CCU/TSS    G: GCF/IPL PORTS                    SP: CCU STOP    Q: DATE/TIME  
L: LINE FNCTN    C: CNTRL PGM PROC                    ST: CCU START    T: TERMINATE  
E: ERROR LOG    M: MAINTENANCE                    RS: CCU RESET    CCU FNCTN

```
. 1 ADDRESS COMPARE CHANNEL ADAPTER NUMBER 1
. 2 BRANCH TRACE
. 3 DISPLAY/ALTER
. 4 DISPLAY LONG REG X'0' 8800 C002 0000 C004
. 5 SYSTEM CONTROL
. 6 DATA EXCHANGE REG X'4' D7C5 C440 4000 0080
. 7 AC/BT PARAM
. 8 CANCEL AC REG X'8' C004
. 9 CANCEL BT
10 CH ADAPT STATE REG X'C' 0000 0000 0000 2000
11 RESET CCU/LSSD LSR 30 A-REG 0000 0000 0000 0000
B-REG 0000 0000 0000 0000
```

SEND: REDISPLAY PF3: QUIT

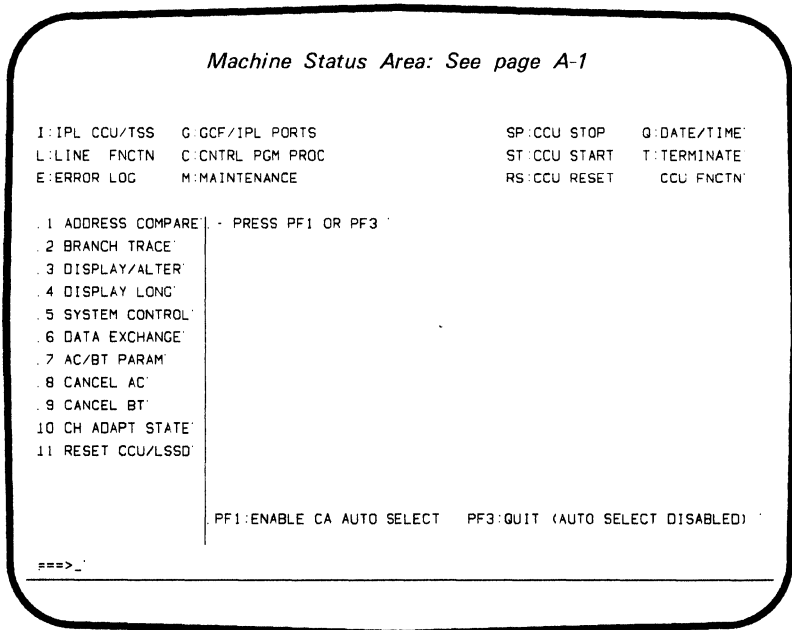
====>

**C** The LSR displayed on this line gives the pointer to the channel adapter cycle steal.

A description of the registers is given in *3725 Communication Controller Principles of Operation*.

The only two actions that you can now perform are:

- Press SEND to *redisplay* the registers once, and/or
- Press PF3:QUIT, whether you want to display other CA registers or terminate the function. The next screen will be displayed.



Now you have the choice of enabling the CA auto-selection mechanism or leaving it in disabled state. Press the appropriate PF key:

**PF1:ENABLE CA AUTO SELECT** - To enable the channel adapter auto-selection mechanism and display the channel adapter state screen.

**PF3:QUIT (AUTO SELECT DISABLED)** - To leave the channel adapter auto-selection mechanism in disabled state and display the channel adapter state screen.

Once the channel adapter state screen is displayed, you may either terminate the function or display other channel adapter registers.

### Channel Adapter State/Register Display Termination

You can terminate this function only from the channel adapter state screen.

Cancel all CCU functions:



or

Select a CCU function.

#### Notes:

1. Before you terminate the function, do not forget to restart the CCU. See page 5-12.
2. If you displayed channel adapter registers, it is recommended that you set the channel adapter auto-selection mechanism to its initial state: enabled or disabled. Refer to "Channel Adapter Register Display."

### Channel Adapter State/Register Display PF Keys

The PF keys are described under "Channel Adapter Register Display."

## Reset CCU/LSSD

Use this function to reset:

- The entire CCU (LSSD, IOC, local store registers, 3725 storage); or
- Only the LSSD.

The channel adapter registers are not reset.

As noted on the screen, remember that using this function *destroys* the current state of the CCU control program.

The only way to restart the 3725 is to IPL it.

Selection:  To display CCU function menu

To select Reset CCU/LSSD

The following screen is displayed:

```
Machine Status Area: See page A-1

I: IPL CCU/TSS      G: GCF/IPL PORTS      SP: CCU STOP      Q: DATE/TIME
L: LINE FNCTN      C: CNTRL PGM  PROC      ST: CCU START    T: TERMINATE
E: ERROR LOG      M: MAINTENANCE      RS: CCU RESET    CCU FNCTN

. 1 ADDRESS COMPARE
. 2 BRANCH TRACE   WARNING: THIS FUNCTION DESTROYS THE CCU CONTROL PROGRAM
. 3 DISPLAY/ALTER
. 4 DISPLAY LONG
. 5 SYSTEM CONTROL
. 6 DATA EXCHANGE - ENTER R OR L ==> _
. 7 AC/BT PARAM
. 8 CANCEL AC      R = TO RESET ALL THE CCU
. 9 CANCEL BT      L = TO RESET LSSD ONLY
10 CH ADAPT STATE
11 RESET CCU/LSSD

====>
```

If you press:

the entire CCU is reset (LSSD, IOC, local store register, 3725 storage).

only the LSSD is reset.

**Machine Status Area (MSA)**

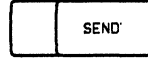
Once the CCU or the LSSD is reset, MOSS is in status MOSS-ALONE. The MSA is updated with:

PROCESS in field a  
MOSS-ALONE in field c  
RESET in field g

**Reset CCU/LSSD Termination**

To terminate the Reset CCU/LSSD function, do as follows:

Cancel all CCU functions:



or

Select a CCU function.

## IPL CCU/TSS (IPL Functions)

Use the IPL CCU/TSS function to IML one scanner or IPL the CCU/scanner.

To perform any of the IPL CCU/TSS functions, MOSS must be running, that is, in status alone, online, or offline.

The only 3725 functions that you can perform while IPLing the CCU are the CCU functions.

**Note:** *IPL CCU/TSS function messages are listed starting on page 8-50. The listing will direct you to the specific message description and action. Messages displayed in the MSA are described in Appendix A.*

---

**Selection:**  To position the cursor

To display the IPL CCU/TSS secondary menu

The following secondary menu is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME'
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE'
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET'	

. 1 ONE SCANNER IML'	
. 2 3725 IPL'	
. 3 LINK TEST REQ'	
. 4 LINK TEST RESP'	

====>

The Link Test Requester (REQ) and Link Test Responder (RESP) functions are documented in *3725 Communication Controller Stand-Alone Link Tests, GA33-0028*.

The following comments apply to the different IPL CCU/TSS functions:

1. You cannot select a CCU function before IPL phase 2 (hexadecimal display = FF2).

2. To select an IPL CCU/TSS function (1 to 4) if one is already selected, you must first do one of the following:
  - Wait until the current IPL/IML is completed, then terminate using the Terminate function (page 5-14), or
  - Cancel the current IPL/IML using the Terminate function, then select IPL CCU/TSS from the primary menu.

*Exception:* Once you have performed the IML of a scanner using the One Scanner IML function, you may IML another scanner without selecting IPL CCU/TSS again.

3. After the 3725 IPL, MOSS is in MOSS-ONLINE status.
4. The IPL/IML is canceled if you do one of the following before the IPL/IML is complete:
  - Select the immediate function Terminate.
  - Switch from the operator console normal mode to test mode.
  - Switch from one operator console to the other.
  - Power off the operator console.

## One Scanner IML

Use this function to IML only one scanner.

**Warning: Before IMLing a scanner, stop all the lines on that scanner, using NCP facilities.**

---

**Selection:**  To position the cursor

To display the IPL CCU/TSS secondary menu

To select One Scanner IML

For the 3725 Model 1, the following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 ONE SCANNER IML . 2 3725 IPL . 3 LINK TEST REQ . 4 LINK TEST RESP	- ENTER:  THE SCANNER NUMBER PRECEDED BY S (S1 TO S16) OR THE LINE ADDRESS (0 TO 255)  ==>
--	--

==>

You are requested to enter the scanner number preceded by S or the line address. The correspondence between line addresses and scanner numbers is given in Appendix B.

For the 3725 Model 2, the IML is automatically started after you have selected the IML function. You are not requested to enter a scanner number or a line address.

Once started, no other operator's intervention is requested. When the IML is complete, the following message is displayed:

**IML FOR SCANNER xx COMPLETED - SCANNER IS CONNECTED**

To terminate the One Scanner IML function when the IML is complete, use the Terminate function (page 5-14). Other indications are given in MSA fields m and n (Appendix A).

## 3725 IPL

Use this function to IPL the CCU and IML the scanners.

---

Selection:   To position the cursor

To display the IPL CCU/TSS  
secondary menu

To select 3725 IPL

Once selected, you are requested to confirm the IPL:

*Machine Status Area*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

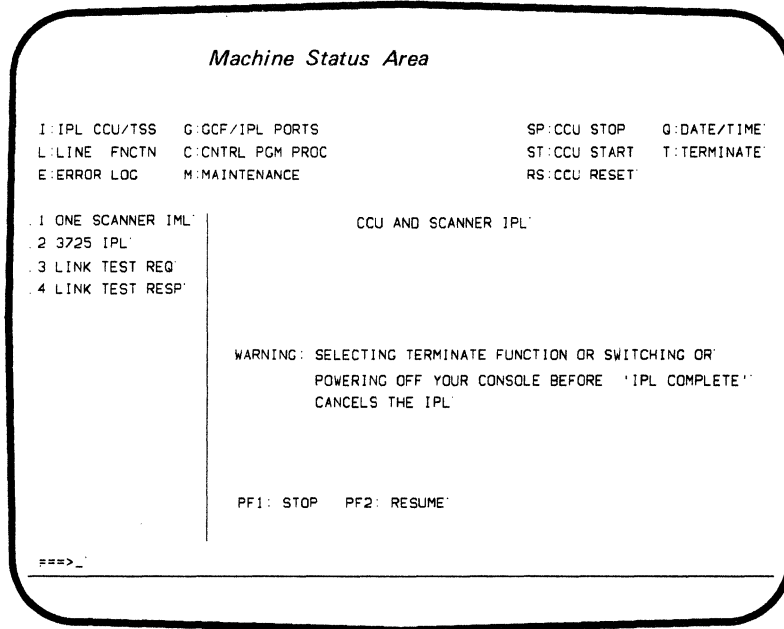
.1 ONE SCANNER IML .2 3725 IPL .3 LINK TEST REQ .4 LINK TEST RESP	PLEASE CONFIRM YOUR SELECTION: Y=YES. N=NO ==>
--	--

==>\_

The IPL starts immediately after confirmation. No other operator action is required. However, you may stop within a phase (PF1) and resume (PF2).



The following screen is displayed while the IPL is in progress and remains until you select the Terminate function.



To terminate the CCU and Scanner IPL function when the IPL is complete, use the Terminate function (page 5-14).

IPL phases are indicated on:

- The third line of the MSA (fields r to x). These fields are described in Appendix A.
- The Hex Display. Hex Display codes are described in Figure 8-1, in Chapter 8.

## Line Functions

The line functions are:

- The Wrap Tests
- The Line Interface Block Display
- The Stand-Alone Link Tests

Selection:  To position the cursor

To display the Line Function secondary menu

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 WRAP TEST	
. 2 LINE INTF DPLY	
. 3 LINK TEST	

==>\_

### **Wrap Tests**

The Wrap Test function is documented in *IBM 3725 Communication Controller Wrap Tests, GA33-0027*.

### **Link Tests**

The Stand-Alone Link Test function is documented in *IBM 3725 Communication Controller Stand-Alone Link Tests, GA33-0028*.

## Line Interface Block Display (LIBD)

Use the Line Interface Block Display function to display, for a specific line, the following fields: SDF, SCF, SET MODE, CONTROL, MODEM-OUT, and the Hexadecimal Mask.

To perform the line interface block display function, the CCU must be in RUN status (MSA field g, Appendix A).

**Warning:** You cannot use the Line Interface Block Display function while IPLing a link-attached 3725.

**Note:** Line Interface Block Display function messages are listed starting on page 8-50. The listing will direct you to the specific message description and action.

- Selection:**  To position the cursor
- To display the Line function secondary menu
- To select the Line Interface Block Display (LIBD)

The following screen is displayed.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 WRAP TEST	- ENTER A DECIMAL LINE ADDRESS FROM 0 TO 255 ==>_
. 2 LINE INTF DPLY	- ENTER T FOR TRANSMIT OR R FOR RECEIVE
. 3 LINK TEST	

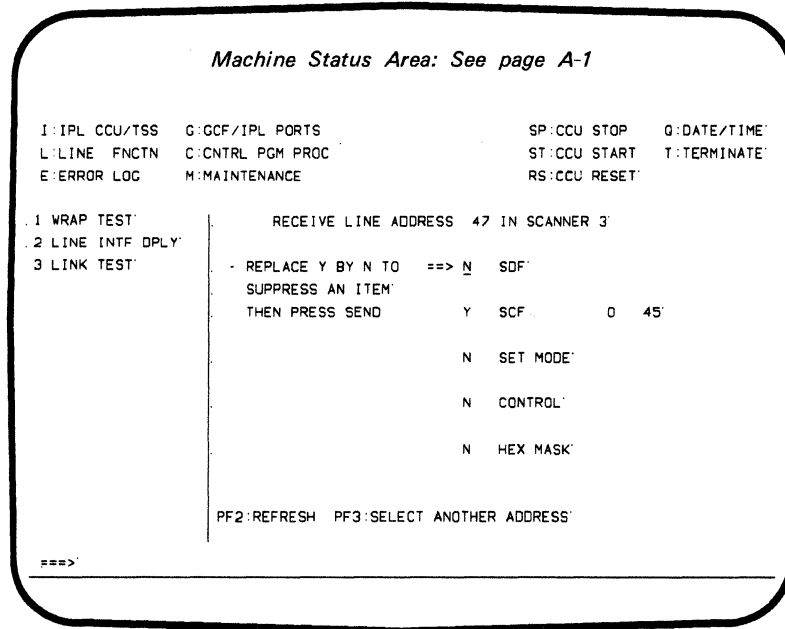
====>

For the 3725 Model 1, the line address must be within the range 0 through 255.

For the 3725 Model 2, the line address must be within the range 0 through 23.



When a bit of a selected field is on, it is indicated by its position number (see screen below).



In the previous screen, field SCF has been selected and bits 0, 4, and 5 are on. The meaning of each bit or of bit configuration is given in the next pages. For example, for a receive line address, BSC only:

0 . . . 4 5 . . : force timer to zero

### LIBD PF Keys

**PF2:REFRESH** - To refresh data every 500ms. However, the refresh rate may vary from 500 ms, if all fields are displayed, to 100 ms, if only one is displayed. This allows you to view permanently the updated image of the data you selected. To stop the effect of the refresh, press **ATTN**.

**Note:** *The refresh is ignored when the scanner is near or at maximum utilization.*

In display mode, pressing **SEND** redisplay the selected field once.

**PF3:SELECT ANOTHER ADDRESS** - To display the first screen so that you can select another line address.

### LIBD Field Description

The meaning of each bit displayed is given below.

#### SDF (serial data field)

is used for the deserialization of the bits received from "receive data" via the LIC.

**TRANSMIT:** is used for the serialization of the bits sent on 'transmit data' via the LIC.

**RECEIVE:** is used for the deserialization of the bits received from 'receive data' via the LIC.

**SCF (secondary control field)**

<b>TRANSMIT:</b>	0	Send CRC
	1	Bit counter 2
	2	Bit counter 1
	3	Modem-in change remembrance
	4	Send EOT
	5	For SDLC: no zero insert For BSC: transparency ending For start/stop: transmit break
	6	Bit counter 0
	7	Send modem-out stacked
<b>RECEIVE:</b>	0	See bit configuration below
	1	Bit counter 2
	2	Bit counter 1
	3	Modem-in change remembrance
	4	See bit configuration below
	5	See bit configuration below
	6	Bit counter 0
	7	Not used

Bits 0, 4, and 5 are set on by hardware to indicate to the control code the end of data transfer. They are coded as follows depending on the protocol:

*Bit Positions:* 0 1 2 3 4 5 6 7

All protocols	0	...	0 0	..	data
SDLC only	1	...	0 0	..	stop check
	0	...	0 1	..	flag OK
	0	...	1 1	..	flag off boundary
	1	...	0 1	..	data check
	1	...	0 0	..	abort
	1	...	1 0	..	idle
BSC only	1	...	1 1	..	force timer to 0
	0	...	1 1	..	normal text
	1	...	1 0	..	transparent text
	.	...	0 1	..	quit control
1	...	0 0	..	data check	

**SET MODE:**

**SDLC TRANSMIT AND RECEIVE:**

0-1	Line type (set 11 means SDLC)
2	Interrupt on first flag
3	Transmit: not used Receive: no zero delete option
4	NRZI
5-7	One's counter

**BSC TRANSMIT AND RECEIVE:**

(non-recognition of control characters)

- 0-2 Line type (100 = BSC)
- 3-4 Not used
- 5 Transmit: not used  
Receive: mono synchronization character
- 6-7 Character length

**BSC (ASCII or EBCDIC) TRANSMIT AND RECEIVE:**

- 0-1 Line type (00 = BSC ASCII, 01 = BSC EBCDIC)
- 2-3 EIB/ITB encoding
- 4-5 CRC type
- 6 ASCII 8-bits
- 7 Not used

**START-STOP TRANSMIT AND RECEIVE:**

- 0-2 Line type (set to 101 means start-stop)
- 3 Not used
- 4 Stop length
- 5 Not used
- 6-7 Character length

**CONTROL:**

**SDLC - TRANSMIT:**

- 0 Not used
- 1 Modem-in change remembrance
- 2 Ready for sending 1st character bit
- 3 BCC1 sent
- 4 Not used
- 5 Not used
- 6-7 Current line state
  - 00 = Line inhibit
  - 01 = Diagnostic mode
  - 10 = Modem monitoring
  - 11 = Modem monitoring and data transfer

**SDLC - RECEIVE:**

- 0 Not used
- 1 Character phase
- 2 Wait for 1st character bit
- 3-4 SDLC state
  - 00 = Normal data
  - 01 = First flag detected
  - 10 = Abort detected
  - 11 = Idle detected
- 5 Not used
- 6-7 Current line state  
(see bits 6-7 under SDLC - TRANSMIT)

**BSC - TRANSMIT:**

- 0 Not used
- 1 Modem-in change remembrance
- 2 Ready for sending 1st character bit
- 3 Not used
- 4-5 (ASCII or EBCDIC)
  - Control (00)
  - Normal (10)
  - Transparent (01)
  - Phase CRC (11)
- 6-7 Current line state  
(see bits 6-7 under SDLC - TRANSMIT)

**BSC - RECEIVE:**

- 0 Not used
- 1 Character phase
- 2 Wait for 1st character bit
- 3 Pad character
- 4-5 (ASCII or EBCDIC)
  - Control (00)
  - Normal (10)
  - Transparent (01)
  - Phase CRC (11)
- 6-7 Current line state  
(see bits 6-7 under SDLC - TRANSMIT)

**BSC (character mode) - TRANSMIT:**

- 0 Not used
- 1 Modem-in change remembrance
- 2 Ready for sending 1st character bit
- 3 Underrun
- 4-5 Not used
- 6-7 Current line state

**BSC (character mode) - RECEIVE:**

- 0 Not used
- 1 Character phase
- 2 Wait for 1st character bit
- 3-5 Not used
- 6-7 Current line state

**START-STOP - TRANSMIT:**

- 0 Not used
- 1 Modem-in change remembrance
- 2 Ready for sending start bit
- 3 Underrun
- 4 Not used
- 5 Stop phase
- 6-7 Current line state  
(see bits 6-7 under SDLC - TRANSMIT)



**START-STOP - RECEIVE:**

- 0 Not used
- 1 Start bit detected
- 2 Wait for start bit
- 3-4 Not used
- 5 Stop phase
- 6-7 Current line state  
(see bits 6-7 under SDLC - TRANSMIT)

**HEX MASK:**

For modem-out:

- 0-5 A driver check is performed on the wire that corresponds to the equivalent Modem-Out bit
- 6 Conditional start
- 7 Mask of mark bit

**MODEM-OUT:**

This field contains the status of the leads going to the modem, when the transmit address is specified.

EIA/CCITT V24 (LIC 1), Bell 303 (LIC 2),  
and CCITT V35 (LIC 3):

- 0 Data terminal ready (DTR) (0 = LIC wrap)
- 1 Request to send (RTS)
- 2 New synchronization - LIC 1 only
- 3 Data rate select - LIC 1 only
- 4 Modem test
- 5 Transmit bit echo
- 6-7 Scanning phase 1 (01)  
Scanning phase 2 (10)  
LIC driver check performed (11)

EIA/CCITT V25 (LIC 1):

- 0 Digit signal 8
- 1 Digit signal 4
- 2 Digit signal 2
- 3 Digit signal 1
- 4 Call request (CRQ)
- 5 Digit present (DPR)
- 6-7 Scanning phase 1 (01)  
Scanning phase 2 (10)  
LIC driver check performed (11)

X.21 (LIC 4)

- 0 No LIC wrap
- 1 Control (C)
- 2-7 Not used

**LIBD Termination**

To terminate the LIBD function, do as follows:

Enter 

T
---

	SEND
--	------

or

Select a function from the secondary menu.

# GCF/IPL Port Functions

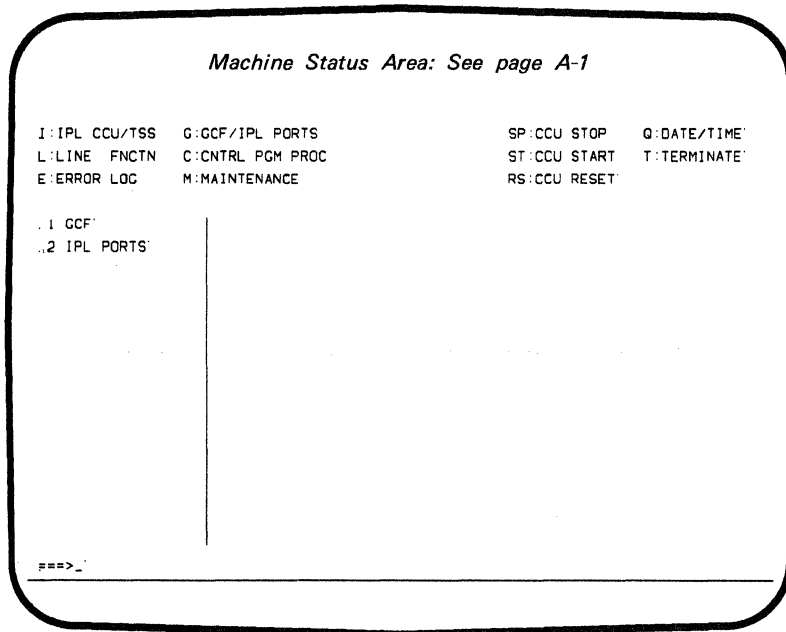
To display the GCF/IPL port functions in the secondary menu.

**Selection:**

To position the cursor

To select GCF/IPL Port function in the secondary menu

The following screen is displayed.



## Graphic Configuration File (GCF)

When performing the GCF function for *the first time*, you initialize the graphic configuration file on the diskette. This file will provide you with the exact picture of the TSS configuration of the 3725.

The graphic configuration file is not an operating file. Neither the control program nor the microcode makes reference to it. Thus you may update it, once initialized, to reflect planned changes to the 3725 configuration before their actual implementation on the machine.

The graphic configuration file can be printed out at the host. The GCF print-out contains information defining the LABs, LICs, and ICCs available or not yet installed but ordered.

To print out the GCF, you have to transfer it to the host. See page 8-117 for instruction on the GCF transfer and printing, and for a sample of the GCF printout.

### Notes:

1. *While performing the GCF function, you cannot switch to the CCU function.*
2. *GCF function messages are listed starting on page 8-50. The listing will direct you to the specific message description and action.*

---

Selection:

SELN  
AREA

To position the cursor

G

SEND

To display GCF/IPL Port function  
secondary menu

1

SEND

To select the GCF function

## GCF Initialization

When you receive the 3725, the graphic configuration file is empty. It is initialized when performing the GCF function for the first time. The following screen is displayed and you are prompted to enter only the weight of each LIC.

**Note:** *Once you have started initializing the graphic configuration file, you must enter the weight of all the LICs.*

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

.1 GCF		GCF INITIALIZATION	
.2 IPL PORTS			
	LAB POSITION = 1	LIC POSITION = 1	
	LAB TYPE ==> CLAB	LIC TYPE ==> 1	
	LAB MES NUMBER ==> 000000	LIC MES NUMBER ==> 000000	
	ICC PRESENCE (Y,N) ==> Y		
	ICC MES NUMBER ==> 000000	LIC WEIGHT ==> 000	
		OR ENTER Y TO COMPUTE THE WEIGHT	
	PF2: SELECT NEXT LAB/LIC		
	ENTER LIC WEIGHT		
	====>		

The above screen, given as an example, is displayed for a 3725 Model 1. For a Model 2, a slightly different screen is displayed.

The LAB and LIC information (except the weight) is automatically displayed. You only have to enter the weight of each LIC. If you do not know the LIC weight, follow the procedure described under "LIC Weight Calculation."

**Note:** *To enter the requested information, you need to know the machine configuration, and the line protocols and speeds.*

## LIC Weight Calculation

1. To calculate the LIC weight, do as follows:

Enter

Press



You are prompted to enter the line speed. The following screen is displayed if you entered option 1 (BSC EBCDIC) on the protocol screen. Other protocols will result in different screens.

```

Machine Status Area: See page A-1

I:IPL CCU/TSS   G:GCF/IPL PORTS           SP:CCU STOP   Q:DATE/TIME
L:LINE FNCTN   C:CNTRL PGM PROC        ST:CCU START  T:TERMINATE
E:ERROR LOG    M:MAINTENANCE                       RS:CCU RESET

.1 GCF          .LINE ADDRESS: 0  LAB NB: 1  SCANNER NB: 01  LIC NB: 1
.2 IPL PORTS   .PROTOCOL: BSC EBCDIC

. SELECT A LINE SPEED      ==> 1.

0 = UNDEFINED
1 = EQUAL OR LESS THAN 9600 BPS
2 = EQUAL OR LESS THAN 19200 BPS

PF3:QUIT      PF5:NEXT LINE

====>

```

If you enter 0 (UNDEFINED), this communication line will not be taken into account in the LIC weight calculation, even if you specified a line protocol. No additional information is displayed. The only action that you can take is either to quit (PF3) or to select the next line (PF5).

4. Once you have entered the line speed, press SEND, then PF5:NEXT LINE to enter the protocol and speed of the next line of the same LIC.

When all the lines of a LIC are defined, PF5 is automatically relabeled PF5:RETURN TO GCF.

5. Press PF5:RETURN TO GCF. The LIC weight is automatically computed and displayed, as shown on the next screen:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	O: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 GCF	GCF INITIALIZATION
. 2 IPL PORTS	

LAB POSITION = 1	LIC POSITION = 1
------------------	------------------

LAB TYPE ==> B	LIC TYPE ==> 1
LAB MES NUMBER ==> 000000	LIC MES NUMBER ==> 000000
ICC PRESENCE (Y.N) ==> Y	
ICC MES NUMBER ==> 000000	LIC WEIGHT ==> 12

OR ENTER Y  
TO COMPUTE  
THE WEIGHT

PF2: SELECT ONE LAB/LIC  
GCF INITIALIZATION COMPLETED

==>

6. Press PF2 in order to enter the weight of the next LIC.
7. When you have entered the LIC weight of all the LABs, press SEND. The graphic configuration file is automatically updated and the following message is displayed:

GCF IS INITIALIZED AND FILED



## GCF Initialization PF Keys

PF2:TO SELECT NEXT LAB/LIC - To display the LAB or LIC selection screen, while initializing the graphic configuration file.

PF3:QUIT - To cancel the present screen and display the previous one, while entering the line protocol and speed.

While calculating the LIC weight, PF5 is labeled either PF5:NEXT LINE or PF5:RETURN TO GCF.

PF5:NEXT LINE - To enter the protocol and speed of next line.

PF5:RETURN TO GCF - To return to the GCF INITIALIZATION screen when all lines have been defined. The weight is then computed and displayed.

## GCF Update

You should update the graphic configuration file every time you wish to modify the 3725 configuration. Once updated, you *must file it*. To file it, press PF5:FILE.

To update the graphic configuration file, select the GCF function. You are first requested to enter the position of the LAB that you want to update. The following screen is displayed. You may:

- Add an item (such as a number)
- Modify a displayed item
- Delete a displayed item. To do so, replace this item by DEL.

If you want to update only the LIC information, press PF4:TO SELECT ONE LIC.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOC	M: MAINTENANCE	RS: CCU RESET	

. 1 GCF	
. 2 IPL PORTS	

LAB POSITION = 1

LAB TYPE	==> CLAB	<b>A</b>
LAB MES NUMBER	==> 000000	
ICC PRESENCE (Y,N)	==> Y	<b>B</b>
ICC MES NUMBER	==> 000000	

PF2: TO SELECT ONE LAB      PF4: TO SELECT ONE LIC      PF5: FILE

==>

- A** The LAB type may be A, B, CLAB1, CLAB2, or C2LB. If you modify or delete the LAB type, you must enter the LAB MES number.
- B** Enter Y for ICCs installed and N for ICCs not installed. If you modify ICC PRESENCE, you must enter the ICC MES number.

To update a LIC, press PF4. You are requested to enter the position of the LIC that you want to update. The following screen is then displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOC	M: MAINTENANCE	RS: CCU RESET	

.1 GCF		LAB POSITION = 1	LIC POSITION = 1	
.2 IPL PORTS				

LAB TYPE	==> CLAB	LIC TYPE	==> 1	
LAB MES NUMBER	==> 000000	LIC MES NUMBER	==> 000000	<b>C</b>
ICC PRESENCE (Y,N)	==> Y			
ICC MES NUMBER	==> 000000	LIC WEIGHT	==> 000	<b>D</b>
		OR ENTER Y		
		TO COMPUTE		
		THE WEIGHT		

PF2: SELECT ONE LAB      PF4: TO SELECT ONE LIC      PF5: FILE

====>

- C** The LIC type may be 1, 2, 3, 4A, or 4B. If you modify or delete the LIC type, you must enter the LIC MES number.
- D** If you do not know the LIC weight, enter Y. The procedure is given under "LIC Weight Calculation."

If you want to update only the LIC weight, and expect the new weight to be lower than the presently displayed one, do as follows:

- Replace the displayed weight by 000, then press SEND
- Replace 000 by Y, then press SEND

When the LIC is updated, you may:

- Update another LAB or LIC; press PF2: TO SELECT ANOTHER LAB/LIC.
- File the graphic configuration file, press PF5: FILE.

Once the updated information is filed, the following message is displayed:  
GCF UPDATE COMPLETED, GCF FILED ON DISKETTE

### GCF Update PF Keys

PF2: TO SELECT ONE LAB - To display the LAB selection screen.

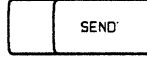
PF4: TO SELECT ONE LIC - To display the LIC selection screen.

PF5: FILE - To file the graphic configuration file once updated.

## ***GCF Termination***

You can terminate the GCF function from any screen. Do as follows:

Enter



or

Select a function from the secondary menu.

## ***IPL Ports***

Once the 3725 is installed, you must first:

- Perform a MOSS IML, then
- Execute the IPL Port function to inform the 3725 Communication Controller from which host machines a 3725 initialization may be expected.
  - For a *channel-attached* 3725, the control program can be transferred across the channel interface. You must indicate ALL the channel adapters that are installed.
  - For a *link-attached* 3725, the control program can be transferred across a communication line (SDLC link). You must give the characteristics of the SDLC link that connects both 3725 controllers used for initialization.

### **Notes:**

1. *No priority is assigned to channel adapters or link IPL ports. Whichever IPL request comes first from the host is taken.*
2. *If you switch to the CCU functions while performing the IPL Port function, all IPL PORT data that you entered will be lost when returning to the IPL Port function. (Switching between functions is described on page 5-6.)*
3. *IPL Port function messages are listed starting on page 8-50. The listing will direct you to the specific message description and action.*

**Selection:**

*To position the cursor*

*To display GCF/IPL Ports function secondary menu*

*To select IPL Ports*

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 GCF	. SELECT IPL PORT OPTION (0 TO 9) ==>
. 2 IPL PORTS	

0 = CHANNEL ADAPTERS (DISPLAY ONLY)
1-8 = INDIVIDUAL LINK IPL PORT
9 = LINK COMMON OPTIONS (CONTROLLER ADDRESS AND TIMERS)

==>

From this screen you may choose to:

- To display the channel adapters that have been defined in the 3725 configuration.
- To define (or update) the link IPL ports and the options common to all the link IPL ports.
- To display the link IPL ports and the common options, once defined.

## Channel Adapter IPL Ports

Use this screen to display the channel adapters that have been defined in the 3725 configuration.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 GCF	CHANNEL ADAPTERS
. 2 IPL PORTS	CHANNEL ADAPTER IS INSTALLED (Y)
	CHANNEL ADAPTER IS NOT INSTALLED (N)
	CA #1 : N
	CA #2 : N
	CA #3 : N
	CA #4 : N
	CA #5 : N
	CA #6 : N

PF3: IPL PORT OPTIONS

==>

## Link IPL Ports

To define a link IPL port, you have to enter its address and characteristics. There is one screen per link IPL port.

Once you have defined a port, press SEND. To go from one port to the previous or to the next one, press PF4 or PF5.

When you have defined the link IPL ports and the common options, you must file by pressing PF2:FILE. Do not forget to press SEND before pressing PF2.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

1 GCF	LINK IPL-PORT # 1
2 IPL PORTS	

- LINE ADDRESS (0 TO 255)	==>	A	
- FULL DUPLEX OR HALF DUPLEX (F,H)	==>	B	
- LINK INTERFACE OPTIONS (Y,N)			
NRZI	==> Y	C	
DX FACILITY	==> Y	D	
SWITCHED LINE	==> N	E	
ANSWER TONE	==> N	F	
RING INDICATOR	==> N	G	
- EXTERNAL CLOCK (Y,N)	==> Y	H	
(N MEANS DIRECT ATTACH)			
- DATA RATE (H = HIGH, L = LOW)	==> H	I	

PF2: FILE PF3: IPL PORT OPTIONS PF4: BACKWARD PF5: FORWARD

====>

- A** This is the decimal line address that will be used as an IPL port. It must be between 0 and 255 for the 3725 Model 1, and 0 and 23 for the 3725 Model 2. The MOSS converts this number into an even hexadecimal interface address or an even or odd pair of hexadecimal addresses, depending on the full-duplex or half-duplex entry. Line addresses are listed in Appendix B. If you specify a line address for any of the eight IPL ports, you must also specify the controller SDLC address and link timeout values; to do so, use the Link Common Options screen (page 5-88).

Only a 3725 line address that is physically installed and configured may be entered. If a non-installed or non-configured address is entered, the following message is displayed:

CABLE DOES NOT EXIST

- B** With FULL DUPLEX OR HALF DUPLEX = F, the decimal line address will be converted into an even or odd pair of hexadecimal addresses. Data is transmitted on the even hexadecimal address and received on the odd hexadecimal address. With FULL DUPLEX OR HALF DUPLEX = H, the decimal line address will be converted to an even hexadecimal address over which data will be both transmitted and received.

If F is specified, the communication facility must be a duplex facility as explained below under **D**.

- C** Specifies whether the data terminal equipment at the ends of the SDLC link must operate in non-return-to-zero-inverted (NRZI) mode (NRZI = Y). The NRZI setting must match the NRZI setting generated

in the channel-attached controller line macro that represents the SDLC link between the channel-attached and link-attached controllers. If the link will not be operated in NRZI mode, specify NRZI = N.

- Ⓓ 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).

- Ⓔ 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).

A LIC Type 4 does not support switched operation.

- Ⓕ 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). 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 modem specifications.)

- Ⓖ For World Trade modems that go off hook when "data terminal ready" is raised by the 3725, "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 modem specifications.) The Y option is valid only for incoming calls on switched lines (SWITCHED LINE = Y).

- Ⓗ EXTERNAL CLOCK = Y indicates that the modem supplies the clock. EXTERNAL CLOCK = N indicates direct attachment and that the link-attached 3725 supplies the clock. Consult your 3725 sales representative to determine the direct-attached clock speeds supported. The appropriate service representative must jumper the 3725 for the clocking required.

- Ⓙ If you specified EXTERNAL CLOCK ==> N for direct-attached lines, you must not specify a data rate. If a rate is already displayed (H or L), delete it, using the DEL CHAR key.



## Common Options

Use this screen to define the link IPL port common options.

```
Machine Status Area: See page A-1

I: IPL CCU/TSS      G: GCF/IPL PORTS      SP: CCU STOP      Q: DATE/TIME
L: LINE FNCTN      C: CNTRL PGM PROC   ST: CCU START     T: TERMINATE
E: ERROR LOG       M: MAINTENANCE                   RS: CCU RESET

. 1 GCF
. 2 IPL PORTS

LINK IPL PORTS - COMMON OPTIONS

. SDLC CONTROLLER ADDRESS (1 TO FE) ==>_ J
. TIMER VALUES (1 TO 4 DIGITS IN 0.1 SEC INTERVALS)

ENABLE TIMER      ==> 0022 K
DISABLE TIMER     ==> 0030 L
LINK ACTIVITY TIMER ==> 0010 M

PF2: FILE  PF3: IPL PORT OPTIONS  PF4: BACKWARD

==>_
```

- J Enter the hexadecimal SDLC address that will be used by the link-attached controller while communicating with the channel-attached controller.

If you entered a line address on a Link IPL Port screen, you must enter a controller SDLC address in hexadecimal; if you do not, the Link IPL port is inoperative and the following message is displayed when you file (PF2):

**FUNCTION COMPLETED BUT CONTROLLER ADDRESS IS NOT DEFINED**

- K If the modem interface characteristics at the link-attached controller are the same as at the channel-attached controller, the same value as was generated in the channel-attached controller ENABLTO build macro that represents the SDLC link between the channel-attached and link-attached controllers should be used.

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 the maximum wait time for modem interface leads to respond to changes in the 3725 interface leads such as '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, etc. Zero will result in an infinite wait. The screen above indicates the default timeout used by a local NCP (2.2 seconds). Consult your modem specifications.

- L If the modem interface characteristics at the link-attached controller are the same as at the channel-attached controller, the same value as was generated in the channel-attached controller DSABLTO build macro that represents the SDLC link between the channel-attached and link-attached controllers should be used.

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. A value other than zero must be entered. The Common Option screen indicates the default timeout used by a local NCP (3 seconds). Consult your modem specifications.

- Ⓜ The value generated in the channel-attached controller REPLYTO group macro that represents the SDLC link between the channel-attached and link-attached controllers should be used.

The link activity timer specifies the time that the scanner will wait for a response to polling, to selection, or to message text. Once it is loaded, the control program can change this value. A zero entry will result in an infinite timeout. The Common Option screen indicates the default timeout used by a local NCP (1 second) for SDLC links.

### IPL Port PF Keys

PF2:FILE - To file updated information. Before filing, do not forget to press SEND to transmit the information that you have updated on the screen. Once filed, the message FUNCTION COMPLETED is displayed. You may terminate the function (see "IPL Port Termination").

If you did not specify a controller SDLC address although you specified a line address on the Link IPL Port screen, the following message is displayed:

FUNCTION COMPLETED BUT CONTROLLER ADDRESS IS NOT DEFINED


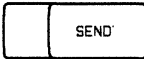
PF3:IPL PORT OPTIONS - To display the IPL port option screen.

PF4:BACKWARD - To display the previous screen.

PF5:FORWARD - To display the next screen.

### IPL Port Termination

You can terminate the IPL Port function from any screen. Do as follows:

Enter  

or

Select a function from the secondary menu.

## Error Log Function

Once an error is detected, a Box Error Record (BER) is stored in the BER file to collect information on the error.

When the BER file is full, the next BER to arrive overrides the oldest BER in the file. BERs are stored in the order of arrival. BER number 1 corresponds to the most recently stored BER.

Alarms are also recorded in the BER file. They can also be displayed. A BER related to an alarm is immediately displayed below the alarm.

To display a BER or a list of BERs for a given component, or to display the list of alarms, use function Error Log.

You may display three types of information on the BERs:

- The summary of all the BERs and alarms in the file (BER Summary screen)
- The list of all the BERs for a specific component or of all the alarms (BER List screen)
- The detail of a specific BER (BER Detail screen).

### Notes:

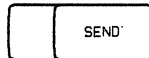
1. *For the Error Log function only, the secondary menu area is part of the work area, which uses the 80 characters of lines 9 to 23.*
2. *Error Log messages are listed starting on page 8-50. The listing will direct you to the specific message description and action.*

---

**Selection:**



*To position the cursor*



*To select the Error Log function*

The BER Summary screen is first displayed.

## BER Summary

When you select the Error Log function, the BER Summary screen is first displayed.

*Machine Status Area: See page A-1*

```

I: IPL CCU/TSS      G: GCF/IPL PORTS          SP: CCU STOP      Q: DATE/TIME
L: LINE FNCTN      C: CNTRL PGM PROC         ST: CCU START     T: TERMINATE
E: ERROR LOG       M: MAINTENANCE                          RS: CCU RESET
  
```

SEL# NAME		BER SUMMARY		DATE 1ST BER		TOTAL
A	B	C	D	E	F	G
SEL#	NAME	TYPE	PENDING BERS	MM/DD	HH:MM	IN FILE
1	CA (CHANNEL ADAPTERS)	10	21	06/04	12:02	21
2	TSS (TRANSMISSION SUBSYSTEM)	11	20	05/10	09:02	20
3	CP (CONTROL PROGRAM)	12	10	04/09	08:03	10
4	CCU (CENTRAL CONTROL UNIT)	13	10	06/01	10:02	10
5	IOC (I/O CONTROL)	14	0			0
6	MOSS (MAINTENANCE OPERATOR SUBSYSTEM)	01	58	06/05	11:53	58
7	ALARMS		22	06/05	09:12	22
8	ALL (ALL FILE CONTENTS)		141			141

..ENTER SEL# OR NAME ==> \_

====>

- A** Selection number. Use this number to display the list of all the BERs for that specific component.
- B** CA, TSS, CP, CCU, IOC, or MOSS is the name of the component that you enter (in place of the SEL#) to display the list of all the BERs for that specific component.  
You enter ALARMS to display the list of all the alarms recorded in the BER file.  
You enter ALL to display the list of all the BERs and ALARMS recorded in the BER file.
- C** Full name of the component. Do not use it to display a BER List screen.
- D** The BER type (service personnel only).
- E** The number of BERs that are not yet flagged. (See BER List screen, column **J**.)
- F** The date and time of the oldest BER in this category, not flagged (pending BER).
- G** The total number of BERs, flagged or not.

## BER List

To display a BER List screen, enter, from the BER Summary screen, either a SEL# or a NAME.

```
Machine Status Area: See page A-1

I: IPL CCU/TSS      G: GCF/IPL PORTS      SP: CCU STOP      Q: DATE/TIME
L: LINE FNCTN      C: CNTRL PGM PROC      ST: CCU START     T: TERMINATE
E: ERROR LOC       M: MAINTENANCE      RS: CCU RESET

  H   I   J   K   L   M   N
  MOSS LIST
SEL# DATE/TIME FLAG NAME TYPE ID ERROR DESCRIPTION TOTAL: 58
1 06/04 11:53 MOSS LVLO 01 00 PGM CHK IN LVLO7 AT 12120
2 06/04 11:44 MOSS LVLO 01 00 PGM CHK IN LVLO7 AT 12120
3 06/04 11:35 MOSS LVLO 01 00 PGM CHK IN LVLO7 AT 12120
4 06/04 11:14 MOSS LVLO 01 00 PGM CHK IN LVLO7 AT 12120
6 06/04 11:05 MOSS APPL 01 06 CCU IPL ABEND OF17
7 06/04 11:04 MOSS LVL1 01 01 CCU HARDCHK
8 06/05 09:13 MOSS DISK 01 03 I/O BUS PARITY ERROR FILE:CHCMOJIB
10 06/05 09:05 MOSS APPL 01 06 CCU IPL ABEND OF17
11 06/05 09:04 MOSS LVLO 01 00 PGM CHK IN LVLO7 AT 13AA0
12 06/05 09:02 MOSS LVL1 01 01 CCU HARDCHK
..ENTER SEL# OR NAME ==> _
PF1 :BER SUMMARY PF4 :BACKWARD PF5 :FORWARD

====>
```

On the first line, the BER type and the total number of BERs for the selected component are displayed.

- H** Selection number. Use this number to display the detail of a specific BER.
- I** The date and time at which the BER was recorded. The date is four digits defining month and day. EP does not handle the date and displays 00/00. The time is four digits defining hour and minute. Under NCP, the date and time come from the host. If the host is remote, the time recorded on the BER may differ from the 3725 time.
- J** The hexadecimal flag value (service personnel only).
- K** The origin name. This name should not be confused with the component name on the BER Summary screen, column **B**. It may be used also to list all the BERs having the same origin: CA, CS, or LINE.
- L** The BER type (service personnel only).
- M** The BER identification (service personnel only).
- N** The error description (up to 40 characters).  
An asterisk (\*) at the end of the error description indicates that the description is truncated. For the complete description of the error, display the BER Detail screen.

From the BER List screen, you may display:

- The details of a specific BER, by entering a SEL# (see BER Detail screen).
- The list of BERs having the same origin, by entering an origin name (NAME on the BER List screen), which are CAx, CSx, or LINEx. The letter x is to be replaced by the number of the channel adapter (CA), of the scanner (CS), or of the line.

For example, if you enter CS6, you will display the list of all the BERs for scanner 6.

- The list of BERs for a specific component, by entering CA, TSS, CP, CCU, IOC, or MOSS.
- The list of all the Alarms, by entering ALARMS.
- The list of all the BERs of the BER file by entering ALL.

#### **BER List PF Keys**

PF1:BER SUMMARY - To display the BER Summary screen.

PF4:BACKWARD - To display the newer BERs for the same component.

PF5:FORWARD - To display the older BERs for the same component.

## BER Detail

To display a BER Detail screen, enter, from the BER List screen, a SEL#. The BER Detail screen may be used to display the full description of a BER that was truncated on a BER List screen.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

BER DETAIL

SEL# 8 FLAG 00 DATE:06/05 TIME:09:13 TYPE:01 ID:03  
DISK I/O BUS PARITY ERROR FILE:CHGMDJIB CHRR:2B010901

PF1 :BER SUMMARY PF2 :BER LIST PF4 :PREVIOUS BER PF5 :NEXT BER

====>

### BER Detail PF Keys

PF1:BER SUMMARY - To display the BER Summary screen.

PF2:BER LIST - To display the BER List screen starting from the BER displayed on the BER Detail screen.

PF4:PREVIOUS BER - To display the BER Detail screen of the previous BER.

PF5:NEXT BER - To display the BER Detail screen of the next BER.

### Error Log Function Termination

You can terminate the Error Log function from any screen. Do as follows:



## Maintenance Functions

These functions are intended for *maintenance personnel* only. They are not described in the present manual. If you enter M in the selection area, maintenance functions will appear in the primary menu. The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	S: TSS FNCTN	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	U: UTILITY PGM	ST: CCU START	T: TERMINATE
E: ERROR LOG	N: CUSTOMER MENU		RS: CCU RESET	

WARNING :

MISUSE OF MAINTENANCE FUNCTIONS MAY LEAD TO UNPREDICTABLE RESULTS  
ENTER 'N' TO RETURN TO CUSTOMER MENU

====> M

Once maintenance functions have been selected, N:CUSTOMER MENU replaces M:MAINTENANCE in the primary menu. Enter N in the selection area to recover the customer menu.





## Chapter 6. How to Execute NCP and EP Functions

### Functions

To execute any of the following NCP and EP functions, use the *Data Exchange* function, described in Chapter 5. This function allows you to select and to provide data to the NCP or EP functions and subroutines.

NCP functions are:

- Line Test
- Dynamic Store
- Display of Storage
- Display of Register
- Channel Disconnect
- Address Trace
- Channel Adapter Trace

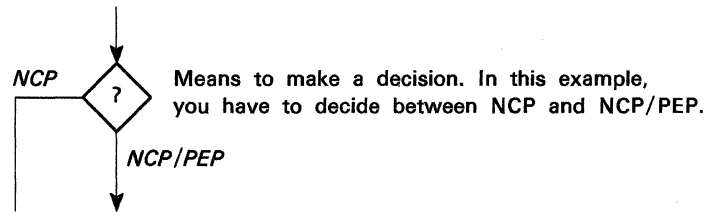
EP functions are:

- 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
- Subchannel Switching

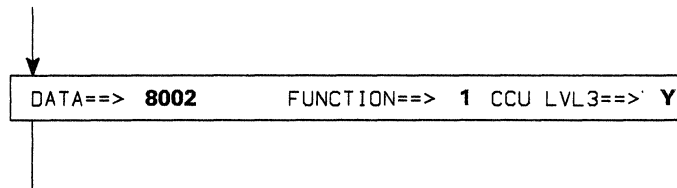
The above NCP and EP functions are also used in the control program procedures, described in Chapter 7.

## Conventions

In the procedures given in this chapter, the following conventions, in addition to those described in Chapter 1, are used:



Boxes in each procedure show information that is displayed on the screen. All you have to do is to enter the characters that are printed in bold type. In this example, you are required to enter 8002, 1, and Y.



When entering the Data Exchange function, you do not have to specify the **FUNCTION==>** and **CCU LVL3==>** values if you already specified the same values in a previous Data Exchange. However, in the following NCP and EP function procedures, **FUNCTION==>** and **CCU LVL3==>** values are always shown, even when repetitive, for clarity.

## NCP and EP Functions in an NCP Environment with PEP

In an NCP environment *with PEP*, 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

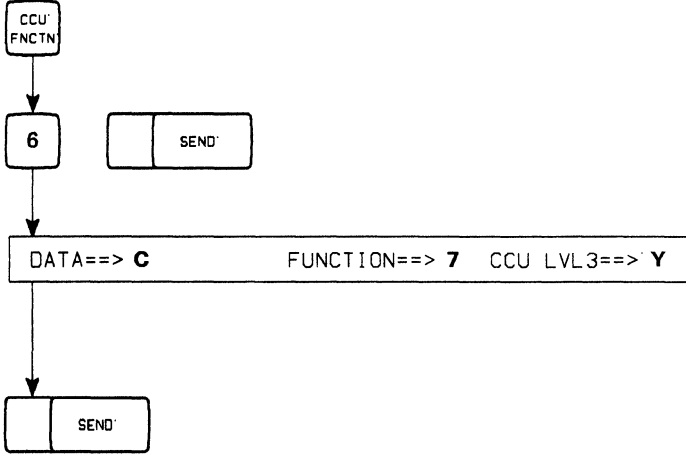
KEY	PROCEDURE	COMMENTS
	 <pre> graph TD     A[CCU FNCTN] --&gt; B[6]     B --- C[SEND]     B --&gt; D[DATA==&gt; C      FUNCTION==&gt; 7      CCU LVL3==&gt; Y]     D --&gt; E[SEND]     </pre>	<p>To select the data exchange function.</p> <p>To switch to NCP mode. If successful, MSA fields e and k display:</p> <p>e = X71:00000C k = X72:00000C</p> <p>If the control program is EP, MSA fields e and k display:</p> <p>e = X71:000000 k = X72:000000</p>

Figure 6-1. Switching Control to NCP Mode

## Switching Control to EP Mode

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     A[CCU FNCTN] --&gt; B[6]     B --- C[SEND]     B --&gt; D[DATA==&gt; E   FUNCTION==&gt; 7   CCU LVL3==&gt; Y]     D --&gt; E[SEND]         </pre>	<p>To select the data exchange function.</p> <p>To switch to EP mode. If successful, MSA fields e and k display:</p> <p>e = X71:00000E k = X72:00000E</p> <p>If the control program is NCP, MSA fields e and k display:</p> <p>e = X71:000000 k = X72:000000</p>

Figure 6-2. Switching Control to EP Mode

## NCP - Line Test

Use this function to test NCP lines via the operator console. The Line Test 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 system, 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.*

To run the EP Line Test function in a PEP environment, switch control to EP mode and use the EP Line Test function.

While the Line Test function is being performed, codes are displayed in MSA fields e and k to show normal processing indications and errors. These codes are described in Figure 6-5.

All subroutine line tests are described in Figure 6-4.

KEY	PROCEDURE	COMMENTS
	<p>In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter.</p> <pre> graph TD     Start[CCU FNCTN] --&gt; Box6[6]     Box6 --&gt; Send1[SEND]     Send1 --&gt; Data1[DATA==&gt; 020yz FUNCTION==&gt; 2 CCU LVL3==&gt; Y]     Data1 --&gt; Send2[SEND]     Send2 --&gt; Dec1{?}     Dec1 -- "MSA field k different from X72:00FFFF" --&gt; Err1[An error occurred. See the description of the error in Figure 6-5.]     Dec1 -- "MSA field k equal to X72:00FFFF" --&gt; Data2[DATA==&gt; wxyz FUNCTION==&gt; 2 CCU LVL3==&gt; Y]     Data2 --&gt; Send3[SEND]     Send3 --&gt; Dec2{?}     Dec2 -- "MSA field k different from X72:00FFFF" --&gt; Err2[An error occurred. See the description of the error in Figure 6-5.]     Dec2 -- "MSA field k equal to X72:00FFFF" --&gt; Dec3{?}     Dec3 -- "Another subroutine or more data characters to enter" --&gt; Data2     Dec3 -- "No more subroutines or data" --&gt; Data3[DATA==&gt; 05000 FUNCTION==&gt; 2 CCU LVL3==&gt; Y]     Data3 --&gt; Send4[SEND]   </pre>	<p>To select data exchange function.</p> <p>To initialize the line test for the NCP line address yz (hexadecimal)</p> <p>w = flag xx = subroutine code yz = variables w, xx, yz are explained in Figure 6-4.</p> <p>To end the Line Test function.</p> <p>The line test is ended.</p>

Figure 6-3. Line Test Procedure

To execute any of the subroutines described in Figure 6-4, enter:

DATA==> wxyz FUNCTION==> 2 CCU LVL3==> Y

w, xx and yz values are given in the second, third, and fourth column of the following figure.

Subroutine Name	w	xx	yz	Description
Initialization	0	20	yz	To accept the relative hexadecimal line number (yz) 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. <i>Note:</i> 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') 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'. <i>Notes:</i> 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 dial 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 dial digits. The special characters X'A' to X'D' are also accepted. <i>Notes:</i> 1. To resume entering the dial 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.

Figure 6-4. Subroutines Used When Performing an NCP Line Test (Part 1 of 4)



Subroutine Name	w	xx	yz	Description
Dial Operate	w	48	yz	<p>To issue a Setmode and Dial to the line and to complete the connection using the digits entered with subroutine Dial Digit Load (X'47').</p> <p>If w = 0, the subroutine ends after the connection is established.</p> <p>If w = 1, the Receive Mode subroutine (X'4A') is executed after the connection is established. (See Note 3.)</p> <p>If w = 2, the Transmit Buffer subroutine (X'4F') will be executed after the connection is established. (See Note 3.)</p> <p>y and z are meaningful only if w = 1 or 2. They are set the same as for subroutines X'4A' and X'4F'.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. This subroutine X'48' is required on auto-dial lines before any other Transmit/Receive subroutine is attempted.</li> <li>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.</li> <li>3. This 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.</li> </ol>
Receive Mode (BSC and Start/Stop)	0	4A	yz	<p>Used to:</p> <ul style="list-style-type: none"> <li>- Monitor the line for incoming data, if the line is point-to-point, and</li> <li>- Poll the device if the line is multipoint.</li> </ul> <p>Note: To transmit and receive data on SDLC lines, use subroutine SDLC Test Frame with Data (X'63').</p> <p>Once data is received, an ACK is transmitted for each block of data received until EOT is received.</p> <p>If y = 1, errors are ignored unless they are so severe that the scanner has disabled the line.</p> <p>If y = 0, the subroutine quits if an error is received. An error code is displayed in MSA field k (Figure 6-5).</p> <p>If z = 1, the terminal is continuously polled or monitored until subroutine End Test (X'50') or End Function (X'5F') is selected.</p> <p>If z = 0, the subroutine quits after it has received data followed by EOT.</p> <p>To look at the last buffer of data received:</p> <ol style="list-style-type: none"> <li>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 k.</li> <li>2. Enter this address in the CCU Display Long function (page 5-35) to look at the received data buffer. The buffer is 256 bytes long.</li> </ol>
Display LTS	0	4C	yz	<p>To display in MSA fields e and k two halfwords of the line test control block (LTS) beginning at the displacement yz (hexadecimal).</p> <p>Note: The halfwords displayed begin on a halfword boundary. If an odd offset is entered, the low-order bit is ignored.</p>

Figure 6-4. Subroutines Used When Performing an NCP Line Test (Part 2 of 4)

Subroutine Name	w	xx	yz	Description
Display LTS Pointer	0	4D	00	To display the address of the LTS pointer in MSA field k so that you may display the entire LTS by means of the CCU Display Long function (page 5-35).
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 k (Figure 6-5). If z = 1, the data is transmitted continuously. If z = 0, the data is transmitted once and the subroutine is ended.  <i>Notes:</i> 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.  <i>Note:</i> 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: e = X71:00005F k = 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', inclusive.
Change Setmode Data	0	61	yz	To change the Setmode data byte, specified in subroutine X'60', to the value yz.  <i>Warning:</i> Invalid values may cause NCP to abend.  <i>Notes:</i> 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 (X'40') subroutine always changes the Setmode data byte to its generated values.

Figure 6-4. Subroutines Used When Performing an NCP Line Test (Part 3 of 4)

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. <i>Note:</i> 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. <i>Note:</i> 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. <i>Note:</i> This 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'. <i>Notes:</i> 1. This subroutine (X'65') must be specified if a transmit ID is required. 2. The data area contains enough space for a three-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. <i>Notes:</i> 1. This 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 seven polling characters or six plus the ENQ character.
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'. <i>Notes:</i> 1. This 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 seven addressing characters or six plus the ENQ character. Only the first character will be used by subroutines X'62' and X'63'.

Figure 6-4. Subroutines Used When Performing an NCP Line Test (Part 4 of 4)

Figure 6-5 describes each code displayed in the MSA field k when executing an NCP line test. The last two digits of field e indicate the function or subroutine code.

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

MSA Field e	MSA Field k	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 is 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	X72:000011	Unable to initialize the line test.
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 S/S 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 dial digit supplied.
X71:0000xx	X72:00002F	No autodial 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 = = > wxyz) is invalid.
X71:0000xx	X72:000034	The value specified in z (DATA = = > wxyz) is invalid.
X71:0000xx	X72:000035	The value specified in w (DATA = = > wxyz) 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	Dial digit overflow.
X71:0000xx	X72:000044	Invalid dial 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.

Figure 6-5. Line Test Codes

## NCP - Dynamic Store

Use this function to store online bytes and halfwords in 3725 storage, without stopping the CCU.

MSA fields e and k display information on the progression of the NCP dynamic store function. See Figure 6-6.

MSA Field e	MSA Field k	Description
X71:03FFFD	X72:03FFFD	Store completed but next address exceeds storage limit.
X71:03FFFE	X72:03FFFE	Invalid sequence entered.
X71:03FFFF	X72:03FFFF	Invalid address entered.
X71:000000	X72:000000	Normal termination (FUNCTION = = > 6).

Figure 6-6. MSA Field e and k Values for Dynamic Store

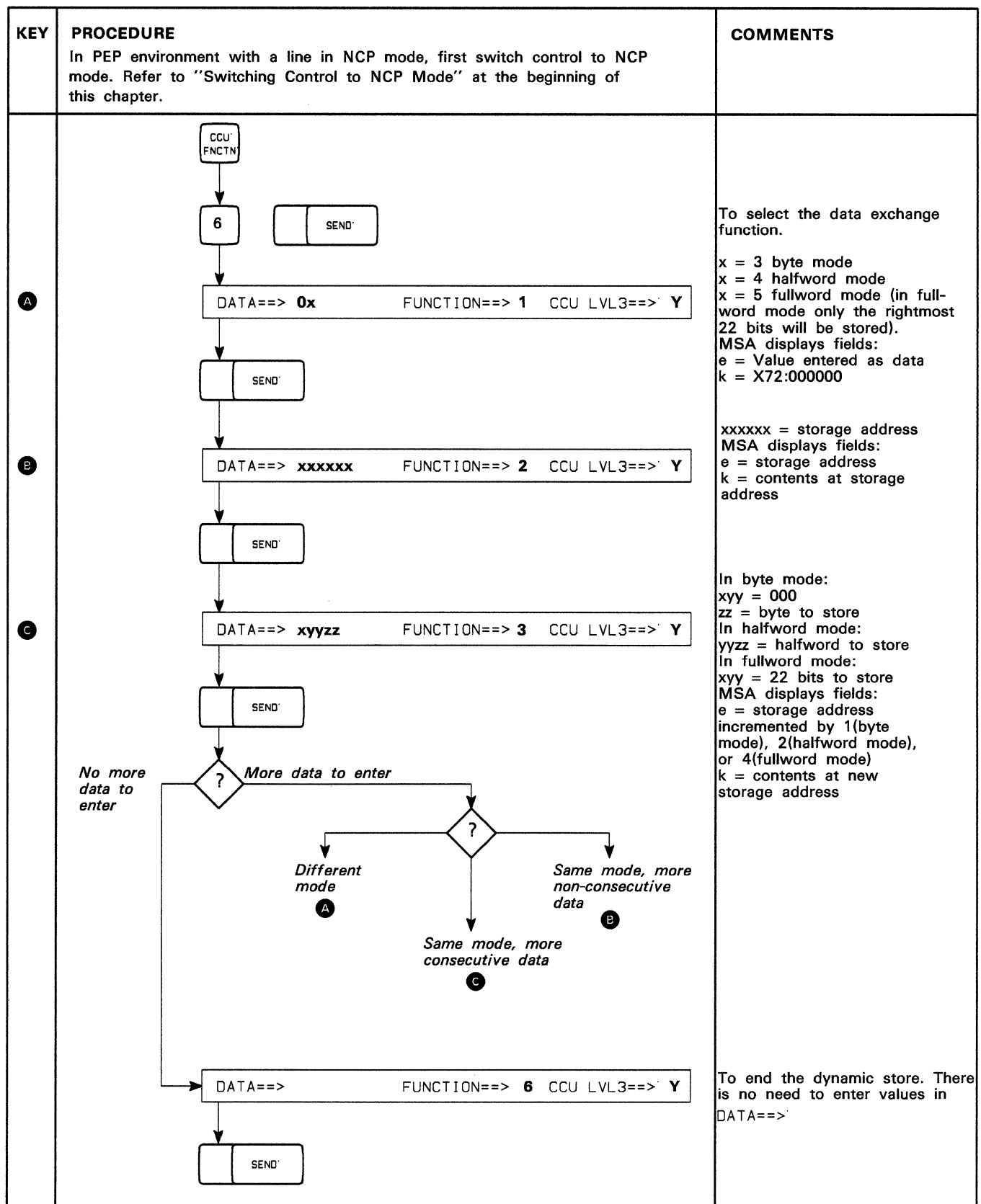


Figure 6-7. NCP - Dynamic Store

# NCP - Display of Storage

Use this function to display a 3725 storage halfword in MSA field k.

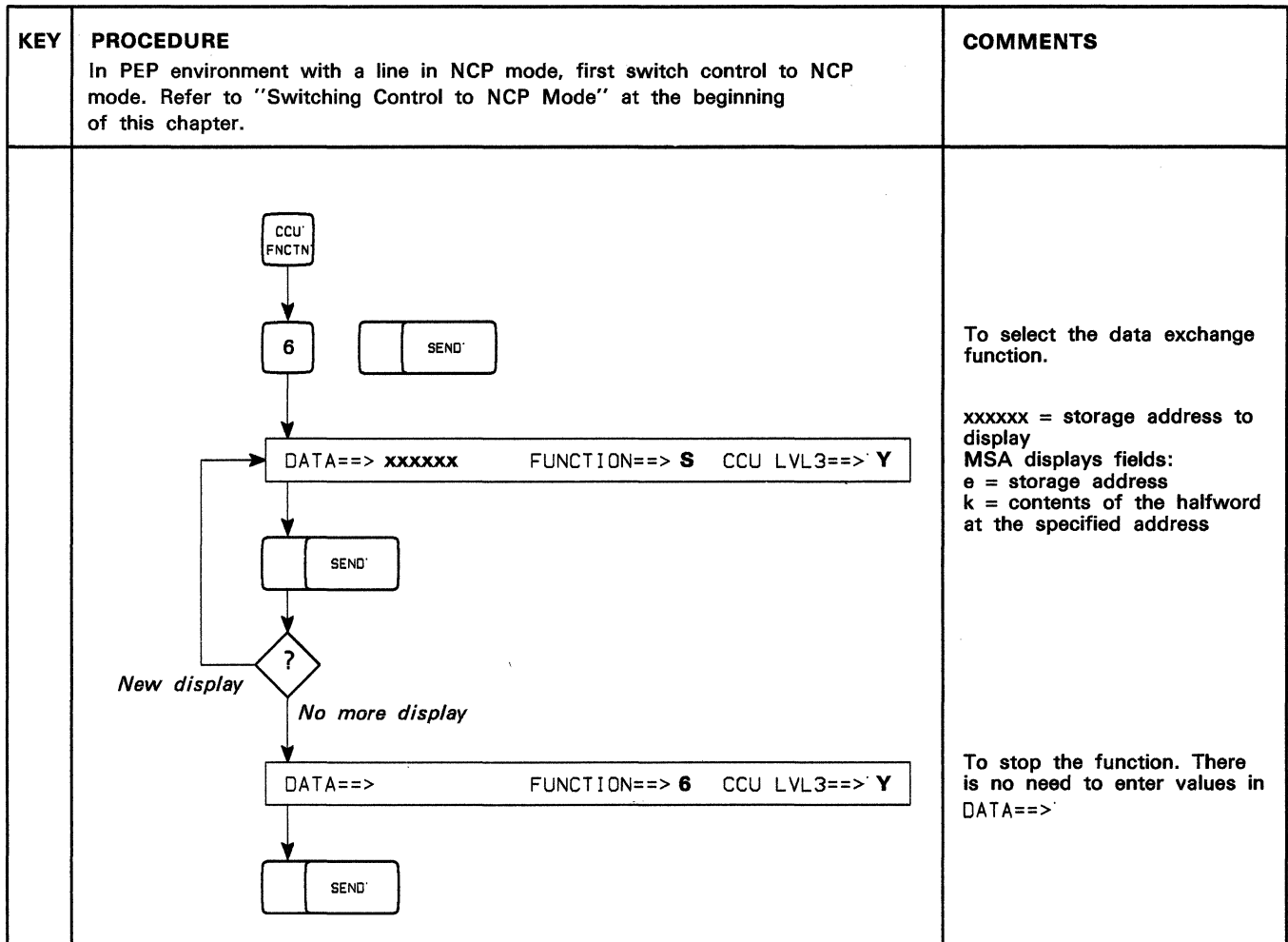


Figure 6-8. NCP - Display of Storage

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

Figure 6-9. MSA Field e and k Values for Display of Storage

# NCP - Display of Register

Use this function to display 3725 register contents in MSA field k.

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start([CCU FNCTN]) --&gt; Step1[6]     Step1 --&gt; Send1[SEND]     Send1 --&gt; Step2[DATA==&gt; 8002 FUNCTION==&gt; 1 CCU LVL3==&gt; Y]     Step2 --&gt; Send2[SEND]     Send2 --&gt; Step3[DATA==&gt; r0r0 FUNCTION==&gt; R CCU LVL3==&gt; Y]     Step3 --&gt; Send3[SEND]     Send3 --&gt; Decision{?}     Decision -- New display --&gt; Step3     Decision -- No more display --&gt; Step4[DATA==&gt; FUNCTION==&gt; 6 CCU LVL3==&gt; Y]     Step4 --&gt; Send4[SEND]     Send4 --&gt; Step5[DATA==&gt; 2 FUNCTION==&gt; 1 CCU LVL3==&gt; Y]     Step5 --&gt; Send5[SEND]     </pre>	<p>To select the data exchange function.</p> <p>To set on the Allow Additional Register Range bit (AARR). See Figure 6-11.</p> <p>r = general register address          example: for register X'42' enter 4020. MSA displays fields:          e = register address          k = contents of registers</p> <p>To end the function.</p> <p>To set off the AARR bit. See Figure 6-11.</p>

Figure 6-10. NCP - Display of Register



MSA Field e	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.

Figure 6-11. AARR Bit Setting Codes

## NCP - Channel Discontact

Use this function to cause auto-network shutdown (ANS) of a particular host processor(s). ANS is a non-optional 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.

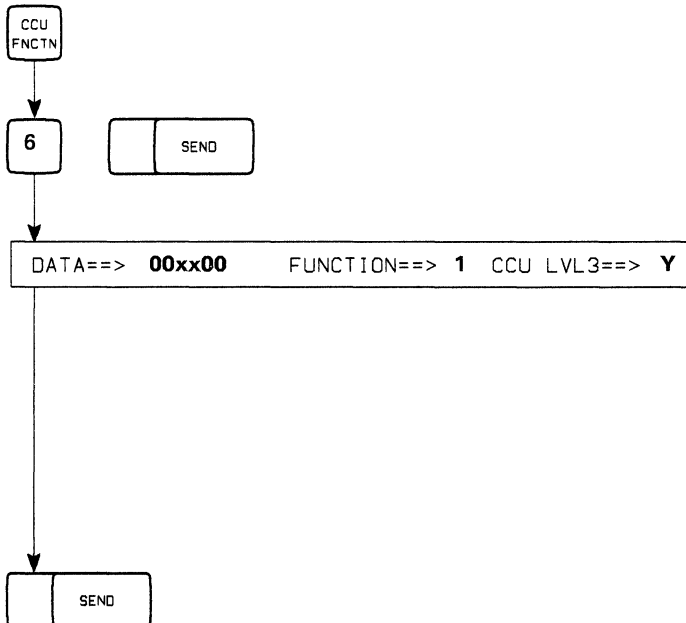
KEY	PROCEDURE	COMMENTS
	<p>In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter.</p>  <pre> graph TD     A[CCU FNCTN] --&gt; B[6]     B --&gt; C[DATA==&gt; 00xx00 FUNCTION==&gt; 1 CCU LVL3==&gt; Y]     C --&gt; D[SEND]     B --- E[SEND]     </pre>	<p>To select the data exchange function.</p> <p>To execute Channel Discontact on the specified channel adapter(s).</p> <p>xx = channel adapter identification within the range X'01' to X'3F'. Only the following bits are valid:</p> <pre> .....1 CA1 .... ..1 CA2 .... .1.. CA3 .... 1... CA4 ...1 .... CA5 ..1. .... CA6     </pre>

Figure 6-12. NCP - Channel Discontact

## **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 e and k will display garbled (and therefore meaningless) information.

You must specify in an address compare function (page 5-16), one or two addresses and option LEVEL 1 INTERRUPT (I).

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.

KEY	PROCEDURE	COMMENTS
	<p>In PEP environment with in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter.</p>	<p>To select the data exchange function.</p> <p>To set on the Allow Additional Register Range bit (AARR). See Figure 6-11.</p> <p>To start the Address Trace function. MSA displays fields: e = X71:000001 k = X72:000000</p> <p>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: e = X71:000002 k = levels (p)</p> <p>xxxxxx = storage address MSA displays fields: e = X71:000003 (1 variable) X71:000004 (2 variables) X71:000005 (3 variables) X71:000006 (4 variables) k = storage address</p>

Figure 6-13. NCP - Address Trace (Part 1 of 3)

KEY	PROCEDURE	COMMENTS
<p><b>B</b></p> <p><b>C</b></p> <p><b>D</b></p>	<p>In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter.</p> <p><b>B</b> DATA==&gt; r0r0 FUNCTION==&gt; R CCU LVL3==&gt; Y</p> <p>SEND</p> <p><b>C</b> ? 4 variables already entered</p> <p>More variables to trace <b>A</b></p> <p>No more variables to trace</p> <p><b>B</b> DATA==&gt; FUNCTION==&gt; 6 CCU LVL3==&gt; Y</p> <p>SEND</p> <p><b>C</b> DATA==&gt; FUNCTION==&gt; 3 CCU LVL3==&gt; Y</p> <p>SEND</p> <p>The address trace is now active.</p> <p>Set a CCU Address Compare with one or two addresses and the LEVEL 1 INTERRUPT option. To select the address compare:</p> <p>SELN' AREA'</p> <p>1 SEND</p> <p>Next page</p>	<p>r = general register address example: for register X'42' enter 4020. MSA displays fields: e = X71:000003 to 000006 depending on the number of variables entered. k = registers address</p> <p>This step is not required if you entered 4 variables. To notify NCP that there is no more data to enter. There is no need to enter values in DATA==&gt;.</p> <p>To start the trace. There is no need to enter values in DATA==&gt;.</p> <p>Each time there is an address compare hit, the Address Trace function will save in the trace table the variables that you entered.</p> <p>To position the cursor at the selection area.</p> <p>To select the Address Compare function.</p>




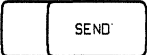
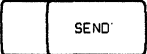
Figure 6-13. NCP - Address Trace (Part 2 of 3)

KEY	<b>PROCEDURE</b> In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter.	<b>COMMENTS</b>
	<p style="text-align: center;">↓</p> <p style="text-align: center;">Enter the address compare parameters as described in Chapter 5. When the address compare is set the count of interrupts processed is displayed in field e of the MSA.</p> <p style="text-align: center;">To end the address trace:</p> <p style="text-align: center;">↓</p> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">SELN AREA</div> <p style="margin: 5px 0;">↓</p> <div style="display: flex; align-items: center; gap: 20px;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">6</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">SEND</div> </div> <p style="margin: 5px 0;">↓</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">DATA==&gt;                      FUNCTION==&gt; 6    CCU LVL3==&gt; Y</div> <p style="margin: 5px 0;">↓</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">SEND</div> <p style="margin: 5px 0;">↓</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">DATA==&gt; 2                      FUNCTION==&gt; 1    CCU LVL3==&gt; Y</div> <p style="margin: 5px 0;">↓</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">SEND</div> <p style="margin: 5px 0;">↓</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">SELN AREA</div> <p style="margin: 5px 0;">↓</p> <div style="display: flex; align-items: center; gap: 20px;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">8</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">SEND</div> </div> </div>	<p style="margin-top: 100px;">To select the data exchange function.</p> <p style="margin-top: 100px;">To end the trace. There is no need to enter values in DATA==&gt;</p> <p style="margin-top: 100px;">To set off the AARR bit . See Figure 6-11.</p> <p style="margin-top: 100px;">To position the cursor at the selection area.</p> <p style="margin-top: 100px;">To cancel the Address Compare function.</p>

Figure 6-13. NCP - Address Trace (Part 3 of 3)

## Address Trace Table

To display the address trace table, do the following:

1.  to display secondary menu function.
2.   to select Display Long function.
3. Enter S7D8 (address of pointer to HWE).
4.  to transmit the address.
5. At S7D8, on the screen, 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 that address preceded by S.
7.  to transmit the address.
8. 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 Figures 6-14 and 6-15.

0(0) <b>ATBPRMS</b> 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) <b>ATBFRST</b> Address of first entry in trace table (CXTATPF)	
ATBPRCT* No. of variables in each trace entry	
20(14) <b>ATBPREV</b> Address of last entry used in trace table (CXTAPL)	
ATBCTL* Address trace control byte	
24(18) <b>ATBLAST</b> Address of last entry in trace table	
ATBLVLS* Program level to be traced	
28(1C) <b>ATBCNTR</b> Number of interrupts processed	30(1E) <b>ATBIN</b> Prototype input instruction
32(20) <b>ATBBR</b> Prototype branch instruction	34(22) <b>ATBENTSZ</b> Trace entry size
* Indicates that a byte expansion follows	

Figure 6-14. Address Trace Block



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

Figure 6-15. Byte Expansion of Address Trace Block

# NCP - 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.

KEY	PROCEDURE	COMMENTS
	<p>In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter.</p> <pre> graph TD     A[CCU FNCTN] --&gt; B[6]     B --&gt; C[DATA==&gt; xx06 FUNCTION==&gt; 1 CCU LVL3==&gt; Y]     C --&gt; D[SEND]     D --&gt; E[DATA==&gt; 0006 FUNCTION==&gt; 1 CCU LVL3==&gt; Y]     E --&gt; F[SEND]     </pre>	<p>To select the data exchange function.</p> <p>xx = channel adapter identification (within the range X'01' to X'3F'). Only the following bits are valid:</p> <pre> ... ..1 CA1 ... ..1. CA2 ... ..1.. CA3 ... ..1... CA4 ... ..1.... CA5 ... ..1..... CA6     </pre> <p>MSA field e indicates which of the channel adapter(s) has the trace function active. Field e positions indicate the channel adapters. For example, X71:000024 indicates channel adapters 3 and 6.</p> <p>To deactivate the trace.</p>

Figure 6-16. NCP - Channel Adapter Trace

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

- The Display Long function (page 5-35), to display the CCU storage.
- Take an NCP dump. Refer to *ACF/SSP Diagnosis Reference*, LY30-3060. The address and the format of the trace table is given in *ACF/NCP Reference Summary and Data Areas (for the IBM 3725)*, SY30-3064.

## 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 macro.

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 Display of CCB function may be used to analyze the operation of a line.

Line test subroutines are fully described in Figure 6-18. 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 e and k, 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' (Figure 6-18).*

KEY	PROCEDURE	COMMENTS
	<p>To test an EP line in PEP environment, first switch control to EP mode. Refer "Switching Control to EP Mode" at the beginning of this chapter.</p> <pre> graph TD     Start[CCU FNCTN] --&gt; Step6[6]     Step6 --&gt; Send1[SEND]     Send1 --&gt; Dec1{?}     Dec1 -- MSLA --&gt; Data1[DATA==&gt; xx00 FUNCTION==&gt; 2 CCU LVL3==&gt; Y]     Data1 --&gt; Send2[SEND]     Dec1 -- Not MSLA --&gt; Data2[DATA==&gt; xxyy FUNCTION==&gt; 5 CCU LVL3==&gt; Y]     Data2 --&gt; Send3[SEND]     Send3 --&gt; Dec2{?}     Dec2 -- Another line test or more data --&gt; Data3[DATA==&gt; 8Fyy FUNCTION==&gt; 5 CCU LVL3==&gt; Y]     Data3 --&gt; Send4[SEND]     Dec2 -- No other line test and no more data to enter --&gt; Data4[DATA==&gt; 80yy FUNCTION==&gt; 5 CCU LVL3==&gt; Y]     Data4 --&gt; Send5[SEND]     Note[Only if the line is initially enabled by the host access method.]   </pre>	<p>To select the data exchange function.</p> <p>xx = channel adapter number</p> <p>For MSLA error code, see Figure 6-32 at the end of this chapter.</p> <p>xx = subroutine code yy = data</p> <p>xx and yy are described in Figure 6-18.</p> <p>To end the test.</p> <p>yy = subchannel address</p> <p>yy = subchannel address</p>

Figure 6-17. EP - Line Test

To execute any of the subroutines described in Figure 6-18, enter:

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

xx and yy values are given in the second and third column of the following figure.

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 dial digit	To load the data character into buffer 1, 2, or 3, or the dial 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 k: 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 k.  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 k: 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 k: 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 e displays X71:00FF00 and field k displays X72:000002. The old (vv) and new (ww) characters are displayed in MSA field k: 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 e and k. If the position is equal to or greater than X'10', the last 4 bytes of the buffer are displayed.
Display Receive Compare Character comp. char. 1 comp. char. 2 comp. char. 3	14 15 16	N/A N/A N/A	To display the receive compare character 1, 2, or 3 in the two middle positions of MSA field k: Field k = X71:000000 Field e = X72:00..00
Display Swap Character buffer 1 buffer 2 buffer 3	18 19 1A	N/A N/A N/A	To display buffer 1, 2, or 3 swap character in the two middle positions of MSA field k: Field k = X71:000000 Field e = X72:00..00

Figure 6-18. Subroutines Used When Performing a Line Test (Part 1 of 2)

Subroutine Name	xx	yy	Description
Transmit Buffer buffer 1	20	subchannel address	To transmit buffer 1, 2, or 3, until X'99' is recognized. The line is then set to receive mode.
buffer 2	21	subchannel address	
buffer 3	22	subchannel address	
buffers 1 to 3	23	subchannel 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	subchannel address	
buffer 2	41	subchannel address	
buffer 3	42	subchannel address	
buffers 1, 2, and 3	43	subchannel address	
Enable Line	80	subchannel address	To enable the line (DTR is raised on LIC interface).
Modify CCB Field			This subroutine is performed in two steps: 1. Specify the subchannel address. 2. Enter the new data. The old (vv) and new (ww) data is displayed in MSA field k: X71:000000 X71:00vvww
CCBOPT	82	s/chan addr - new data	
CCBOPT2	83	s/chan addr - new data	
CCBSTMOD	84	s/chan addr - new data	
CCBFLGB1 (BSC) or CCBSSC (S/S)	85	s/chan addr - new data	
CCBFLGB2 (BSC)	86	s/chan addr - flag byte	
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, TAIL, TTY1, and TTY2 devices. Other terminal types use no-translate mode.
Display Last Message in MSA Fields e and k	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 e and k contain all zeroes.
End Test	8F	subchannel address	To end all testing and to disable the line.

Figure 6-18. Subroutines Used When Performing a Line Test (Part 2 of 2)

## Level 2 and Level 3 Display Codes

Level 2 codes provide information about the line being tested (Figure 6-19), and level 3 codes about the selected subroutine (Figures 6-20 and 6-21).

Level 2 display codes are not displayed automatically in MSA fields e and k. To display them while performing subroutine 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 e is 2 (X71:2.....).

In Figure 6-19, lowercase letters in fields e and k have the following meaning:

xx = channel adapter number  
 yy = subchannel address  
 zz = first six bits of the SES  
 vv = SCF  
 ww = PCF

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

Figure 6-19. Level 2 Display Codes

MSA Field e	MSA Field k	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 documented in Figure 6-19.

Figure 6-20. Level 3 Display Codes

MSA Field e	MSA Field k	Description
X71:x0FFFF	X72:000000	Invalid subroutine.
X71:x0FFFF	X72:000001	Invalid buffer index.
X71:x0FFFF	X72:000002	Invalid subchannel address (subchannel address is not associated with a line that was 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 documented in Figure 6-19.

Figure 6-21. Level 3 Error Codes



# 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 e and k (Figure 6-23). These fields also display information on the function progression (see Figure 6-32 at the end of this chapter).

KEY	PROCEDURE	COMMENTS
	<p>In PEP environment to display CCB areas, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter.</p> <pre> graph TD     Start[CCU FNCTN] --&gt; Box6[6]     Box6 --&gt; Send1[SEND]     Send1 --&gt; Dec1{?}     Dec1 -- MSLA --&gt; Data1[DATA==&gt; xx00 FUNCTION==&gt; 2 CCU LVL3==&gt; Y]     Data1 --&gt; Send2[SEND]     Dec1 -- Not MSLA --&gt; Data2[DATA==&gt; xxyy FUNCTION==&gt; 6 CCU LVL3==&gt; Y]     Data2 --&gt; Send3[SEND]     Send3 --&gt; Dec2{?}     Dec2 -- To display another or the same area --&gt; Dec1     Dec2 -- If no more CCB areas to display, no other action is required --&gt; End[ ]     </pre>	<p>To select the data exchange function.</p> <p>xx = channel adapter number</p> <p>For MSLA error codes, see Figure 6-32 at the end of this chapter.</p> <p>xx = CCB area to be displayed (see Figure 6-23)</p> <p>yy = subchannel address</p>

Figure 6-22. EP/PEP - Display of Character Control Block (CCB)

Figure 6-23 (Part 1) lists all the operands that you have to enter to display CCB areas in MSA fields e and k. The asterisk (\*) shows the bytes that are explained in Figure 6-23 (Part 2).

For the complete description of CCB areas, refer to *Program Reference Handbook*, GY30-3012.

<b>DATA = =&gt;</b>			
0 0	CCBDATA		DATA BUFFER 0
0 4	CCBDATA1		DATA BUFFER 1
0 8	CCBSVLNK		CCBSVLNK
0 C	CCBSUBCH	CCBCFLG	CCBSTAT* CCBSENSE*
1 0	CCBCMD*	CCBLRI	CCBCSTAT* CCBSENS*
1 4	CCBNQCNT	CCBSVSTC	CCBCLOCK CCBTMADR
1 8	CCBACADR		CCBOPT* CCBOPT2*
1 C	CCBSTMOD*	CCBLCD	////////////////////////////////////

**START/STOP EXTENSION**

1 C	////////////////////////////////////	CCBLRC	CCBSSC
2 0	CCBSSCX	CCBPEPFL	CCBLGT
2 4	CCBL2 Address of next level 2 service		
2 8	CCBCHADR		

**BSC EXTENSION**

1 C	////////////////////////////////////	CCBTBUF	
2 0	Reserved	CCBPEPFL	CCBBUF
2 4	CCBL2 Address of next level 2 service		
2 8	CCBCHADR		CCBFLGB1 CCBFLGB2
2 C	CCBBCNT	CCBTCNT	CCBCAB CCBBUFSZ
3 0	CCBDLCOM		CCBIS CCBCBFSZ
	CCBASCR (ALC)		

Figure 6-23. CCB Areas and Byte Expansion (Part 1 of 2)

Figure 6-23 (Part 2) gives the byte expansion of the most used CCB areas.

CCBSTAT CCBCSTAT	X'00' X'01' X'02' X'04' X'08' X'10' X'20' X'40' X'80'	Reset status byte Set unit exception (UE) Set unit check (UC) Set device end (DE) Set Channel end (CE) Set CU busy Set CU end Set status modifier Set attention
CCBSENSE CCBCSENS	X'00' X'01' X'02' X'04' X'08' X'10' X'20' X'40' X'80'	Reset sense BYTE Timeout (TO) Set lost data Set overrun Set data check Set equipment check Set bus out parity check Set intervention required Set command reject
CCBCMD	0000 1... 0001 0... 0010 0... 0100 1... 0111 1... 1000 0... 1001 1... 1111 1100 .... .1..	Write (S370/ X'01') Read (S370/ X'02') Sense (S370/ X'04') Poll (S370/ X'09') Disable (S370/ X'2F') Enable (S370/ X'27') Set mode (S370/ X'23') Line is used by Line Test function Command end flag
CCBOPT	1... .... .... 1... .... ..1.	Auto Call instructions Switched line instructions Duplex line
CCBOPT2	.1.. .... ...1 ....	Trace active bit 2702/2703
CCBSTMOD	..1. .... ...1 .... .... 1... .... ..xx	DTR (line enabled) Binary Synch clock External clocking Oscillator select bits (00-01-10-11)

Figure 6-23. CCB Areas and Byte Expansion (Part 2 of 2)

## 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 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 3725 using dump utility or dynamic dump utility programs.

The trace table in the storage dump is as follows:

- The 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.
- 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.

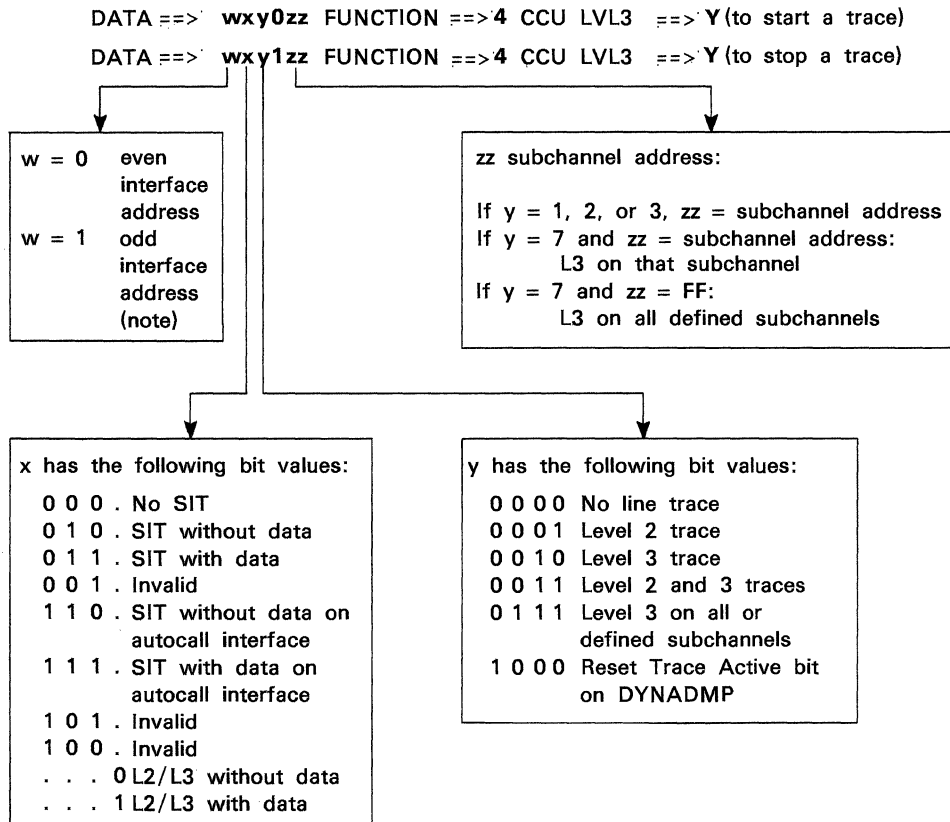
### Notes:

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 Program Reference Handbook, GY30-3012.*

KEY	<b>PROCEDURE</b> In PEP environment with a line in EP mode, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter	<b>COMMENTS</b>
	<pre>           graph TD             Start[CCU FNCTN] --&gt; Step6[6]             Step6 --&gt; Send1[SEND]             Step6 --&gt; Decision{?}             Decision -- MSLA --&gt; Data1[DATA==&gt; xx00 FUNCTION==&gt; 2 CCU LVL3==&gt; Y]             Data1 --&gt; Send2[SEND]             Decision -- Not MSLA --&gt; Send2             Send2 --&gt; Data2[DATA==&gt; wxy0zz FUNCTION==&gt; 4 CCU LVL3==&gt; Y]             Data2 --&gt; Send3[SEND]             Send3 --&gt; Data3[DATA==&gt; wxy1zz FUNCTION==&gt; 4 CCU LVL3==&gt; Y]             Data3 --&gt; Send4[SEND]           </pre>	<p>To select the data exchange function.</p> <p>xx = channel adapter number (01 to 06)            For MSLA error codes, see Figure 6-32 at the end of this chapter.</p> <p>To start a trace. Values w, x, y, and zz are given on the next page.</p> <p>To stop a trace. Values w, x, y, and zz are given on the next page.</p>

Figure 6-24. EP/PEP - Line Trace and Scanner Interface Trace (SIT)

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



**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.

MSA Field e	MSA Field k	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.

Figure 6-25. Display Codes for Line Trace and Scanner Interface Trace

## EP/PEP - Present Status on Channel

Use this function to release dynamically a locked subchannel without reinitializing the 3725 or the hosts. The subchannel may have not been released because of an error condition. The ending status channel end (CE), device end (DE), and unit check (UC) is presented to the host for the selected subchannel.

### Notes:

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

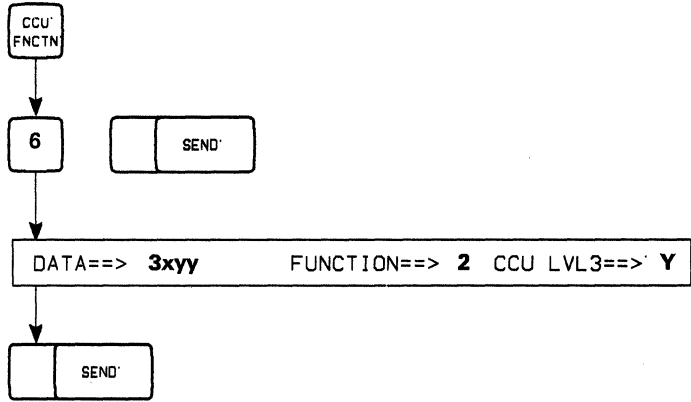
KEY	PROCEDURE	COMMENTS
	<p>In PEP environment with a line in EP mode, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter.</p> 	<p>To select the data exchange function.</p> <p>x = channel adapter number yy = subchannel address</p>

Figure 6-26. EP/PEP - Present Status on Channel

MSA Field e	MSA Field k	Description
X71:000000	X72:000300	Ending status CE, DE, UC presented to the host.
X71:00FFFF	X72:000301	Rejected. Subchannel not in low/high range.

Figure 6-27. MSA Fields e and k Values for Present Status on Channel

## EP - Display of Storage

Use this function to display two halfwords of storage in MSA fields e and k (Figure 6-29).

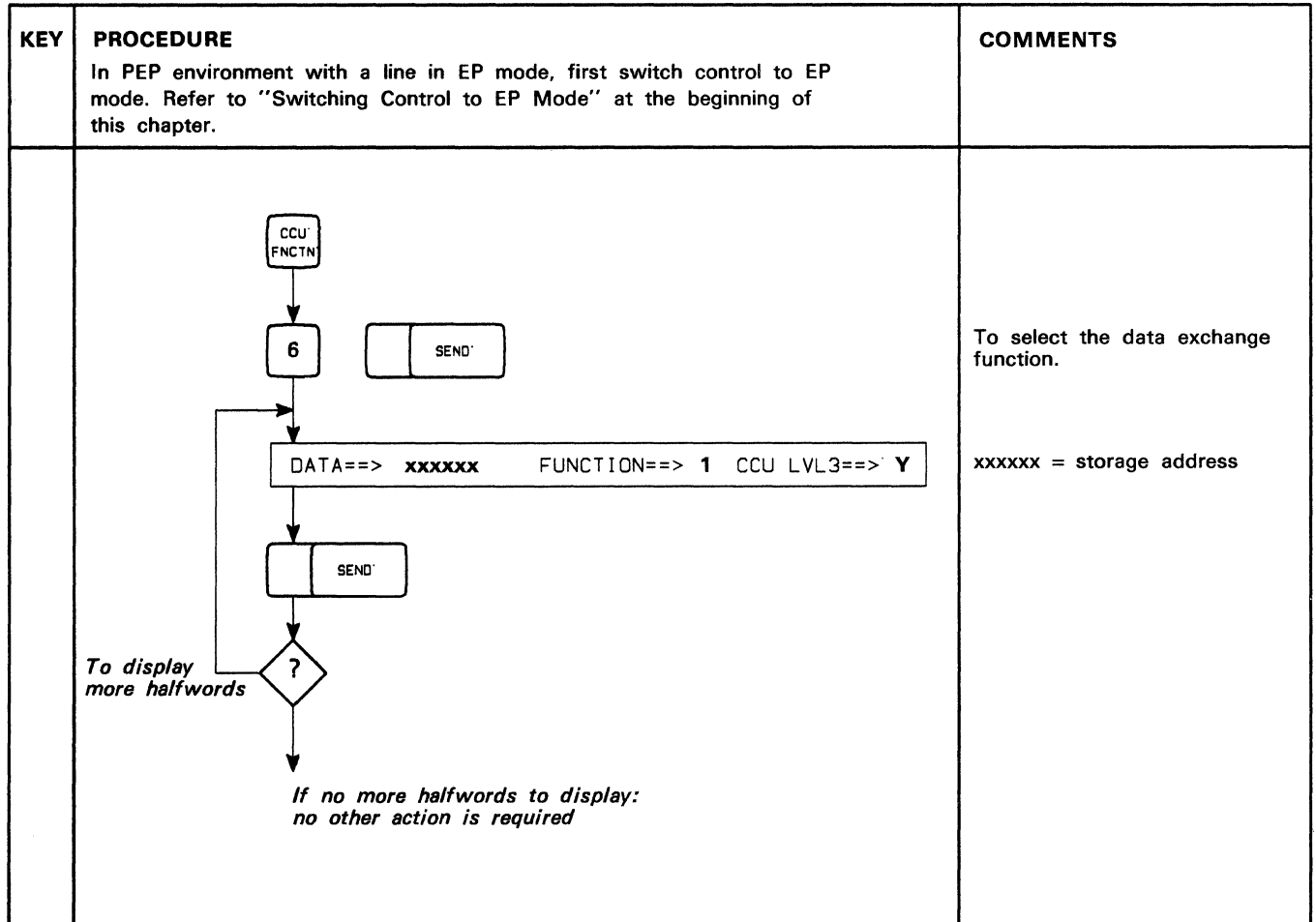


Figure 6-28. EP - Display of Storage

MSA Field e	MSA Field k	Description
X71:000000	X72:000300	Invalid address or function
X71:00xxxx	X72:00yyyy	xxxx = first storage halfword yyyy = second storage halfword

Figure 6-29. MSA Field e and k Values for Display of Storage



## EP/PEP - Channel Adapter Reset (MSLA)

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 subchannels and lines.

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

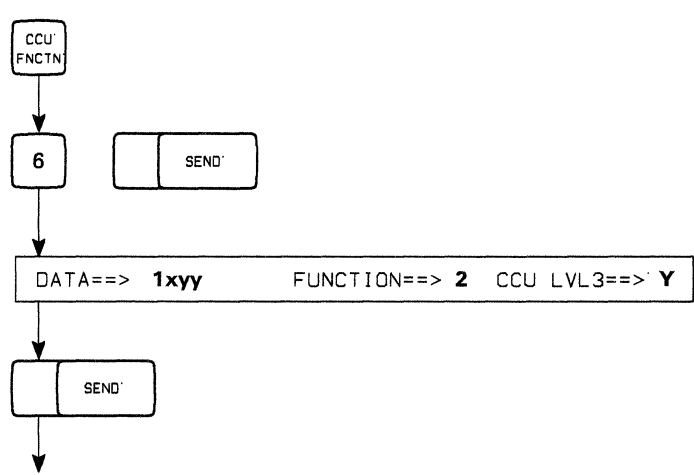
KEY	PROCEDURE	COMMENTS
	<p>In PEP environment with a line in EP mode, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter.</p>  <p>When the channel adapter is reset, the MSA displays the following:</p> <p>field e: X71:000000  field k: X72:000101 or X72:000102</p> <p>For other codes, see Figure 6-32.</p>	<p>To select the data exchange function.</p> <p>x = channel adapter number</p> <p>yy = 00 no status presentation</p> <p>yy = FF CE/DE/UC presented on all associated subchannels</p>

Figure 6-30. EP/PEP - Channel Adapter Reset (MSLA)

## EP - Subchannel Switching (MSLA)

Use this function to switch subchannel/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 subchannel via host-issued commands.

Criteria regulating subchannel/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 subchannel switching function does not change the physical state of the line; an enabled line, for example, will remain enabled.

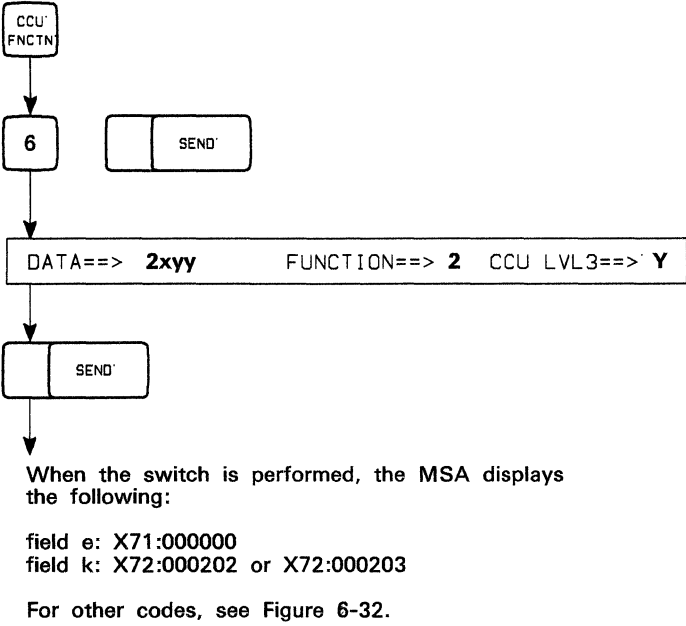
KEY	PROCEDURE	COMMENTS
	<p>In PEP environment with a line in EP mode, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter.</p>  <p>When the switch is performed, the MSA displays the following:</p> <p>field e: X71:000000 field k: X72:000202 or X72:000203</p> <p>For other codes, see Figure 6-32.</p>	<p>To select the data exchange function.</p> <p>x = channel adapter number yy = subchannel address</p>

Figure 6-31. EP - Subchannel Switching (MSLA)

MSA Field e	MSA Field k	Description
X71:00FFFF	X72:00FFFF	Invalid subroutine.
X71:00FFFF	X72:00CACA	Invalid channel adapter.
X71:00FFFF	X72:000201	Subchannel 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	X72:000001	Channel adapter 1 selected.
X71:000000	X72:000002	Channel adapter 2 selected.
X71:000000	X72:000101	Channel adapter 1 reset.
X71:000000	X72:000102	Channel adapter 2 reset.
X71:000000	X72:000201	Subchannel is already using the line.
X71:000000	X72:000202	Successful switch.
X71:000000	X72:000203	Switch is performed - ENABLE or PREPARE aborted.

Figure 6-32. MSLA Function Error Codes

## Chapter 7. Control Program Procedures

A control program procedure is a sequence of instructions that call and execute one or several NCP or EP functions to perform a specific task. For example, to install a ZAP in NCP, the NCP Dynamic Store function is called. NCP and EP functions are described in Chapter 6 "How to Execute NCP and EP Functions."

To create and run the control program procedures, you have at your disposal a series of tools, referred to as 3725 procedure tools.

Control program procedures are:

1. Precataloged control program procedures. They are already cataloged in the 3725 diskette and are available at any time to perform an appropriate task. The name of such 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. Precataloged procedures are described later in this chapter under "Precataloged Control Program Procedures."
2. Your own control program procedures that you create and catalog using the 3725 procedure tools.

Control program procedures may be printed on a host printer. Refer to "File Transfer" and "File Printing" in Chapter 8.

This chapter:

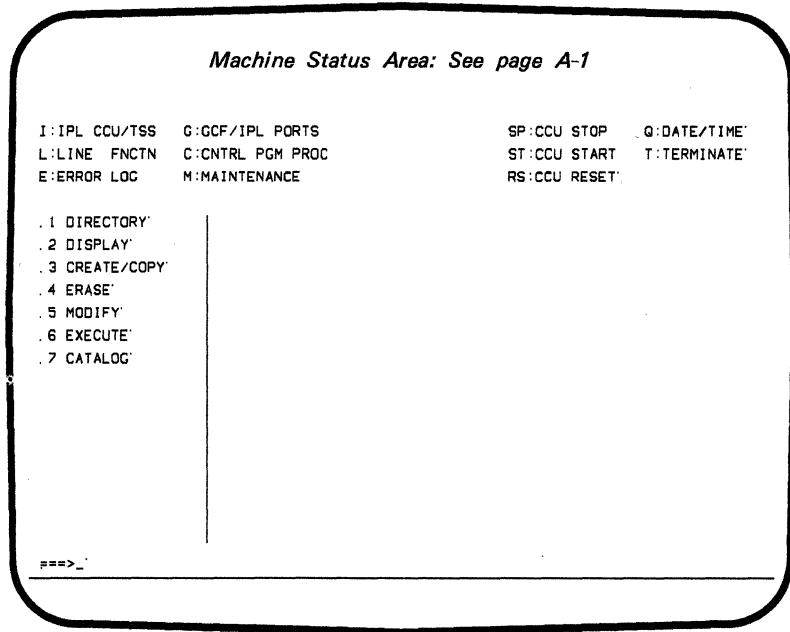
- Describes the 3725 procedure tools that you use to run the control program procedures.
- Explains each step of the precataloged procedures that you can execute and copy.
- Shows you how to create some control program procedures.

# 3725 Procedure Tools

**Selection:**  To position the cursor

To display the control program procedure tools

The following 3725 procedure tools are displayed in the secondary menu area:



The 3725 procedure tools are:

- **DIRECTORY** - To list all cataloged and precataloged procedures.
- **DISPLAY** - To display a specific procedure.
- **CREATE/COPY** - To create or copy a procedure.
- **ERASE** - To erase a procedure that *you* created and cataloged.
- **MODIFY** - To modify a procedure that *you* created and cataloged.
- **EXECUTE** - To execute any cataloged procedure.
- **CATALOG** - To catalog a procedure that you created, copied or modified.

A procedure is created in *3725 storage* then it is cataloged into a *procedure file* on the diskette.

To display, modify, or execute a procedure, the procedure is moved from the procedure file into *3725 storage* unless a procedure with the same name is already in storage. In this case, the following two PF keys are displayed, so you can select the appropriate procedure:

PF1: TO USE PROC FROM FILE

PF3: TO USE PROC FROM STORE

Both versions of the same procedure may be at different levels.

To exit from a 3725 procedure tool:

- Select another 3725 procedure tool displayed in the secondary menu, or
- Select the Terminate function (page 5-14). It will cancel *all* 3725 procedure tools and erase the procedure that may be in 3725 storage.

## Directory

Use **DIRECTORY** to display the directory, that is, the list of all the cataloged procedures. The directory is updated automatically when you cataloged a procedure.

**Selection:**   To position the cursor

To display the control program procedure tools

To select **DIRECTORY**

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

	NAME	TITLE	DATE (06/21/82)
. 1 DIRECTORY			
. 2 DISPLAY			
. 3 CREATE/COPY			
. 4 ERASE	.01	CP01	SDLC TEST FRAMES (NCP) 05/10/82 <sup>A</sup>
. 5 MODIFY	.02	CP02	3270 BSC GENERAL POLL 05/20/82
. 6 EXECUTE	.03	CP03	2740 START/STOP POLL 05/30/82
. 7 CATALOG	.04	CP04	START ADDRESS TRACE (NCP) 06/05/82
	.05	CP05	STOP ADDRESS TRACE (NCP) 06/20/82
	.06		
	.07		
	.08		
	.09		
	.10		

PF5: FORWARD

===>

<sup>A</sup> the first two digits 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 3725 when you cataloged the procedure.

The directory is automatically updated when you catalog a procedure.

### PF Keys

PF4: BACKWARD - To list the preceding available procedures.

PF5: FORWARD - To list the next available procedures.

## Display

Use DISPLAY to display a specific procedure.

- Selection:  To position the cursor
- To display the control program procedure tools
- To select DISPLAY

You are first requested to enter the name of the procedure that you want to display. The following screen is then displayed:

```
Machine Status Area: See page A-1

I:IPL CCU/TSS      G:GCF/IPL PORTS      SP:CCU STOP      Q:DATE/TIME
L:LINE FNCTN      C:CNTRL PGM PROC      ST:CCU START     T:TERMINATE
E:ERROR LOG       M:MAINTENANCE                  RS:CCU RESET

.1 DIRECTORY          CP01 SDLC TEST FRAMES (NCP)  05/10/82  A
.2 DISPLAY
.3 CREATE/COPY
.4 ERASE              001 SETI  D= 00000C F= 07 I= Y      B
.5 MODIFY             002 GOTO  T= 020 A= 000000 C= & B= 000000
.6 EXECUTE            003 DISP  L= 12 M= TEST FRAMESTO SDLC LINK
.7 CATALOG            004 DISP  L= 15 M= CHANGE FFF TO NCP LINE ADDRESS
                    005 OSET  D= 002FFF F= 02 I= Y
                    006 GOTO  T= 018 A= 000000 C= & B= 000000
                    007 DISP  L= 15 M= CHANGE FF TO SDLC STATION ADDRESS
                    008 OSET  D= 0051FF F= 02 I= Y
                    009 SETI  D= 0051F3 F= 02 I= Y
                    010 SETI  D= 005C03 F= 02 I= Y
                    PF3:QUIT          PF5:FORWARD

====>
```

- A** Displays the NAME and the TITLE of the procedure, and the DATE.
- B** The first 3 characters of each line are the step number. All instructions and operands shown on that screen are described under the Create procedure tool.

You may print the cataloged control program procedures on the host printer. Refer to "File Transfer" in Chapter 8.

## PF Keys

PF1:TO USE PROC FROM FILE - To display the procedure that is already cataloged.

The PF3 key may have two meanings:

PF3:TO USE PROC FROM STORE - To display the procedure that is in the 3725 storage.

PF3:QUIT - To clear the displayed procedure and allow you to display another one.



**PF4:BACKWARD** - To display the previous 10 steps of the selected control program procedure.

**PF5:FORWARD** - To display the next 10 steps of the selected control program procedure.

## Create/Copy

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 47, including the precataloged control program procedures.)

- Selection:**   *To position the cursor*
- To display the control program procedure tools*
- To select CREATE/COPY*

1. You are first requested to enter the name and the title of the procedure.

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

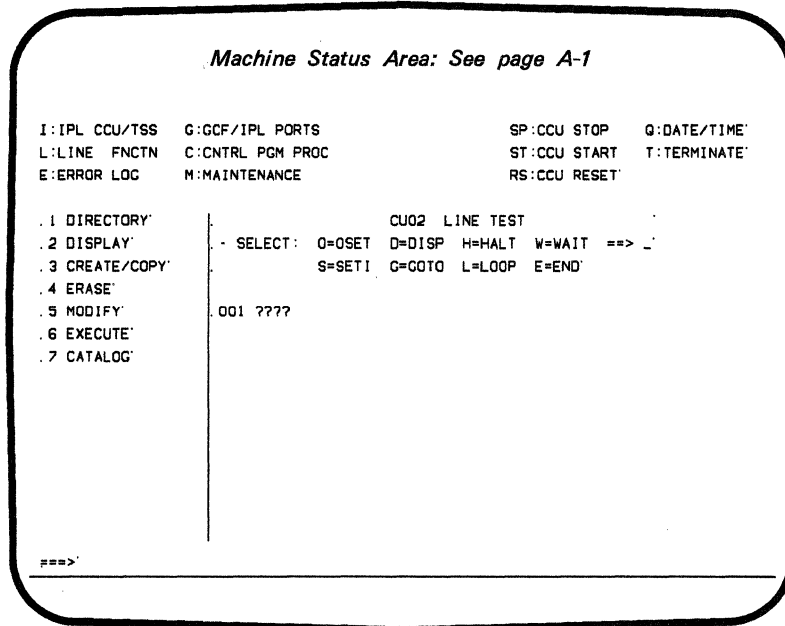
. 1 DIRECTORY	
. 2 DISPLAY	- ENTER NAME OF PROCEDURE TO BE CREATED ==> <b>A</b>
. 3 CREATE/COPY	- ENTER TITLE (UP TO 24 CHAR) ==> <b>B</b>
. 4 ERASE	
. 5 MODIFY	
. 6 EXECUTE	
. 7 CATALOG	

====>

- A** The name is mandatory and must not exceed 4 characters. The first 2 characters must be different from CP. CP is reserved for precataloged procedures.

**B** The title must not exceed 24 characters. The title is not mandatory. It may be used to give any type of information that would help you to identify the contents of the procedure.
2. Once you have entered the name and title, press SEND. The Copy screen is displayed.  
If you do not want to copy, press SEND a second time. Go to step 3.  
If you want to copy an existing procedure under the name that you have just entered:
  - Enter the name of the procedure that you want to copy.
  - Press SEND.
  - Press PF3 (you may modify the procedure before pressing PF3).

- Select CATALOG to catalog the procedure.
- 3. If you did not choose to copy a procedure, the following screen is displayed. Select one of the instructions and press SEND. Enter the first letter of the instruction (for example, O for OSET). Each instruction and its operands are described in the following pages.



- 4. You are requested to enter the appropriate operands.
- 5. When you have entered all operands, press SEND  
If there is no error, select another instruction or press PF1:REPEAT PREVIOUS VALID OPERATOR 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.

Once created, a procedure may be:

- Cataloged:



If you create, erase, modify, execute, or display *another procedure* before you catalog the procedure just created, the latter is lost.

- Executed:



- Displayed:



### Set Immediate Instruction (SETI)

SETI D= xxxxxx F= xx I= x

Use the SETI instruction to call a control program function and provide data. All available control program functions are described in Chapter 6. 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 6 digits, the leftmost digit must not exceed 3.

If you enter no value, the last entered one 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 entered one is taken.

I= Y or I= N

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

N: an Operator Level 3 Interrupt is not requested and the function specified in F= will not be performed. If you specify I= N, press ATTN to recover and re-enter the SETI instruction with operand I= Y.

If you enter no value, the last entered one is taken.

### Operator Set Instruction (OSET)

OSET D= xxxxxx F= xx I= x

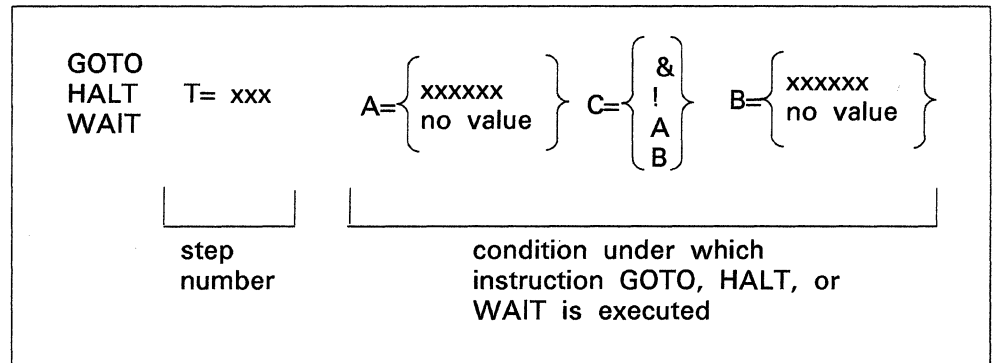
Use the OSET instruction every time you want to be prompted to call a control program function and/or enter data while executing a procedure. This allows you to enter, for example, a subchannel number.

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 of 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}**  
**{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 is displayed in MSA field e (see Appendix A).

**{ & }** & means conditions A and B.

**C={!}** ! means condition A or B.

**{A}** 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}**  
**{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 register is displayed in MSA field k.

## GOTO Instruction

Instruction GOTO 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

When a HALT instruction is encountered, the following screen is displayed:

```
Machine Status Area: See page A-1

I: IPL CCU/TSS      G: GCF/IPL PORTS      SP: CCU STOP      Q: DATE/TIME
L: LINE FNCTN      C: CNTRL PGM PROC     ST: CCU START     T: TERMINATE
E: ERROR LOG       M: MAINTENANCE         RS: CCU RESET

. 1 DIRECTORY      STEP BY STEP      CU02 LINE TEST      01/21/82
. 2 DISPLAY        . ENTER STEP NUMBER OR  ==> _
. 3 CREATE/COPY    PRESS PF1 PF2 PF3 OR SEND (EXECUTE CURRENT STEP: 001)
. 4 ERASE
. 5 MODIFY
. 6 EXECUTE
. 7 CATALOG

PF1: EXECUTE SETI  PF2: STOP EXECUTION  PF3: CHANGE EXEC. MODE
001 HALT T= 002 A= 000005 C= & B= 00000F

==>
```

Instruction HALT 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.

The current step is displayed on the function message line. To resume processing, do one of the following actions:

- Execute the current step, displayed on line 23 (SEND key).
- Go to another step (enter the step number).
- Request an additional SETI instruction (PF1 key). You are then requested to enter the SETI operands.
- Stop the function execution (PF2 key).
- Change the mode of execution (PF3 key). If the execution mode is step-by-step, it switches to continuous mode, and vice versa. Then press SEND or any other displayed PF key.

## WAIT Instruction

Instruction WAIT allows you to wait until the condition is fulfilled, and then to go to step that you specified in operand T=.

To get control of the operator console, press the ATTN key. The following screen is then displayed:

*Machine Status Area: See page A-1*

```
I: IPL CCU/TSS      G: GCF/IPL PORTS      SP: CCU STOP      Q: DATE/TIME
L: LINE FNCTN      C: CNTRL PGM PROC     ST: CCU START     T: TERMINATE
E: ERROR LOG       M: MAINTENANCE          RS: CCU RESET

. 1 DIRECTORY'      STEP BY STEP      CUQ2 LINE TEST      01/21/82
. 2 DISPLAY'        . ENTER STEP NUMBER OR  ==> _
. 3 CREATE/COPY'    . PRESS PF1 PF2 PF3 OR SEND (EXECUTE CURRENT STEP: 003)'
. 4 ERASE'
. 5 MODIFY'
. 6 EXECUTE'
. 7 CATALOG'

PF1: EXECUTE SETI  PF2: STOP EXECUTION'  PF3: CHANGE EXEC. MODE'
003 WAIT  T= 004  A= 00003F  C= &  B= 00004F

==>
```

To resume processing, do one of the following actions:

- Return to wait state (SEND key).
- Go to another step (enter the step number).
- Request an additional SETI instruction (PF1 key). You are then requested to enter the SETI operands.
- Stop the function execution (PF2 key).
- Change the mode of execution (PF3 key). If the execution mode is step-by-step, it switches to continuous mode, and vice versa. Then press SEND or any other displayed PF key.

### LOOP Instruction

```
LOOP T= xxx N= xxx
```

When it reaches this instruction, the procedure loops from this step to that specified in operand T= xxx, for the number of times that you indicated in operand N= xxx minus 1 (because the LOOP instruction is located at the end of the loop block).

The value specified in operand T= 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
```

Instruction DISP allows you to display on the line specified in operand L= xx (12 to 21), the message specified in the M= operand.

These messages are used to inform you of the progression of the procedure or to ask you to perform specific actions.

A message remains on the screen until a new one is displayed on the same line.

To clear a message, you must enter another DISP instruction on the same line (same operand L=) with a number of blank characters (in operand M=) equal to the number of characters of the message that you want to clear. For example, to clear message STOP ADDRESS TRACE displayed on line 15, you must enter:

```
DISP L= 15 M= (followed by 18 blank characters)
```

### Notes:

1. You cannot enter (in operand M=) 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

Instruction END indicates the end of the procedure. It must be the last instruction of the procedure.



## Copy

Use COPY to copy existing procedures in order to catalog them either modified or not. You may copy *any* procedure: procedures that you created and cataloged, or precataloged ones. The only way to modify a precataloged procedure is to copy it under another name and modify the copied version.

---

- Selection:**  *To position the cursor*
- To display the control program procedure tools*
- To select CREATE/COPY*

The first screen of CREATE/COPY is displayed. You are requested to:

- Enter the new name and title of the procedure (that is, the name under which you will catalog the copied procedure).
- Enter the name of the procedure that you want to copy.
- Press PF3 (you may modify the procedure before pressing PF3).
- Select CATALOG.
- Enter the new name of the procedure.

# Erase

Use ERASE to erase a cataloged procedure. The directory and the procedure file are automatically updated.

- Selection:**  To position the cursor
- To display the control program procedure tools
- To select ERASE

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

.1 DIRECTORY	ENTER NAME OF PROCEDURE TO BE ERASED ==> _
.2 DISPLAY	
.3 CREATE/COPY	
.4 ERASE	
.5 MODIFY	
.6 EXECUTE	
.7 CATALOG	

====>

You cannot erase procedures starting with CP. As a general rule, erase *only* the procedures that *you* created and cataloged.

## Modify

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 precataloged procedure (CP), you must first copy it under another name (see COPY).

**Note:** Before selecting MODIFY, you must know the step number of the instruction(s) that you want to modify.

**Selection:**  To position the cursor

To display the control program procedure tools

To select MODIFY

Once you have selected MODIFY from the secondary menu, you are requested to enter the name of the procedure that you want to modify. Then the following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 DIRECTORY	CU02 LINE TEST	A	06/21/82
. 2 DISPLAY	- ENTER STEP NUMBER ==> _		
. 3 CREATE/COPY	- SELECT ACTION: 0=DELETE I=INSERT M=MODIFY ==>	B	
. 4 ERASE			
. 5 MODIFY			
. 6 EXECUTE			
. 7 CATALOG			

PF3:END MODIFY

==>>

- A** Enter the step number of the instruction that you want to delete or modify, or after which you want to insert a new instruction.
- B** Select the action: delete, insert, or modify.

The step you have just selected is displayed. If you selected the action:

- **DELETE:** The selected step is immediately deleted.
- **INSERT:** You have to enter one or more instructions. To insert a step before the first step, enter the step number 0.
- **MODIFY:** You have to modify the displayed instruction or to replace it by a new instruction.

If you insert or delete one or several instructions, the T= operands of the GOTO, HALT, WAIT, and LOOP instructions are automatically updated.

If you enter a step number and press SEND without selecting an action, the step is nevertheless displayed.

Once the procedure is modified:

- Press PF3, then
- Catalog the procedure.

## PF Keys

PF1:TO USE PROC FROM FILE - To modify the procedure that is already cataloged.

The PF3 key may have two meanings:

PF3:TO USE PROC FROM STORE - To modify the procedure that is in the 3725 storage.

PF3:END MODIFY - To indicate end of modifications. Do not forget to catalog the procedure.

## Execute

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.

**Selection:**   *To position the cursor*

*To display the control program procedure tools*

*To select EXECUTE*

You are first requested to enter the procedure name. Then the following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 DIRECTORY	CU02 LINE TEST
. 2 DISPLAY	- ENTER EXECUTION MODE
. 3 CREATE/COPY	S=STEP BY STEP C=CONTINUOUS ==> C
. 4 ERASE	
. 5 MODIFY	
. 6 EXECUTE	
. 7 CATALOG	

==>

The procedure may be executed in two modes:

- 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 both modes, when an OSET, a HALT, or a WAIT instruction is encountered, the procedure stops and you are requested to take an action. These instructions are described under the Create procedure tool.

While a procedure is being executed, the messages specified in the DISP instruction at creation time are displayed on the screen.

**PF Keys**

**PF1:TO USE PROC FROM FILE - To execute the procedure that is already cataloged.**

**PF3:TO USE PROC FROM STORE - To execute the procedure that is in the 3725 storage.**

## Catalog

Use CATALOG to catalog in the procedure file the procedure that you have created or modified in 3725 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.

- Selection:**  *To position the cursor*
- To display the control program procedure tools*
- To select CATALOG*

The following screen is displayed:

*Machine Status Area: See page A-1*

I: IPL CCU/TSS	G: GCF/IPL PORTS	SP: CCU STOP	Q: DATE/TIME
L: LINE/ FNCTN	C: CNTRL PGM PROC	ST: CCU START	T: TERMINATE
E: ERROR LOG	M: MAINTENANCE	RS: CCU RESET	

. 1 DIRECTORY . 2 DISPLAY . 3 CREATE/COPY . 4 ERASE . 5 MODIFY . 6 EXECUTE . 7 CATALOG	ENTER NAME OF PROCEDURE TO BE CATALOGED ==> _
--	---

====>

When the procedure is cataloged, the following message is displayed (x is the name of the procedure):

PROCEDURE x CATALOGED

## Precataloged Control Program Procedures

Precataloged procedures are procedures already cataloged on the controller diskette when you receive your 3725. The names of precataloged procedures always start with CP. You cannot modify or erase them.

Each procedure is documented in this chapter as follows:

- The selection. This tells you exactly what to do to select and execute each procedure.
- Detailed description of each step. This 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 performing a control program procedure, do as follows:

1. Re-IML MOSS (page 4-9).
2. Correct the control program procedure using the 3725 procedure tools described in this chapter, and
3. Execute the procedure another time.

There are five precataloged procedures:

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)

Control program procedures use several NCP or EP subroutines. Most of these subroutines are described in Figures 6-4 and 6-18 in Chapter 6. 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 Figures 6-4 (for NCP) and 6-18 (for EP) in Chapter 6.

Example:      SETI    D= 051F3 F= 2 I= Y  
                 SETI    D=  51F3 F= 2 I= Y

↓  
↓

Load Transmit Buffer subroutine (X'51')

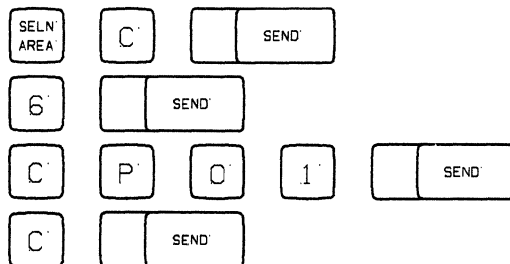
When an error occurs while executing a precataloged control program procedure, the procedure stops and the error code is displayed in field k of the MSA. These codes are documented under the appropriate functions in Chapter 6.



## CP01 - SDLC Test Frames (NCP)

Use this function to transmit SDLC test frames (command F3) from the 3725 to any SDLC link in your network.

### Selection



to display 3725 procedure tools in the secondary menu

to select Execute

name of the procedure

continuous mode; otherwise enter S for step-by-step mode

### Detailed Description

Steps and Instructions	Comments
001 SETI D= 00000C F= 07 I= Y	Set NCP mode.
002 GOTO T= 025 A= 000000 C= & B= 000000	If EP, go to step 25.
003 DISP L= 18 M= **** SDLC TEST-FRAMES TO SDLC LINK ****	Display on line 18 text in operand M.
004 DISP L= 14 M= CHANGE 'FF' TO NCP LINE ADDRESS (HEX)	Display on line 14 text in operand M.
005 OSET D= 0020FF F= 02 I=	Initialize the line.
006 GOTO T= 025 A= 0000FF C= B B= 000003	The line is an EP line, go to step 25.
007 GOTO T= 013 A= 0000FF C= B B= 000005	The line is active, go to step 13.
008 GOTO T= 011 A= 00FF00 C= B B= 000000	Errors, go to step 11.
009 SETI D= 004000 F= I=	Enable the line.
010 GOTO T= 017 A= 00FF00 C= B B= 00FF00	No error detected, go to step 17.
011 DISP L= 14 M= ERROR (SEE LINE TEST FUNCTION)	An error is detected during initialization. The error code is in MSA fields e and k. See Figure 6-5 in Chapter 6.
012 GOTO T= 026 A= C= B=	Go to step 26.
013 DISP L= 14 M= LINE IS ACTIVE. (DEACTIVATE)	Display on line 14 text in operand M.
014 HALT T= 004 A= C= B=	Go to step 4 after the line is deactivated.

Figure 7-1. CP01 Procedure (Part 1 of 2)

Steps and Instructions	Comments
015 DISP L = 14 M = ERROR (SEE LINE TEST FUNCTION)	Same comment as STEP 011.
016 GOTO T = 026 A = C = B =	Go to step 26.
017 DISP L = 14 M = CHANGE 'AA' TO SDLC STATION ADDRESS	Display on line 14 text in operand M.
018 OSET D = 0067AA F = I =	Load addressing character.
019 SETI D = 006210 F = I =	Set SDLC test mode
020 GOTO T = 022 A = 00FFFF C = B B = 000000	No error, go to step 22.
021 GOTO T = 015 A = C = B =	Error, go to step 15.
022 DISP L = 14 M = TO END THE TEST, PRESS SEND	Display on line 14 text in operand M.
023 OSET D = 005000 F = I =	Set end test.
024 GOTO T = 027 A = C = B =	Go to step 27 (end).
025 DISP L = 14 M = INITIATED LINE IS SUPPORTED BY EP	Display on line 14 text in operand M.
026 HALT T = 027 A = C = B =	Halt.
027 END	End of procedure.

Figure 7-1. CP01 Procedure (Part 2 of 2)

## CP02 - 3270 BSC General Poll (NCP/EP)

Use this procedure to transmit a poll sequence from the 3725 to any 3270 display system in EBCDIC with BSC protocol. For a 3270 display system 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 NCP or NCP/PEP environment.

### Selection

<input type="text" value="SELN' AREA'"/>	<input type="text" value="C"/>	<input type="text" value="SEND"/>				<i>to display 3725 procedure tools in the secondary menu</i>
<input type="text" value="6"/>	<input type="text" value="SEND"/>					<i>to select Execute</i>
<input type="text" value="C"/>	<input type="text" value="P"/>	<input type="text" value="O"/>	<input type="text" value="2"/>	<input type="text" value="SEND"/>		<i>name of the procedure</i>
<input type="text" value="C"/>	<input type="text" value="SEND"/>					<i>continuous mode; otherwise enter S for step-by-step mode</i>

### Detailed Description

Steps and Instructions	Comments
001 DISP L= 19 M= **** GENERAL POLL TO 3270 (BSC) ****	Display on line 19 text in operand M.
002 SETI D= 00000C F= 07 I= Y	Set NCP mode.
003 GOTO T= 030 A= 000000 C= & B= 000000	If EP, go to STEP 31.
004 DISP L= 12 M= CHANGE 'FF' TO NCP LINE ADDRESS (HEX)	Display on line 12 text in operand M.
005 OSET D= 0020FF F= 02 I= Y	Initialize the line.
006 GOTO T= 030 A= 0000FF C= B B= 000003	PEP line, go to step 30.
007 GOTO T= 011 A= 0000FF C= B B= 000005	Line is active, go to step 11.
008 GOTO T= 013 A= 00FF00 C= B B= 00FF00	Line is available, go to step 13.
009 DISP L= 12 M= ERROR (SEE LINE TEST FUNCTION)	An error is detected during initialization. The error code is in MSA fields e and k. See Figure 6-5 in Chapter 6.
010 GOTO T= 024 A= C= B=	Go to step 24.
011 DISP L= 12 M= LINE IS ACTIVE IN NCP. (DEACTIVATE)	Display on line 12 text in operand M.
012 GOTO T= 024 A= C= B=	Go to step 24.
013 DISP L= 12 M= CHANGE 'AA' TO CU-POLL ADDRESS (TWICE)	Display on line 12 text in operand M.
014 OSET D= 0066AA F= I=	Load polling character.
015 OSET D= 0066AA F= I=	Load polling character.
016 SETI D= 00667F F= I=	Load all-device poll address.
017 SETI D= 00667F F= I=	Load all-device poll address.
018 SETI D= 00662D F= I=	Load ENQ character.
019 SETI D= 004000 F= I=	Enable the line.
020 SETI D= 004A11 F= I=	Continuous polling.

Figure 7-2. CP02 Procedure (Part 1 of 2)

Steps and Instructions	Comments
021 GOTO T = 023 A = 0000FF C = B B = 000000	Go to step 23.
022 GOTO T = 009 A = C = B =	Go to step 9.
023 DISP L = 12 M = -----LINE TEST IS RUNNING-----	Display on line 12 text in operand M.
024 DISP L = 13 M = TO END THE TEST, PRESS SEND	Display on line 13 text in operand M.
025 OSET D = 005000 F = I =	End the line test.
026 GOTO T = 046 A = C = B =	Go to step 46.
027 DISP L = 12 M = ERROR (SEE LINE TEST FUNCTION)	An error is detected. The error code is in MSA fields e and k. See Figure 6-5 (NCP) or Figures 6-20 and 6-21 (EP).
028 OSET D = 008DAA F = I =	Display last message.
029 GOTO T = 043 A = C = B =	Go to step 43 (end).
030 SETI D = 00000E F = 07 I =	Set EP mode.
031 DISP L = 13 M = CHANGE 'AA' TO CU-POLL ADDRESS (TWICE)	Display on line 13 text in operand M.
032 SETI D = 000037 F = 05 I =	Load EOT character.
033 SETI D = 0000FF F = I =	Load PAD.
034 SETI D = 000032 F = I =	Load SYN.
035 SETI D = 000032 F = I =	Load SYN.
036 OSET D = 0000AA F = 05 I = Y	Load poll address.
037 OSET D = 0000AA F = 05 I = Y	Load poll address.
038 SETI D = 00007F F = I =	Load all-device poll.
039 SETI D = 00007F F = I =	Load all-device poll.
040 SETI D = 00002D F = I =	Load ENQ character.
041 SETI D = 000099 F = I =	Load end-of-buffer.
042 SETI D = 000110 F = I =	Load ACK buffer 1.
043 SETI D = 000161 F = I =	Load ACK.
044 SETI D = 000199 F = I =	Load end buffer 1.
045 SETI D = 000437 F = I =	Load compare character EOT.
046 SETI D = 000903 F = I =	Load swap character ETX.
047 DISP L = 13 M = CHANGE 'AA' TO SUBCHANNEL ADDRESS	Display on line 13 text in operand M.
048 OSET D = 0080AA F = I =	Enable line.
049 OSET D = 0020AA F = I = Y	Transmit buffer.
050 GOTO T = 027 A = 200000 C = A B = 200000	EP errors, go to step 27.
051 DISP L = 12 M = TO END THE TEST	Display on line 12 text in operand M.
052 OSET D = 008FAA F = I =	End test.
053 GOTO T = 027 A = 00FFFF C = A B = 00FFFF	Error, go to step 27.
054 END	End of procedure.

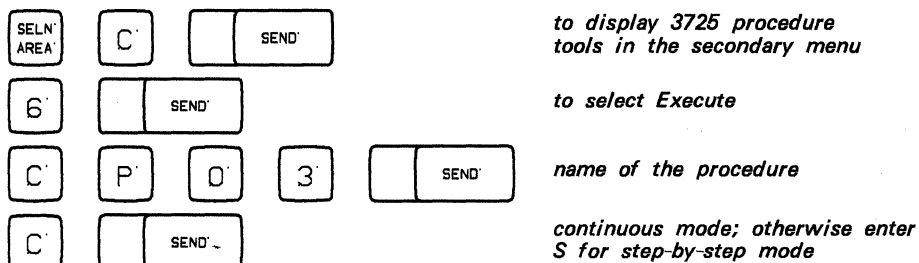
Figure 7-2. CP02 Procedure (Part 2 of 2)

## CP03 - 2740 Start/Stop Poll (NCP/EP)

Use this procedure to transmit a poll sequence from the 3725 to any 2740 or other Start/Stop terminal in a network working with the same protocol.

CP03 runs in EP environment as well as in NCP or NCP/PEP environment;

### Selection



Steps and Instructions	Comments
001 DISP L = 19 M = **** S/S POLL TO 2740 WITH SCTL ****	Display on line 19 text in operand M.
002 SETI D = 00000C F = 07 I = Y	Set control to NCP mode.
003 GOTO T = 027 A = 000000 C = & B = 000000	If EP, go to step 27.
004 DISP L = 12 M = CHANGE 'FF' TO NCP LINE ADDRESS (HEX)	Display on line 12 text in operand M.
005 OSET D = 0020FF F = 02 I = Y	Initialize the line.
006 GOTO T = 025 A = 0000FF C = B B = 000003	PEP line, go to step 25.
007 GOTO T = 011 A = 0000FF C = B B = 000005	Go to step 11.
008 GOTO T = 013 A = 00FF00 C = B B = 00FF00	Line is available, go to step 13.
009 DISP L = 12 M = ERROR (SEE LINE TEST FUNCTION)	An error is detected during initialization. The error code is in MSA fields e and k. See Figure 6-5 in Chapter 6.
010 GOTO T = 022 A = C = B =	Go to step 24.
011 DISP L = 12 M = LINE IS ACTIVE IN NCP. DEACTIVATE	Display on line 12 text in operand M.
012 GOTO T = 022 A = C = B =	Go to step 22.

Figure 7-3. CP03 Procedure (Part 1 of 2)

Steps and Instructions	Comments
013 DISP L= 12 M= CHANGE 'AA' TO 2740 STATION ADDRESS	Display on line 12 text in operand M.
014 OSET D= 0066AA F= I=	Load the station address.
015 SETI D= 006640 F= I=	
016 SETI D= 004000 F= I=	Enable the line.
017 GOTO T= 016 A= 0000FF C= B B= 000023	Error, go to step 16.
018 SETI D= 004A11 F= I=	Receive mode.
019 GOTO T= 021 A= 00004A C= & B= 000000	Go to step 21.
020 GOTO T= 009 A= C= B=	Error, go to step 9.
021 DISP L= 12 M= -----LINE TEST IS RUNNING-----	Display on line 12 text in operand M.
022 DISP L= 13 M= TO END THE TEST, PRESS SEND	Display on line 13 text in operand M.
023 OSET D= 005000 F= I=	End test.
024 GOTO T= 038 A= C= B=	Go to step 38.
025 SETI D= 00000E F= 07 I=	
026 SETI D= 008CFF F= I=	
027 SETI D= 00001F F= 05 I=	
028 DISP L= 13 M= CHANGE 'AA' TO 2740 ADDRESS (PDF-CODE)	Display on line 13 text in operand M.
029 OSET D= 0000AA F= I=	Load the station address.
030 SETI D= 000001 F= I=	Load EOA character.
031 SETI D= 000099 F= I=	Load buffer-end.
032 SETI D= 00047C F= I=	
033 DISP L= 13 M= CHANGE 'AA' TO SUBCHANNEL ADDRESS	Display on line 13 text in operand M.
034 OSET D= 0080AA F= I=	
035 OSET D= 0020AA F= I=	
036 DISP L= 12 M= TO END THE TEST,	Display on line 12 text in operand M.
037 OSET D= 008FAA F= I=	End the line test.
038 END	End the procedure.

Figure 7-3. CP03 Procedure (Part 2 of 2)

## 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, use the procedure given under "Address Trace Table" on page 6-22.

You can use procedure CP04 only in NCP or NCP/PEP environment if TRACE=YES is specified in the BUILD macro.

### Selection

SELN  
AREA C SEND

6 SEND

C P O 4 SEND

C SEND

*to display 3725 procedure  
tools in the secondary menu*

*to select Execute*

*name of the procedure*

*continuous mode; otherwise enter  
S for step-by-step mode*

## Detailed Description

Steps and Instructions	Comments
001 SETI D= 00000C F= 07 I= Y	Set NCP mode.
002 GOTO T= 026 A= 000000 C= & B= 000000	If not NCP, go to step 26.
003 DISP L= 18 M= ***START ADDRESS TRACE ***	Display on line 18 text in operand M.
004 SETI D= 008002 F= 01 I= Y	Set on Allow Additional Register Range Bit (AARR).
005 SETI D= 000001 F= 01 I= Y	Set Address Trace function in NCP.
006 DISP L= 13 M= ENTER DESIRED PGM LEVELS ( 1 - F )	Display on line 13 text in operand M.
007 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
008 GOTO T= 019 A= 0FFFFF C= B B= 03FFFF	Error, go to step 19.
009 DISP L= 13 M= ENTER STORAGE-ADDR. IN 'D' + S IN 'F'	Display on line 13 text in operand M.
010 DISP L= 14 M= OR REG.- ADDR. R0R0 IN 'D' + R IN 'F'	Display on line 14 text in operand M.
011 OSET D= F= I=	Enter in D= either the storage or the register address. (Enter the register address as rOrO: for register X'42' enter 4020.) Enter in F= either S for storage or R for register.
012 GOTO T= 014 A= C= B=	Go to step 14.
013 GOTO T= 016 A= C= B=	Go to step 16.

Figure 7-4. CP04 Procedure (Part 1 of 2)



Steps and Instructions	Comments
014 LOOP T = 013 N = 004	4 loops required to enter data.
015 GOTO T = 021 A = C = B =	All data entered, go to step 21 to continue.
016 DISP L = 13 M = IF MORE VALUES TO ENTER, PRESS [SEND]	Display on line 13 text in operand M.
017 DISP L = 14 M = IF NO MORE VALUES, ENTER STEP = > 21	Display on line 14 text in operand M.
018 HALT T = 009 A = C = B =	
019 DISP L = 13 M = INVALID PGM-LEVEL VALUE ENTERED	Display on line 13 text in operand M.
020 GOTO T = 006 A = C = B =	Go to step 06.
021 DISP L = 13 M =	Clear message on line 13.
022 DISP L = 14 M = *ALL POSSIBLE VARIABLES ARE ENTERED*	Display on line 14 text in operand M.
023 SETI D = F = 06 I =	
024 SETI D = F = 03 I =	Start the trace.
025 GOTO T = 028 A = C = B =	Go to step 28.
026 DISP L = 13 M = * CP04 ISN'T SUPPORTED BY EP *	Display on line 13 text in operand M.
027 HALT T = 031 A = C = B =	
028 DISP L = 13 M = ADDR. TRACE IS NOW ACTIVE, SET 'AC' WITH	Display on line 13 text in operand M.
029 DISP L = 14 M = LEVEL 1 INTERR. OPTION (CCU FUNCT. 1)	Display on line 14 text in operand M.
030 HALT T = 031 A = C = B =	
031 END	End of the procedure.

Figure 7-4. CP04 Procedure (Part 2 of 2)

## CP05 - Stop Address Trace (NCP)

Use this procedure to stop an address trace. You can use procedure CP05 only in NCP or NCP/PEP environment.

You can execute CP05 only if you already executed procedure CP04 - Start Address Table.

### Selection

SELN AREA	C		SEND		
6			SEND		
C	P	0	5		SEND
C			SEND		

*to display 3725 procedure tools in the secondary menu*

*to select Execute*

*name of the procedure*

*continuous mode; otherwise enter S for step-by-step mode*

## Detailed Description

Steps and Instructions	Comments
001 SETI D= 00000C F= 07 I= Y	Set NCP mode.
002 GOTO T= 009 A= 000000 C= & B= 000000	If EP, go to step 9.
003 DISP L= 18 M= **** STOP ADDRESS TRACE ****	Display on line 13 text in operand M.
004 SETI D= F= 06 I= Y	Stop the Address Trace function.
005 SETI D= 000002 F= 01 I= Y	Set off the Allow Additional Register Range bit (AARR)
006 DISP L= 13 M= THE ADDRESS TRACE IS NOW STOPPED...	Display on line 13 text in operand M.
007 DISP L= 14 M= CANCEL AC (CCU FNCTN 8)!	To cancel the address compare, select CCU function, Cancel AC (8). Note: This action is required only if you selected an Address Compare.
008 HALT T= 011 A= C= B=	Go to step 11 (end).
009 DISP L= 13 M= *CP05 ISN'T SUPPORTED BY EP*	Display on line 13 text in operand M.
010 HALT T= 011 A= C= B=	Go to step 11 (end).
011 END	End of the procedure.

Figure 7-5. CP05 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 (NCP)
- CE02 - Text to 3270 - BSC (EP, PEP)
- CE03 - Text to 2740 - S/S (NCP)
- CE04 - Text to 2740 - S/S (EP, PEP)

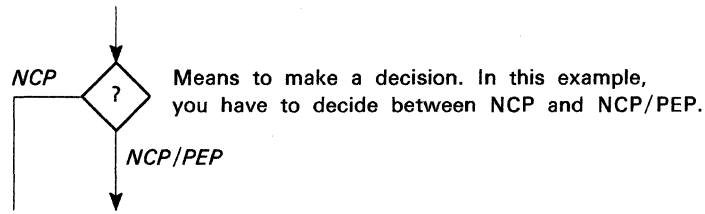
These procedures use several NCP and EP subroutines. Most of these subroutines are described in Figures 6-4 and 6-18 in Chapter 6. The subroutine identifier is the first two characters of the D operand of each SETI and OSET instruction. These identifiers are listed in columns xx of Figures 6-4 (for NCP) and 6-18 (for EP).

Example:

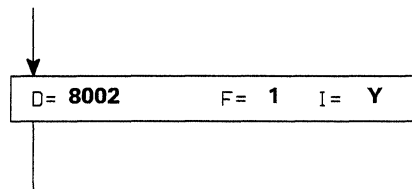
```
SETI  D= 0032 F= 5 I= Y
      |
      ↓
Load Transmit Buffer 1 subroutine (X'00')
```

## Conventions

In the create procedures given in this chapter, the following conventions, in addition to those described in Chapter 1, are used:



Boxes in each procedure show information that is displayed on the screen. All you have to do is to enter the characters that are printed in bold type. In this example, you are required to enter 8002, 1, and Y.



When entering a SETI or OSET instruction, you do not have to specify the F= and I= values if you already specified the same values in a previous SETI or OSET instruction. However, in the following procedures, F= and I= values are always shown, even when repetitive, for clarity.

### What to Do Once a Procedure is Created?

You should first catalog it:



Once cataloged, you should test the procedure. To do so, execute it:



If there are errors, correct them, then catalog the procedure again. To modify it:



***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

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start[SELN AREA] --&gt; C[C]     C --&gt; Send1[SEND]     Send1 --&gt; 3[3]     3 --&gt; Send2[SEND]     Send2 --&gt; Input["- ENTER NAME OF PROCEDURE TO BE CREATED ==&gt;_ - ENTER TITLE (UP TO 24 CHAR) ==&gt;"]     Input --&gt; Send3[SEND]     Send3 --&gt; Send4[SEND]     Send4 --&gt; D1{NCP?}     D1 -- NCP/PEP --&gt; S[S]     S --&gt; Send5[SEND]     Send5 --&gt; D2["D=C F=7 I=Y"]     D2 --&gt; Send6[SEND]     D2 --&gt; D3{To store halfwords?}     D3 -- C --&gt; D1     D3 -- To store bytes --&gt; PF1_1[PF1]     PF1_1 --&gt; D4["D=3 F=1 I=Y"]     D4 --&gt; Send7[SEND]     Send7 --&gt; PF1_2[PF1]     PF1_2 --&gt; End[next page]   </pre>	<p>To position the cursor.</p> <p>To select the control program procedure tools.</p> <p>To select CREATE.</p> <p>The name is FE01.</p> <p>SETI instruction</p> <p>In NCP/PEP environment, you have to switch to NCP mode.</p> <p>To repeat previous SETI instruction.</p> <p>Byte mode</p> <p>To repeat previous SETI instruction.</p>

Figure 7-6. FE01 - Install a ZAP (NCP or NCP/PEP) (Part 1 of 3)

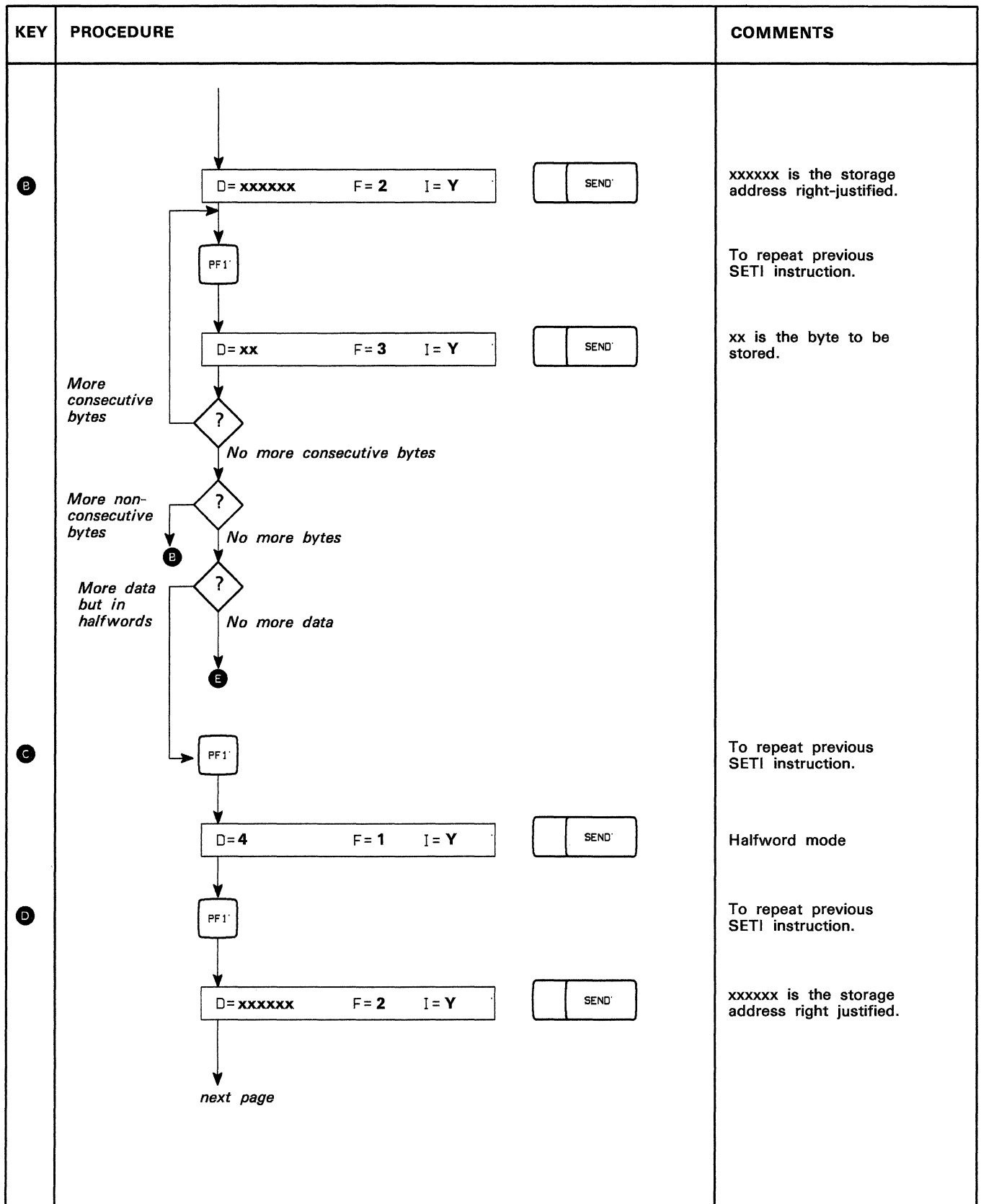


Figure 7-6. FE01 - Install a ZAP (NCP or NCP/PEP) (Part 2 of 3)



KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; PF1[PF1]     PF1 --&gt; D1["D= xxxx F= 3 I= Y"]     D1 --&gt; S1[SEND]     S1 --&gt; D1     D1 --&gt; D1Q{?}     D1Q -- "More consecutive halfwords" --&gt; PF1     D1Q -- "No more consecutive halfwords" --&gt; D2Q{?}     D2Q -- "More non-consecutive halfwords" --&gt; D1Q     D2Q -- "No more halfwords to store" --&gt; D3Q{?}     D3Q -- "More data but in bytes" --&gt; D3((D))     D3Q -- "No more data (all data stored)" --&gt; D4[D]     D3 --&gt; A((A))     D4 --&gt; S2[SEND]     S2 --&gt; D4     S2 --&gt; L12["L= 12 M= ZAP XXX IS NOW INSTALLED. PRESS SEND TO END"]     L12 --&gt; S3[SEND]     S3 --&gt; O[O]     O --&gt; S4[SEND]     S4 --&gt; O     O --&gt; D5["D= F= 6 I= Y"]     D5 --&gt; S5[SEND]     S5 --&gt; D5     D5 --&gt; E[E]     E --&gt; S6[SEND]     S6 --&gt; E   </pre>	<p>To repeat previous SETI instruction.</p> <p>xxxx is the halfword to be stored.</p> <p>DISP instruction</p> <p>To display on line 12 text in operand M=</p> <p>OSET instruction</p> <p>To end the dynamic store function. Enter no value in D=</p> <p>To end the procedure. (Do not forget to catalog the procedure.)</p>

Figure 7-6. FE01 - Install a ZAP (NCP or NCP/PEP) (Part 3 of 3)

**CE01 - Text to 3270 - BSC in EBCDIC (NCP)**

Create this procedure to transmit text messages from the 3725 to any 3270 with BSC protocol.

**Requirements:**

- NCP line
- BSC line protocol
- EBCDIC line code

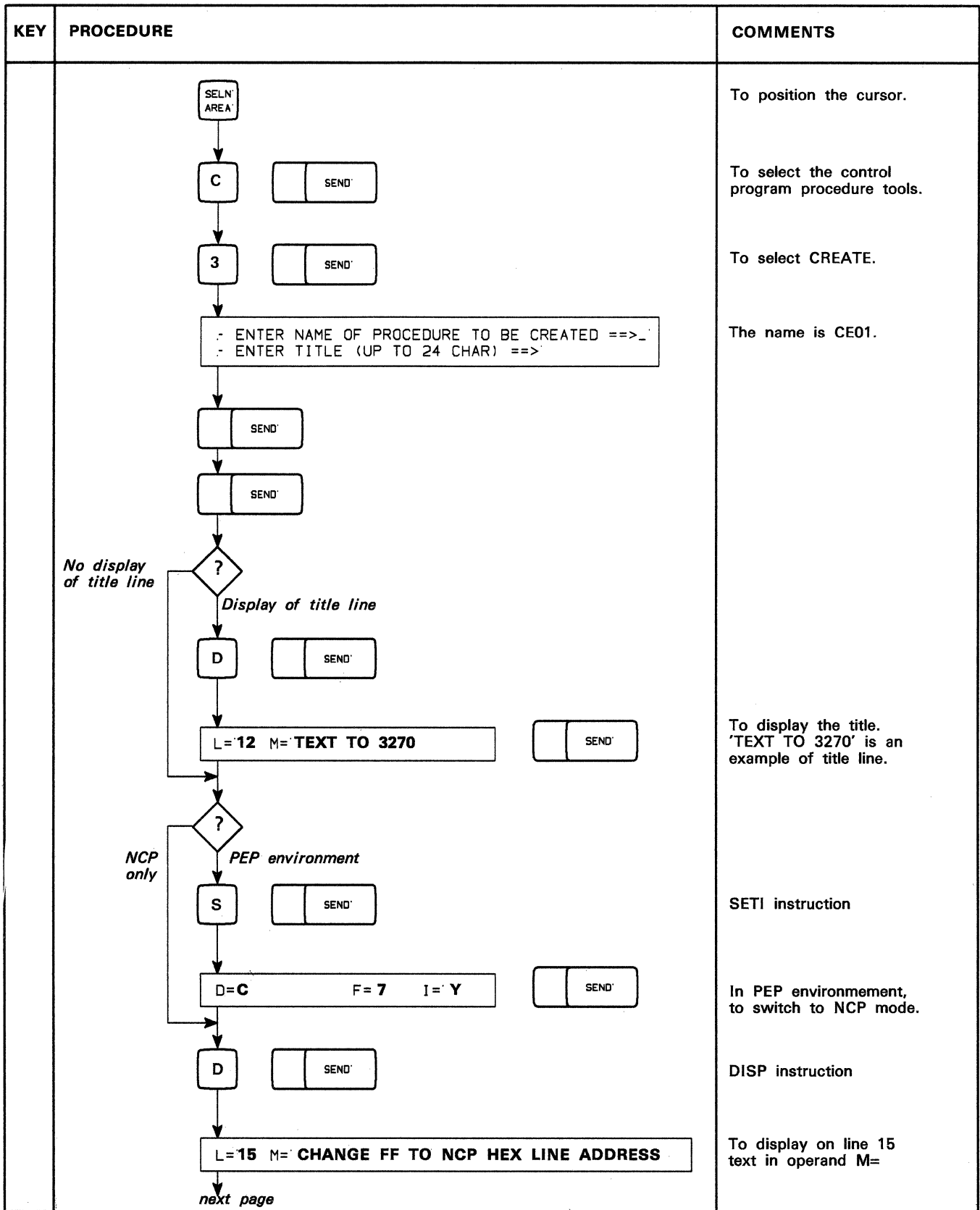


Figure 7-7. CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 1 of 5)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; S1[SEND]     S1 --&gt; O1(O)     O1 --&gt; S2[SEND]     S2 --&gt; D1["D= 20FF F= 2 I= Y"]     D1 --&gt; S3[SEND]     S3 --&gt; D2(D)     D2 --&gt; S4[SEND]     S4 --&gt; L["L= 15 M= CHANGE AA TO 3270 POLL ADDRESS TWICE"]     L --&gt; S5[SEND]     S5 --&gt; O2(O)     O2 --&gt; S6[SEND]     S6 --&gt; D2["D= 066AA F= 2 I= Y"]     D2 --&gt; S7[SEND]     S7 --&gt; PF1_1[PF1]     PF1_1 --&gt; S8[SEND]     S8 --&gt; S3(S)     S3 --&gt; S9[SEND]     S9 --&gt; D3["D= 0667F F= 2 I= Y"]     D3 --&gt; S10[SEND]     S10 --&gt; PF1_2[PF1]     PF1_2 --&gt; NextPage[<i>next page</i>]   </pre>	<p>OSET instruction</p> <p>To enter the NCP line address.</p> <p>DISP instruction</p> <p>To display on line 15 text in operand M=</p> <p>OSET instruction</p> <p>To enter 3270 cupoll address.</p> <p>To repeat previous OSET instruction.</p> <p>To transmit previous OSET unchanged.</p> <p>SETI instruction</p> <p>To enter all-device=poll address (X'7F').</p> <p>To repeat previous SETI instruction.</p>

Figure 7-7. CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 2 of 5)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; S1[SEND]     S1 --&gt; PF1[PF1]     PF1 --&gt; C1["D=0662D F=2 I=Y"]     C1 --&gt; S2[SEND]     S2 --&gt; D1[D]     D1 --&gt; S3[SEND]     S3 --&gt; C2["L=15 M=CHANGE AA TO CU-SELECTION ADDR TWICE"]     C2 --&gt; S4[SEND]     S4 --&gt; O[O]     O --&gt; S5[SEND]     S5 --&gt; C3["D=067AA F=2 I=Y"]     C3 --&gt; S6[SEND]     S6 --&gt; PF1_2[PF1]     PF1_2 --&gt; S7[SEND]     S7 --&gt; D2[D]     D2 --&gt; S8[SEND]     S8 --&gt; C4["L=15 M=CHANGE AA TO DEVICE SELECTION ADDR TWICE"]     C4 --&gt; S9[SEND]     S9 --&gt; NextPage[next page] </pre>	<p>To transmit previous SETI unchanged.</p> <p>To repeat previous SETI instruction.</p> <p>To enter enquiry character ENQ (X'2D')</p> <p>DISP instruction</p> <p>To display on line 15 text in operand M=</p> <p>OSET instruction</p> <p>To enter 3270 CU-select address.</p> <p>To repeat previous OSET instruction.</p> <p>To transmit previous OSET unchanged.</p> <p>DISP instruction</p> <p>To display on line 15 text in operand M=</p>

Figure 7-7. CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 3 of 5)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; O[O]     O --&gt; Send1[SEND]     Send1 --&gt; D1[D=067AA F=2 I=Y]     D1 --&gt; Send2[SEND]     Send2 --&gt; PF1_1[PF1]     PF1_1 --&gt; Send3[SEND]     Send3 --&gt; S[S]     S --&gt; Send4[SEND]     Send4 --&gt; D2[D=0672D F=2 I=Y]     D2 --&gt; Send5[SEND]     Send5 --&gt; PF1_2[PF1]     PF1_2 --&gt; D3[D=5800 F=2 I=Y]     D3 --&gt; Send6[SEND]     Send6 --&gt; PF1_3[PF1]     PF1_3 --&gt; D4[D=5127 F=2 I=Y]     D4 --&gt; Send7[SEND]     Send7 --&gt; PF1_4[PF1]     PF1_4 --&gt; D5[D=51xx F=2 I=Y]     D5 --&gt; Send8[SEND]     Send8 --&gt; Q{?}     Q -- "More characters to enter" --&gt; PF1_5[PF1]     PF1_5 --&gt; D5     Q -- "No more characters to enter" --&gt; PF1_6[PF1]     PF1_6 --&gt; NextPage[next page]   </pre>	<p>OSET instruction</p> <p>To enter 3270 dev-select address.</p> <p>To repeat previous OSET instruction.</p> <p>To transmit previous OSET unchanged.</p> <p>SETI instruction</p> <p>To enter enquiry character ENQ (X'2D').</p> <p>To repeat previous SETI instruction.</p> <p>To set transmit buffer offset X'00'.</p> <p>To enter ESC (X'27').</p> <p>To repeat previous SETI instruction.</p> <p>To enter text (first enter 3270 WCC character) xx= data byte of text</p> <p>To repeat previous SETI instruction.</p>

Figure 7-7. CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 4 of 5)

KEY	PROCEDURE	COMMENTS
		To enable the line.
		To repeat previous SETI instruction.
		To poll the 3270 and monitor for response.
		To repeat previous SETI instruction.
		To transmit the message text.
		DISP instruction
		To display on line 15 text in operand M=
		OSET instruction
		To wait for operator's response.
		End of procedure. (Do not forget to catalog the procedure).

Figure 7-7. CE01 - Text to 3270 - BSC in EBCDIC (NCP) (Part 5 of 5).

***CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)***

Create this procedure to transmit a text message from the 3275 to any 3270 in your network.

**Requirements:**

- EP or PEP line
- BSC line protocol
- EBCDIC line code



KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start([SELN AREA]) --&gt; C[C]     C --&gt; Send1[SEND]     Send1 --&gt; 3[3]     3 --&gt; Send2[SEND]     Send2 --&gt; Prompt[- ENTER NAME OF PROCEDURE TO BE CREATED ==&gt;_&lt;br/&gt;- ENTER TITLE (UP TO 24 CHAR) ==&gt;]     Prompt --&gt; Send3[SEND]     Send3 --&gt; Send4[SEND]     Send4 --&gt; Q{?}     Q -- "Display of title line" --&gt; D[D]     D --&gt; Send5[SEND]     Send5 --&gt; Title[L=12 M=TEXT TO 3270]     Title --&gt; Send6[SEND]     Send6 --&gt; S1[S]     S1 --&gt; Send7[SEND]     Send7 --&gt; Mode[D=E F=7 I=Y]     Mode --&gt; Send8[SEND]     Send8 --&gt; S2[S]     S2 --&gt; Send9[SEND]     Send9 --&gt; EOT[D=0037 F=5 I=Y]     EOT --&gt; Send10[SEND]     Send10 --&gt; PF1[PF1]     PF1 --&gt; NextPage[next page] </pre>	<p>To position the cursor.</p> <p>To select the control program procedure tools.</p> <p>To select CREATE.</p> <p>The name is CE02.</p> <p>To display the title. 'TEXT TO 3270' is an example of title line.</p> <p>SETI instruction</p> <p>To switch to EP mode.</p> <p>To enter EOT character (X'37') into buffer 1.</p>

Figure 7-8. CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 1 of 6)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; D00FF[D=00FF F=5 I=Y]     D00FF --&gt; PF1_1[PF1]     PF1_1 --&gt; D0032[D=0032 F=5 I=Y]     D0032 --&gt; PF1_2[PF1]     PF1_2 --&gt; SEND_1[SEND]     SEND_1 --&gt; D[D]     D --&gt; SEND_2[SEND]     SEND_2 --&gt; L15[L=15 M=CHANGE AA TO CU-SELECT-ADDRESS]     L15 --&gt; SEND_3[SEND]     SEND_3 --&gt; O[O]     O --&gt; SEND_4[SEND]     SEND_4 --&gt; D00AA[D=00AA F=5 I=Y]     D00AA --&gt; PF1_3[PF1]     PF1_3 --&gt; SEND_5[SEND]     SEND_5 --&gt; NextPage[<i>next page</i>]   </pre>	<p>To enter PAD character (X'FF') into buffer 1.</p> <p>To repeat previous SETI instruction.</p> <p>To enter SYNC character (X'32') into buffer 1.</p> <p>To repeat previous SETI instruction.</p> <p>To transmit previous SETI unchanged.</p> <p>DISP instruction</p> <p>To display in line 15 text in operand M=</p> <p>OSET instruction</p> <p>To enter CU-select address into buffer 1.</p> <p>To repeat previous OSET instruction.</p> <p>To transmit previous OSET unchanged.</p>

Figure 7-8. CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 2 of 6)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; D[D]     D --&gt; Send1[SEND]     Send1 --&gt; L["L= 15 M= CHANGE FF TO DEV-SELECT-ADDRESS"]     L --&gt; Send2[SEND]     Send2 --&gt; O[O]     O --&gt; Send3[SEND]     Send3 --&gt; DFF["D= 00FF F= 5 I= Y"]     DFF --&gt; Send4[SEND]     Send4 --&gt; PF1_1[PF1]     PF1_1 --&gt; Send5[SEND]     Send5 --&gt; S[S]     S --&gt; Send6[SEND]     Send6 --&gt; D2D["D= 002D F= 5 I= Y"]     D2D --&gt; Send7[SEND]     Send7 --&gt; PF1_2[PF1]     PF1_2 --&gt; D99["D= 0099 F= 5 I= Y"]     D99 --&gt; Send8[SEND]     Send8 --&gt; PF1_3[PF1]     PF1_3 --&gt; NextPage[next page]   </pre>	<p>DISP instruction</p> <p>To display on line 15 text in operand M=</p> <p>OSET instruction</p> <p>To enter dev-select address into buffer 1.</p> <p>To repeat previous OSET instruction.</p> <p>To transmit previous OSET unchanged.</p> <p>SETI instruction</p> <p>To enter ENQ character (X'2D').</p> <p>To repeat previous SETI instruction.</p> <p>To enter end-buffer 1 character.</p> <p>To repeat previous SETI instruction.</p>

Figure 7-8. CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 3 of 6)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; D0102[D= 0102 F= 5 I= Y]     D0102 --- S01[SEND]     S01 --&gt; PF1_1[PF1]     PF1_1 --&gt; D0127[D= 0127 F= 5 I= Y]     D0127 --- S02[SEND]     S02 --&gt; PF1_2[PF1]     PF1_2 --&gt; D01F1[D= 01F1 F= 5 I= Y]     D01F1 --- S03[SEND]     S03 --&gt; PF1_3[PF1]     PF1_3 --&gt; D01C2[D= 01C2 F= 5 I= Y]     D01C2 --- S04[SEND]     S04 --&gt; PF1_4[PF1]     PF1_4 --&gt; D01xx[D= 01xx F= 5 I= Y]     D01xx --- S05[SEND]     S05 --&gt; Decision{?}     Decision -- More data bytes --&gt; D01xx     Decision -- No more data bytes --&gt; S06[S]     S06 --- S07[SEND]     S07 --&gt; End((next page))   </pre>	<p>To enter STX character (X'02') into buffer 2.</p> <p>To repeat previous SETI instruction.</p> <p>To enter ESC character (X'27') into buffer 2.</p> <p>To repeat previous SETI instruction.</p> <p>To enter Erase/Write command (X'F1') into buffer 2.</p> <p>To repeat previous SETI instruction.</p> <p>To enter WCC (X'C2') into buffer 2.</p> <p>To repeat previous SETI instruction.</p> <p>To enter text into buffer 2 xx= data byte of text (up to 15 characters).</p> <p>SETI instruction</p>

Figure 7-8. CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 4 of 6)

KEY	PROCEDURE	COMMENTS
		To enter ETX character (X'03') into buffer 2.
		To repeat previous SETI instruction.
		To enter end-buffer 2 character.
		To repeat previous SETI instruction.
		To enter ACK 1 (X'61') or swap character 1.
		To repeat previous SETI instruction.
		To enter ACK 0 (X'70') or swap character 2.
		DISP instruction
		To display on line 15 text in operand M=
		OSET instruction
		To start the line test on subchannel AA.
	<p>next page</p>	

Figure 7-8. CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 5 of 6)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; D[D]     D --- S1[SEND]     S1 --&gt; L["L = 14 M = TO END THE TEST, PRESS SEND"]     L --&gt; S2[SEND]     S2 --&gt; O[O]     O --- S3[SEND]     S3 --&gt; D_val["D = 8FAA F = 5 I = Y"]     D_val --- S4[SEND]     S4 --&gt; E[E]     E --- S5[SEND]   </pre>	<p>DISP instruction</p> <p>To display on line 14 text in operand M=</p> <p>OSET instruction</p> <p>To wait for operator's display.</p> <p>End of procedure. (Do not forget to catalog the procedure).</p>

Figure 7-8. CE02 - Text to 3270-BSC in EBCDIC (EP/PEP) (Part 6 of 6)

**CE03 - Text to 2740 - S/S (NCP)**

Create this procedure to transmit a text message from the 3725 to any 2740 start/stop terminal in your network.

**Requirements:**

- NCP
- Start/Stop line protocol
- EBCDIC line code
- 2740 with station control

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     A[SELN AREA] --&gt; B[C]     B --&gt; C[SEND]     C --&gt; D[3]     D --&gt; E[SEND]     E --&gt; F["- ENTER NAME OF PROCEDURE TO BE CREATED ==&gt;_&lt;br&gt;- ENTER TITLE (UP TO 24 CHAR) ==&gt;"]     F --&gt; G[SEND]     G --&gt; H[SEND]     H --&gt; I{?}     I -- "Display of title line" --&gt; J[D]     J --&gt; K[SEND]     K --&gt; L["L=12 M='TEXT TO 2740'"]     L --&gt; M[SEND]     I -- "No display of title line" --&gt; M     M --&gt; N[S]     N --&gt; O[SEND]     O --&gt; P["D=C F=7 I=Y"]     P --&gt; Q[SEND]     Q --&gt; R[D]     R --&gt; S[SEND]     S --&gt; T["L=15 M='CHANGE FF TO NCP HEX LINE ADDRESS'"]     T --&gt; U[SEND]     U --&gt; V[next page] </pre>	<p>To position the cursor.</p> <p>To select the control program procedure tools.</p> <p>To select CREATE.</p> <p>The name is CE03.</p> <p>To display the title. 'TEXT TO 2740' is an example of title line.</p> <p>SETI instruction</p> <p>To switch to NCP mode.</p> <p>DISP instruction</p> <p>To display on line 15 text in operand M=</p>

Figure 7-9. CE03 - Text to 2740 - S/S (NCP) (Part 1 of 4)



KEY	PROCEDURE	COMMENTS
		OSET instruction
		To enter NCP line address.
		SET instruction
		To set transmit buffer offset (X'00').
		To repeat previous SETI instruction.
		To load circle c (X'1F') into transmit buffer.
		To repeat previous SET instruction.
		To load circle s (X'37') into transmit buffer.
		DISP instruction
		To display on line 15 text in operand M=
		OSET instruction
	next page	

Figure 7-9. CE03 - Text to 2740 - S/S (NCP) (Part 2 of 4)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; D51AA[D= 51AA F= 2 I= Y]     D51AA --&gt; S[S]     S --&gt; D5101[D= 5101 F= 2 I= Y]     D5101 --&gt; PF1_1[PF1]     PF1_1 --&gt; D51xx[D= 51xx F= 2 I= Y]     D51xx --&gt; Q{?}     Q -- More data bytes --&gt; PF1_1     Q -- No more data bytes --&gt; PF1_2[PF1]     PF1_2 --&gt; D4000[D= 4000 F= 2 I= Y]     D4000 --&gt; PF1_3[PF1]     PF1_3 --&gt; D4F10[D= 4F10 F= 2 I= Y]     D4F10 --&gt; D[D]     D --&gt; NextPage[next page]   </pre>	<p>To enter 2740 station address.</p> <p>SETI instruction</p> <p>To load EOA character (X'01') into buffer.</p> <p>To repeat previous SETI instruction.</p> <p>To load data into buffer. xx= data byte</p> <p>To repeat previous SETI instruction.</p> <p>To enable the line.</p> <p>To repeat previous SETI instruction.</p> <p>To start transmitting data.</p> <p>DISP instruction</p>

Figure 7-9. CE03 - Text to 2740 - S/S (NCP) (Part 3 of 4)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; L["L= 15 M='TO END THE TEST PRESS SEND'"]     L --&gt; S1["SEND"]     S1 --&gt; O["O SEND"]     O --&gt; D["D= 5000 F= 2 I= Y SEND"]     D --&gt; E["E SEND"]     E --&gt; End(( ))           </pre>	<p>To display on line 15 text in operand M=</p> <p>OSET instruction</p> <p>To wait for operator's response to stop the function.</p> <p>End of procedure. (Do not forget to catalog the procedure).</p>

Figure 7-9. CE03 - Text to 2740 - S/S (NCP) (Part 4 of 4)

**CE04 - Text to 2740 - S/S (EP, PEP)**

Create this procedure to transmit a text message from the 3725 to any 2740 start/stop terminal in your network.

**Requirements:**

- EP or PEP line
- Start/Stop line protocol
- EBCDIC line code
- 2740 with station control

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     A[SELN AREA] --&gt; B[C]     B --&gt; C[3]     C --&gt; D["ENTER NAME OF PROCEDURE TO BE CREATED ==&gt;_&lt;br/&gt;ENTER TITLE (UP TO 24 CHAR) ==&gt;"]     D --&gt; E[SEND]     E --&gt; F[SEND]     F --&gt; G{?}     G -- "Display of title line" --&gt; H[D]     H --&gt; I["L=12 M='TEXT TO 2740'"]     I --&gt; J[SEND]     G -- "No display of title line" --&gt; J     J --&gt; K[S]     K --&gt; L["D=E F=7 I=Y"]     L --&gt; M[SEND]     M --&gt; N[PF1]     N --&gt; O["D=001F F=5 I=Y"]     O --&gt; P[SEND]     P --&gt; Q[PF1]     Q --&gt; R[next page] </pre>	<p>To position the cursor.</p> <p>To select the control program procedure tools.</p> <p>To select CREATE.</p> <p>The name is CE04.</p> <p>To display the title. 'TEXT TO 2740' is an example of title line</p> <p>SETI instruction</p> <p>To switch to EP mode.</p> <p>To repeat previous SETI instruction.</p> <p>To load circle c (X'1F') into buffer 1.</p> <p>To repeat previous SETI instruction.</p>

Figure 7-10. CE04 - Text to 2740 - S/S (EP/PEP) (Part 1 of 4)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; Box1[D= 0037 F= 5 I= Y]     Box1 --&gt; KeyD[D]     KeyD --&gt; Box2[L= 15 M= CHANGE AA TO 2740 ADDRESS]     Box2 --&gt; KeyO[O]     KeyO --&gt; Box3[D= 00AA F= 5 I= Y]     Box3 --&gt; KeyS[S]     KeyS --&gt; Box4[D= 0001 F= 5 I= Y]     Box4 --&gt; KeyPF1_1[PF1]     KeyPF1_1 --&gt; Box5[D= 0099 F= 5 I= Y]     Box5 --&gt; KeyPF1_2[PF1]     KeyPF1_2 --&gt; Box6[D= 0116 F= 5 I= Y]     Box6 --&gt; End((next page))   </pre>	<p>To load circle s (X'37') into buffer 1.</p> <p>DISP instruction</p> <p>To display on line 15 text in operand M=</p> <p>OSET instruction</p> <p>To enter 2740 station address.</p> <p>SETI instruction</p> <p>To load EOA character (X'01') into buffer 1.</p> <p>To repeat previous SETI instruction.</p> <p>To load end-of-buffer 1 character.</p> <p>To repeat previous SETI instruction.</p> <p>To load into buffer 2.</p>

Figure 7-10. CE04 - Text to 2740 - S/S (EP/PEP) (Part 2 of 4)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; PF1_1[PF1]     PF1_1 --&gt; D01xx[D=01xx F=5 I=Y]     D01xx --&gt; SEND1[SEND]     SEND1 --&gt; Decision{?}     Decision --&gt; PF1_2[PF1]     PF1_2 --&gt; D011F[D=011F F=5 I=Y]     D011F --&gt; SEND2[SEND]     SEND2 --&gt; PF1_3[PF1]     PF1_3 --&gt; D0199[D=0199 F=5 I=Y]     D0199 --&gt; SEND3[SEND]     SEND3 --&gt; PF1_4[PF1]     PF1_4 --&gt; D081F[D=081F F=5 I=Y]     D081F --&gt; SEND4[SEND]     SEND4 --&gt; PF1_5[PF1]     PF1_5 --&gt; D0976[D=0976 F=5 I=Y]     D0976 --&gt; SEND5[SEND]     SEND5 --&gt; D[D]     D --&gt; SEND6[SEND]     SEND6 --&gt; End((next page))   </pre>	<p>To repeat previous SETI instruction.</p> <p>To load text into buffer 2. Maximum number of bytes that can be loaded is 18. xx= data byte</p> <p>To repeat previous SETI instruction.</p> <p>To load circle c (X'1F') into buffer 2.</p> <p>To repeat previous SETI instruction.</p> <p>To load end-of-buffer 2 character.</p> <p>To repeat previous SETI instruction.</p> <p>To enter the swap character 1 (X'1F').</p> <p>To repeat previous SETI instruction.</p> <p>To enter the swap character 2.</p> <p>DISP instruction</p>

Figure 7-10. CE04 - Text to 2740 - S/S (EP/PEP) (Part 3 of 4)

KEY	PROCEDURE	COMMENTS
	<pre> graph TD     Start(( )) --&gt; L15[L= 15 M= CHANGE AA TO SUBCHANNEL ADDRESS]     L15 --&gt; S1[SEND]     S1 --&gt; O1[O]     O1 --&gt; S2[SEND]     S2 --&gt; D20AA[D= 20AA F= 5 I= Y]     D20AA --&gt; S3[SEND]     S3 --&gt; D[D]     D --&gt; S4[SEND]     S4 --&gt; L14[L= 14 M= TO END THE TEST PRESS SEND]     L14 --&gt; S5[SEND]     S5 --&gt; O2[O]     O2 --&gt; S6[SEND]     S6 --&gt; D8FAA[D= 8FAA F= 5 I= Y]     D8FAA --&gt; S7[SEND]     S7 --&gt; E[E]     E --&gt; S8[SEND]   </pre>	<p>To display on line 15 text in operand M=</p> <p>OSET instruction</p> <p>To enable the line.</p> <p>DISP instruction</p> <p>To display on line 14 text in operand M=</p> <p>OSET instruction</p> <p>To wait for operator's response to end the function.</p> <p>End of procedure. (Do not forget to catalog the procedure).</p>

Figure 7-10. CE04 - Text to 2740 - S/S (EP/PEP) (Part 4 of 4)

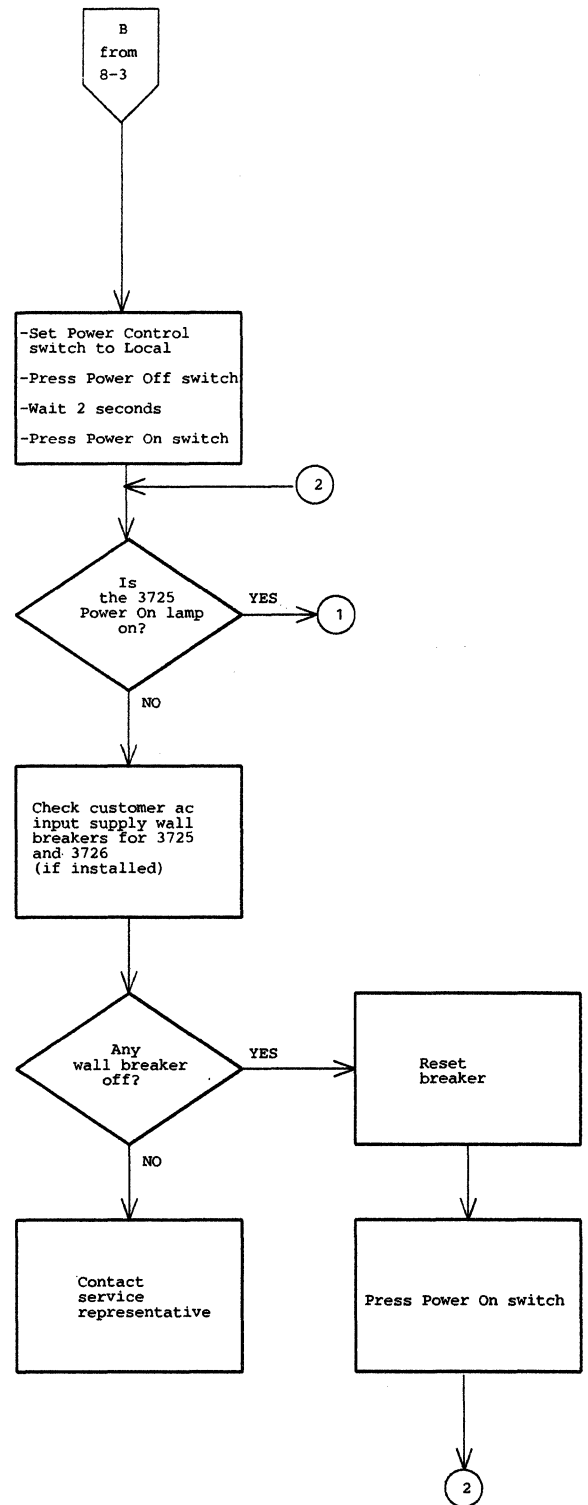
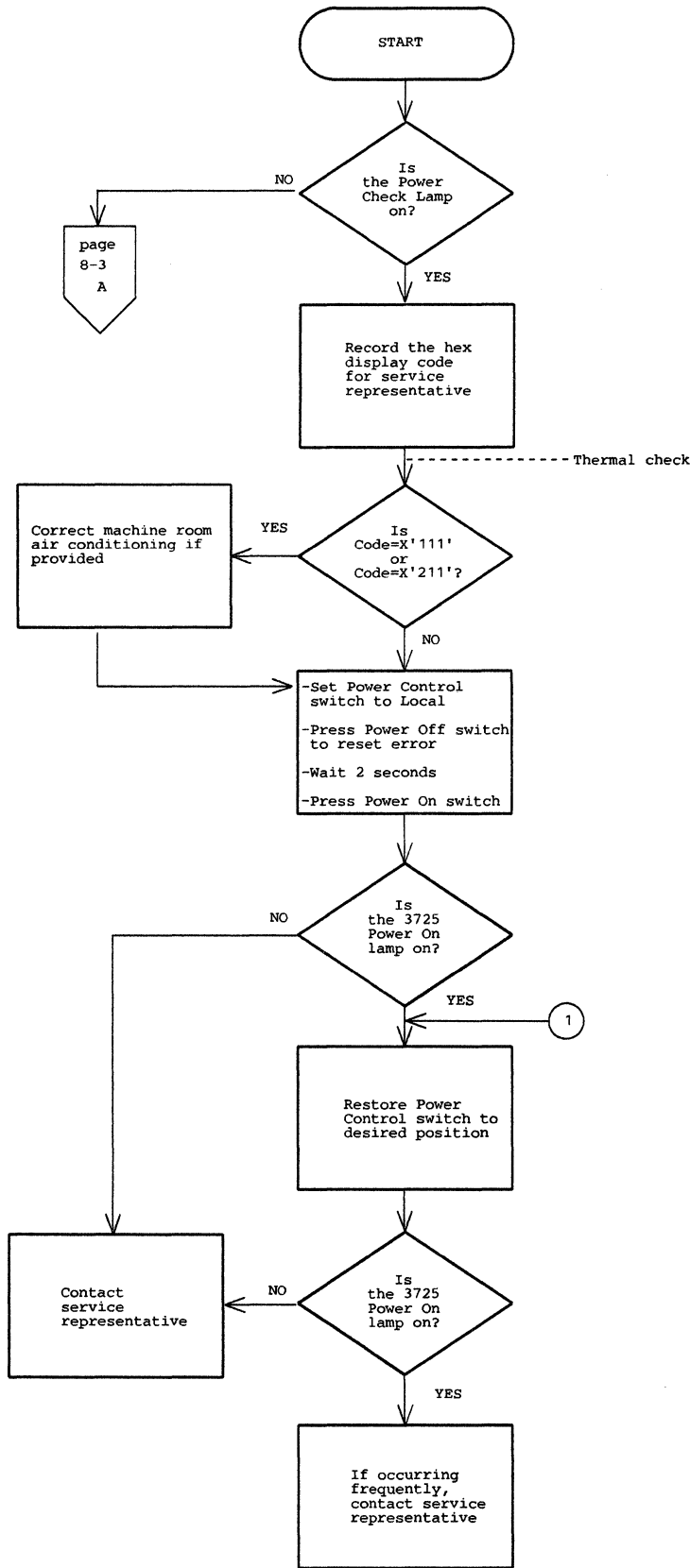


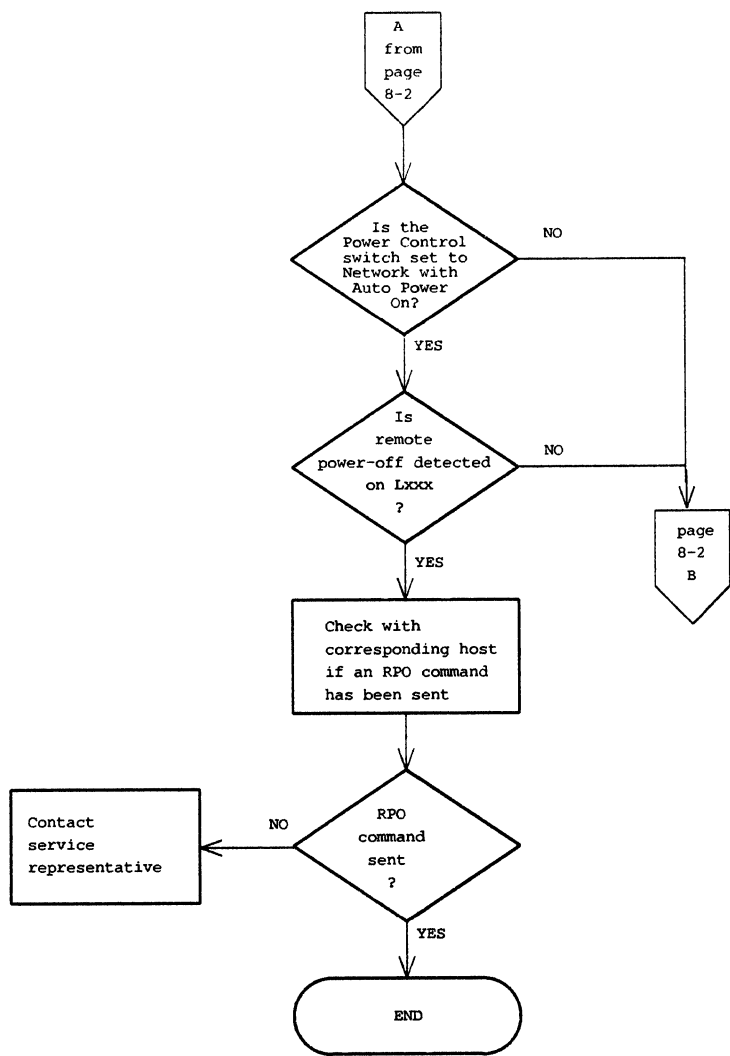


Problem Determination Start Page

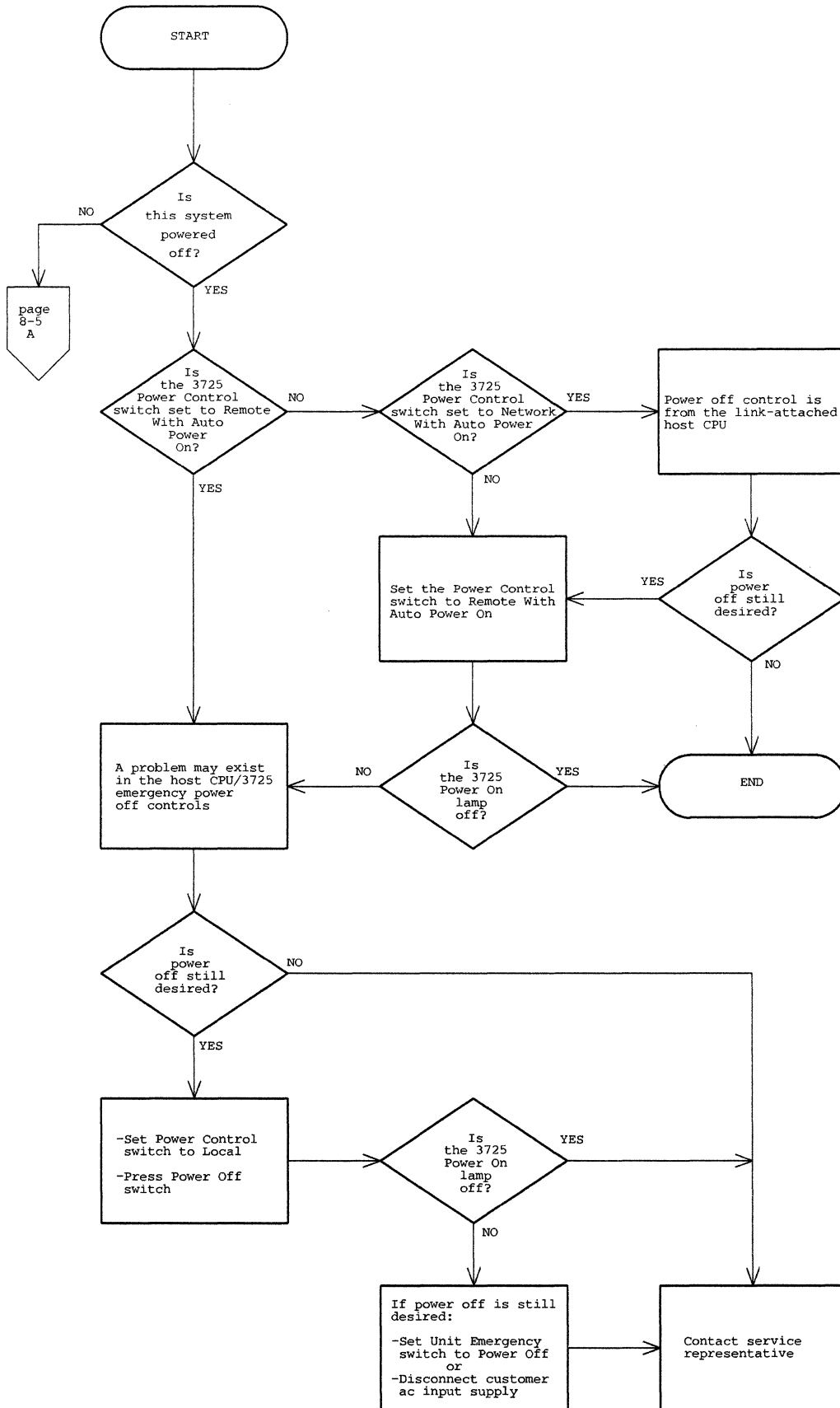
SYMPTOM DESCRIPTION	GO TO Page
<b>CONTROL PANEL</b>	
<ul style="list-style-type: none"> <li>• Power Check lamp on</li> </ul>	8-2
<ul style="list-style-type: none"> <li>• Power On lamp does not turn on</li> </ul>	8-2
<ul style="list-style-type: none"> <li>• Power On lamp does not turn off</li> </ul>	8-4
<ul style="list-style-type: none"> <li>• Link-attached 3725 does not power off when RPO command is initiated</li> </ul>	8-4
<ul style="list-style-type: none"> <li>• 3725 Drops Power</li> </ul>	8-2
<ul style="list-style-type: none"> <li>• Hex display code other than X'000' and Power Check lamp on</li> </ul>	8-2
<ul style="list-style-type: none"> <li>• Hex display code other than X'000' and no control program running</li> </ul>	8-10
<ul style="list-style-type: none"> <li>• Hex display code other than X'000' and no Power Check lamp on and the control program running</li> </ul>	8-33
<ul style="list-style-type: none"> <li>• MOSS Message lamp on</li> </ul>	8-10
<ul style="list-style-type: none"> <li>• MOSS Inoperative lamp on</li> </ul>	8-10
<b>3727 OPERATOR CONSOLE</b>	
<ul style="list-style-type: none"> <li>• 3727 Power On light does not turn on</li> </ul>	8-8
<ul style="list-style-type: none"> <li>• Messages on 3727 operator console</li> </ul>	8-8
<ul style="list-style-type: none"> <li>• Unable to perform keyboard entry</li> </ul>	8-8
<b>7427 CONSOLE SWITCH RPQ</b>	
<ul style="list-style-type: none"> <li>• Problem determination for this RPQ is not documented in this manual. Refer to the appropriate 7427 Console Switch manual.</li> </ul>	
<b>HOST CPU CONSOLE</b>	
<ul style="list-style-type: none"> <li>• Host console error messages during 3725 initialization (no control program running)</li> </ul>	8-10
<ul style="list-style-type: none"> <li>• No notification of the successful load in channel-attached 3725</li> </ul>	8-10
<ul style="list-style-type: none"> <li>• No notification of the successful link activation</li> </ul>	8-12
<ul style="list-style-type: none"> <li>• No notification of the successful load in link-attached 3725</li> </ul>	8-12
<ul style="list-style-type: none"> <li>• No notification of the successful activate of a remote NCP</li> </ul>	8-33
<ul style="list-style-type: none"> <li>• No notification of the successful activate (start) line(s)</li> </ul>	8-33
<ul style="list-style-type: none"> <li>• Host console error messages when the control program is running</li> </ul>	8-33
<ul style="list-style-type: none"> <li>• No notification of the successful dump in channel-attached 3725</li> </ul>	8-10
<ul style="list-style-type: none"> <li>• No notification of the successful dump in link-attached 3725</li> </ul>	8-12
<b>MISCELLANEOUS</b>	
<ul style="list-style-type: none"> <li>• Network control console error message</li> </ul>	8-33
<ul style="list-style-type: none"> <li>• Notification of error while running line(s)</li> </ul>	8-33

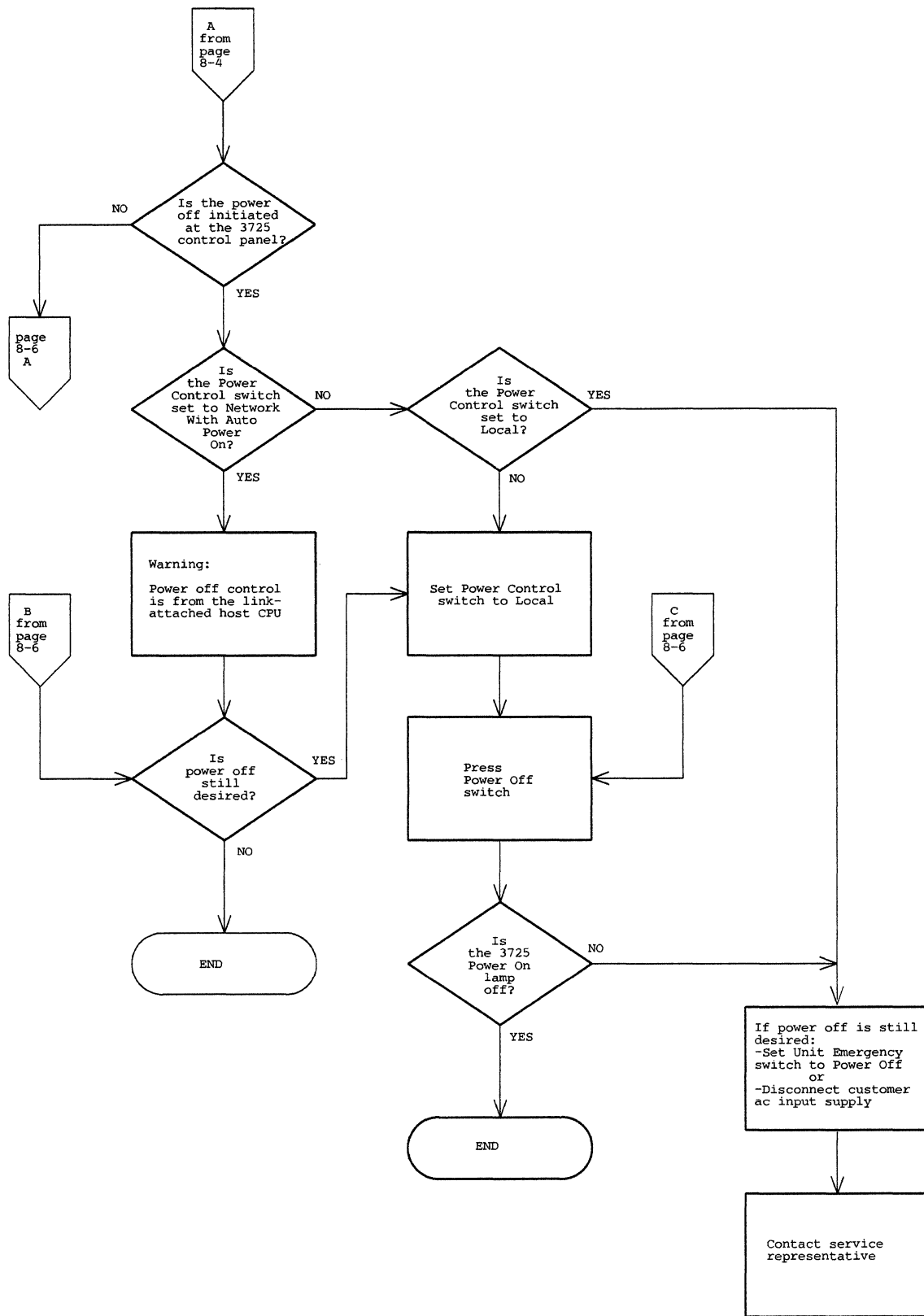
# Unable to Power on the 3725 or 3725 Drops Power

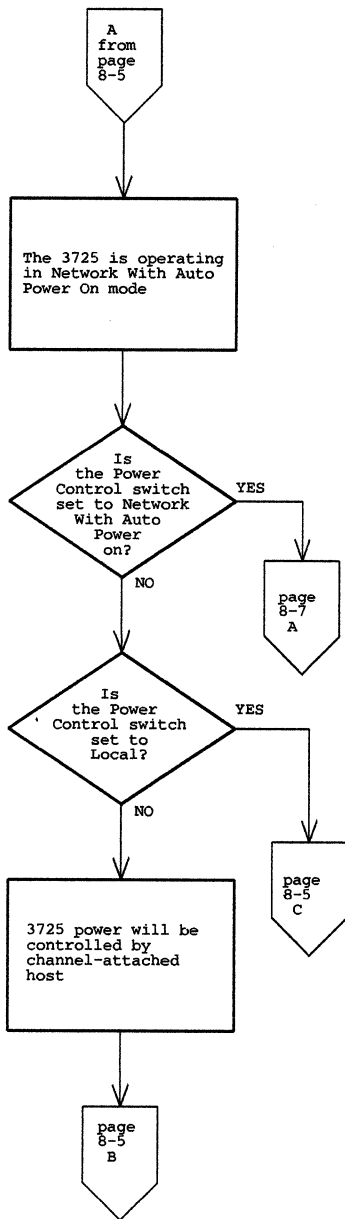


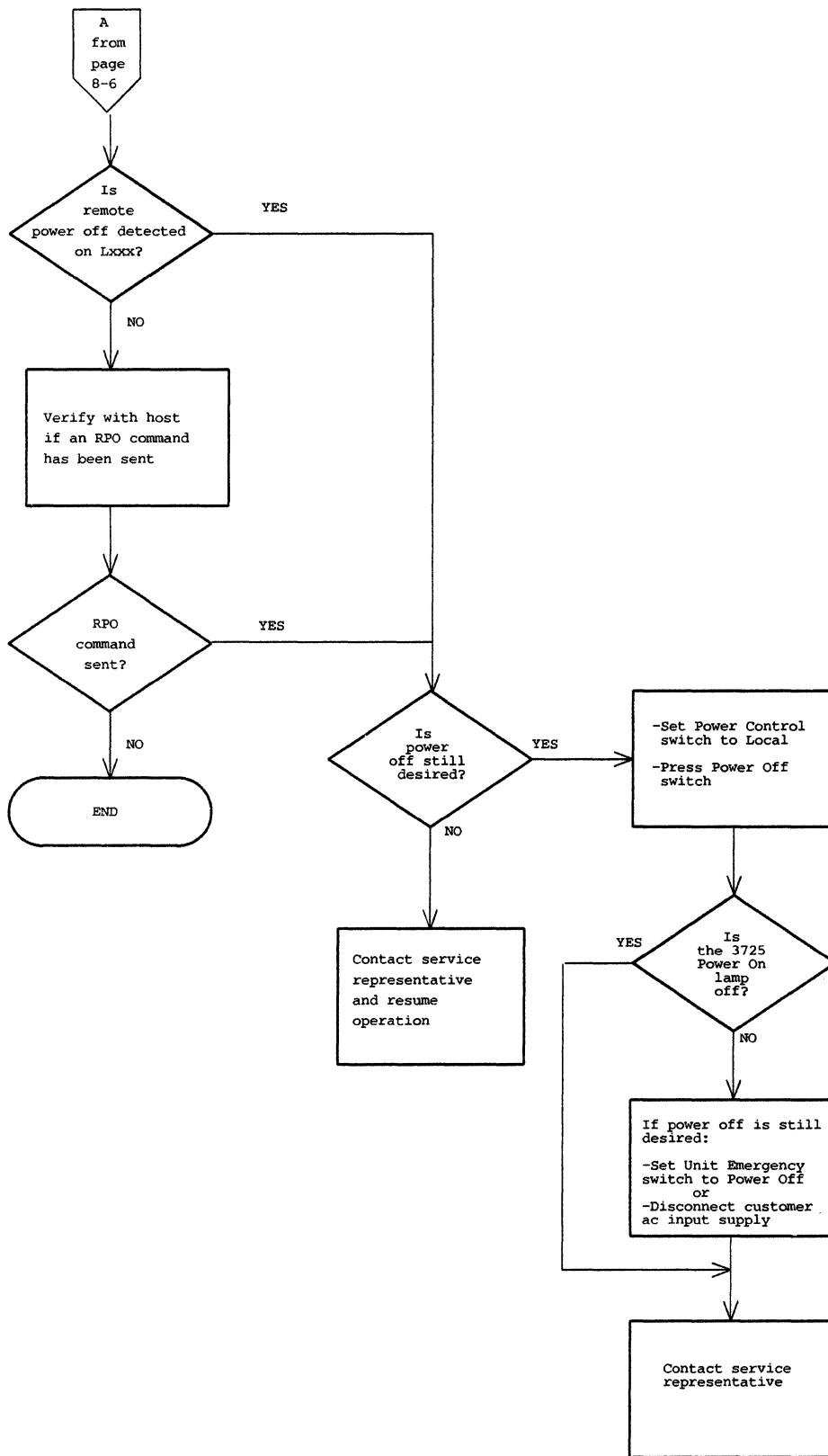


# Unable to Power off the 3725



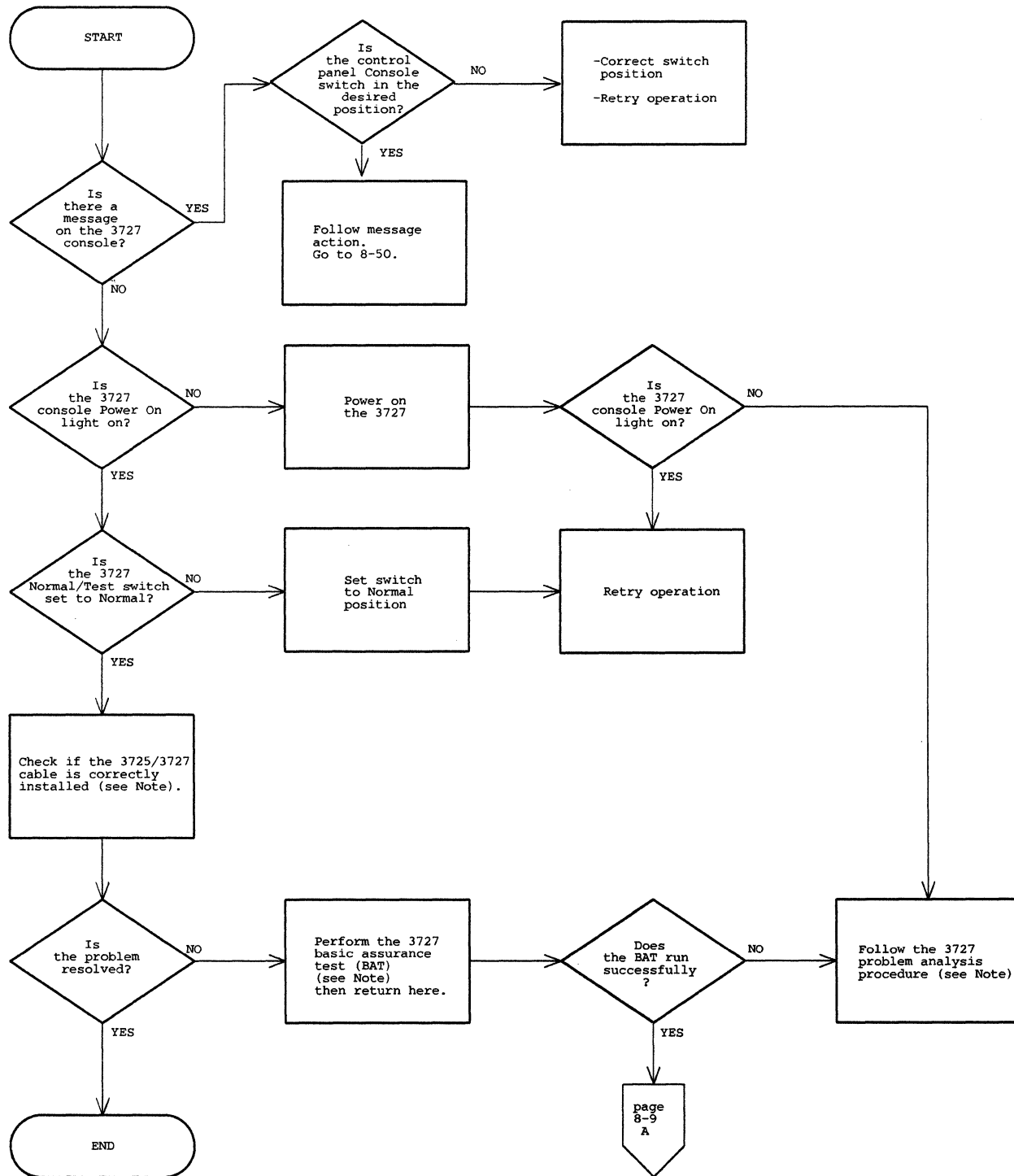




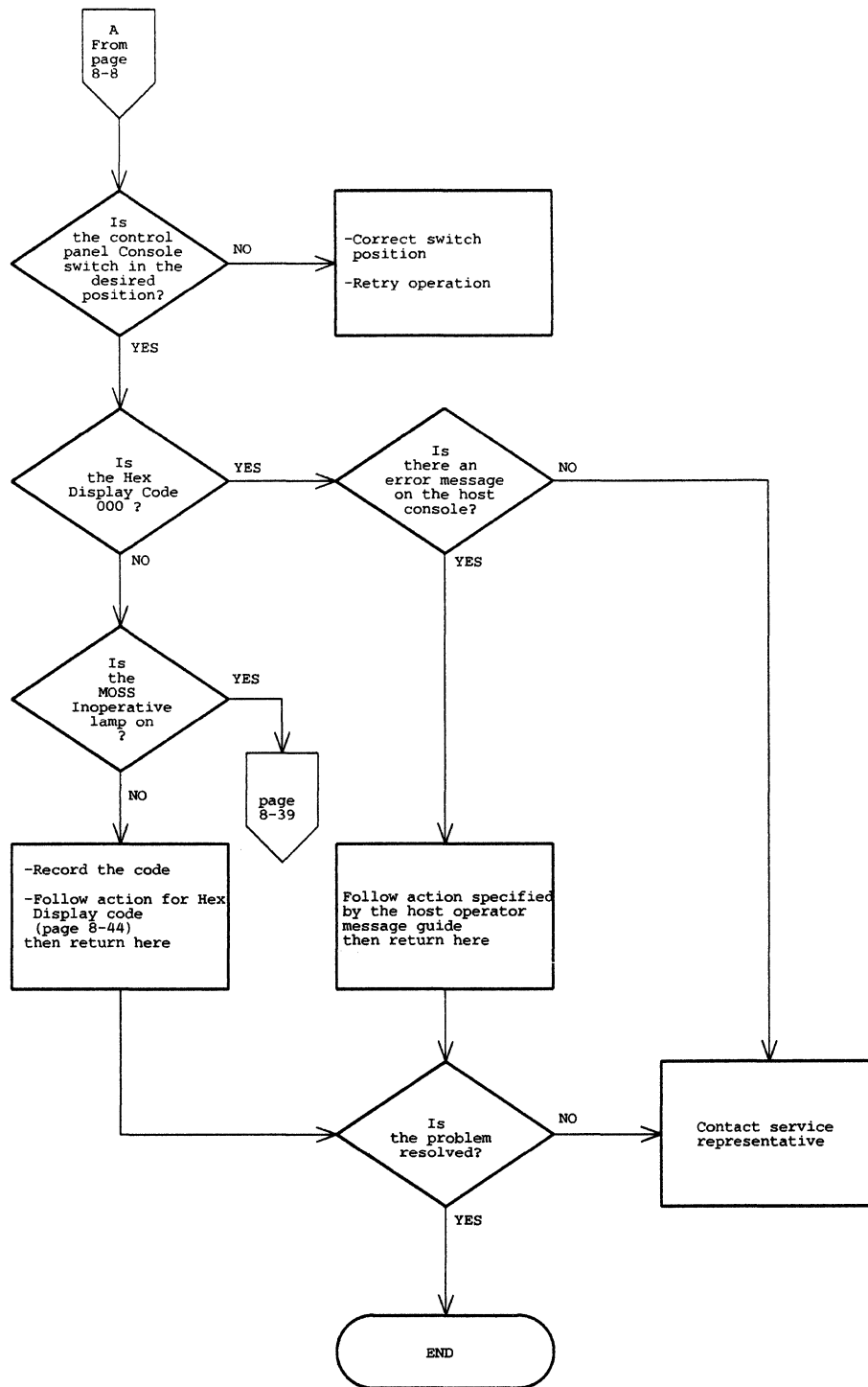




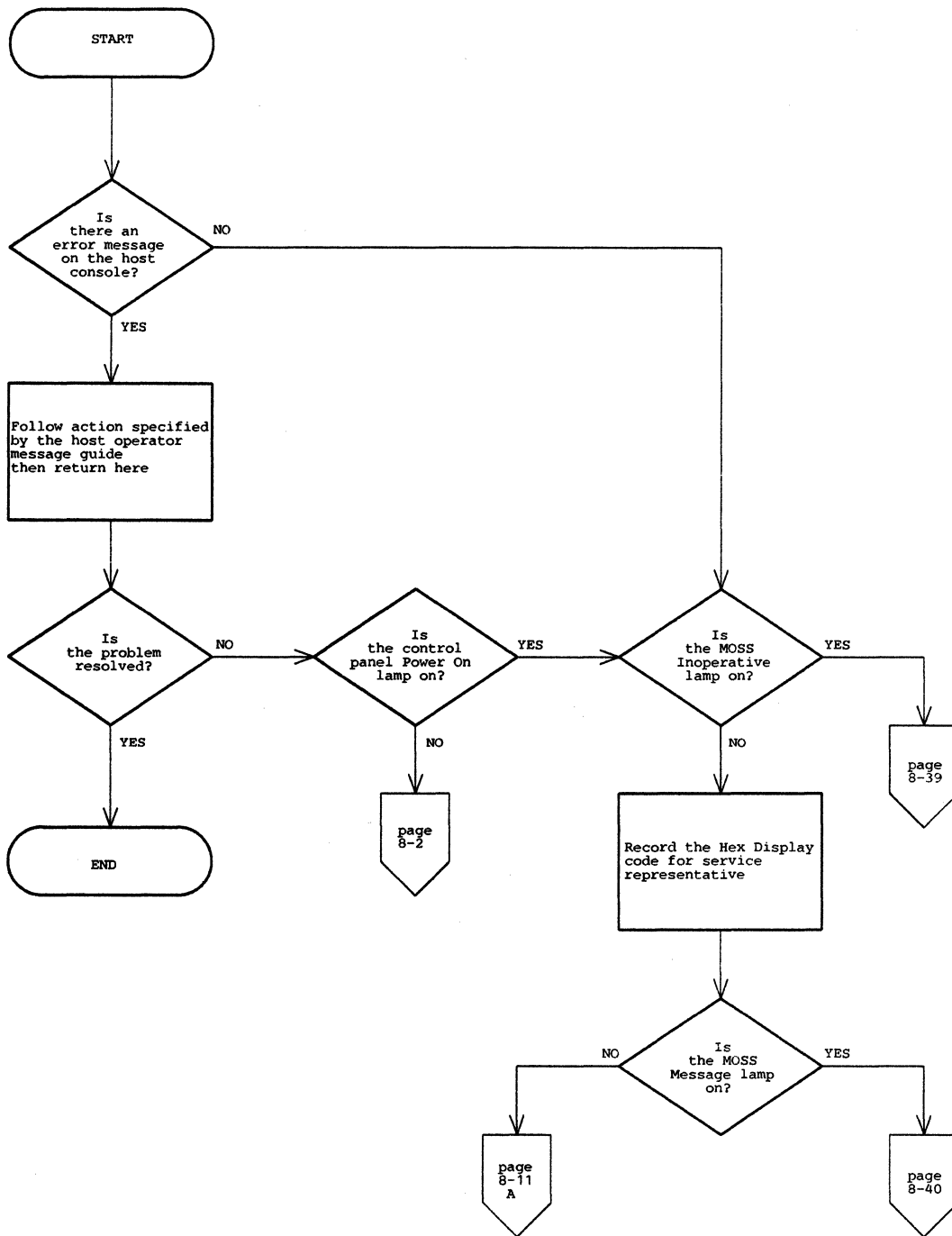
# 3727 Console Problem

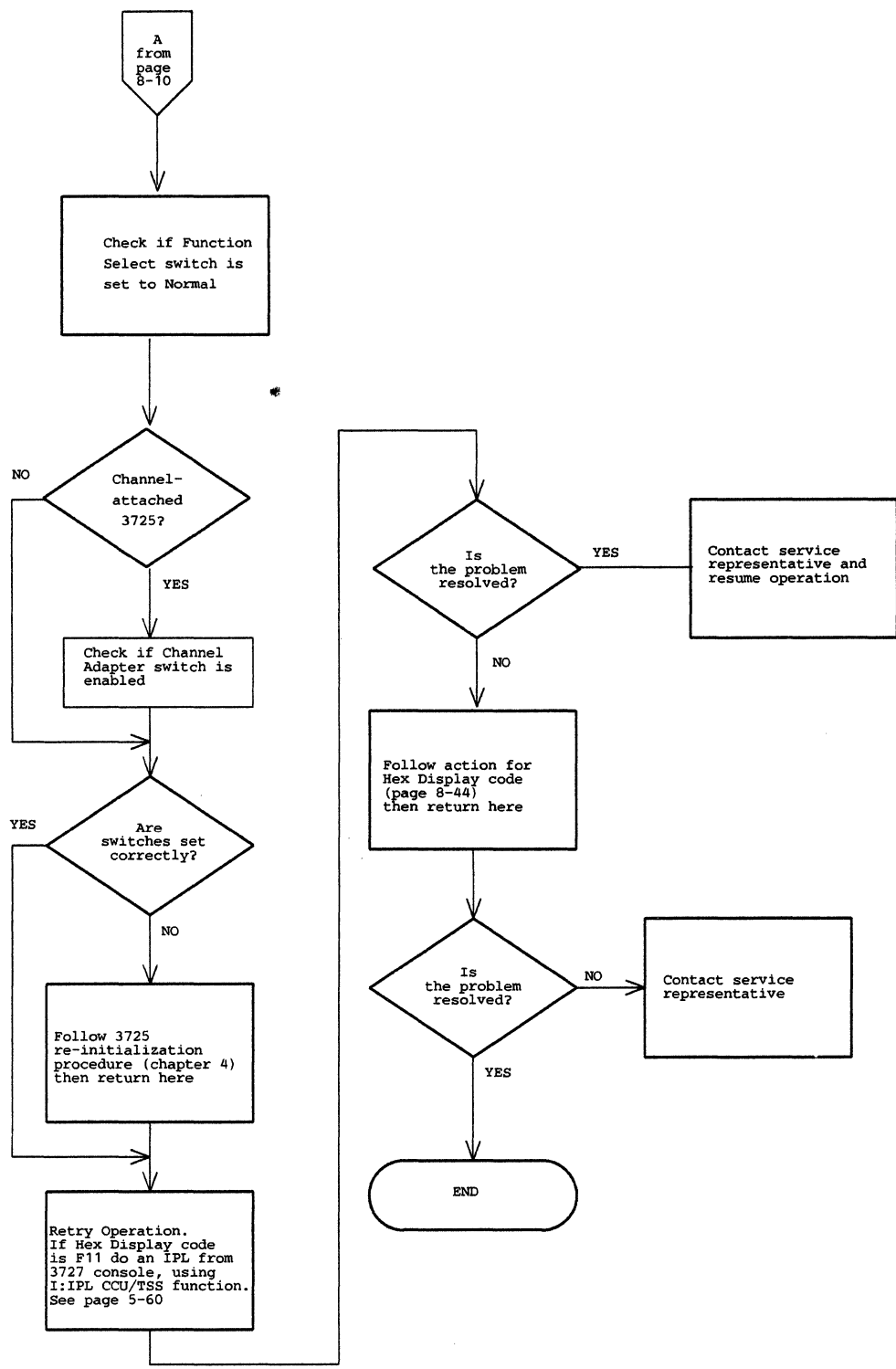


**Note:** Refer to 3727 Console Operator Reference and Problem Analysis Guide, GA33-0015

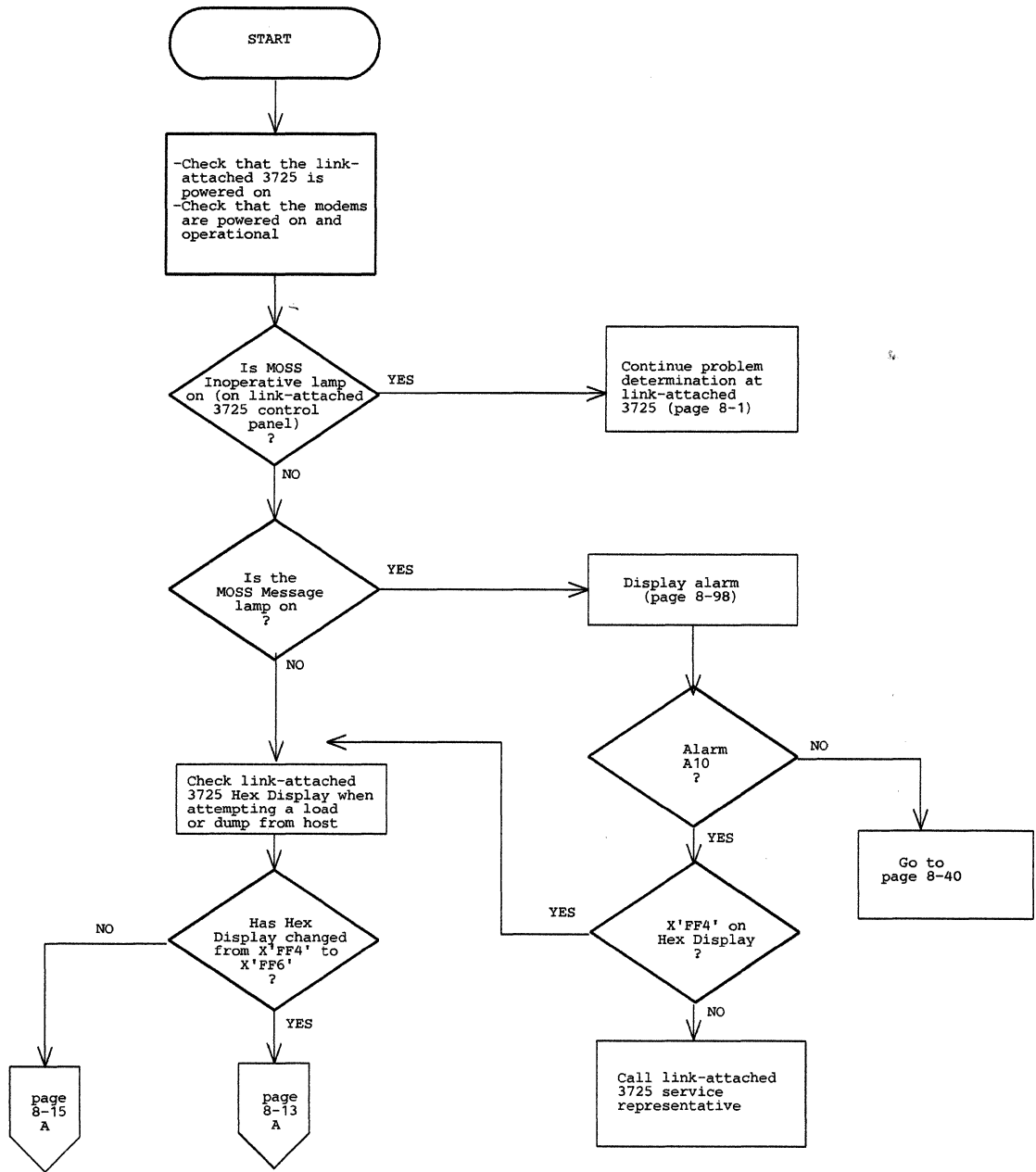


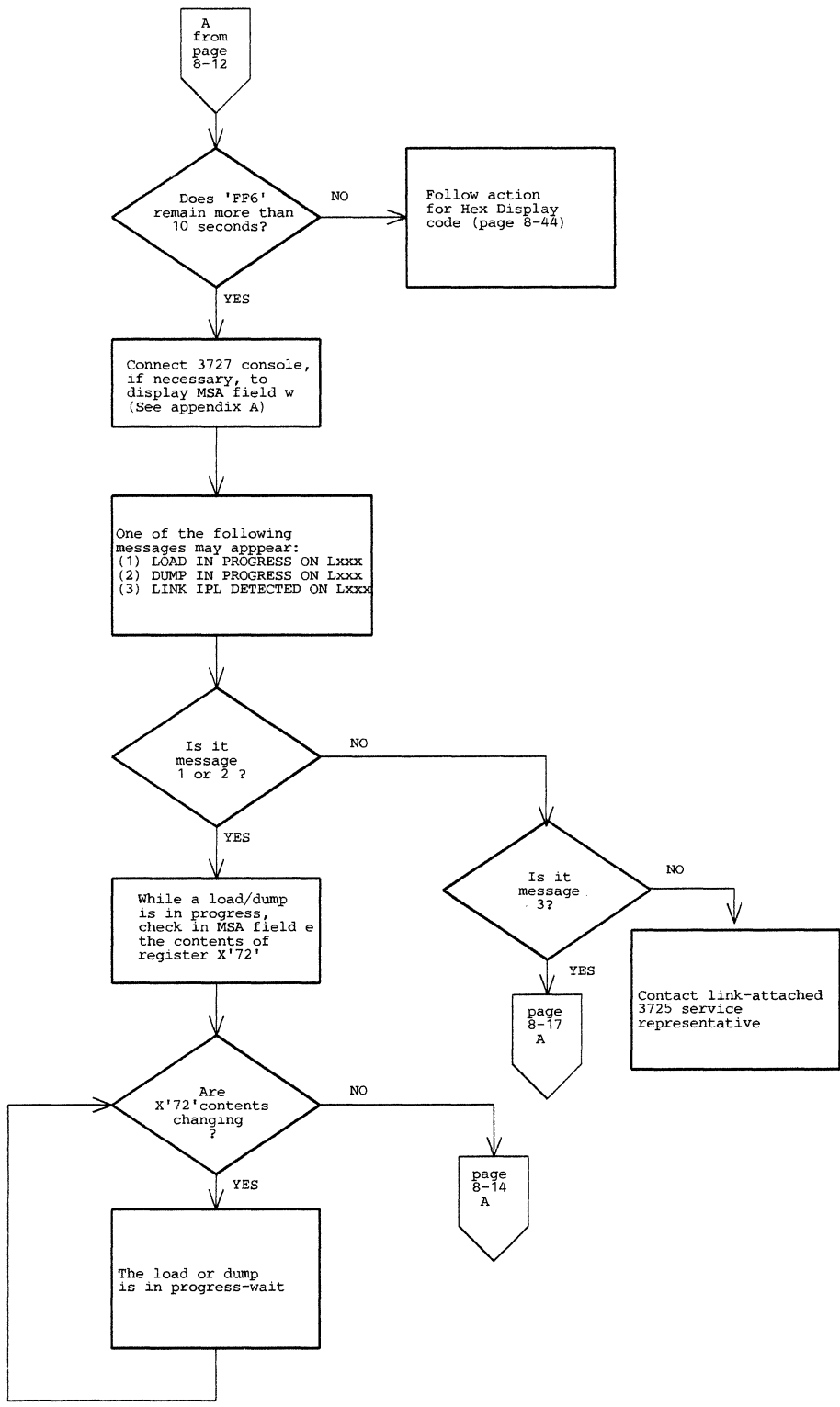
- 3725 Initialization Problem
- Unable to Load/Dump Control Program in Channel-Attached 3725

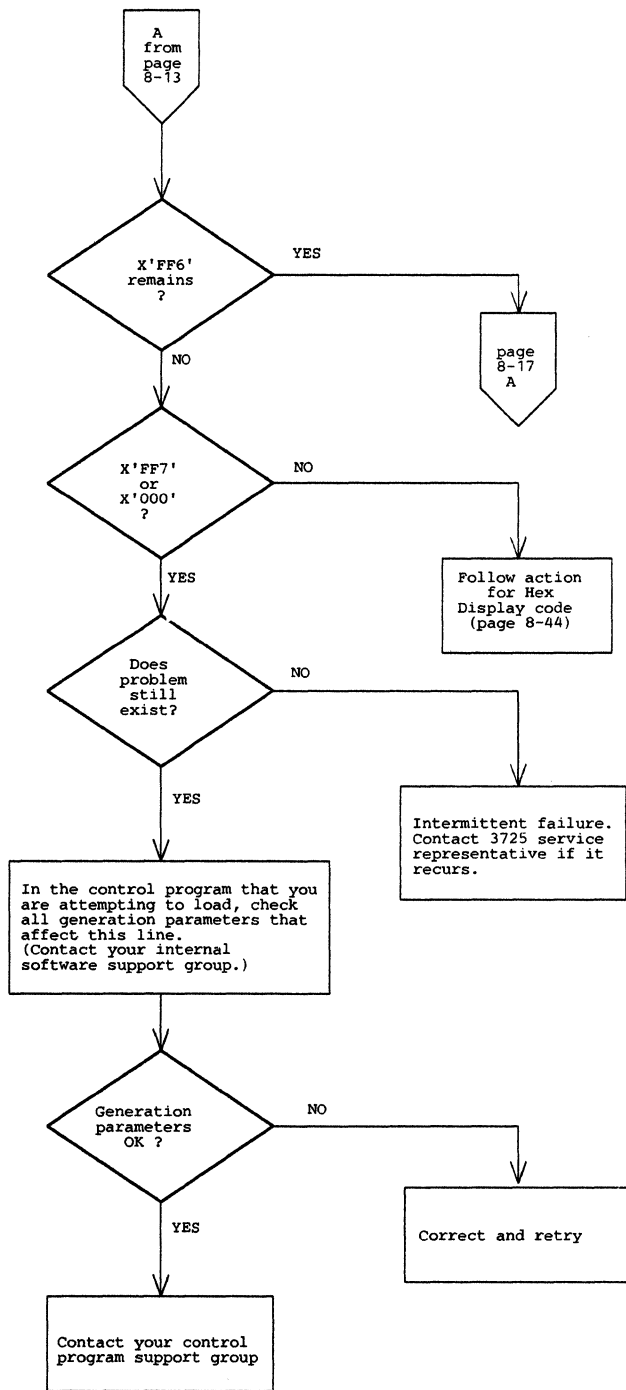


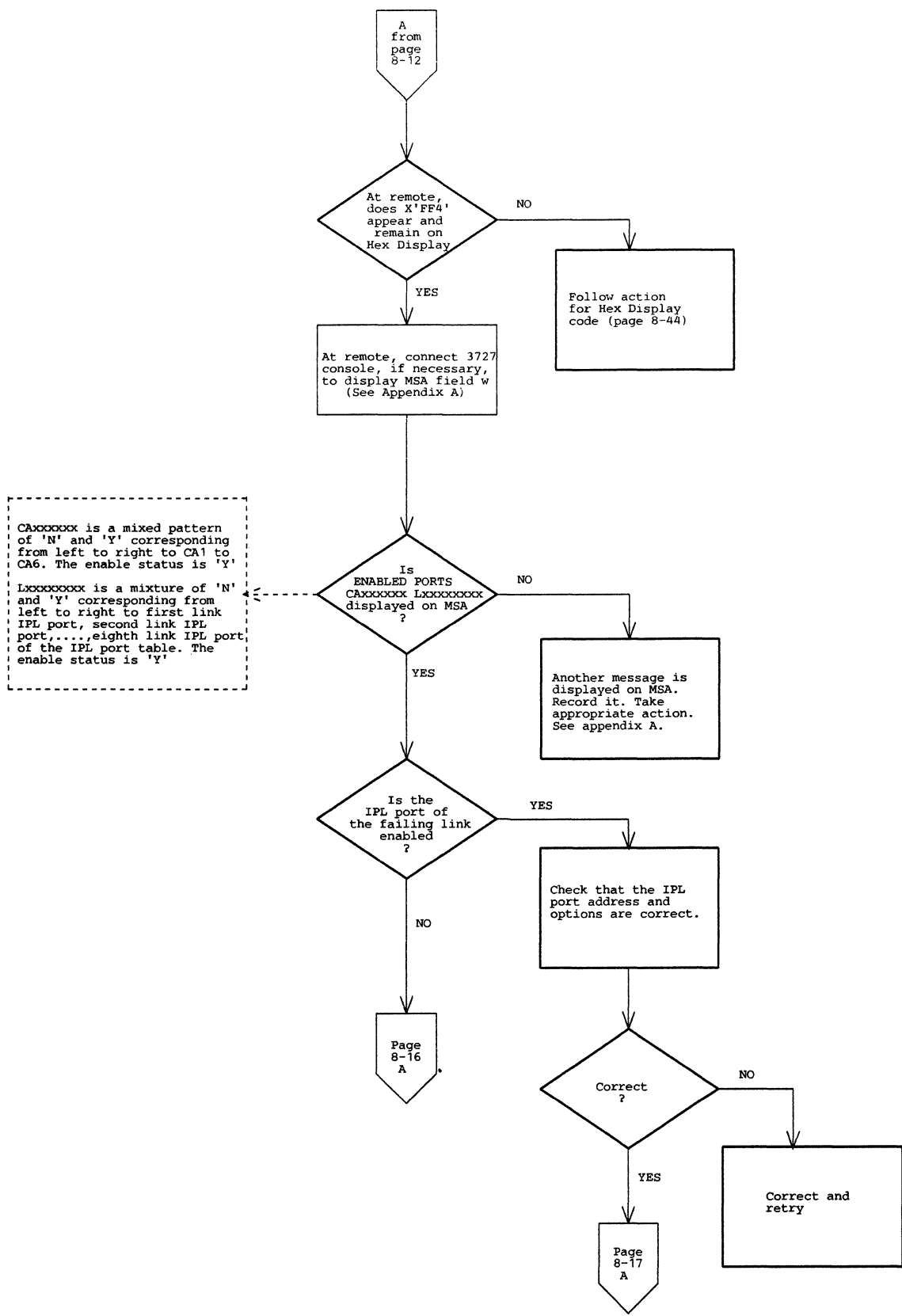


# Unable to Load/Dump Control Program in Link-Attached 3725

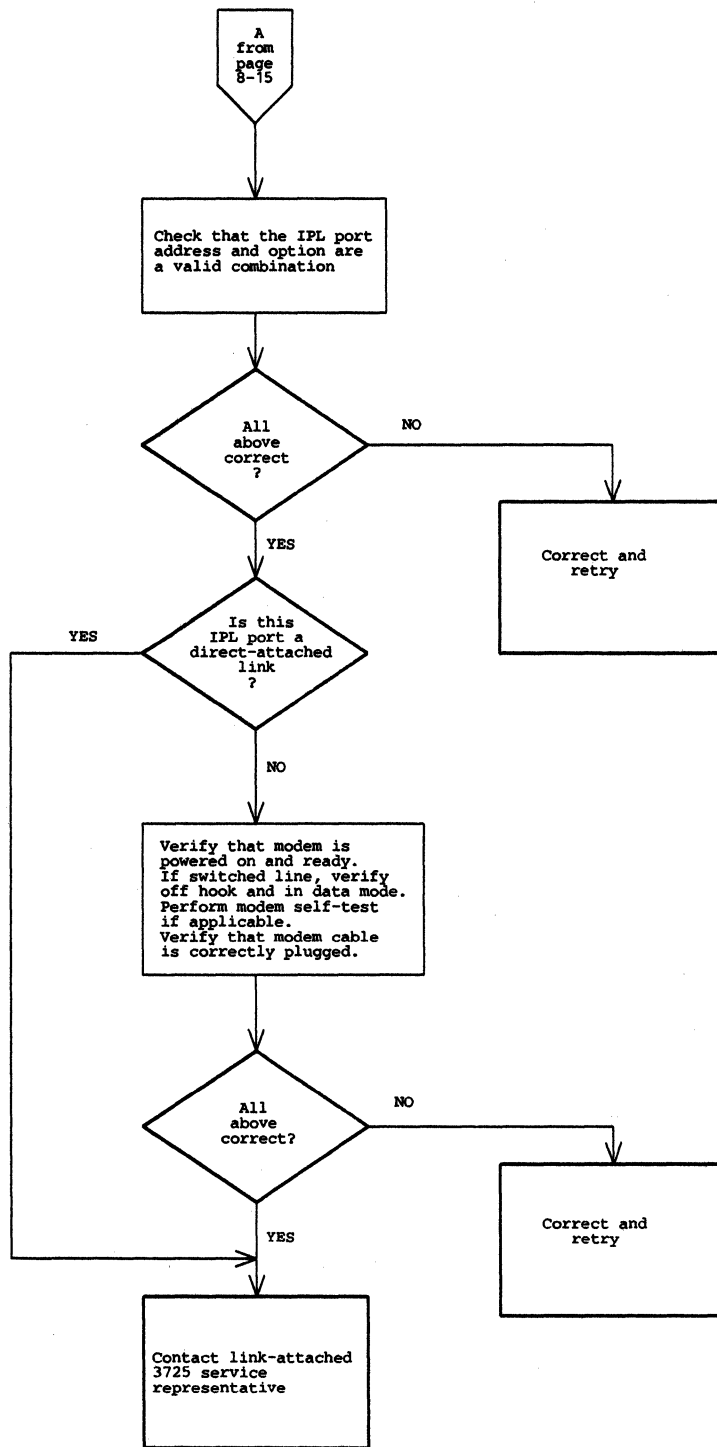


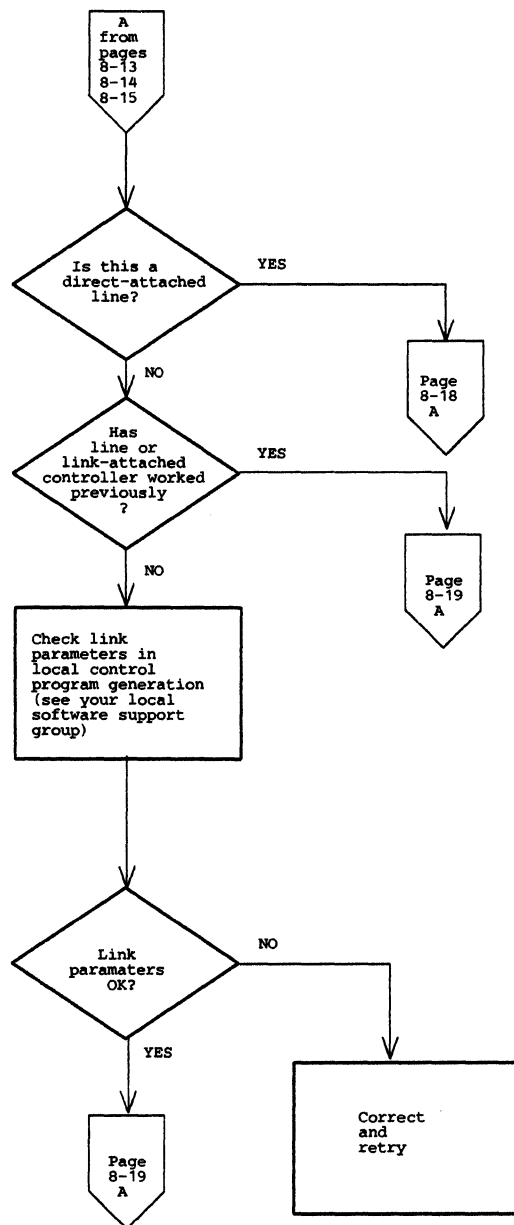


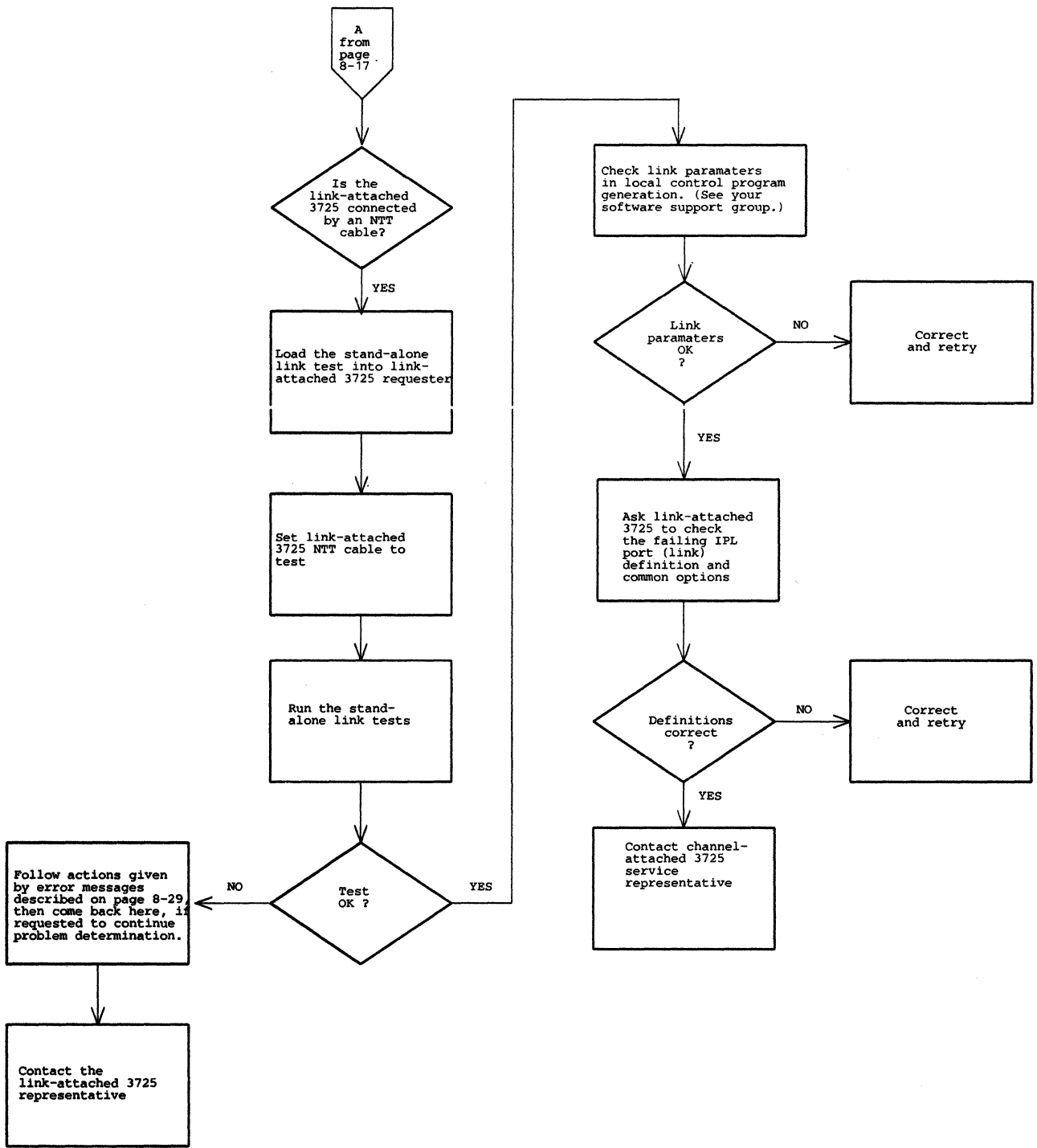


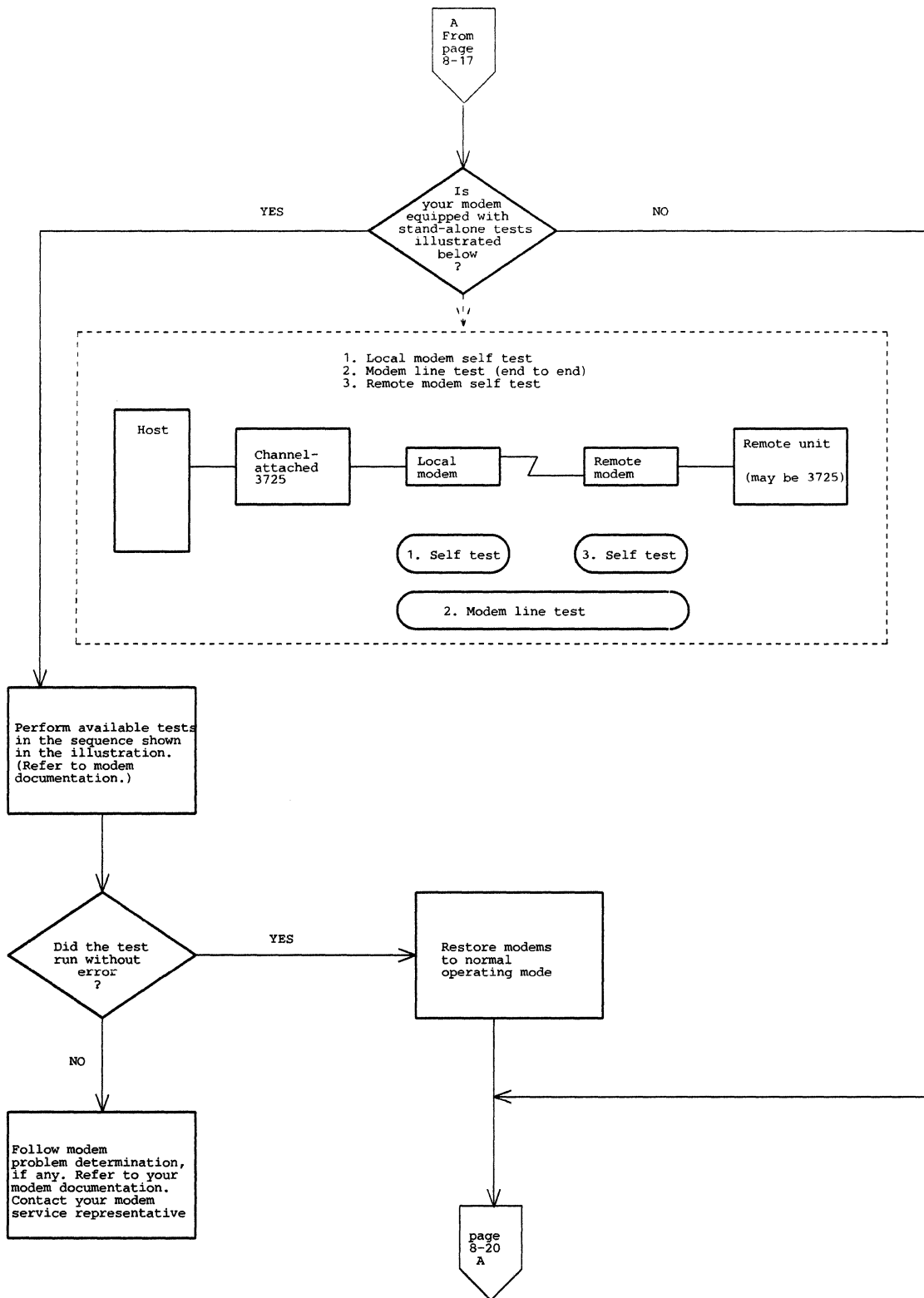


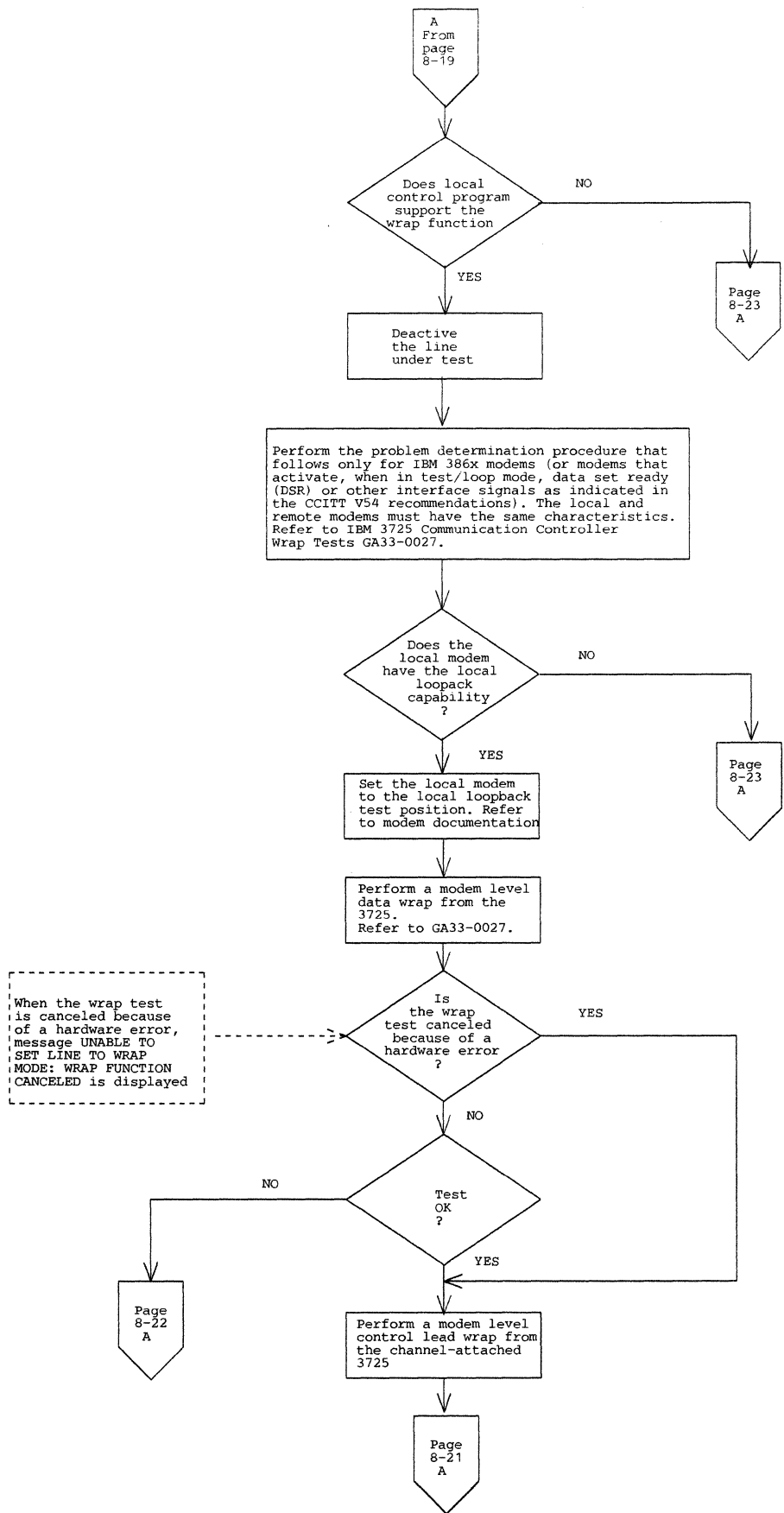


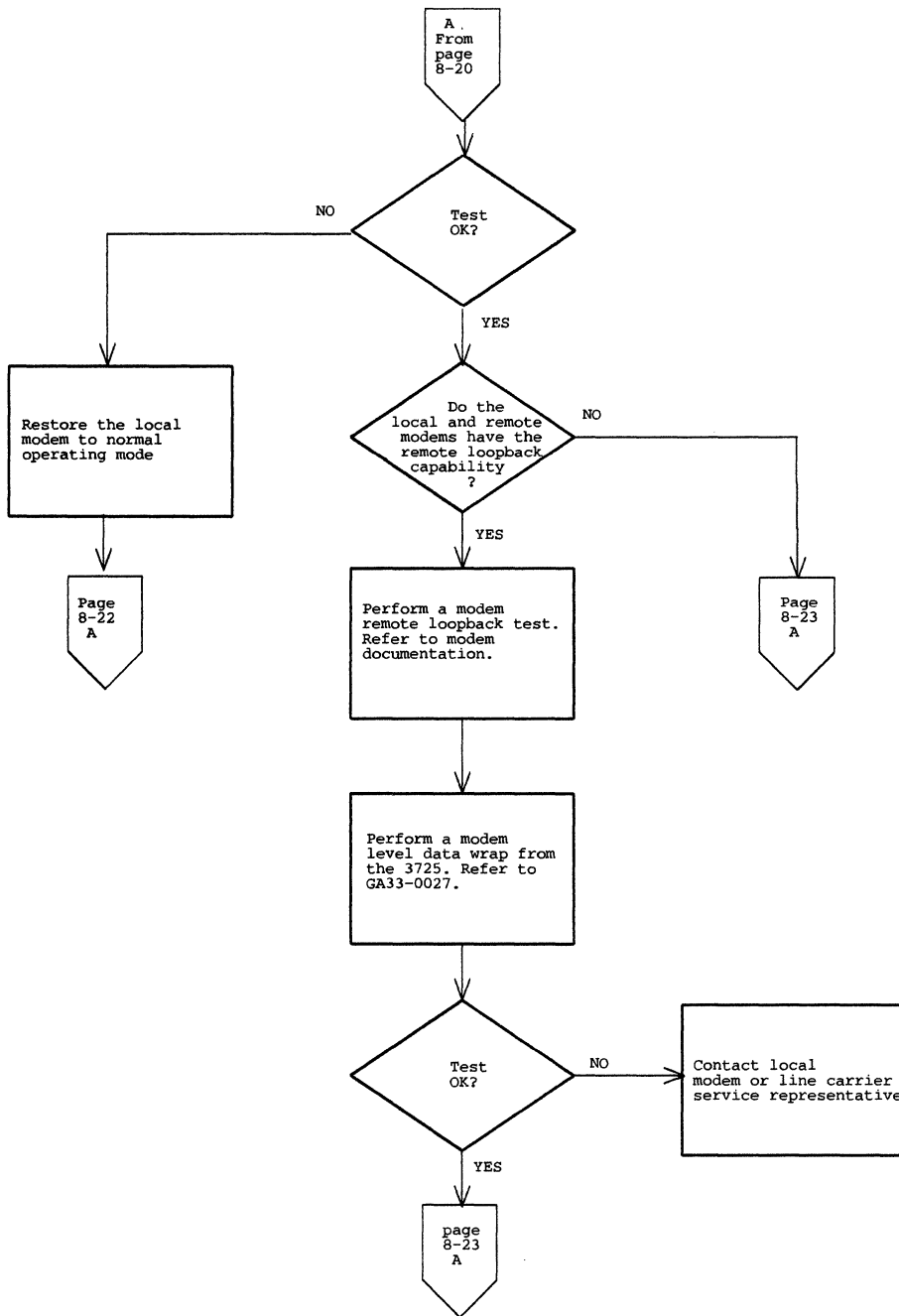


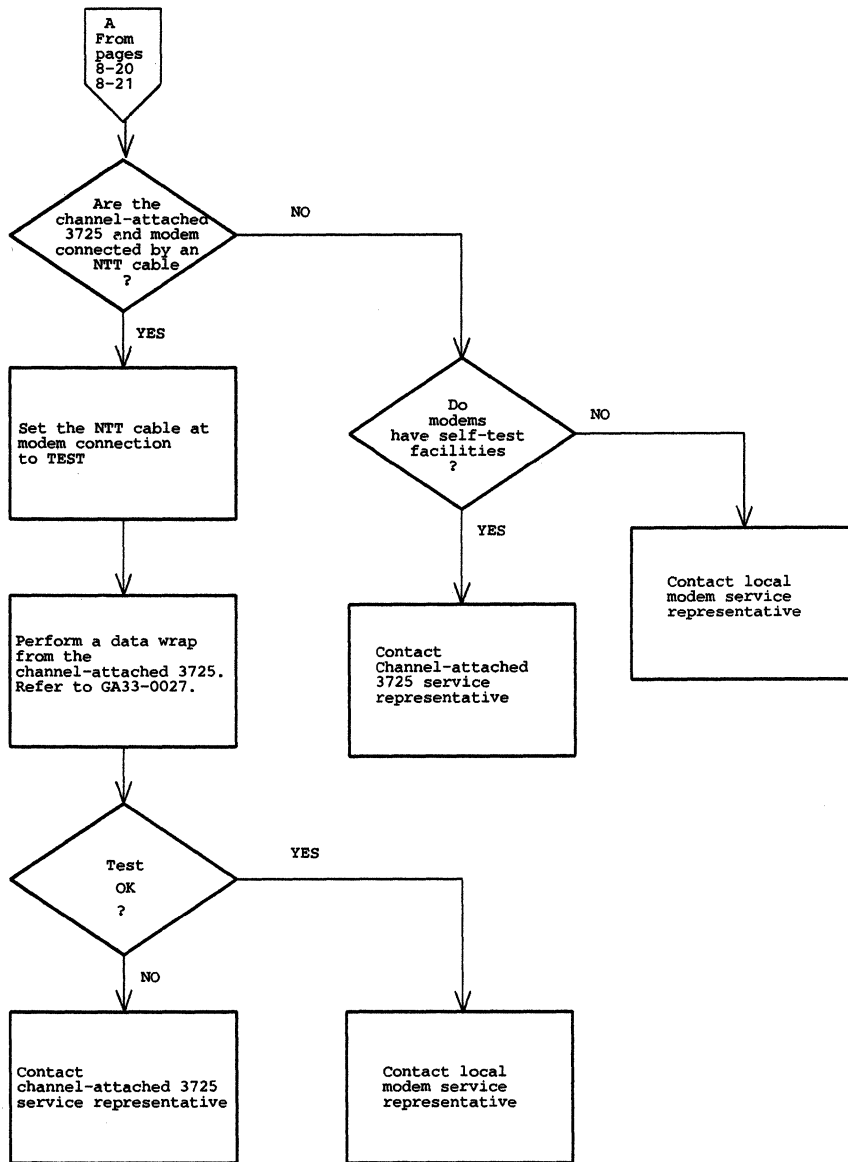


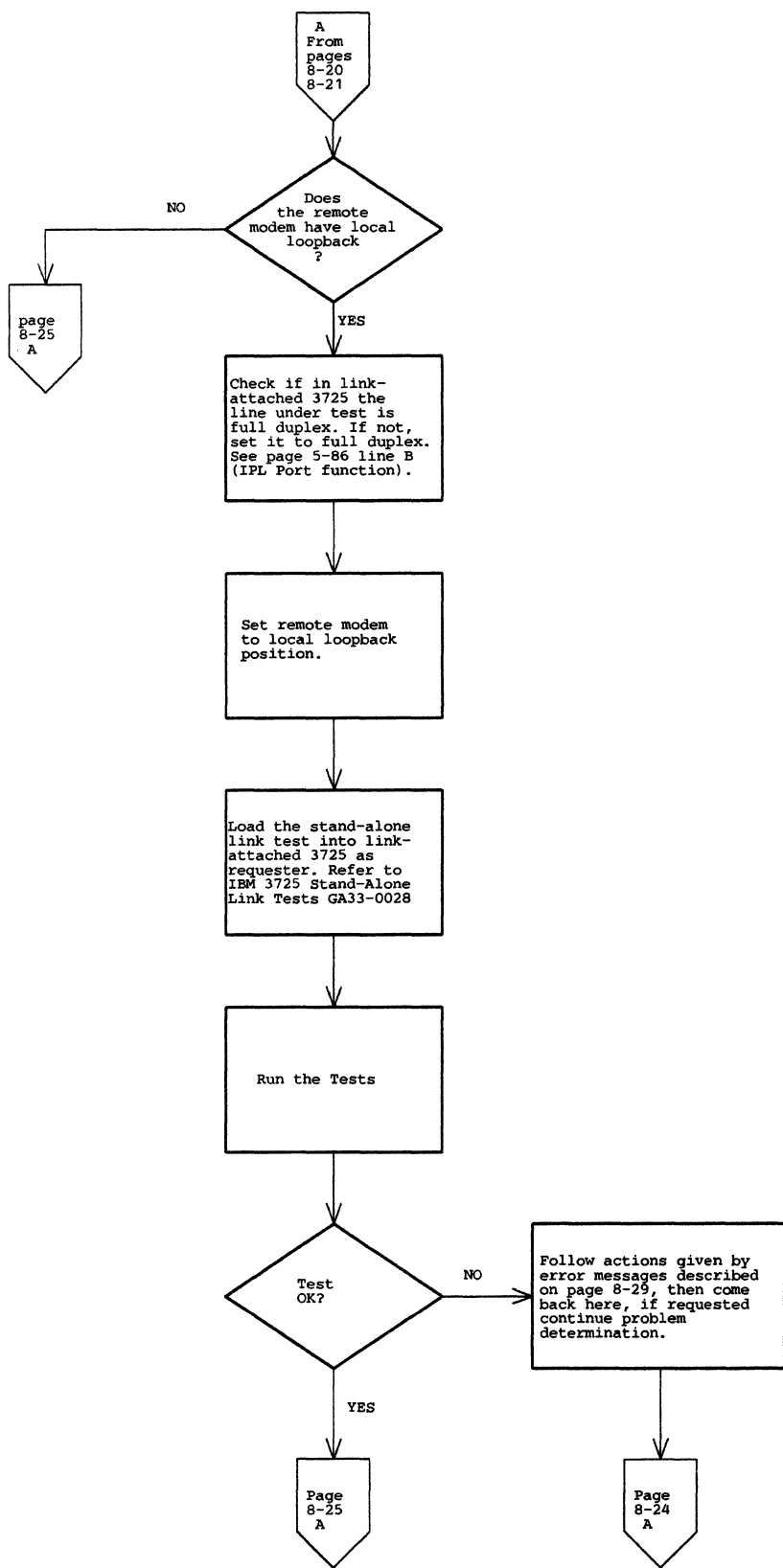




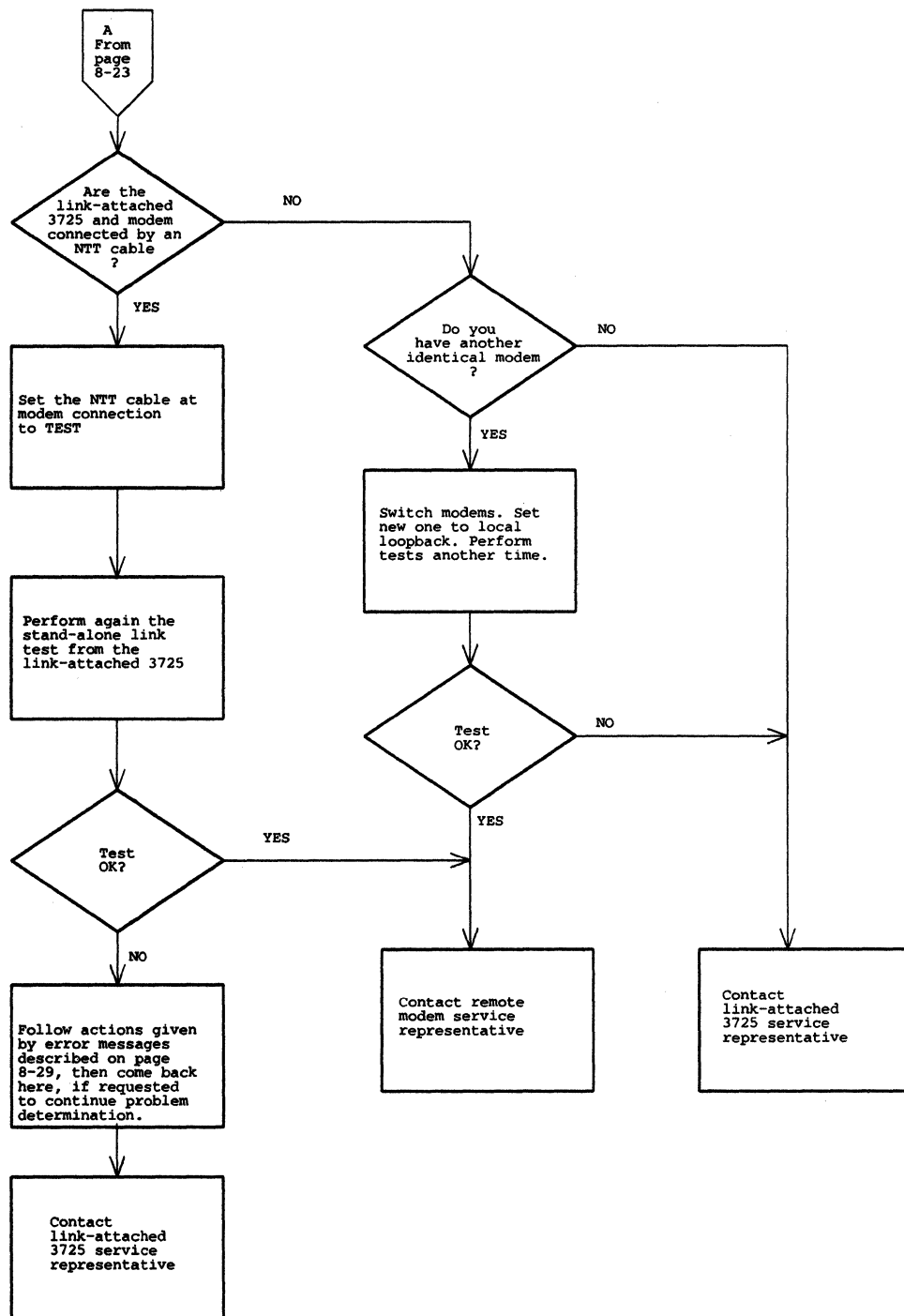


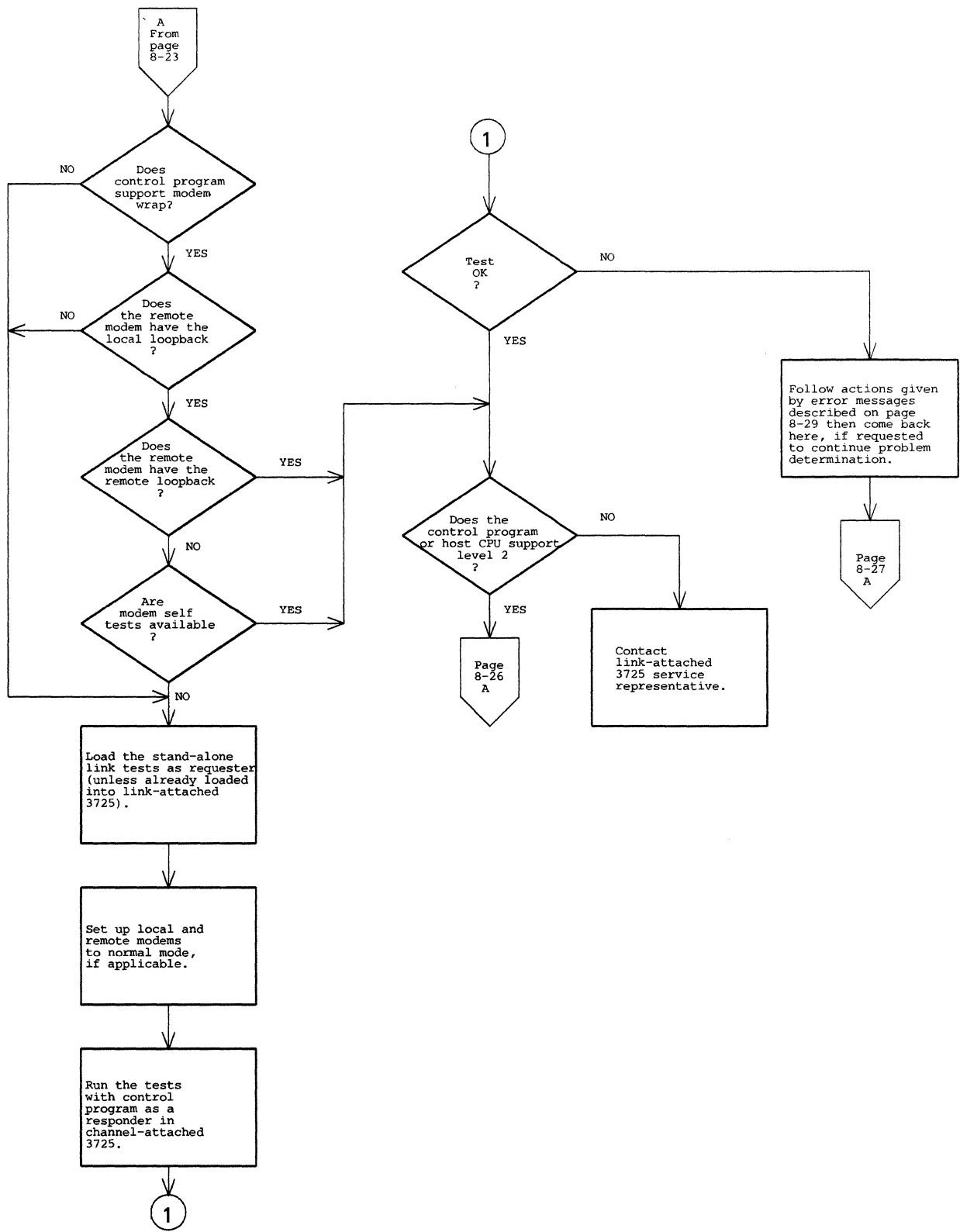


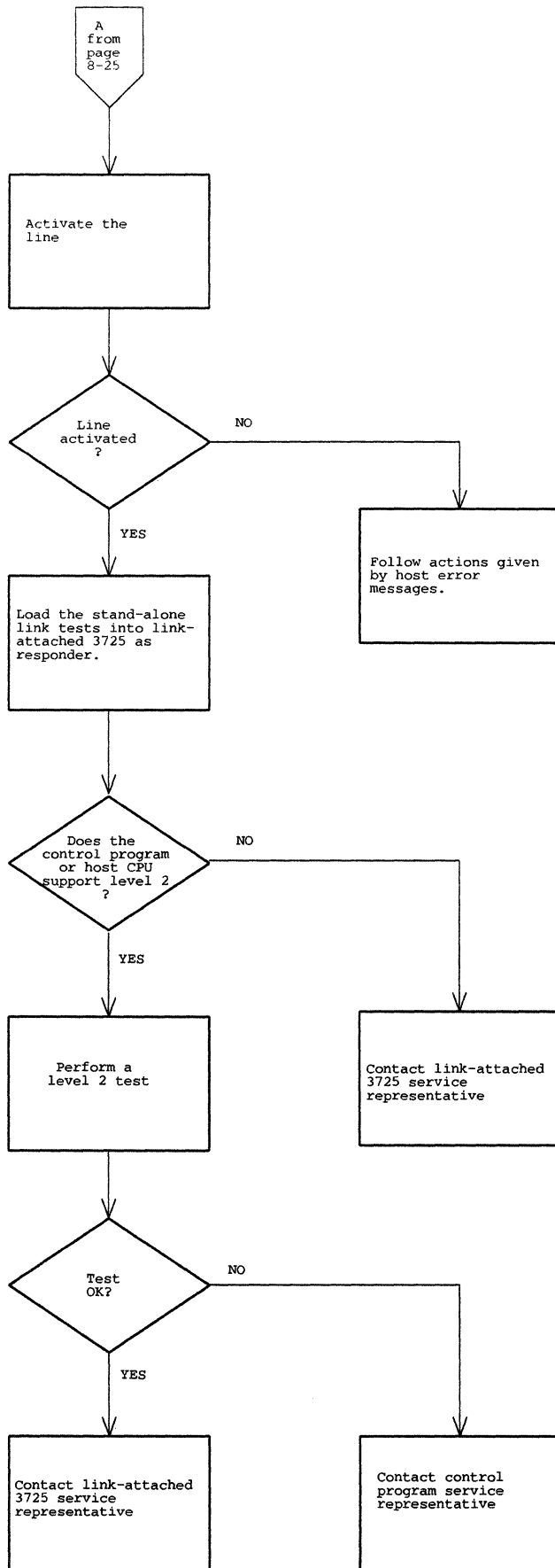


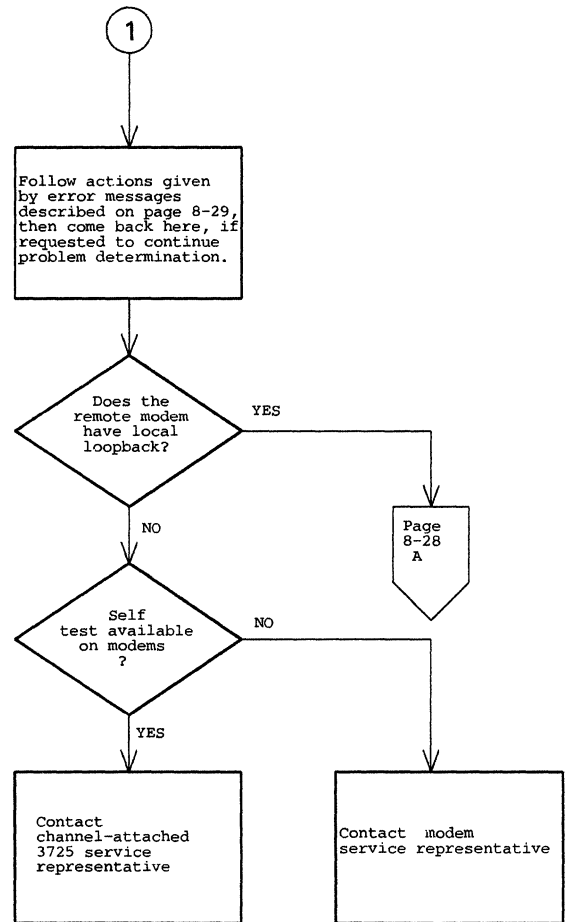
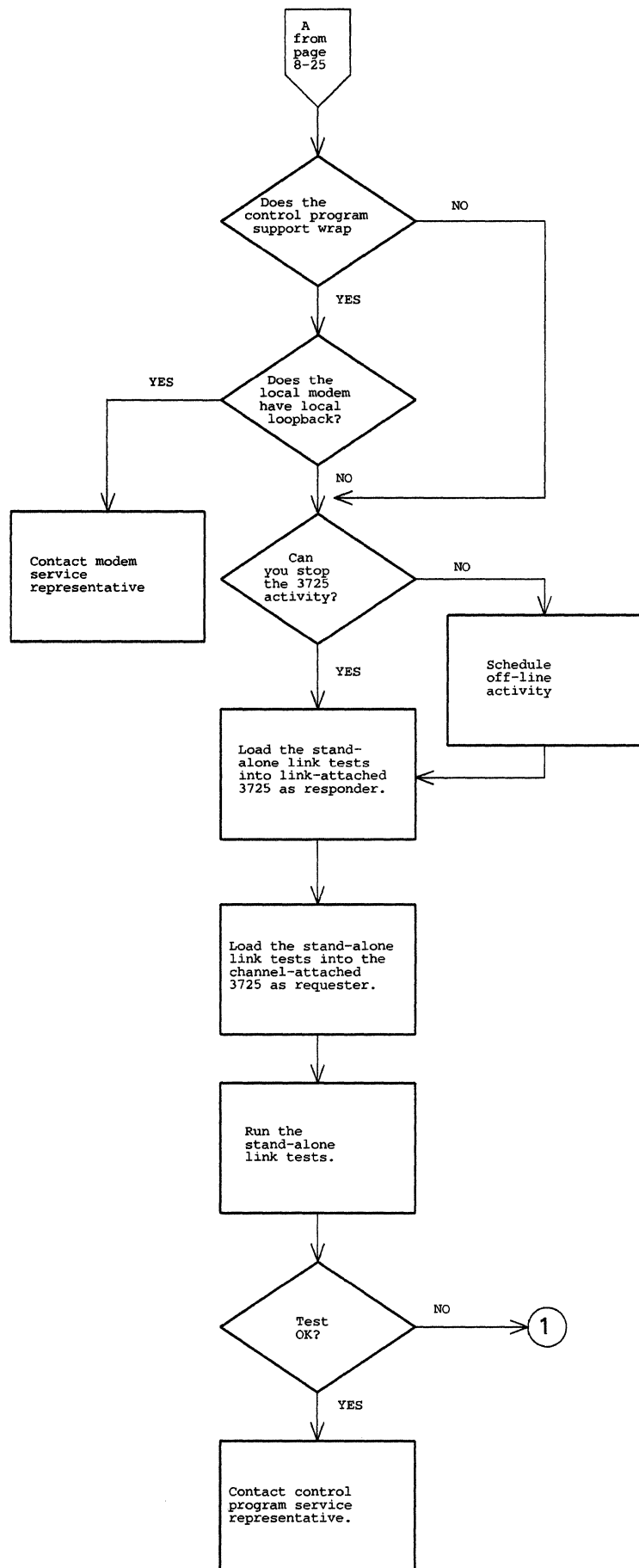


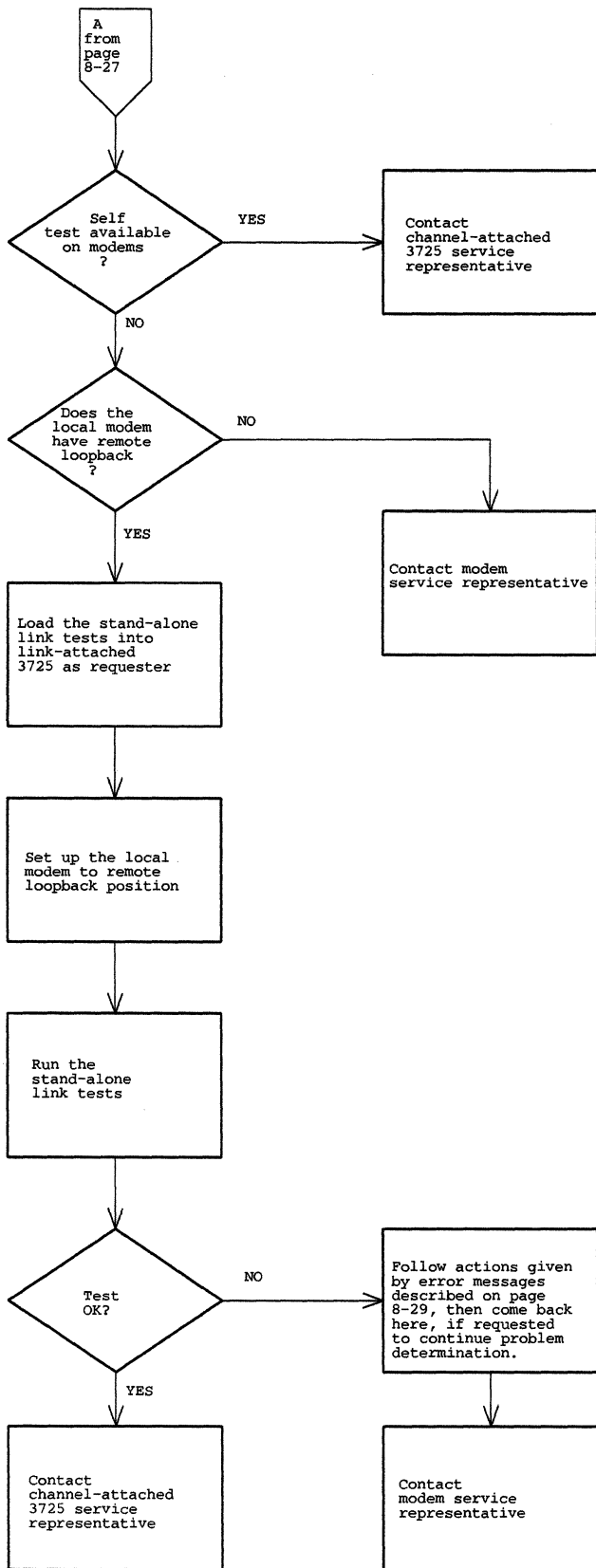




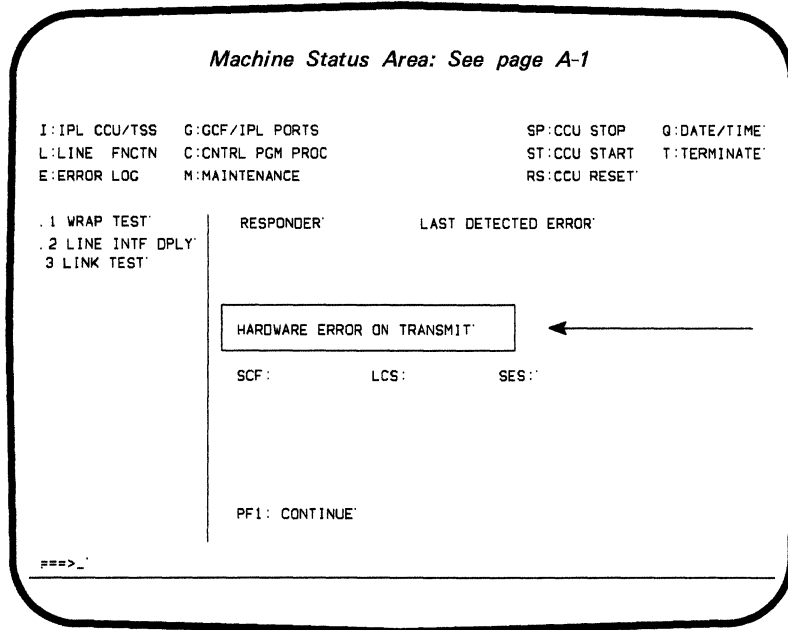








The following messages may be displayed while you perform a stand-alone link test. They are displayed as shown below.



#### CCU STOPPED BY OUTPUT X'70' - FUNCTION CANCELED

*Action:*

1. ReIPL the Link Test program.
2. Restart the test.
3. If the error persists, contact the appropriate 3725 service representative.

#### COMMAND REJECT RECEIVED DUE TO BUFFER OVERRUN

*Action:*

1. Re-IPL the Link Test program.
2. Restart the test.
3. If the error persists, contact the link-attached 3725 service representative.

#### COMMAND REJECT RECEIVED DUE TO INVALID COMMAND

*Action:*

1. Re-IPL the Link Test program.
2. Restart the test.
3. If the error persists, contact the link-attached 3725 service representative.

## ENABLE COMMAND FAILED - LINK TEST FUNCTION CANCELED

*Action:*

1. Check that the modem cable is correctly connected.
2. Check that the modem is powered on and operational.
3. If no trouble is found in the above two operations, contact the appropriate service representative.

Record the SCF, LCS, and SES codes displayed on the screen.

## HARDWARE ERROR ON RECEIVE

*Action:*

1. Verify the modem and modem cable.
2. Restart the test.
3. If the error persists, contact the service representative responsible for the 3725 for which the message was issued.

Record the SCF, LCS, and SES codes displayed on the screen.

## HARDWARE ERROR ON TRANSMIT

*Action:*

1. Verify the modem and modem cable.
2. Restart the test.
3. If the error persists, contact the service representative responsible for the 3725 for which the message was issued.

Record the SCF, LCS, and SES codes displayed on the screen.

## INVALID DATA RECEIVED

*Action:*

1. If the responder is a 3725 without either the control program or the stand-alone link test as the responder, check that no more than 32 bytes have been sent. (The CLDP buffer is limited to 32 bytes.)
2. Continue the problem determination.

## INVALID ADDRESS FIELD RECEIVED

*Action:*

1. Check that the correct responder unit address is provided to the stand-alone link test requester.
2. Continue the problem determination.

## INVALID CONTROL FIELD RECEIVED

*Action:* Continue the problem determination.

## MORE THAN 128 BYTES RECEIVED

*Action:* Continue the problem determination.

## NO ANSWER FROM LINK TEST PROGRAM - FUNCTION CANCELED

### *Action:*

1. Power on and reset the 3725.
2. Re-IPL the Link Test program.
3. Restart the test.

If the error persists, contact the appropriate service representative.

## SCANNER ERROR ON RECEIVE

### *Action:*

1. Contact the service representative responsible for the 3725 for which the message was issued.
2. Record the SCF, LCS, and SES codes displayed on the screen.

## SCANNER ERROR ON TRANSMIT

### *Action:*

1. Contact the service representative responsible for the 3725 for which the message was issued.
2. Record the SCF, LCS, and SES codes displayed on the screen.

## SCANNER NOT OPERATIONAL - LINK TEST FUNCTION CANCELED

*Action:* Check the validity of the link address, using the IPL Port function.

- If the address is invalid:
  1. Re-enter the valid address.
  2. Re-IPL the stand-alone link tests.
  3. Perform the tests.
- If the address is valid:
  1. Re-IML the scanner.
  2. Perform the tests.

If the problem persists, contact the appropriate 3725 service representative.

## SET MODE COMMAND FAILED - LINK TEST FUNCTION CANCELED

*Action:* Contact the 3725 service representative responsible for the 3725 for which the message was issued.

## TIMEOUT ON RECEIVE

### *Action:*

1. Check if the line parameters are correctly defined in both units.
2. Check if the correct responder unit address is provided to the stand-alone link test requester.
3. Continue the problem determination.



## TIMEOUT ON TRANSMIT

*Action:*

1. Reset the 3725 and re-IPL the Link Test program.
2. Restart the test.
3. If the error persists, contact the 3725 service representative.

## TOO MUCH DATA RECEIVED

*Action:* Continue the problem determination.

## TRANSMISSION ERROR ON RECEIVE

*Action:*

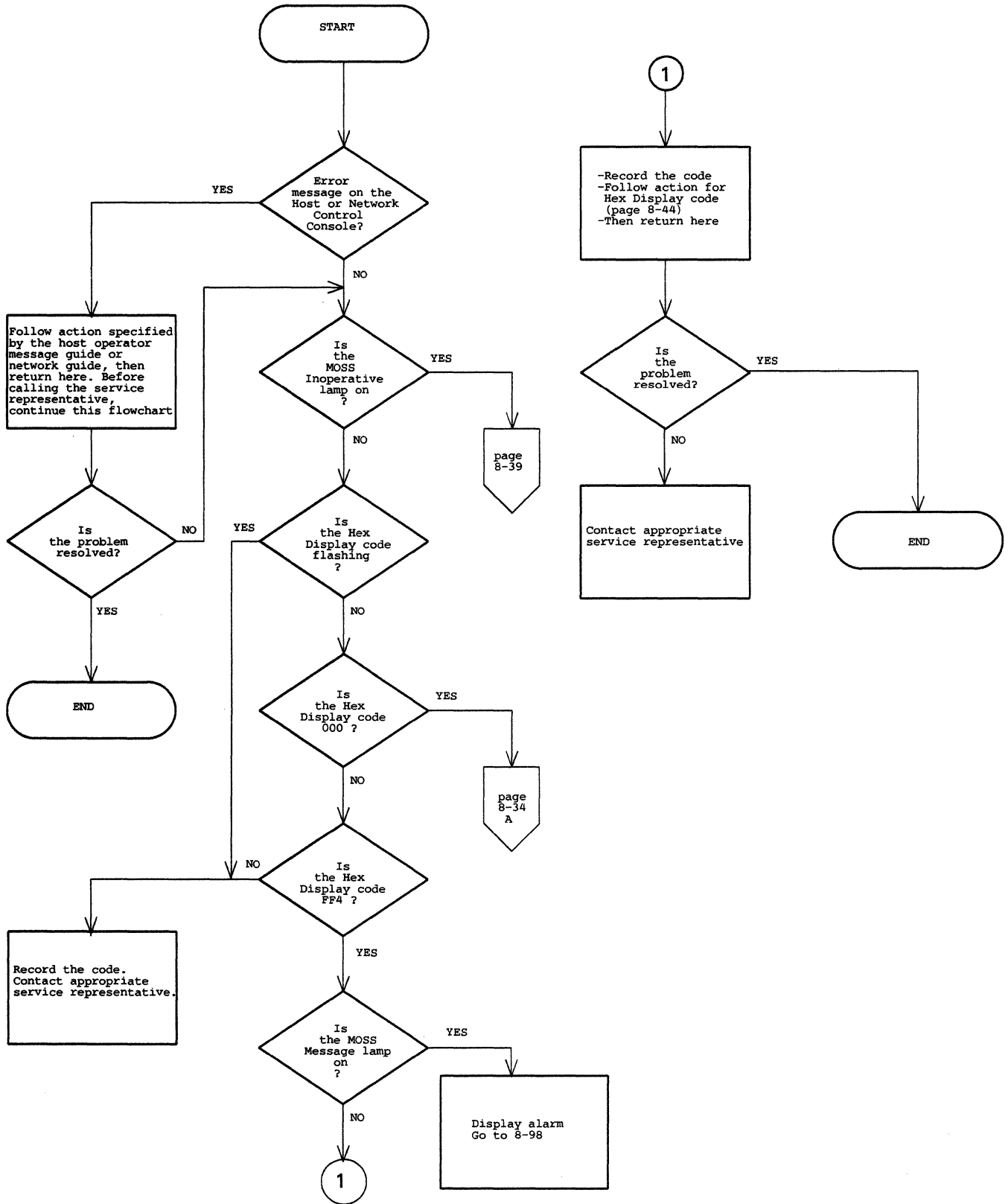
1. Continue the problem continuation.
2. Record the SCF, LCS, and SES codes displayed on the screen.

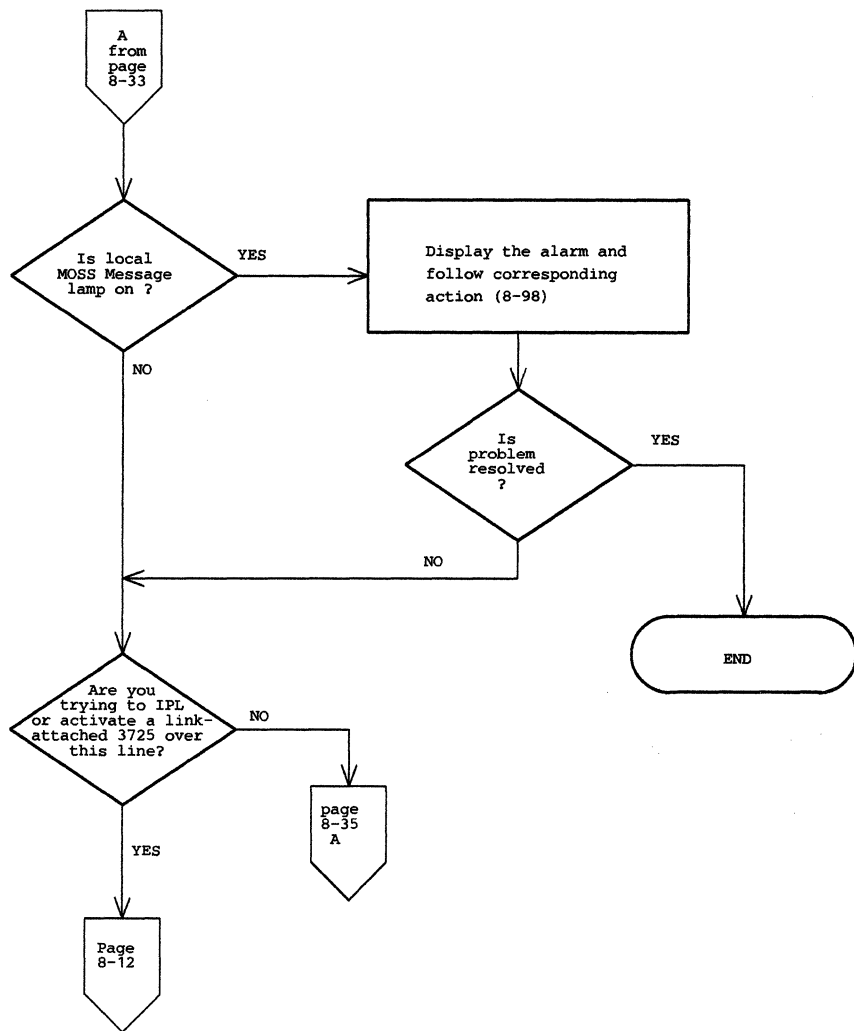
## TRANSMISSION ERROR ON TRANSMIT

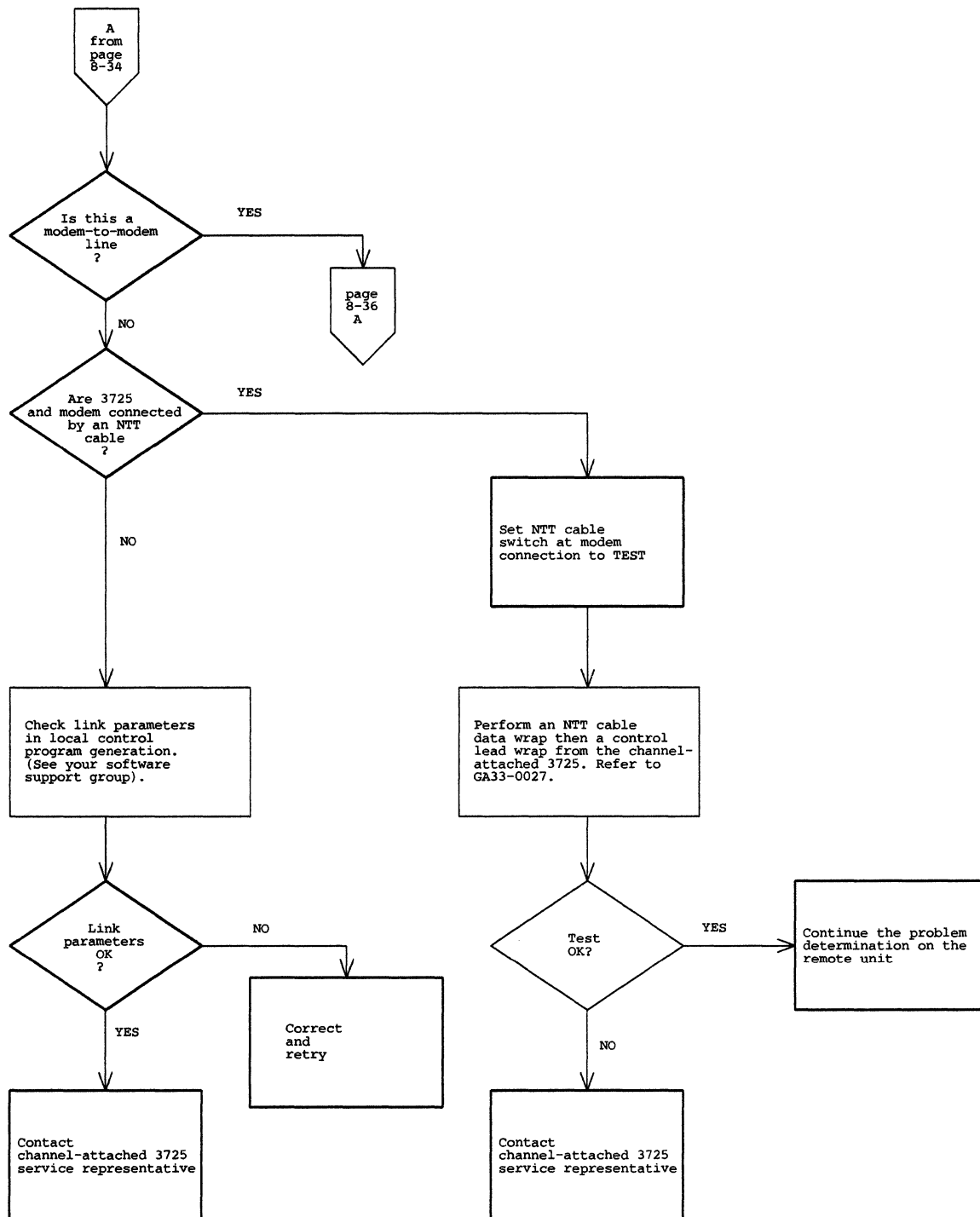
*Action:*

1. Continue the problem continuation.
2. Record the SCF, LCS, and SES codes displayed on the screen.

Activate (start) Line Problem  
or  
Errors while Running Lines



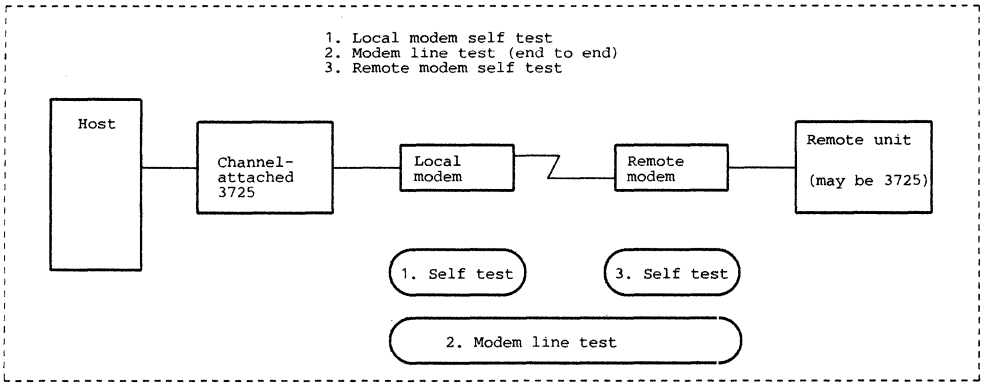
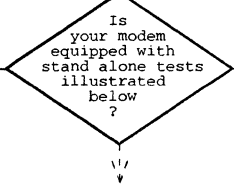




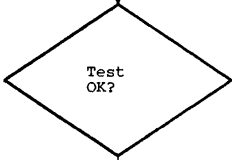
A  
From  
page  
8-35

YES

NO



Perform available tests in the sequence shown in the illustration. (Refer to modem documentation.)



YES

NO

Restore modems to normal operating mode

Follow modem problem determination if any. Refer to your modem documentation. Contact your modem service representative

Continue problem determination

page  
8-37  
A

Perform the problem determination procedure that follows only for IBM 386x modems (or modems that activate, when in test/loop mode, data set ready (DSR) or other interface signals as indicated in the CCITT V54 recommendations). The local and remote modems must have the same characteristics. Refer to IBM 3725 Communication Controller Wrap Tests, GA33-027.

Does the local modem have the local loopback capability?

NO

Switch the local modem to the local loopback test position. Refer to modem documentation

Perform a modem level data wrap from the 3725. Refer to GA33-0027.

Is the wrap test canceled because of a hardware error?

When the wrap test is canceled because of a hardware error, message UNABLE TO SET LINE TO WRAP MODE: WRAP FUNCTION CANCELED is displayed

YES

NO

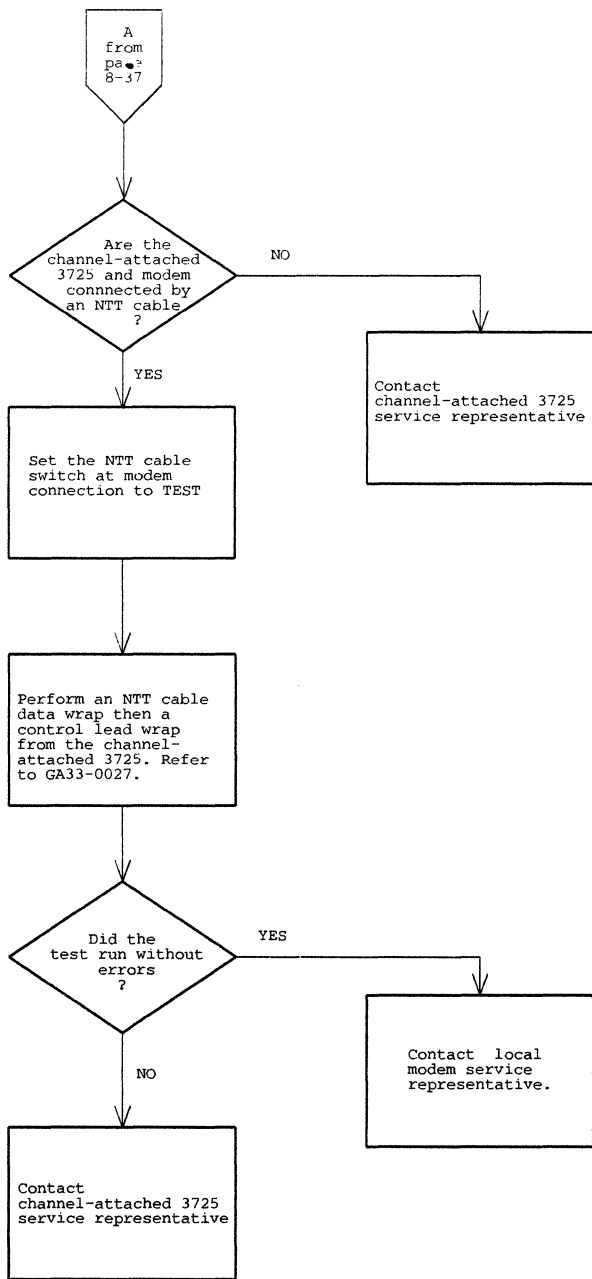
YES

Test OK?

NO

Suspect the remote unit. Follow remote unit problem determination.

Restore the local modem to normal operating mode



# MOSS Inoperative Lamp

## Cause

- The MOSS Inoperative lamp indicates a:
- MOSS error
  - MOSS-to-CCU communication error
  - MOSS-to-control program communication error

*Note: At IPL/IML time, the MOSS Inoperative lamp goes on and off while the MOSS microcode is testing the hardware.*

## Action

Do not attempt to perform a 3725 IPL from the control panel or the operator console.

You may perform a MOSS IML unless MOSS has already been automatically re-IML'ed (Hex Display shows 000). If you do, do not forget to set MOSS online (page 5-46).

- Note the error code displayed on the control panel Hex Display.
- Perform action indicated for the error code in Figure 8-1 (page 8-44).

The following messages are displayed at the host and NPDA consoles when the MOSS Inoperative lamp is on.

- VTAM Alert: IST757E MOSS UNAVAILABLE - HARDWARE ERROR
- TCAM Alert: IED301E 3725 MOSS UNAVAILABLE - HARDWARE ERROR
- NPDA Message: MOSS HARDWARE DOWN - DO NOT ATTEMPT TO IPL:MOSS



## Operator Console Not Operational Indication

Cause	Action
<ul style="list-style-type: none"><li>- The Console switch on the control panel is set to an incorrect position</li><li>- 3727 Power off</li><li>- 3727 Hardware failure</li><li>- 3725 Hardware failure</li><li>- 3725/3727 Interface problem</li></ul>	Go to page 8-8 for the problem determination procedure: 3727 Console Problem.

The following messages are displayed at the host and NPDA console when the 3727 operator console is not operational.

VTAM Alert: IST761E MOSS CONSOLE UNAVAILABLE

TCAM Alert: IED305E 3725 MOSS CONSOLE UNAVAILABLE

NPDA Message: MOSS CONSOLE UNAVAILABLE: MOSS CONSOLE/ADAP/CABLE

## Hexadecimal Codes Displayed on the Control Panel

The hexadecimal codes listed in Figure 8-1 are displayed on the 3725 control panel. The convention used to identify hexadecimal codes (X' ') is not used on the Hex Display.

Hex Code	Meaning	Action
	Service representative use only. <---blank	If the Hex Display is blank, contact the appropriate service representative.
000	3725 initialization from the control panel, from the operator console, or from the host, or an automatic IPL is complete. MOSS is online.	If this code remains and the host does not receive the Control Program Load Complete message, contact the appropriate service representative.
001 to 107	Service representative use only.	Contact the appropriate service representative.
108	After a manual power off, you did not wait at least 5 seconds before powering on the 3725.	- Power off the 3725. - Wait at least 5 seconds. - Power on the 3725.
109 to CFF	Service representative use only.	Contact the appropriate service representative.
D00	MOSS dump requested from the 3725 control panel is completed.	None.
D01 to E50	Service representative use only.	Contact the appropriate service representative.
E51	The primary operator console is switched off, not connected, or in test.	Perform appropriate action if the primary operator console is not in the correct status.
E52	The alternate operator console is switched off, not connected, or in test.	Perform appropriate action if the alternate operator console is not in the correct status.
E53 and E54	The Function Select switch is set to Console Link.	- Set switch to appropriate position and retry. - If code remains, contact the appropriate service representative.
E55 to E56	Service representative use only.	Contact the appropriate service representative.
E57 and E58	The Function Select switch is set to Console Link.	- Set switch to appropriate position and retry. - If code remains, contact the appropriate service representative.
E59 to E64	Service representative use only.	Contact the appropriate service representative.
E65	Function Select switch is set to MOSS Dump.	- Set switch to appropriate position and retry. - If code remains, contact the appropriate service representative.
E66 to EFF	Service representative use only.	Contact the appropriate service representative.
F00 F01 F03 F04 F05 F06 F07 F08 F09 FOA FOB	IML step 0 started. IML step 1 started. IML step 3 started. IML step 4 started. IML step 5 started. IML step 6 started. IML step 7 started. IML step 8 started. IML step 9 started. IML step A started. MOSS code initialization step 1 started.	- F00 to FOB show the normal progression of the MOSS IML either during a 3725 initialization or a MOSS IML itself. Some of these codes may not be seen unless an error occurs in that step. - One of these codes remaining longer than two minutes indicates a problem. Contact the appropriate service representative.

Figure 8-1. Codes Displayed on the Hexadecimal Display (Part 1 of 4)

Hex Code	Meaning	Action
F10	Service representative use only.	Contact the appropriate service representative.
F11	CCU handcheck during the 3725 initialization.	Press the Power ON position of the Power On/Off switch on the control panel. The 3725 is automatically re-initialized. If F11 is redisplayed, contact the appropriate service representative.
F12	While the 3725 is being initialized: - A 3725 is requested from the host, or - Control program abend, or - CLDP abend.	- If temporary, no action required. - If permanent, a previous IPL from the operator console was not terminated. See page 5-14.
F13 to F1A	Service representative use only.	Contact the appropriate service representative.
F1B F1C F1D F1E F1F F20 F21	Control program loader/dump abend. Control program loader/dump-to-MOSS communication error. NCP/EP initialization abend. Control program loader/dump-to-MOSS communication error. NCP/EP initialization error. NCP/EP initialization error. NCP/EP initialization error.	- Re-initialize the 3725. See Chapter 4. If the re-initialization is not successful, do the following:  Take a 3725 main storage dump (see page 8-117) and  Contact the appropriate service representative: customer engineer for F1B, F1C, F1E; and software support for others.
F22	IPL ports not initialized.	Initialize IPL ports using function IPL port. See page 5-83.
F23 to F2E	Service representative use only.	Contact the appropriate service representative.
F2F	IPL port table not initialized according to the hardware configuration.	Verify IPL port table according to hardware configuration. For IPL Port function, see page 5-83.
F30	The control program is not compatible with the MOSS level. Error in the control program initialization.	- Take a dump of 3725 storage, see page 8-117, then - Check the system generation parameters/options related to the control program information table (CPIT): Buffer length, prefix length, L1/L2/L3/L4 CRP buffer lengths, control program type.
F31 to FDF	Service representative use only.	Contact the appropriate service representative.
FE0	MOSS code initialization step 2.	- If temporary, no action required. - If permanent, it signals that there is a problem. Contact the appropriate service representative.
FE1 to FE6	Service representative use only.	Contact the appropriate service representative.
FE7	The control program did not answer while MOSS was getting on line.	Logically reconnect MOSS to the control program using function MOSS Online (page 5-46). If not successful, perform actions as for code X'F1B'.

Figure 8-1. Codes Displayed on the Hexadecimal Display (Part 2 of 4)

Hex Code	Meaning	Action
FE8	End of MOSS IML. The primary operator console was: - powered off or disconnected - in test - not selected (console switch)	Normal indication. Modify the status of the console, if necessary. The operator console interface has been incompletely tested.
FE9	End of MOSS IML. The alternate operator console was: - powered off or disconnected - in test - not selected (console switch)	
FEA	Service representative use only.	Contact the appropriate service representative.
FEB	The Function Select switch is set to Maintenance.  A general IPL is requested but the service diskette is installed.	Set the switch to the appropriate position.  Contact the appropriate service representative.
FEC to FED	Service representative use only.	Contact the appropriate service representative.
FEE	MOSS is offline because you: - Selected the MOSS <u>Offline</u> function, or  - Activated the Function Start switch while the Function Select switch was on MOSS IML. MOSS load and initialization is completed and the CCU control program is loaded.	Normal indication - no action required.  To set MOSS online, go to page 5-46.
FEF	MOSS load and initialization completed, the CCU control program is not loaded.	You tried to initialize the 3725 and code FEF remains displayed. Check the position of the Function Select switch, which is probably on MOSS IML. If it is, set the Function Select switch to Normal and re-initialize (see page 4-3). If it is not, contact the appropriate service representative.
FF0	3725 initialization started.	If temporary, no action required.  If permanent, it signals that there is a problem during corresponding phase. Contact the appropriate service representative.
FF1	IPL phase 1 started (CCU initialization).	
FF2	IPL phase 2 started (load and start the control program loader/dump in the CCU).	
FF3	IPL phase 3 started (load and initialize the scanners).	
FF4	IPL phase 4 started. (3725 is ready to load/dump the control program.)	Load the control program from the host. If FF4 remains while attempting to load/dump the control program, follow the procedure 'Unable to Load/Dump Control Program in Channel-Attached 3725' on page 8-10.
FF5	The control program loading/dumping is started on a channel-attached 3725. (A WRITE IPL command has been detected by a 3725 channel adapter.)	If temporary, no action required.  If permanent, it signals that there is a problem. Contact the appropriate service representative.

Figure 8-1. Codes Displayed on the Hexadecimal Display (Part 3 of 4)

Hex Code	Meaning	Action
FF6	The control program loading/dumping is started on a link-attached 3725. (A SIM command has been detected by the 3725.)	If temporary, no action required. If permanent, it signals that there is a problem. Contact the appropriate service representative.
FF7	Control program is loaded.	Same action as for FF5.
FF8 to FFA	Service representative use only.	If you have no need of the operator console, the 3725 operates normally; Otherwise, contact the appropriate service representative.
FFB	3725 initialization is canceled by: <ul style="list-style-type: none"> <li>- The operator (immediate function Terminate).</li> <li>- 3727 power-off when the IPL was requested from the console.</li> <li>- The switching from one console to the other (primary/alternate) when the IPL was requested from the initial console.</li> <li>- The operator console switching from normal mode to test mode.</li> <li>- MOSS automatic re-IML during a CCU/scanner step-by-step IPL, or</li> <li>- Two MOSS automatic re-IMLs during a CCU/scanner IPL.</li> </ul>	If necessary, perform a CCU/Scanner IPL (see page 5-60). If the error persists, contact the appropriate service representative.
FFC to FFD	Service representative use only.	Contact the appropriate service representative.
FFE	3725 initialization is completed although an error has been encountered. If the error comes from a scanner, an alarm A11 is displayed for any non-IMLed scanner. An alert A11 is sent to the host, if the control program is loaded and activated (not EP).  For any other errors, no alarm is displayed. The 3725 should run normally.	3725 operates normally except for the scanner(s) indicated in alarm A11 (page 8-112).  Take note of the error for record. No other action is required.
FFF	Service representative use only.	Contact the appropriate service representative.

Figure 8-1. Codes Displayed on the Hexadecimal Display (Part 4 of 4)

# Messages

Five types of messages are displayed on different areas of the operator console screen (Figure 8-2).

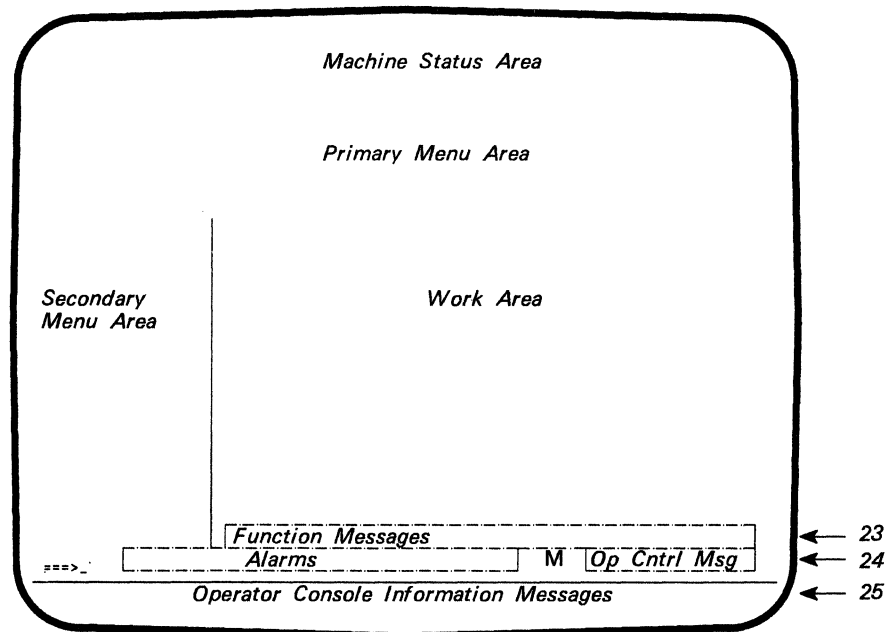


Figure 8-2. Message Areas

- **Function Messages**

Function messages are displayed on line 23 when selecting and performing a 3725 function (highlighted in the primary or secondary menu), to inform you of the progression of the function or to indicate errors.

Function messages are documented in this chapter, as follows:

- They are all listed in alphabetical order in Figure 8-3. This helps you to locate quickly the appropriate page.
- They are described under each function, in alphabetical order.

Messages common to two or more 3725 functions are described under "Common Messages".

An alphabetical list of all messages starts on page 8-50.

- **Operator Control Messages**

Operator control messages are displayed in the last 17 characters of line 24, to indicate invalid commands or to give information about immediate functions (except Terminate). They are described in this chapter in alphabetical order.

An alphabetical list of all messages start on page 8-50.

- **Operator Console Information Messages**

Operator console information messages are displayed below the horizontal line of the screens. They give the status of the operator console. They are described in this chapter in alphabetical order.

An alphabetical list of all messages starts on page 8-50.

- Alarms  
Alarms are displayed on line 24.  
An alphabetical list of all messages (including alarms) starts on page 8-50.
- The *Machine Status Area (MSA)* displays IPL messages. They are listed in the message table starting on page 8-50 and described in Appendix A.

Figure 8-3 lists in alphabetical order all messages displayed on the operator console and indicates the page where they are described. Messages applying to maintenance functions are not documented in this manual but in maintenance manuals. They are referred to in column "Go to Page" as "SP only" (service personnel only). Messages applying to the Wrap Test function are documented in *3725 Communication Controller Wrap Tests, GA33-0027*. Messages applying to the Stand-Alone Link Test function are documented in *3725 Communication Controller Stand-Alone Link Tests, GA33-0028*.



Messages	Go to Page
A0 MOSS IML EXCEPTION xxx yyy zzz	8-101
A2 MOSS RECOVERABLE ERROR, TRANSFER DUMP	hhmmss 8-103
A3 DISKETTE DOWN, DO NOT ATTEMPT TO IPL	hhmmss 8-104
A4 DISKETTE MEDIA ERROR	hhmmss 8-105
A6 MOSS OFFLINE, ALERT SENT	hhmmss 8-107
A7 HARDWARE ERROR, 3725 RE-IPL	hhmmss 8-108
A8 CONTROL PROGRAM ABEND xxxx, 3725 REIPL	hhmmss 8-109
A9 CHANNEL ADAPTER x DOWN	8-110
A10 GENERAL IPL CHECK	hhmmss 8-111
A11 SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER	hhmmss 8-112
A12 SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER	hhmmss 8-113
A13 SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER	hhmmss 8-114
A14 SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER	hhmmss 8-115
A15 LINE ADAPTER xxx DOWN	hhmmss 8-116
A DELAYED DISPLAY OR ALTER HAS BEEN SPECIFIED	SP only
A SCANNER IS ALREADY SELECTED: RELEASE IT TO SELECT ANOTHER	SP only
ADDRESS COMPARE ALREADY SET: CANCEL IT OR WAIT FOR HIT	SP only
ADDRESS COMPARE ANOMALY: CANCEL ADDRESS COMPARE AND RETRY	SP only
ADDRESS COMPARE CANCELED ON OPERATOR REQUEST	SP only
ALL OR PART OF 'VERIFY DATA' IS OUTSIDE MODULE	SP only
ALL ZAPS ARE 'APPLIED'	SP only
ALL ZAPS ARE 'NON-APPLIED'	SP only
AUTOMATIC DISPLAY BECAUSE OF ADDRESS COMPARE HIT	SP only
BER FILE IS UPDATED	SP only
BT BUFFER INCORRECTLY DEFINED	8-57
BUFFERS NOT AVAILABLE: WRAP TEST STOPPED	GA33-0027
BUFFERS TEMPORARILY NOT AVAILABLE: WRAP FUNCTION CANCELED	GA33-0027
CABLE DOES NOT EXIST	8-80
CABLE NOT INSTALLED	GA33-0027
CA IPL DETECTED ON CA x	A-9
CANCELED: TARGET VALUE > END STEP NUMBER	8-68
CCU ERROR: WRAP TEST STOPPED	GA33-0027
CCU FUNCTION NOT ALLOWED NOW: MOUNT DISKETTE FIRST	SP only
CCU FNCTN REFUSED	8-91
CCU INITIALIZATION STARTED	SP only
CCU STOPPED BY OUTPUT X'70'	8-29
CCU/MOSS ERROR: AUTO SELECT NOT DISABLED	8-65
CCU/MOSS ERROR: AUTO SELECT NOT ENABLED	8-65
CCU/MOSS ERROR: BT BUFFER NOT ACCESSIBLE	8-57
CCU/MOSS ERROR: BT BUFFER NOT UPDATED	8-57
CCU/MOSS ERROR: CA CANNOT BE SELECTED	8-65
CCU/MOSS ERROR: CA REGISTER X'E' NOT ACCESSIBLE	8-65
CCU/MOSS ERROR: CA REGISTERS NOT ACCESSIBLE	8-65
CCU/MOSS ERROR: CA STATE NOT ACCESSIBLE	8-66
CCU/MOSS ERROR: CCU INITIALIZATION CANCELED	SP only

Figure 8-3. Alphabetical List of 3725 Messages (Part 1 of 7)

Messages	Go to Page
CCU/MOSS ERROR: CDF CREATION CANCELED	SP only
CCU/MOSS ERROR: CDF VERIFICATION CANCELED	SP only
CCU/MOSS ERROR: DISKETTE SWAP FAILED	SP only
CCU/MOSS ERROR: FUNCTION NOT PERFORMED	8-57
CCU/MOSS ERROR: INITIAL CA CANNOT BE RESELECTED	8-66
CCU/MOSS ERROR: INPUT X'71', X'72' REG NOT ACCESSIBLE	8-74
CCU/MOSS ERROR: MOSS DUMP SWAP CANCELED	SP only
CCU/MOSS ERROR: RESET CCU FUNCTION CANCELED	8-87
CCU/MOSS ERROR: SCANNER DUMP SWAP CANCELED	SP only
CCU/MOSS ERROR: STEP NOT EXECUTED	8-68
CCU/MOSS ERROR: WORK REGISTERS CANNOT BE ALTERED	8-75
CCU/MOSS ERROR: WRAP FUNCTION CANCELED	GC33-0027
CCU/MOSS ERROR: ZAP FUNCTION CANNOT BE PERFORMED	SP only
CHANNEL ADAPTER NOT INSTALLED	8-66
CHECKPOINT TRACE SET xxx FOR LINE ADDRESS xxxx yyyyyyyy	SP only
CHGDMP MOSS DUMP FILE IS NOT EMPTY	SP only
CHHDMP SCANNER DUMP FILE IS NOT EMPTY	SP only
CHJDMP DUMP FILE ALREADY CONTAINS A xxxx DUMP	SP only
COMMAND INCOMPATIBLE WITH SCANNER MODE: LOOK AT MSA	SP only
COMMAND REJECT RECEIVED DUE TO BUFFER OVERRUN	8-29
COMMAND REJECT RECEIVED DUE TO INVALID COMMAND	8-29
CONTROL PROGRAM LOADED	A-9
CONTROLLER DISKETTE ERROR: SAVE NOT PERFORMED	SP only
CONTROLLER DISKETTE ERROR: SAVE PARTIALLY PERFORMED	SP only
CREATION NOT ALLOWED: MOSS MUST BE IN ALONE STATUS	SP only
DATA RATE MUST NOT BE SPECIFIED WITH EXTERNAL CLOCK = N	8-80
DELAYED ALTER PERFORMED BECAUSE OF ADDRESS COMPARE HIT	SP only
DISKETTE ERROR: BER FILE INCOMPLETELY RESTORED, PURGE ABORTED	SP only
DISKETTE ERROR: CCU INITIALIZATION CANCELED	SP only
DISKETTE ERROR: CDF CREATION CANCELED	SP only
DISKETTE ERROR: CDF DISPLAY CANCELED	SP only
DISKETTE ERROR: CDF VERIFICATION CANCELED	SP only
DISKETTE ERROR: DIRECTORY MAY BE DAMAGED	8-68
DISKETTE ERROR: DIRECTORY NOT ACCESSIBLE	8-68
DISKETTE ERROR: DUMP MAY BE INCOMPLETE	SP only
DISKETTE ERROR: FILE NOT FOUND	SP only
DISKETTE ERROR: FUNCTION CANCELED	8-78
DISKETTE ERROR: FUNCTION NOT AVAILABLE	8-58
DISKETTE ERROR: FUNCTION NOT PERFORMED	8-80
DISKETTE ERROR: IML CANCELED	8-84
DISKETTE ERROR: MLT FAILED	SP only
DISKETTE ERROR: MOSS DUMP SWAP CANCELED	SP only
DISKETTE ERROR: PROCEDURE CANNOT BE FILED/MODIFIED	8-69
DISKETTE ERROR: PROCEDURE FILE MAY BE DAMAGED	8-69
DISKETTE ERROR: PROCEDURE NOT AVAILABLE	8-69
DISKETTE ERROR: PURGE NOT PERFORMED	SP only
DISKETTE ERROR: REQUEST IGNORED	8-77
DISKETTE ERROR: RESET CCU FUNCTION CANCELED	8-87
DISKETTE ERROR: SCANNER DUMP NOT AVAILABLE	SP only
DISKETTE ERROR: SCANNER DUMP SWAP CANCELED	SP only
DISKETTE ERROR: UNABLE TO LOAD FUNCTION MODULE	SP only

Figure 8-3. Alphabetical List of 3725 Messages (Part 2 of 7)

Messages	Go to Page
DISKETTE ERROR: WRAP FUNCTION CANCELED	GC33-0027
DISKETTE ERROR: ZAP FUNCTION CANCELED - PERFORM A MOSS IML	SP only
DISKETTE ERROR: ZAP FUNCTION CANCELED	SP only
DISKETTE STARTING	8-91
DISKETTE UNUSABLE	8-91
DUMP IN PROGRESS ON CA x	A-9
DUMP IN PROGRESS ON L xxx	A-9
DUMP FILE BEING TRANSFERRED: TRY LATER	SP only
DUMP FILED IN CHHDMP: TO PRINT DUMP, TRANSFER IT TO HOST	SP only
DUMP FILED: TO TRANSFER TO HOST, SWAP IT TO CNTRL DISKETTE	SP only
ENABLE COMMAND FAILED - LINK TEST FUNCTION CANCELED	8-30
ENABLE NOT ALLOWED: STOP THE CCU	8-66
ENABLED PORTS CA xxxxxx L xxxxxxxx	A-10
ENTER MES NUMBER	8-78
ERROR IN FRONT END SCANNER PROCESSOR	SP only
ERROR IN SCANNER DURING COMMAND PROCESSING	8-58
ERROR IN SCANNER: ICC/LIC FAILED OR IS NOT PRESENT	SP only
EXEC CANCELED ON OPERATOR REQUEST	8-69
EXEC CANCELED: OUTPUT X'71' REGISTER NOT ACCESSIBLE	8-70
'EXPECTED DATA' CANNOT BE ENTERED AFTER 'Y'	GC33-0027
FILE EMPTY: MOSS DUMP SWAP CANCELED	SP only
FILE EMPTY: SCANNER DUMP SWAP CANCELED	SP only
FIRST STOP THE CCU	8-75
FORMAT CHECK	8-96
FUNCTION COMPLETED	8-58
FUNCTION COMPLETED - ZAP HISTORY TABLE IS FULL	SP only
FUNCTION COMPLETED BUT CONTROLLER ADDRESS IS NOT DEFINED	8-80
FUNCTION IN PROGRESS	8-58
FUNCTION NOT AVAILABLE: TRY LATER	8-58
FUNCTION xx COMPLETED	8-88
FUNCTION xx IN PROGRESS	8-88
GCF IS INITIALIZED AND FILED	8-78
GCF UPDATE COMPLETED, GCF FILED ON DISKETTE	8-78
HARDWARE ERROR ON RECEIVE	8-30
HARDWARE ERROR ON TRANSMIT	8-30
IML FOR SCANNER xx COMPLETED: SCANNER CAN BE CONNECTED	SP only
IML FOR SCANNER xx COMPLETED: SCANNER IS CONNECTED	8-84
IML FOR SCANNER xx IN PROGRESS	8-84
IML FOR SCANNER xx IN PROGRESS: CHECKOUT RETURN CODE = xxx	8-84
INCOMPATIBLE OPTIONS: FULL DUPLEX AND NO DX FACILITY	8-80
INCOMPATIBLE OPTIONS: NON-SWITCHED LINE AND ANSWER TONE	8-80
INCOMPATIBLE OPTIONS: NON-SWITCHED LINE AND RING INDICATOR	8-81
INCOMPATIBLE OPTIONS: SWITCHED LINE AND NO EXTERNAL CLOCK	8-81
INPUT MUST BE PAIRS OF HEX CHARACTERS SEPARATED BY BLANKS	GA33-0027
INPUT MUST BE 8 BINARY DIGITS	GA33-0027
INSERT	8-96
INVALID	8-91
INVALID ADDRESS FIELD RECEIVED	8-30
INVALID ACTION	8-67
INVALID ALTER REQUEST ON READ-ONLY STORAGE	SP only
INVALID BER RECORD n	SP only

Figure 8-3. Alphabetical List of 3725 Messages (Part 3 of 7)

Messages	Go to Page
INVALID CONTROL FIELD RECEIVED	8-30
INVALID CHANNEL ADAPTER NUMBER	8-67
INVALID DATA RECEIVED	8-30
INVALID DATE	SP only
INVALID FILE NAME	SP only
INVALID FLAG VALUE	SP only
INVALID INPUT	8-59
INVALID LINE ADDRESS	8-59
INVALID MODULE NAME	SP only
INVALID SEL#	8-77
INVALID SELECTION	SP only
INVALID TTA DATA	SP only
IOC ERROR DURING ERROR RECOVERY	8-59
IOC/SCANNER ERROR: FUNCTION NOT PERFORMED	8-59
IPL CANCELED	A-10
IPL CHECK xxx	A-10
IPL CHECK F1B CLDP ABEND xxxx	A-10
IPL COMPLETE	A-10
IPL COMPLETE + ERRORS	A-10
IPL STOP	A-11
LIC NOT INSTALLED	GA33-0027
LINE ADDRESS DOES NOT BELONG TO AN INSTALLED SCANNER	8-60
LINE ADDRESS xxx IS zz IN SELECTED SCANNER xx	SP only
LINE CHECK 1	8-96
LINE CHECK 2	8-96
LINE NOT DISABLED /DEACTIVATED: WRAP FUNCTION CANCELED	GA33-0027
LINE NOT SYSTEM GENERATED: WRAP FUNCTION CANCELED	GA33-0027
LINE TEMPORARILY NOT AVAILABLE: WRAP FUNCTION CANCELED	GA33-0027
LINE TEST ACTIVE: WRAP FUNCTION CANCELED	GA33-0027
LINE TRACE ACTIVE: WRAP FUNCTION CANCELED	GA33-0027
LINK IPL DETECTED ON L xxx	A-11
LINK NOT DEFINED IN IPL PORT TABLE	GA33-0028
LINK TEST PROGRAM LOADED	A-11
LINK TEST PROGRAM NOT LOADED - FUNCTION CANCELED	GA33-0028
LOAD IN PROGRESS ON CA x	A-11
LOAD IN PROGRESS ON L xxx	A-11
LOCK-FORMAT CHECK	8-96
LOCK-LINE CHECK 1	8-96
LOCK-LINE CHECK 2	8-97
LOCK-RE-KEY	8-97
LOCK-SENDING	8-97
LOCK-SYSTEM COMMAND	8-97
LOOK AT MSA FOR ADDRESS COMPARE STATUS	SP only
LSSD NOT ON DISKETTE: CDF CREATION CANCELED	SP only
LSSD NOT ON DISKETTE: CDF VERIFICATION CANCELED	SP only
MLT ALREADY IN USE	SP only
MORE THAN 128 BYTES RECEIVED	8-30
MOSS DUMP COPIED INTO CCU STORAGE	SP only
MOSS DUMP COPIED ON DISKETTE	SP only
MOSS IS NOT ALONE	SP only
MOUNTED DISKETTE EC LEVEL IS DIFFERENT FROM ORIGINAL ONE	SP only
MOUNTED DISKETTE TYPE IS DIFFERENT FROM ORIGINAL ONE	SP only

Figure 8-3. Alphabetical List of 3725 Messages (Part 4 of 7)

Messages	Go to Page
MOUNT xxxxxxxx DISKETTE, PRESS SEND WHEN READY	SP only
NO ANSWER FROM CCU CONTROL PROGRAM: WRAP FUNCTION CANCELED	GA33-0027
NO ANSWER FROM CONTROL PROGRAM: FUNCTION NOT PERFORMED	8-88
NO ANSWER FROM LINK TEST PROGRAM - FUNCTION CANCELED	8-31
NO ANSWER TO ERROR STATUS REQUEST DURING ERROR RECOVERY	8-82
NO CHANNEL ADAPTER SELECTED	8-67
NO CONTROL PROGRAM BUFFER: FUNCTION NOT PERFORMED	8-88
NO FILE TO SWAP - SWAP IS COMPLETED	SP only
NO FUNCTION VALUE	8-74
NO PROCEDURE TO CATALOG	8-70
NO SCANNER ANSWER: CHECK CCU STATE AND IF NEEDED RE-IML CS	8-82
NO SCANNER SELECTED	SP only
NO SELECTION MADE	SP only
NO SUPPORT FOR AUTOCALL LINE: WRAP FUNCTION CANCELED	GA33-0027
NO SUPPORT FOR OEM LINE: WRAP FUNCTION CANCELED	GA33-0027
NO VALID SCANNER INSTALLED: FUNCTION CANCELED	8-78
NO ZAP FILED	SP only
NON-OPERATIONAL EP DUALCOM LINE: WRAP FUNCTION CANCELED	GA33-0027
NOT ENOUGH SPACE IN ZAP AREA FOR ALL DATA	SP only
NOT ENOUGH SPACE IN ZAP AREA TO COPY ALL SELECTED ZAPS	SP only
ORIGINAL DISKETTE ZAPS ARE ALREADY ON BACKUP DISKETTE	SP only
PATTERN MUST CONTAIN AT LEAST 4 PAIRS OF HEX CHARACTERS	GA33-0027
PRESS ATTN TO CANCEL ADDRESS COMPARE	SP only
PRESS ATTN TO STOP	8-75
PROCEDURE IN STORAGE CANNOT BE EXECUTED	8-70
PROCEDURE NAME ALREADY USED	8-70
PROCEDURE NAME CANNOT START WITH CP	8-70
PROCEDURE NOT FOUND IN FILE	8-70
PROCEDURE x CATALOGED	8-71
PROCEDURE x CREATED	8-71
PROCEDURE x ERASED	8-71
PROCEDURE x EXECUTED	8-71
PROCEDURE x MODIFIED	8-71
PURGE COMPLETED	SP only
RE-ENTER	8-91
REFRESH MODE: PRESS ATTN TO STOP	SP only
REFRESH MODE: PRESS ATTN TO STOP REFRESH	8-83
REFUSED: CCU SIZE MUST BE 512, 768, OR 1024	SP only
REFUSED: DIRECTORY IS FULL	8-71
REFUSED: FILE SPACE EXCEEDED	8-72
REFUSED: MAX NUMBER OF MESSAGES REACHED	8-72
REFUSED: MAX NUMBER OF STEPS REACHED	8-72
REFUSED: MAXIMUM NUMBER OF ZAPS REACHED	SP only
REFUSED: ZAP AREA IS FULL	SP only
RELEASED SCANNER IS IN RESET OR INOPERATIVE MODE	SP only
REQUEST IGNORED	8-60
REQUEST IGNORED: CCU NOT INITIALIZED	8-89
RESET CCU FAILED	8-92
RESET COMPLETED	8-92
RESET NOT ALLOWED	8-92
RESUME IGNORED	8-90
RPO DETECTED ON L xxx	A-11

Figure 8-3. Alphabetical List of 3725 Messages (Part 5 of 7)

Messages	Go to Page
SAVE COMPLETED	SP only
SCANNER xx AUTOMATIC DUMP IN PROGRESS	SP only
SCANNER xx SELECTED: LOOK AT MSA FOR SCANNER MODE	SP only
SCANNER AC HIT BUT REQUESTED ACTION NOT PERFORMED	SP only
SCANNER AND/OR LINE TIME-OUT: WRAP TEST STOPPED	GA33-0027
SCANNER CANNOT BE CONNECTED: MOSS IS NOT ONLINE	8-85
SCANNER CHECKOUT FAILED: RC = xxxx	8-85
SCANNER CONNECTED TO CCU CONTROL PROGRAM	SP only
SCANNER CONNECTION REJECTED BY CCU CONTROL PROGRAM	8-86
SCANNER CYCLE STEAL TO/FROM CCU FAILED	8-83
SCANNER DUMP COPIED INTO CCU STORAGE	SP only
SCANNER DUMP COPIED ON DISKETTE	SP only
SCANNER DUMP STARTED	SP only
SCANNER ERROR ON RECEIVE	8-31
SCANNER ERROR ON TRANSMIT	8-31
SCANNER IN DISCONNECTED/GO MODE	SP only
SCANNER IN DISCONNECTED/STOP MODE	SP only
SCANNER IN RESET MODE	SP only
SCANNER NOT IML'ED - LINK TEST FUNCTION CANCELED	GA33-0028
SCANNER NOT INSTALLED	8-60
SCANNER NOT OPERATIONAL - LINK TEST FUNCTION CANCELED	8-31
SCANNER PROCESSING RESUMED BUT SCANNER MODE IS UNKNOWN	SP only
SCANNER PROCESSING RESUMED THEN STOPPED ON AC HIT	SP only
SCANNER RELEASED BUT CURRENT MODE KEPT	SP only
SCANNER SELECTED BUT NO STATUS RECEIVED	SP only
SCANNER SELECTED BUT STATUS UNKNOWN	SP only
SCANNER TOTAL WEIGHT > 100	8-79
SCANNER(S) NOT IMLED: xxxx	A-11
SEL# RANGE LIMITED TO n	8-77
SELECT A FILE	SP only
SELECT A SCANNER	SP only
SELECTED PROCEDURE IS FROM STORAGE	8-72
SENDING	8-97
SET MODE COMMAND FAILED - LINK TEST FUNCTION CANCELED	8-31
SPECIFY A DELAYED ALTER	SP only
SPECIFY A DELAYED DISPLAY	SP only
START CCU FAILED	8-92
START CCU IGNORED	8-92
START COMPLETED	8-92
START NOT ALLOWED	8-93
STEP 1 OF MOSS DUMP SWAP STARTED: DISKETTE TO CCU	SP only
STEP 1 OF SCANNER DUMP SWAP STARTED: DISKETTE TO CCU	SP only
STEP 2 OF MOSS DUMP SWAP STARTED: CCU TO DISKETTE	SP only
STEP 2 OF SCANNER DUMP SWAP STARTED: CCU TO DISKETTE	SP only
STEP 255 MUST BE THE END STATEMENT	8-72
STOP CCU COMPLETED	8-93
STOP CCU FAILED	8-93
STOP CCU IGNORED	8-94
STOP IGNORED	8-90
STOP NOT ALLOWED	8-94
STOP THE CCU THEN PRESS PF1 TO DISPLAY CA REGISTERS	8-67

Figure 8-3. Alphabetical List of 3725 Messages (Part 6 of 7)

Messages	Go to Page
STORE EXCEEDED (MAX 80 SECT.): USE 2 RUNS TO COPY FILES	SP only
SWAP COMPLETED	SP only
SWAP IS NOT ALLOWED, MOSS IS NOT OFFLINE	SP only
SWAP IS STARTED	SP only
SYSTEM COMMAND	8-97
THE NAME OF THE PROCEDURE TO BE CATALOGED IS: xxxx	8-73
THIS BER IS NO LONGER IN THE BER FILE	SP only
TIME-OUT ON RECEIVE	8-32
TIME-OUT ON TRANSMIT	8-32
TO ALTER DATA, SPECIFY AN IMMEDIATE DISPLAY	SP only
TO CLEAR DUMP FILE ENTER C, OTHERWISE PRESS SEND	SP only
TO DELAY ALTER, ENTER NEW DATA, CHANGE I TO D, PRESS SEND	SP only
TOO MANY SELECTED ZAPS (WOULD EXCEED ZAP AREA CAPACITY)	SP only
TOO MUCH DATA RECEIVED	8-32
TRANSMISSION ERROR ON RECEIVE	8-32
TRANSMISSION ERROR ON TRANSMIT	8-32
UNABLE TO SET LINE TO WRAP MODE: WRAP FUNCTION CANCELED	GA33-0027
UNDEFINED PF KEY	8-60
UNEXPECTED SCANNER INTERRUPT: PRESS SEND TO RETRY	SP only
UPSHIFT	8-97
VERIFICATION NOT ALLOWED: MOSS MUST BE IN ALONE STATUS	SP only
'VERIFY DATA' AND 'REPLACE DATA' HAVE DIFFERENT LENGTHS	SP only
'VERIFY DATA' DOES NOT MATCH MODULE DATA	SP only
WARNING: AT LEAST ONE TARGET VALUE > END STEP NUMBER	8-73
WARNING: THIS FUNCTION DESTROYS THE CCU CONTROL PROGRAM	SP only
WRAP FUNCTION CAN BE TERMINATED ONLY BY USING PF2	GA33-0027
WRAP FUNCTION CANCELED ON OPERATOR REQUEST	GA33-0027
WRAP FUNCTION COMPLETED	GA33-0027
WRAP TEST COMPLETED	GA33-0027
WRAP TEST STOPPED ON OPERATOR REQUEST	GA33-0027
WRONG DISKETTE	SP only
YOU CANNOT TERMINATE WRAP FUNCTION	GA33-0027
ZAP ALREADY EXISTS	SP only
ZAP AREA DOES NOT CONTAIN ANY 'APPLIED' ZAP	SP only
ZAP AREA DOES NOT CONTAIN ANY 'NON-APPLIED' ZAP	SP only
ZAP AREA IS EMPTY	SP only
ZAP AREA IS NOW FULL	SP only
ZAP AREA OF ORIGINAL DISKETTE IS EMPTY	SP only
ZAP DOES NOT EXIST	SP only
ZAP FUNCTION CANNOT BE PERFORMED WHEN MOSS IS ONLINE	SP only
ZAP FUNCTION TERMINATION NOT ALLOWED	SP only
ZAP MUST BE 'NON-APPLIED'	SP only
ZAP XXXXXXXXXXXX ERASED (DID NOT CONTAIN ANY RECORD)	SP only
ZAP XXXXXXXXXXXX FILED	SP only
nn ZAPS PARTIALLY APPLIED	SP only
xx BYTES ALTERED	SP only

Figure 8-3. Alphabetical List of 3725 Messages (Part 7 of 7)

## **Function Messages**

### **Common Messages**

The following messages are common to several 3725 functions.

#### **BT BUFFER INCORRECTLY DEFINED**

*Cause:* The branch trace register address and/or length are destroyed.

*Action:* Restore branch trace register address and/or length: Go to page 5-33. If the message appears another time, 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: 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 02.

*Action:* Do the following:

1. Terminate the function, using function Terminate (page 5-14), and
2. Contact the appropriate service representative.



## Common Messages (continued)

### 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:* Do the following:

1. Terminate the function, using function Terminate (page 5-14), and
2. Contact the appropriate service representative.

### 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:* Do the following:

1. Terminate the function, using function Terminate (page 5-14).
2. Contact the appropriate service representative.

### 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
- Terminate the function using function Terminate (page 5-14).

### FUNCTION IN PROGRESS

*Cause:* The function that you selected is being performed.

*Action:* None.

### FUNCTION NOT AVAILABLE: TRY LATER

*Cause:* The function that you selected is not available because the procedure file is being transferred to the host.

*Action:* Wait and try later.

## Common Messages (continued)

### 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, or
- You made a formatting error.

*Action:* Do one of the following:

- Correct the erroneous input, or
- Press one of the PF keys displayed on the screen, if any.

### INVALID LINE ADDRESS

*Cause:* The line address that you entered is not within the range from 0 through 255 for the 3725 Model 1 and from 0 through 23 for the 3725 Model 2.

*Action:* Check the line address in Appendix B, and re-enter.

### 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:* Do the following:

1. ReIML the appropriate scanner (page 5-65).
2. If the error persists, contact the appropriate service representative.

### 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:* Do the following:

1. Terminate the function, using function Terminate (page 5-14), and
2. Contact the appropriate service representative.

## Common Messages (continued)

### 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 in Appendix B, and re-enter.

### REQUEST IGNORED

*Cause:* Your request cannot be accepted in the present environment.

*Action:* Check in this manual the right way to enter your request.

### SCANNER NOT INSTALLED

*Cause:* The line address that you specified corresponds to a scanner that is not installed.

*Action:* Check the line address in Appendix B, and re-enter.

### UNDEFINED PF KEY

*Cause:* You pressed a PF key that is not displayed on the screen.

*Action:* Do one of the following:

- Press one of the PF keys displayed on the screen, if any, or
- Enter requested input.

**Address Compare Messages**

CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)

DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)

INVALID INPUT (See Common Messages)

REQUEST IGNORED (See Common Messages)

UNDEFINED PF KEY (See Common Messages)

## **Branch Trace Messages**

**BT BUFFER INCORRECTLY DEFINED (See Common Messages)**

**CCU/MOSS ERROR: BT BUFFER NOT ACCESSIBLE (See Common Messages)**

**CCU/MOSS ERROR: BT BUFFER NOT UPDATED (See Common Messages)**

**CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)**

**DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)**

**INVALID INPUT (See Common Messages)**

**REQUEST IGNORED (See Common Messages)**

**UNDEFINED PF KEY (See Common Messages)**

**Cancel AC Messages**

CCU/MOSS ERROR: BT BUFFER NOT UPDATED (See Common Messages)

CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)

DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)

REQUEST IGNORED (See Common Messages)

**Cancel BT Messages**

**CCU/MOSS ERROR: BT BUFFER NOT UPDATED (See Common Messages)**

**CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)**

**DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)**

**REQUEST IGNORED (See Common Messages)**

## Channel Adapter State and Register Display Messages

### CCU/MOSS ERROR: AUTO SELECT NOT DISABLED

*Cause:* The auto-selection mechanism cannot be disabled because of a hardware error on the CCU-to-MOSS boundary.

A BER is created: Type 01, ID 02.

*Action:* Contact the appropriate service representative.

### CCU/MOSS ERROR: AUTO SELECT NOT ENABLED

*Cause:* The auto-selection mechanism cannot be enabled as requested because of a hardware error on the CCU-to-MOSS boundary.

A BER is created: Type 01, ID 02.

*Action:* Contact the appropriate service representative.

### CCU/MOSS ERROR: CA CANNOT BE SELECTED

*Cause:* The requested channel adapter cannot be selected because of a hardware error on the CCU-to-MOSS boundary.

A BER is created: Type 01, ID 02.

*Action:* Contact the appropriate service representative.

### CCU/MOSS ERROR: CA REGISTER X'E' NOT ACCESSIBLE

*Cause:* The channel adapter register that you selected cannot be read because of a hardware error on the CCU-to-MOSS boundary.

A BER is created: Type 01, ID 02.

*Action:* Contact the appropriate service representative.

### CCU/MOSS ERROR: CA REGISTERS NOT ACCESSIBLE

*Cause:* The channel adapter registers cannot be read because of a hardware error on the CCU-to-MOSS boundary.

A BER is created: Type 01, ID 02.

*Action:* Contact the appropriate service representative.



## Channel Adapter State and Register Display Messages (continued)

### CCU/MOSS ERROR: CA STATE NOT ACCESSIBLE

*Cause:* The channel adapter state registers cannot be read 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: INITIAL CA CANNOT BE RESELECTED

*Cause:* The initial channel adapter cannot be reselected because of a hardware error on the CCU-to-MOSS boundary.

A BER is created: Type 01, ID 02.

*Action:* Contact the appropriate service representative.

### CHANNEL ADAPTER NOT INSTALLED

*Cause:* You entered a valid channel adapter number, but it is not among the installed channel adapter numbers.




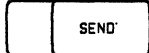

*Action:* Enter the number of channel adapter that has been installed.

### DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)

### ENABLE NOT ALLOWED: STOP THE CCU

*Cause:* You cannot enable the channel adapter auto-selection mechanism if the CCU is not stopped.

*Action:* Do the following if the CCU is not stopped:

1.     to stop the CCU.
2.  to continue.

## Channel Adapter State and Register Display Messages (continued)

### INVALID ACTION

*Cause:* You were requested to press either PF1 (to enable the auto-selection mechanism and to display the Display Channel Adapter State screen) or PF3 (to leave the auto-selection mechanism in disabled status and to display the Display Channel Adapter State screen) but you pressed some other key.

*Action:* Press either PF1 or PF3.

### INVALID CHANNEL ADAPTER NUMBER

*Cause:* You entered an invalid channel adapter number.

*Action:* Enter a valid channel number.

### NO CHANNEL ADAPTER SELECTED

*Cause:* Neither was a channel adapter automatically selected nor did you enter a channel adapter number.

*Action:* Enter a channel adapter number.

### STOP THE CCU THEN PRESS PF1 TO DISPLAY CA REGISTERS

*Cause:* To display the channel adapter registers, the CCU must be stopped.

*Action:* Do the following to stop the CCU:

1. 

SELN AREA
--------------

S
---

P
---

SEND
------

 to stop the CCU.
2. 

PF1
-----

 to continue.

## Control Program Procedure Messages

### CANCELED: TARGET VALUE > END STEP NUMBER

*Cause:* While executing 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 (page 7-16).

### 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 02.

*Action:* Contact the appropriate service representative.

### DISKETTE ERROR: DIRECTORY MAY BE DAMAGED

*Cause:* The directory may be damaged because of a diskette hardware error that occurred when writing the directory. Control program procedures may be lost.

A BER is created: Type 01, ID 03.

Alarm A3 is displayed.

*Action:* Contact the appropriate service representative.

### DISKETTE ERROR: DIRECTORY NOT ACCESSIBLE

*Cause:* The directory is not available because of a hardware error on the diskette.

A BER is created: Type 01, ID 03.

Alarm A3 is displayed.

*Action:* Contact the appropriate service representative.

**Control Program Procedure Messages (continued)**

**DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)**

**DISKETTE ERROR: PROCEDURE CANNOT BE FILED/MODIFIED**

*Cause:* The procedure cannot be cataloged or modified because of a diskette hardware error that occurred when writing the procedure.

A BER is created: Type 01, ID 03.

Alarm A3 is displayed.

*Action:* Contact the appropriate service representative.

**DISKETTE ERROR: PROCEDURE FILE MAY BE DAMAGED**

*Cause:* The procedure file may be damaged because of a diskette hardware error that occurred when erasing a procedure.

A BER is created: Type 01, ID 03.

Alarm A3 is displayed.

*Action:* Contact the appropriate service representative.

**DISKETTE ERROR: PROCEDURE NOT AVAILABLE**

*Cause:* The procedure 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:* Contact the appropriate service representative.

**EXEC CANCELED ON OPERATOR REQUEST**

*Cause:* You canceled the procedure by pressing PF2 while the procedure was being executed.

*Action:* None.

## Control Program Procedure Messages (continued)

### 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 02.

*Action:* Contact the appropriate service representative.

### FUNCTION NOT AVAILABLE: TRY LATER (See Common Messages)

### INVALID INPUT (See Common Messages)

### NO PROCEDURE TO CATALOG

*Cause:* You selected CATALOG but there is no procedure to catalog.

*Action:* None.

### PROCEDURE IN STORAGE CANNOT BE EXECUTED

*Cause:* The selected procedure cannot be executed because it is not completely created or modified.

*Action:* Do one of the following:

- Once you have entered all the steps, enter END, which must be the last instruction, or
- Once you have entered all the modifications, press PF3:END MODIFY.

### 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 (page 7-14).

### 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.

## Control Program Procedure Messages (continued)

### PROCEDURE x CATALOGED

*Cause:* Procedure x is successfully cataloged. The procedure directory is automatically updated.

*Action:* None.

### PROCEDURE x CREATED

*Cause:* Procedure x is created.

*Action:* You should catalog the procedure. However, before cataloging it, you may execute and/or modify it, if necessary.

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.

*Action:* None.

### PROCEDURE x EXECUTED

*Cause:* Procedure x is executed.

*Action:* None.

### PROCEDURE x MODIFIED

*Cause:* Procedure x is modified.

*Action:* You should catalog the procedure. However, before cataloging it, you may execute and/or modify it, if necessary.

### 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 (page 7-15).

**Control Program Procedure Messages (continued)**

**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 (page 7-15).

**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.

*Action:* None.

**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.

*Action:* None.

**REQUEST IGNORED (see Common Messages)**

**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 PF1, to use the procedure that is in the file, or
- Press PF3, to use the procedure that is in storage.

**STEP 255 MUST BE THE END STATEMENT**

*Cause:* The next step is the last one (255).

*Action:* You must enter the END instruction.

**Control Program Procedure Messages (continued)**

**THE NAME OF THE PROCEDURE TO BE CATALOGED IS: xxxx**

*Cause:* The name of the procedure to be cataloged does not match with the name of the procedure that is in 3725 storage (just created or modified).

*Action:* Enter the name indicated in the message.

**UNDEFINED PF KEY (See Common Messages)**

**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.



## Data Exchange Messages

CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)

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 02.

*Action:* Contact the appropriate service representative.

DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)

INVALID INPUT (See Common Messages)

NO FUNCTION VALUE

*Cause:* You did not enter a function value in parameter FUNCTION ==>.

*Action:* Enter a function value in FUNCTION ==>.

UNDEFINED PF KEY (See Common Messages)

## Display/Alter Messages

CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)

CCU/MOSS ERROR: WORK REGISTERS CANNOT BE ALTERED

*Cause:* The current CCU interrupt level cannot be accessed 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.

DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)

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:

1.  to position the cursor.
2.    to stop the CCU.
3.   to select Display/Alter.
4. Display appropriate data then press PF1 to switch to alter mode.

INVALID INPUT (See Common Messages)

PRESS ATTN TO STOP

*Cause:* The Display function is in refresh mode.

*Action:* Press ATTN to stop refreshing.

UNDEFINED PF KEY (See Common Messages)

**Display Long Messages**

BT BUFFER INCORRECTLY DEFINED (See Common Messages)

CCU/MOSS ERROR: BT BUFFER NOT ACCESSIBLE (See Common Messages)

CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)

DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)

INVALID INPUT (See Common Messages)

UNDEFINED PF KEY (See Common Messages)

## Error Log Messages

BER FILE IS UPDATED (Service personnel only)

DISKETTE ERROR: REQUEST IGNORED

*Cause:* Your request cannot be performed because of a diskette error.

A BER is created: Type 01, ID 03

Alarm A3 is displayed.

*Action:* Do the following:

1. Retry.
2. If the error persists, contact the appropriate service representative.

INVALID BER RECORD n (Service personnel only)

INVALID FLAG VALUE (Service personnel only)

INVALID INPUT (See Common Messages)

INVALID SEL#

*Cause:*

- The selection number (SEL#) that you entered is not between 0 and the maximum number of BERs in the BER file, or
- When scrolling, you reached the last BER of the selected list.

*Action:* Do one of the following:

- Enter a correct BER SEL#, or
- Stop scrolling; the last BER of the list is already displayed.

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.

*Action:* None.

THIS BER IS NO LONGER IN THE BER FILE (Service personnel only)

UNDEFINED PF KEY (See Common Messages)

**DISKETTE ERROR: FUNCTION CANCELED**

*Cause:* A physical error occurred when accessing the diskette. The GCF function is canceled.

A BER is created: Type 01, ID 03.

Alarm A3 is displayed.

*Action:* Select the GCF function another time. If the problem persists, contact the appropriate service representative.

**ENTER MES NUMBER**

*Cause:* You did not enter a MES number before pressing SEND.

*Action:* Enter a MES number.

**FUNCTION NOT AVAILABLE: TRY LATER (See Common Messages)**

**GCF IS INITIALIZED AND FILED**

*Cause:* The graphic configuration file is successfully initialized, and filed on the diskette.

*Action:* None.

**GCF UPDATE COMPLETED, GCF FILED ON DISKETTE**

*Cause:* The updated graphic configuration file is successfully filed.

*Action:* None.

**INVALID INPUT (See Common Messages)**

**NO VALID SCANNER INSTALLED: FUNCTION CANCELED**

*Cause:* Either the 3725 configuration is not initialized or the diskette has been damaged.

*Action:*

- If the configuration is not initialized, contact the appropriate service representative.
- If the diskette is damaged, a BER is created, Type 01, ID 03. Contact the appropriate service representative.

**GCF Messages (continued)**

**SCANNER TOTAL WEIGHT > 100**

*Cause:* Allowable scanner load is exceeded.

*Action:* Do one of the following:

- Verify if no mistakes have been made while entering weights. If any, enter the appropriate weight as well as the LIC type and the LIC MES number.
- Redistribute line load on other LICs. Refer to your system generation manuals to determine the current load for this LIC.

**UNDEFINED PF KEY (See Common Messages)**

## IPL Port Messages

### CABLE DOES NOT EXIST

*Cause:* The communication line whose address was entered is either not installed or not configured.

*Action:* Enter a new address, if a non-installed address was entered. Contact the appropriate service representative, if an installed address was entered.

### DATA RATE MUST NOT BE SPECIFIED WITH EXTERNAL CLOCK = N

*Cause:* You selected a data rate (DATA RATE = H or L) for direct-attached lines.

*Action:* Delete the data rate option (H or L) by using



### DISKETTE ERROR: FUNCTION NOT PERFORMED

*Cause:* The IPL Port file cannot be accessed because of a diskette error.

A BER is created: Type 01, ID 03.

Alarm A3 is displayed.

*Action:* Do the following:

1. Retry.
2. If the error persists, contact the appropriate service representative.

### FUNCTION COMPLETED (See Common Messages)

### FUNCTION COMPLETED BUT CONTROLLER ADDRESS IS NOT DEFINED

*Cause:* Link IPL port(s) that you defined are inoperative since you did not specify an SDLC controller address.

*Action:* Select the IPL Port function and specify the SDLC controller address on the Link IPL Port Common Option screen (page 5-88).

### INCOMPATIBLE OPTIONS: FULL DUPLEX AND NO DX FACILITY

*Cause:* The options that you entered are not compatible:

FULL DUPLEX= F AND DX FACILITY= N

*Action:* Determine correct option and re-enter.

### INCOMPATIBLE OPTIONS: NON-SWITCHED LINE AND ANSWER TONE

*Cause:* The options that you entered are not compatible:

SWITCHED LINE= N and ANSWER TONE= Y

*Action:* Determine correct option and re-enter.

**IPL Port Messages (continued)**

**INCOMPATIBLE OPTIONS: NON-SWITCHED LINE AND RING INDICATOR**

*Cause:* The options that you entered are not compatible:

SWITCHED LINE= N and RING INDICATOR= Y

*Action:* Determine correct option and re-enter.

**INCOMPATIBLE OPTIONS: SWITCHED LINE AND NO EXTERNAL CLOCK**

*Cause:* The options that you entered are not compatible:

SWITCHED LINE= Y and EXTERNAL CLOCK= N

*Action:* Determine correct option and re-enter.

**INVALID INPUT (See Common Messages)**

**UNDEFINED PF KEYS (See Common Messages)**



## Line Interface Block Display Messages

CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)

DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)

ERROR IN SCANNER DURING COMMON PROCESSING (See Common Messages)

INVALID INPUT (see Common Messages)

INVALID INTERFACE ADDRESS (See Common Messages)

IOC ERROR DURING ERROR RECOVERY (See Common Messages)

IOC/SCANNER ERROR: FUNCTION NOT PERFORMED (See Common Messages)

LINE ADDRESS DOES NOT BELONG TO AN INSTALLED SCANNER (See Common Messages)

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:* Do the following:

1. Re-IPL the CCU/Scanner (page 5-60).
2. If the error persists, contact the appropriate service representative.

NO SCANNER ANSWER: CHECK CCU STATE AND IF NEEDED RE-IML

*Cause:* The scanner cannot answer MOSS commands because of the CCU or the scanner.

*Action:* Do one of the following:

- If CCU/Scanner not IPLed, perform a CCU/Scanner IPL (page 5-60) and retry.
- Reset all the CCU (page 5-58), IML the scanner (page 5-60), and retry.

In both cases, the CCU state must be RUN or STOP-PGM. See MSA field g in Appendix A.

**Line Interface Block Display Messages (continued)**

**REFRESH MODE: PRESS ATTN TO STOP REFRESH**

*Cause:* The Line Interface Block Display function is in refresh mode.

*Action:* Press ATTN to stop refreshing.

**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:* Do the following:

1. ReIML the appropriate scanner (page 5-60).
2. If the error persists, reIPL the CCU/Scanner (page 5-60).
3. If the error still persists, contact the appropriate service representative.

**SCANNER NOT INSTALLED (See Common Messages)**

## One Scanner IML Messages

CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)

DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)

DISKETTE ERROR: IML CANCELED

*Cause:* The scanner microcode is not accessible because of a hardware error on the diskette. The IML is canceled.

A BER is created: Type 01, ID 03.

Alarm A3 is displayed.

*Action:* Do the following:

1. Terminate the function, using function Terminate (page 5-14) and
2. Contact the appropriate service representative.

ERROR IN SCANNER DURING COMMAND PROCESSING (See Common Messages)

IML FOR SCANNER xx COMPLETED: SCANNER IS CONNECTED

*Cause:* The scanner is operational and under control of the CCU control program. MSA field m displays SCANNER xx CONNECTED (Appendix A).

*Action:* None.

IML FOR SCANNER xx IN PROGRESS

*Cause:* The IML of scanner xx is being processed normally.

*Action:* None

IML FOR SCANNER xx IN PROGRESS: CHECKOUT RETURN CODE= xxxx

*Cause:*

xxxx = 0000

The IML is being processed normally

xxxx = 0003

The IML is being processed normally although there is a scanner pre-selection check.

A BER is created: Type 01, ID 05.

xxxx = 0005

The IML is being processed normally although there is a hardware error in the scanner address compare function (service personnel only).

A BER is created: Type 01, ID 05.

*Action:* None.

**One Scanner IML Messages (continued)**

INVALID INPUT (See Common Messages)

INVALID INTERFACE ADDRESS (See Common Messages)

IOC ERROR DURING ERROR RECOVERY (See Common Messages)









IOC/SCANNER ERROR: FUNCTION NOT PERFORMED (See Common Messages)

LINE ADDRESS DOES NOT BELONG TO AN INSTALLED SCANNER (See Common Messages)

**SCANNER CANNOT BE CONNECTED: MOSS IS NOT ONLINE**

*Cause:* The scanner cannot be connected because the MOSS is not online.

*Action:* Set MOSS online and restart the IML as follows:

1.  to display the CCU functions.
2.   to select System Control.
3.    to select function MOSS ONLINE.
4.  to switch back to IML functions.
5.  to restart automatically the IML of the same scanner.

**SCANNER CHECKOUT FAILED: RC = xxxx**

*Cause:* A hardware error is detected in the scanner. The IML cannot be performed. The return code (RC=xxxx), for service personnel, is found in the BER.

A BER is created: Type 01, ID 05.

*Action:* Do the following:

1. Terminate the function, using the function Terminate (page 5-14).
2. ReIPL CCU/Scanner and retry (page 5-60).
3. If the error persists, contact the appropriate service representative.

**One Scanner IML Messages (continued)**

**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:* Do the following:

1. Terminate the function using function Terminate (page 5-14).
2. Contact the appropriate service representative.

**SCANNER NOT INSTALLED (See Common Messages)**

## Reset CCU/LSSD Messages

### 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 02.

*Action:* Select the Reset CCU/LSSD function another time. If the problem 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 another time. If the problem persists, contact the appropriate service representative.

FUNCTION COMPLETED (See Common Messages)

FUNCTION IN PROGRESS (See Common Messages)

INVALID INPUT (See Common Messages)

## System Control Function Messages

**CCU/MOSS ERROR: FUNCTION NOT PERFORMED (See Common Messages)**

**DISKETTE ERROR: FUNCTION NOT AVAILABLE (See Common Messages)**

**FUNCTION xx COMPLETED**

*Cause:* Function xx is completed. xx is the function selection number.

*Action:* Do one of the following:

- Select another function from the same menu.
- Terminate the function, using function Terminate (page 5-14).

**FUNCTION xx IN PROGRESS**

*Cause:* Function xx is being performed. xx is the function selection number.

*Action:* None.

**INVALID INPUT (See Common Messages)**

**NO ANSWER FROM CONTROL PROGRAM: FUNCTION NOT PERFORMED**

*Cause:* There was no answer from the control program, when selecting function MOSS Online or MOSS Offline.

*Action:* Check if the control program is running.

**NO CONTROL PROGRAM BUFFER: FUNCTION NOT PERFORMED**

*Cause:* No control program buffer is available at this time to execute your request.

*Action:* Try later.

**REQUEST IGNORED (See Common Messages)**

**UNDEFINED PF KEY (See Common Messages)**

INVALID INPUT (See Common Messages)

REQUEST IGNORED: CCU NOT INITIALIZED

*Cause:* The CCU resources to IML a scanner are not available, because the CCU hardware is not yet initialized. The IML request is ignored.

*Action:* Do one of the following:

- IPL the CCU and IML all the scanners, using function IPL CCU/TSS (page 5-60).
- Reset the CCU and restart the scanner IML:

1. 

CCU FNCTN
--------------

 to display the CCU functions.

2. 

1
---

1
---

SEND
------

 to select RESET CCU/LSSD.

3. 

R
---

SEND
------

 to select RESET ALL.

When message FUNCTION COMPLETE is displayed:

4. 

CCU FNCTN
--------------

 to switch back to IML functions.

5. 

SEND
------

 to start automatically the IML.



## 3725 IPL Messages (continued)

### RESUME IGNORED

*Cause:* You cannot resume this IPL because it is not stopped.

*Action:* To resume the IPL, wait until message IPL STOP is displayed.

### STOP IGNORED

*Cause:* You cannot stop this IPL because it is already stopped, not yet started, or already completed.

*Action:* Do one of the following:

- Press PF2 to resume the IPL,
- Select another IPL from the secondary menu, or
- Terminate the IPL, using function Terminate, page 5-14.

### UNDEFINED PF KEY (See Common Messages)

## Operator Control Messages

### CCU FNCTN REFUSED

*Cause:* You selected the CCU functions before MOSS IML phase 2.

*Action:* Select the CCU functions after MOSS IML phase 2.

### DATE AND TIME

*Cause:* This is a reply to the Query Date and Time function (Q). In NCP environment, the date and time come from the host. They are displayed in the following format: mm/dd/yy hh:mm:ss

In EP environment, 00/00/00 is displayed instead of the date. The time displayed (hh:mm:ss) is the period of time that elapsed since the last MOSS IML.

*Action:* None.

### DISKETTE STARTING

*Cause:* The diskette drive is reaching its normal speed (10 seconds).

*Action:* None.

### DISKETTE UNUSABLE

*Cause:*

- The diskette is not mounted,
- The diskette engaging lever is not set correctly, or
- There is a diskette adapter hardware error.

*Action:* Do the following:

1. Perform a MOSS IML (page 4-9).
2. If MOSS IML is not successful, contact the appropriate service representative.

### INVALID

*Cause:* What you entered is erroneous in the present context.

*Action:* Re-enter correctly.

### RE-ENTER

*Cause:* The command or data that you entered was incorrectly received.

*Action:* Do the following:

1. Re-enter all your input, even though it is still present on the screen.

2. 

	SEND
--	------

## ***Operator Control Messages (continued)***

### **RESET CCU FAILED**

*Cause:* The CCU cannot be reset because of a hardware error.

A BER is created: Type 01, ID 02.

*Action:* Re-IPL the CCU (page 5-60).

### **RESET COMPLETED**

*Cause:* The immediate function CCU Reset is successfully completed.

*Action:* None.

### **RESET NOT ALLOWED**

*Cause:* The immediate function CCU Reset is not allowed while performing the CCU extended functions (service personnel).

*Action:* None.

### **START CCU FAILED**

*Cause:* The CCU cannot be started because of a hardware error.

A BER is created: Type 01, ID 02.

*Action:* Re-IPL the CCU (page 5-60).

### **START CCU IGNORED**

*Cause:* You are trying to start the CCU but it is already running.

*Action:* None.

### **START COMPLETED**

*Cause:* The immediate function CCU Start is successfully completed.

*Action:* None.





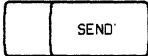

## Operator Control Messages (continued)

### START NOT ALLOWED



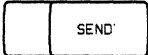


*Cause:* You are trying to start the CCU but there is a CCU hardcheck or the CCU is reset.

*Action:*

- If CCU hardcheck, you must first reset the CCU check conditions, then start the CCU:

1.  to display CCU function menu, if not already selected.
2.   to select the System Control functions.
3.   to select the CCU Check Reset function.
4.  to start the CCU.

- If the CCU is reset, IPL the CCU (page 5-60).

1.  to position the cursor.
2.   to display IPL CCU/TSS functions.
3.   to IPL the CCU.

### 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 02.

*Action:* Re-IPL the CCU (page 5-60).

***Operator Control Messages (continued)***

**STOP CCU IGNORED**

*Cause:* You are trying to stop the CCU but it is already stopped.

*Action:* None.

**STOP NOT ALLOWED**

*Cause:* The immediate function CCU Stop is not allowed while performing the CCU extended functions (service personnel only).

*Action:* None.

## Operator Console Information Messages

The operator information area (line 25 of the screen) is reserved for the display of:

1. Operator console information messages in normal operation
2. Test messages, documented in *3727 Operator Console Reference and Problem Analysis Guide*

The operator console information message format is shown in Figure 8-4.

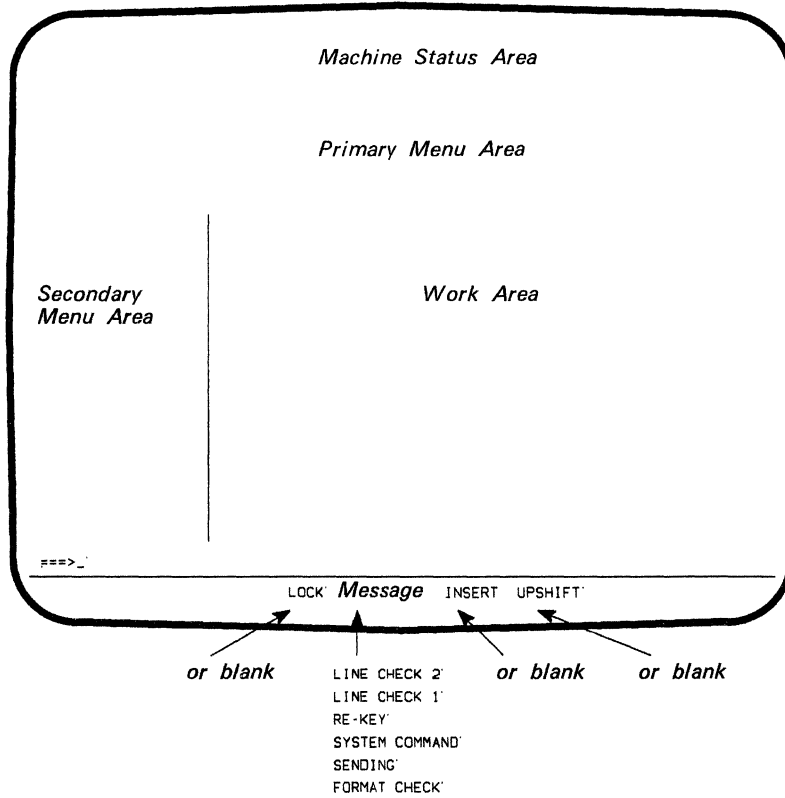


Figure 8-4. Operator Console Information Message Format

## ***Operator Console Information Messages (continued)***

### **FORMAT CHECK**

*Cause:* You performed one of the following invalid actions:

1. Pressed one of the following keys in a protected field:  
Any graphic character key, including:  
space bar  
ERASE  
DEL CHAR
2. Pressed any graphic character key in insert mode when the field does not contain at least one null character to be used for character movement.

### **INSERT**

*Cause:* You pressed INS CHAR. The operator console is operating in insert mode.

*Action:* Insert characters.

### **LINE CHECK 1**

*Cause:* The communication with 3725 was not possible because the 'clear-to-send' (CTS) signal was off, or was dropped during data transmission.

*Action:* Wait until the message is cleared.

### **LINE CHECK 2**

*Cause:* The communication with the 3725 was not possible because the 'data-set-ready' (DSR) signal was off, or was dropped during data transmission. This message is displayed, for instance, when performing the MOSS IML.

*Action:* Wait until the message is cleared unless the control panel Console switch is not in the desired position. In this case, correct the position and retry.

### **LOCK-FORMAT CHECK**

*Action:* You pressed a key other than SHIFT and LOCK while message FORMAT CHECK was being displayed.

*Action:* Press RESET.

### **LOCK-LINE CHECK 1**

*Action:* You pressed a key other than SHIFT and LOCK while message LINE CHECK 1 was being displayed.

*Action:* Press RESET. The LOCK part of the message is cleared. The LINE CHECK 1 part is cleared when the error condition disappears.

## ***Operator Console Information Messages (continued)***

### **LOCK-LINE CHECK 2**

*Action:* You pressed a key other than SHIFT and LOCK while message LINE CHECK 2 was being displayed.

*Action:* Press RESET. The LOCK part of the message is cleared. The LINE CHECK 2 part is cleared when the error condition disappears.

### **LOCK-RE-KEY**

*Cause:* You typed too quickly.

*Action:* Press RESET, and re-key.

### **LOCK-SENDING**

*Cause:* You pressed a key other than SHIFT or LOCK while message SENDING was being displayed.

*Action:* Press RESET and wait until message SENDING is cleared before entering new data.

### **LOCK-SYSTEM COMMAND**

*Cause:* You pressed a key other than SHIFT, LOCK, or ATTN while message SYSTEM COMMAND was being displayed.

*Action:* Press RESET and wait until message SYSTEM COMMAND is cleared before entering new data.

### **SENDING**

*Cause:* You pressed SEND. Consequently, data that you entered is being transmitted. The keyboard is not available.

*Action:* Wait until message SENDING is cleared before entering new data.

### **SYSTEM COMMAND**

*Cause:* The keyboard is disabled by a keyboard-lock command from the 3725.

*Action:* Wait until message SYSTEM COMMAND is cleared before entering new data.

### **UP SHIFT**

*Cause:* You pressed SHIFT or LOCK. The operator console is in uppercase mode.

*Action:* Enter characters.



## **Alarms**

When the operator console is powered on:

- You are informed that an alarm is generated by an audible alarm and by the MOSS Message lamp on the control panel.
- When an alarm is already displayed, you are informed that another one is waiting for display by the alarm indicator (letter M on line 24).

When the operator console is powered off, you are informed that an alarm is waiting for display by the MOSS Message lamp on the control panel. Power on the operator console and the alarm will appear on line 24 of the screen.

Alarms are also recorded in the BER file. You can display them using the Error Log function, described in Chapter 5.

The alarm appears on line 24, and remains there until you display the next one by pressing MSG. Up to five alarms may be stacked. If a sixth one is generated, it is stacked but the oldest one is erased.

Pressing MSG when no alarms are waiting clears the Alarm area from the screen.

**Note:** *Before you press MSG, you should take note of the alarm code. Once an alarm is cleared it cannot be displayed again, unless you use function Error Log.*

List of alarms page 8-99.

## **Alerts**

For a complete description of:

- VTAM alerts, refer to *ACF for VTAM, Messages and Codes, SC27-0467*.
- TCAM alerts, refer to *ACF TCAM Release 4 Messages, SC30-3140*.

Alerts are related to 3725 alarms except Alerts 1 and 5, for which there is no alarm. These alerts are given under "MOSS Inoperative Lamp" (page 8-39) and "Operator Console Not Operational Indication" (page 8-42) in this chapter.

List of VTAM alerts page 8-99.

List of TCAM alerts page 8-100.

## **NPDA Messages**

For a complete description, refer to *Network Problem Determination: User Action Guide, SC34-2032*.

List of NPDA messages page 8-100.

3725 Alarm Messages		Go to Action	Page
A0	MOSS IML EXCEPTION xxx yyy zzz	A0	8-101
A2	MOSS RECOVERABLE ERROR, TRANSFER DUMP	hhmmss A2	8-103
A3	DISKETTE DOWN, DO NOT ATTEMPT TO IPL	hhmmss A3	8-104
A4	DISKETTE MEDIA ERROR	hhmmss A4	8-105
A6	MOSS OFFLINE, ALERT SENT	hhmmss A6	8-107
A7	HARDWARE ERROR, 3725 RE-IPL	hhmmss A7	8-108
A8	CONTROL PROGRAM ABEND xxxx, 3725 REIPL	hhmmss A8	8-109
A9	CHANNEL ADAPTER x DOWN	hhmmss A9	8-110
A10	GENERAL IPL CHECK	hhmmss A10	8-111
A11	SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER	hhmmss A11	8-112
A12	SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER	hhmmss A12	8-113
A13	SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER	hhmmss A13	8-114
A14	SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER	hhmmss A14	8-115
A15	LINE ADAPTER xxx DOWN	hhmmss A15	8-116

**Note:** Hours, minutes, and seconds (hhmmss) indicate the time that the error was recorded by MOSS on the diskette.

Figure 8-5. 3725 Alarms

VTAM Alert Messages		Go to Action	Page
IST757E	MOSS UNAVAILABLE - HARDWARE ERROR	A1	8-102
IST758E	MOSS RELOADED - HARDWARE ERROR	A2	8-103
IST759E	MOSS DISKETTE UNUSABLE	A3	8-104
IST760E	MOSS DISKETTE HARDWARE ERROR	A4	8-105
IST761E	MOSS CONSOLE UNAVAILABLE	A5	8-106
IST762I	MOSS IN MAINTENANCE MODE	A6	8-107
IST763I	PHYSICAL UNIT RELOADED - HARDWARE ERROR	A7	8-108
IST764I	PHYSICAL UNIT RELOADED - PRIOR ABEND CODE WAS xxxx	A8	8-109
IST765E	CHANNEL ADAPTER x UNAVAILABLE - HARDWARE ERROR	A9	8-110
IST767E	SCANNER xx (yyy - zzz) UNAVAILABLE - HARDWARE ERROR	A11	8-111
IST768E	SCANNER xx (yyy - zzz) UNAVAILABLE - HARDWARE ERROR	A12	8-113
IST769E	SCANNER xx (yyy - zzz) UNAVAILABLE - SOFTWARE ERROR	A13	8-114
IST770E	SCANNER xx (yyy - zzz) UNAVAILABLE - SOFTWARE ERROR	A14	8-115
IST771E	SCANNER xx LINE xxx UNAVAILABLE - HARDWARE ERROR	A15	8-116

Figure 8-6. VTAM Alert Messages for 3725

TCAM Alert Messages	Go to Action	Page
IED301E 3725 MOSS UNAVAILABLE - HARDWARE ERROR	A1	8-102
IED302E 3725 MOSS RELOADED - HARDWARE ERROR	A2	8-103
IED303E 3725 MOSS DISKETTE UNUSABLE	A3	8-104
IED304E 3725 MOSS DISKETTE - HARDWARE ERROR	A4	8-105
IED305E 3725 MOSS CONSOLE UNAVAILABLE	A5	8-106
IED306I 3725 MOSS IN MAINTENANCE MODE	A6	8-107
IED307I 3725 RELOADED - HARDWARE ERROR	A7	8-108
IED308I 3725 RELOADED - ABEND xxxx	A8	8-109
IED309E 3725 CHANNEL ADAPTER x UNAVAILABLE - HARDWARE ERROR	A9	8-110
IED311E 3725 SCANNER xx (yyy - zzz) UNAVAILABLE - HARDWARE ERROR	A11	8-112
IED312E 3725 SCANNER xx (yyy - zzz) UNAVAILABLE - HARDWARE ERROR	A12	8-113
IED313E 3725 SCANNER xx (yyy - zzz) UNAVAILABLE - SOFTWARE ERROR	A13	8-114
IED314E 3725 SCANNER xx (yyy - zzz) UNAVAILABLE - SOFTWARE ERROR	A14	8-115
IED315E 3725 SCANNER xx LINE xxx UNAVAILABLE - HARDWARE ERROR	A15	8-116

Figure 8-7. TCAM Alert Messages for 3725

NPDA Messages	Go to Action	Page
MOSS HARDWARE DOWN - DO NOT ATTEMPT TO IPL: MOSS	A1	8-102
MOSS RECOVERABLE ERROR - TRANSFER MOSS DUMP: MOSS	A2	8-103
MOSS DISKETTE DOWN - DO NOT ATTEMPT TO IPL: MOSS	A3	8-104
MOSS DISKETTE ERROR: DISKETTE MEDIA	A4	8-105
MOSS CONSOLE UNAVAILABLE: MOSS CONSOLE/ADAP/CABLE	A5	8-106
MOSS OFFLINE: MAINTENANCE MODE	A6	8-107
HARDWARE ERROR: COMMUNICATION CONTROLLER RE-IPLD	A7	8-108
SOFTWARE ERROR: COMMUNICATION CONTROLLER RE-IPLD	A8	8-109
HARDWARE ERROR: CHANNEL ADAPTER	A9	8-110
HARDWARE ERROR: SCANNER	A11	8-112
HARDWARE ERROR: SCANNER	A12	8-113
SCANNER ERROR: COMMUNICATION CONTROLLER PROGRAM	A13	8-114
SCANNER ERROR: COMMUNICATION CONTROLLER PROGRAM	A14	8-115
HARDWARE ERROR: LINE ADAPTER	A15	8-116

Figure 8-8. NPDA Messages

**ACTION A0**

3725 ALARM: A0 MOSS IML EXCEPTION xxx yyy zzz

VTAM Alert: None  
TCAM Alert: None  
NPDA Message: None

Cause	Action
MOSS errors given in Alarm A0 do not prevent the IML completion. Consequently, different codes may be displayed in the Hex Display and in Alarm A0.	
xxx may have the following values:	
FE4 The configuration data file is not initialized on the diskette.	Contact the appropriate service representative.
FE5 The configuration data file is not accessible on the diskette.	Contact the appropriate service representative.
FE6 Unidentified IPL or MOSS IML request.	Contact the appropriate service representative.
FE7 MOSS-to-control program communication time-out	Contact the appropriate service representative.
yyy has the value FEB:	
The position of the Function Select switch is incorrect for the installed diskette.	Correct the Function Select switch position (Chapter 4). Contact the appropriate service representative if the switch is on the correct position.
zzz has the value FEC:	
MLT not initialized.	Contact the appropriate service representative.

## ACTION A1

3725 ALARM: None.

VTAM Alert IST757E MOSS UNAVAILABLE - HARDWARE ERROR

TCAM Alert IED301E 3725 MOSS UNAVAILABLE - HARDWARE ERROR

NPDA Message: MOSS HARDWARE DOWN - DO NOT ATTEMPT TO IPL:MOSS

Cause	Action
<ul style="list-style-type: none"><li>- MOSS error</li><li>- MOSS-to-CCU communication error.</li><li>- MOSS-to-control program communication error.</li></ul>	<p>Do not attempt to perform a 3725 IPL from the control panel or the operator console.</p> <p>You may perform a MOSS IML unless MOSS has been automatically re-IMLed (Hex Display shows 000). If you do, do not forget to set MOSS online (page 5-46).</p> <ul style="list-style-type: none"><li>- Note the error code displayed on the control panel Hex Display. (If error code is flashing, contact the appropriate service representative.)</li><li>- Perform action indicated for the error code in Figure 8-1, page 8-44.</li></ul>

**ACTION A2**

3725 ALARM: A2 MOSS RECOVERABLE ERROR, TRANSFER DUMP hmmmss

VTAM Alert: IST758E MOSS RELOADED - HARDWARE ERROR

TCAM Alert: IED302E 3725 MOSS RELOADED - HARDWARE ERROR

NPDA Message: MOSS RECOVERABLE ERROR - TRANSFER MOSS DUMP:MOSS

Cause	Action
- MOSS recoverable condition on hardware error. (The last MOSS check code is displayed in MSA field i.)	Transfer MOSS dump file to the host (page 8-117). You are not required to contact the appropriate service representative unless the problem occurs repeatedly.

**ACTION A3**

**3725 ALARM: A3 DISKETTE DOWN, DO NOT ATTEMPT TO IPL hmmmss**

**VTAM Alert: IST759E MOSS DISKETTE UNUSABLE**

**TCAM Alert: IED303E 3725 MOSS DISKETTE UNUSABLE**

**NPDA Message: MOSS DISKETTE DOWN - DO NOT ATTEMPT TO IPL:MOSS**

Cause	Action
- Diskette drive error	<i>Warning:</i> Do not power off or initialize the 3725.
- Diskette adapter error	IML MOSS. If Hex Display code is other than X'000', contact the appropriate service representative. To IML MOSS: page 4-9.

**ACTION A4**

3725 ALARM: A4 DISKETTE MEDIA ERROR      hhmss

VTAM Alert: IST760E MOSS DISKETTE HARDWARE ERROR

TCAM Alert: IED304E 3725 MOSS DISKETTE HARDWARE ERROR

NPDA Message: MOSS DISKETTE ERROR: DISKETTE MEDIA

Cause	Action
- MOSS diskette error (one or more files are no longer available from the diskette).	Try to re-initialize the 3725. See Chapter 4. Contact the appropriate service representative.



**ACTION A5**

3725 ALARM: None

VTAM Alert: IST761E MOSS CONSOLE UNAVAILABLE

TCAM Alert: IED305E 3725 MOSS CONSOLE UNAVAILABLE

NPDA Message: MOSS CONSOLE UNAVAILABLE: MOSS CONSOLE/ADAP/CABLE

Cause	Action
- 3727 Hardware failure	Go to page 8-8 for the problem determination procedure: 3727 Console Problem.
- 3725 Hardware failure	
- 3725/3727 communication problem	
- The Console switch was activated too quickly.	
	- ReIML MOSS (page 4-9). If the problem persists, contact the appropriate service representative.

**ACTION A6**

3725 ALARM: A6 MOSS OFFLINE, ALERT SENT hhmms

VTAM Alert: IST762I MOSS IN MAINTENANCE MODE-

TCAM Alert: IED306I 3725 MOSS IN MAINTENANCE MODE

NPDA Message: MOSS OFFLINE: MAINTENANCE MODE

Cause	Action
MOSS is set offline.	- If in maintenance mode, no action required. - If it is the result of an invalid function, reconnect MOSS, using the function MOSS Online (page 5-46). Otherwise, contact the appropriate service representative.

**ACTION A7**

3725 ALARM: A7 HARDWARE ERROR, 3725 RE-IPL hhmss

VTAM Alert: IST763I PHYSICAL UNIT RELOADED - HARDWARE ERROR

TCAM Alert: IED307I 3725 RELOADED - HARDWARE ERROR

NPDA Message: HARDWARE ERROR: COMMUNICATION CONTROLLER RE-IPLD

Cause	Action
- Environment problem (such as temperature, power, electrostatic discharge, etc.)	- Fix the environment problem. Refer to your installation procedure.
- CCU error	- Reactivate affected line(s) from the host. Refer to your installation manual.
- Adapter error	- If error occurs repeatedly, contact the appropriate service representative.
- Control program error	

**ACTION A8**

3725 ALARM: A8 CONTROL PROGRAM ABEND xxxx, 3725 REIPL hhmss

VTAM Alert: IST764I PHYSICAL UNIT RELOADED - PRIOR ABEND CODE WAS xxxx

TCAM Alert: IED308I 3725 RELOADED - ABEND xxxx

NPDA Message: SOFTWARE ERROR: COMMUNICATION CONTROLLER RE-IPLD

Cause	Action
Control program error (xxxx is the abend code number).	- If repetitive, dump the control program using NCP facilities or DYNADUMP facilities. Refer to the control program aids. - Contact the appropriate service representative.

**ACTION A9**

**3725 ALARM: A9 CHANNEL ADAPTER x DOWN hhmss**

**VTAM Alert: IST765E CHANNEL ADAPTER x UNAVAILABLE - HARDWARE ERROR  
TCAM Alert: IED309E 3725 CHANNEL ADAPTER x UNAVAILABLE - HARDWARE ERROR  
NPDA Message: HARDWARE ERROR: CHANNEL ADAPTER**

**Cause**

**Action**

- 3725 channel adapter error.

- Contact the appropriate service representative.

**ACTION A10**

3725 ALARM: A10 GENERAL IPL CHECK hhmss

VTAM Alert: None  
TCAM Alert: None  
NPDA Message: None

Cause	Action
The 3725 initialization is canceled because of a hardware error.	- Retry. - If the error occurs repeatedly, contact the appropriate service representative.
<i>Note: Details on this error are given in MSA field w (see Appendix A).</i>	

## ACTION A11

3725 ALARM: A11 SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER hhmss

VTAM Alert: IST767E SCANNER xx (yyy-zzz) UNAVAILABLE - HARDWARE ERROR

TCAM Alert: IED311E 3725 SCANNER xx (yyy/zzz) UNAVAILABLE - HARDWARE ERROR

NPDA Message: HARDWARE ERROR: SCANNER

Cause	Action
- 3725 scanner error	- Re-IML affected scanner: See page 5-60. - Reactivate affected line(s) from the host. Refer to your installation manual. - If the error occurs repeatedly, contact the appropriate service representative.

**ACTION A12**

3725 ALARM: A12 SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER hhmss

VTAM Alert: IST768E SCANNER xx (yyy-zzz) UNAVAILABLE - HARDWARE ERROR

TCAM Alert: IED312E 3725 SCANNER xx (yyy/zzz) UNAVAILABLE - HARDWARE ERROR

NPDA Message: HARDWARE ERROR: SCANNER

Cause	Action
- 3725 scanner error	- Transfer scanner dump file to the host: See page 8-117. - ReIML affected scanner: See page 5-60. - Reactivate affected line(s) from the host. Refer to your installation manual. - If the error occurs repeatedly, contact the appropriate service representative.



## ACTION A13

3725 ALARM: A13 SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER hhmms

VTAM Alert: IST769E SCANNER xx (yyy-zzz) UNAVAILABLE - SOFTWARE ERROR

TCAM Alert: IED313E 3725 SCANNER xx (yyy/zzz) UNAVAILABLE - SOFTWARE ERROR

NPDA Message: SCANNER ERROR: COMMUNICATION CONTROLLER PROGRAM

Cause	Action
- 3725 control program error	- ReIML affected scanner. See page 5-60. - Reactivate affected line(s) from the host. Refer to your installation manual. - If repetitive: <ol style="list-style-type: none"><li>1. Dump the control program using NCP facilities or DYNADUMP facilities described in your control program service aids.</li><li>2. Contact the appropriate service representative.</li></ol>

**ACTION A14**

3725 ALARM: A14 SCANNER xx DOWN (LINES xxx-yyy) IML SCANNER hhmss

VTAM Alert: IST770E SCANNER xx (yyy-zzz) UNAVAILABLE - SOFTWARE ERROR

TCAM Alert: IED314E 3725 SCANNER xx (yyy/zzz) UNAVAILABLE - SOFTWARE ERROR

NPDA Message: SCANNER ERROR: COMMUNICATION CONTROLLER PROGRAM

Cause	Action
- Control program error - Scanner error	Re-IML affected scanner. See page 5-60. - Transfer scanner dump file to the host (page 8-117). - Reactivate affected line(s) from the host. Refer to your installation manual. - If the error occurs repeatedly, contact the appropriate service representative.

## ACTION A15

3725 ALARM: A15 LINE ADAPTER xxx DOWN hhmss

VTAM Alert: IST771E SCANNER xx LINE xxx UNAVAILABLE - HARDWARE ERROR

TCAM Alert: IED315E 3725 SCANNER xx LINE xxx UNAVAILABLE - HARDWARE ERROR

NPDA Message: HARDWARE ERROR: LINE ADAPTER

Cause	Action
- Line adapter error - Scanner error	Reactivate affected line from the host. Refer to your installation manual. If error occurs repeatedly, go to the flow chart on page 8-32 "Activate (Start) Line Problem or Errors while Running Lines."

## Scanner Interface Trace (SIT)

The scanner interface trace procedure under NCP is documented in *Advanced Communications Function for Network Control Program and System Support Programs Diagnosis Guide*, SC30-3171.

How to start and stop the SIT in EP environment is documented:

- Under "EP/PEP - Line Trace and Scanner Interface Trace (SIT)" (page 6-35).
- In *Advanced Communications Function for Network Control Program and System Support Programs Diagnosis Guide*.

## File Transfer

To print MOSS or scanner dumps, or any of the 3725 files listed below, you must first transfer them from the diskette to the host. The transfer procedure is performed at the host side. To transfer a file, MOSS must be in status MOSS-ONLINE.

- Graphic configuration file (GCF)
- BER file
- Cataloged control program procedures
- Configuration data file (CDF) (service personnel)
- ZAP (service personnel)
- Machine load table (MLT) (service personnel)

You cannot request a file transfer if one is already taking place. Wait until the current file transfer is completed to request another one.

The file transfer procedure is documented in *Advanced Communications Function for Network Control Program and System Support Programs Diagnosis Guide*, Chapters 4 and 5.

## File Printing

The 3725 files transferred to the host may be selectively printed. The file printing procedure is documented in *Advanced Communications Function for Network Control Program and System Support Programs Diagnosis Guide*.

A sample of the GCF, BER file, and cataloged control program procedure printout is given in the following pages.

## 3725 Main Storage Dump

Procedures to take a complete 3725 storage dump or a CLDP dump are documented in *Advanced Communications Function for Network Control Program and System Support Programs Diagnosis Guide*.

**Note:** *When a control program dump or a CLDP dump is taken, you can re-IPL from the same port or from any other one.*

# GCF Printout

Refer to page 5-76 for the description of the GCF function.

LAB POSITION: 3                      TYPE: A                      MES NUMBER: 7777                      STATUS: M                      (2)

	G	H	J	K	M	N	P	Q	
CS .	LIC	LIC	LIC	LIC	LIC	LIC	LIC	LIC	LIC
POS	POS	POS	POS	POS	POS	POS	POS	POS	POS
1	1	2	3	4	5	6	7	8	
	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE
	4A	4A	4A						
	LINE #	LINE #	LINE #	LINE #	LINE #	LINE #	LINE #	LINE #	LINE #
	64 M	68 M	72 F	F	F	F	F	F	F
	65 M	69 M	F	F	F	F	F	F	F
	66 M	70 M	F	F	F	F	F	F	F
	67 M	71 M	F	F	F	F	F	F	F
WEIGHT									
SUM	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT
49	12	25	12	..	..	..	..	..	..
STATUS	STATUS	STATUS	STATUS	STATUS	STATUS	STATUS	STATUS	STATUS	STATUS
M	I	I	I	F	F	F	F	F	F
	MES #	MES #	MES #	MES #	MES #	MES #	MES #	MES #	MES #
	L-R								
	I C C								
	STATUS (A)	MES #							

(1)

(2)

(2)

- (1) F = NO CABLE INSTALLED
- D = DIRECT ATTACH
- M = MODEM CABLE INSTALLED
- A = AUTOCALL (LIC 1)
- W = WRAP BLOCK INSTALLED (MAINTENANCE MODE)
- (2) F = POSITION FREE
- I = INSTALLED (IF MES # IS BLANK: FACTORY INSTALLED)
- A = ADD MES ORDERED BUT NOT INSTALLED
- M = MODIFICATION MES FOR LIC OR LAB TYPE REPLACEMENT ORDERED BUT NOT INSTALLED
- R = REMOVAL MES ORDERED BUT NOT INSTALLED

# BER File Printout

Refer to page 5-90 for a description of the Error Log function.

ERROR LOG-----BER SUMMARY-----PAGE 17

COMPONENT NAME-----	TYPE	PENDING BERS	DATE FIRST ERROR	TOTAL BERS IN FILE
CHANNEL ADAPTER	10	6	05/08/82 11:03:18	6
TRANSMISSION SUBSYSTEM	11	6	05/08/82 11:03:21	6
CONTROL PROGRAM	12	11	05/08/82 11:02:38	11
CENTRAL CONTROL UNIT	13	20	05/08/82 11:02:26	20
I/O CONTROL	14	12	05/08/82 11:02:41	12
MAINTENANCE OPERATOR SUBSYSTEM	01	3	05/08/82 11:02:44	3
ALARMS		2	00:00:15	2
TOTAL		60		60

ERROR LOG-----BERS LIST-----PAGE 13

DATE/TIME	SIZE	FLAG	TYPE	ID	ERROR DATA
00/00/00 00:09:31	1F		11	8A	00000000 00000000 00000000 00000000 0000F4F1
00/00/00 00:09:30	15		10	B2	00000000 00000000 F3F1
00/00/00 00:09:29	13		13	FE	00000000 0000F2F3
00/00/00 00:09:28	10		12	21	000000F1 F4
00/00/00 00:09:27	11		11	8A	00000000 F1F3
00/00/00 00:09:23	13		10	B2	00000000 0000F1F1
00/00/00 00:03:15	1F		02	A10	GENERAL IPL CHECK
00/00/00 00:03:12	3C		01	06	06010850 0F12A008 08080808 08080808 08080808 08080000 00000000 00000000 00000000
					00000000 00000000 00000000 00
00/00/00 00:00:42	1F		11	8A	00000000 00000000 00000000 00000000 0000F4F1
00/00/00 00:00:39	15		10	B2	00000000 00000000 F3F1
00/00/00 00:00:38	13		13	FE	00000000 0000F2F3
00/00/00 00:00:37	10		12	21	000000F1 F4
00/00/00 00:00:36	11		11	8A	00000000 F1F3
00/00/00 00:00:33	13		10	B2	00000000 0000F1F1
00/00/00 00:00:15	33		02	A2	MOSS RECOVERABLE ERROR. TRANSFER DUMP
05/08/82 11:03:30	10		01	00	4B050000 84FFFFFF FF080860 04531E8D 0CC1
05/08/82 11:03:25	1A		13	C3	000000C1 E2D7C9C3 40404040 404040

# Cataloged Control Program Procedure Printout

Refer to Chapter 7 for a description of the control program procedures.

## CONTROL PROGRAM PROCEDURES - DIRECTORY

NAME: CP01	TITLE: SDLC TEST FRAMES (NCP)	DATE:
NAME: CP02	TITLE: 3270 BSC GENERAL POLL	DATE:
NAME: CP03	TITLE: 2740 START/STOP POLL	DATE:
NAME: CP04	TITLE: START ADDRESS TRACE (NCP)	DATE:
NAME: CP05	TITLE: STOP ADDRESS TRACE (NCP)	DATE:

NAME: CP01	TITLE: SDLC TEST FRAMES(NCP)	DATE:
001	SETI D= 00000C F= 07 I= Y	
002	GOTO T= 025 A= 000000 C= & B= 000000	
003	DISP L= 18 M= **** SDLC TEST-FRAMES TO SDLC LINK ****	
004	DISP L= 14 M= CHANGE 'FF' TO NCP LINE ADDRESS (HEX)	
005	OSET D= 0020FF F= 02 I=	
006	GOTO T= 025 A= 0000FF C= B B= 000003	
007	GOTO T= 013 A= 0000FF C= B B= 000005	
008	GOTO T= 011 A= 00FF00 C= B B= 000000	
009	SETI D= 004000 F= I=	
010	GOTO T= 017 A= 00FF00 C= B B= 00FF00	
011	DISP L= 14 M= ERROR (SEE LINE TEST FUNCTION)	
012	GOTO T= 026 A= C= B=	
013	DISP L= 14 M= LINE IS ACTIVE (DEACTIVATE)	
014	HALT T= 004 A= C= B=	
015	DISP L= 14 M= ERROR (SEE LINE TEST FUNCTION)	
016	GOTO T= 026 A= C= B=	

## Appendix A. Machine Status Area

You are permanently informed of the 3725 status by the information displayed on the first three lines of the operator console screen: the Machine Status Area (MSA).

The first two lines of the MSA show CCU and MOSS information. The third line shows:

- Selected scanner information (service personnel only); *or*
- CCU/Scanner IPL information.

Figure A-1 illustrates the MSA with scanner information. Figure A-2 illustrates the MSA with CCU/Scanner IPL information. Each letter is a key that refers to the explanation following the two figures.

The MSA is updated every 500 ms.

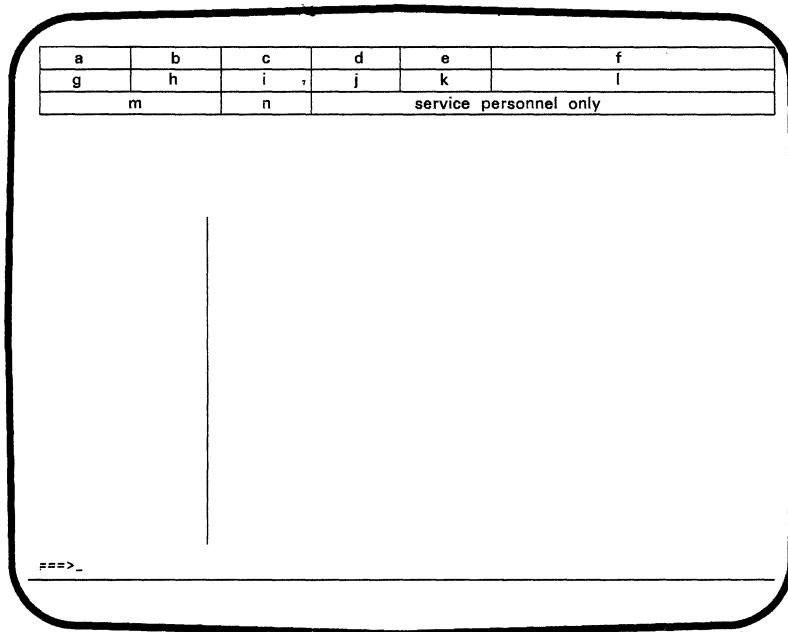


Figure A-1. Machine Status Area with Scanner Information



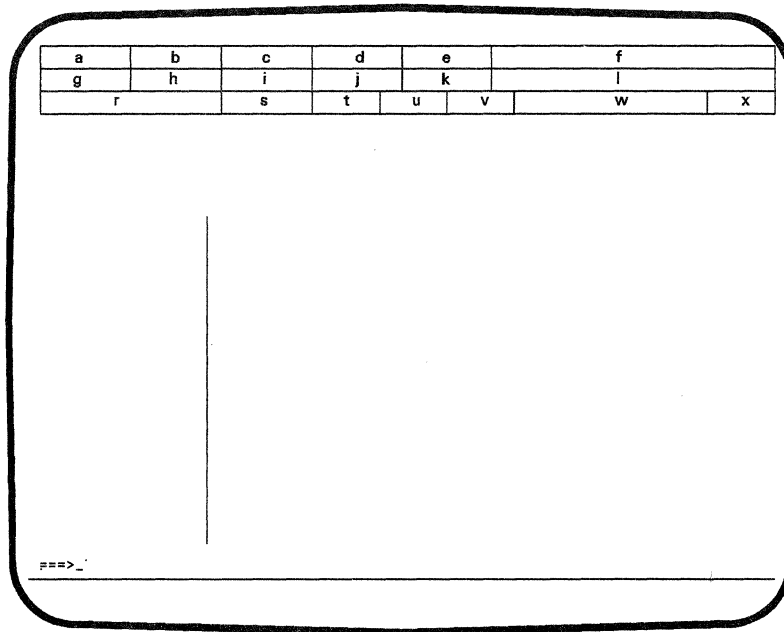


Figure A-2. Machine Status Area with CCU/Scanner IPL Information

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

**Field a** displays the CCU mode:

PROCESS                    Normal processing  
I-STEP                      Instruction step

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

**Field b** displays the CCU check mode:

STOP-CCU-CHK            The system will stop on a CCU check (default or after function  
RESET BYPASS CCU CHECK)  
BYP-CCU-CHK             You initiated function SET BYPASS CCU CHECK so the system  
will not stop on a CCU check

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

**Field c** 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.  
SERVICE-MODE         MOSS is in service mode (service personnel only).  
The following illustration gives the status of MOSS after the different IPLs/IML.

After a:	MOSS is in status:	Hex Display code is:
Initialization (general IPL)	MOSS-ONLINE	X'000'
MOSS IML	MOSS-OFFLINE if CP is loaded	X'FEE'
	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'
BYPASS PHASE 3 IPL	MOSS-ONLINE	X'000'

a	b	c	<b>d</b>	e	f
g	h	i	j	k	l
m		n	service personnel only		

**Field d** displays information on the CCU Address Compare function:

**AC**                      The Address Compare function is active.

If you selected MOSS INTERRUPT=Y and/or CCU STOP=Y when defining the address compare, the following are displayed:

**AC HIT**                      A single or double address compare is successful.  
**AC HIT1**                     A two-single address compare is successful on the first address.  
**AC HIT 2**                     A two-single address compare is successful on the second address.

a	b	c	d	<b>e</b>	f
g	h	i	j	k	l
m		n	service personnel only		

**Field e** is 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 the 3725 initialization. The values displayed in this field are explained where appropriate in this manual. See also field k.)

**X71:xxxxxx**                Contents of CCU X'71' output register.  
**X71:ERROR**                Error when accessing the register. Register contents cannot be displayed.

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

Field f is displayed along with field l, when the CCU status is STOP X'70', STOP PGM, STOP BT, STOP AC, or HARDSTOP (see field g)

LAR:xxxxxx	OP:xxxx	C:x	(field f)
IAR:xxxxxx	ILVL:xxxx	Z:x	(field l)
	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	
	Z:x	Value of the Z-latch (0 or 1)	

CCU INTERRUPTS DISABLED (field f)  
Nothing displayed (field l)

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)
- While performing some utility programs (service personnel only)

CCU REGISTERS (in field f)  
NOT ACCESSIBLE (in field l)

Appropriate registers cannot be read, so it is impossible to display LAR, OP, C, IAR, ILVL, and Z information.

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

**Field g** displays the CCU status:

<b>RUN</b>	Instructions are being executed or data transferred.
<b>RESET</b>	The control program stopped since you initiated function RESET CCU; to restart the CCU, do an IPL.
<b>HARDCHK</b>	The control program stopped on a hardcheck error. An automatic re-IPL is attempted, if the control program is loaded.
<b>HARDSTOP</b>	You selected the CCU Check Reset function to reset the CCU check condition. To restart, select the CCU Start function from the primary menu or press PF3:CCU START or PF3:ST if displayed on the screen.
<b>IPL-REQ</b>	A CCU IPL was requested and is in progress.
<b>STOP-X70</b>	The control program stopped on an output X'70' instruction executed by the control program.
<b>STOP-PGM</b>	The control program stopped because you initiated function CCU STOP or function SET I-STEP.
<b>STOP-BT</b>	The control program stopped because the Branch Trace function that you initiated with CCU STOP has become deactivated.
<b>STOP-AC</b>	The control program stopped because the Address Compare function that you initiated with CCU STOP (CCU ACTION=S) is successful.

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

**Field h** indicates whether the 3725 will stop on an IOC check.

<b>BYP-IOC-CHK</b>	The system will not stop on an IOC check (default or after a RESET IOC CHECK STOP).
<b>STOP-IOC-CHK</b>	You initiated function SET IOC CHECK STOP to force the system stop on an IOC check.

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

**Field i** displays the last MOSS check code.

<b>LASTMCHK:xxx</b>	Check code. This code is for service personnel only. Simultaneously, additional information is provided, such as Alarms/Alerts, MOSS inoperative lamp.
---------------------	--

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

Field j displays BT when the Branch Trace function is active.

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

Field k is updated each time an output X'72' instruction is executed by the control program, for example, when using the CCU Data Exchange function or the control program procedures, or during the 3725 initialization. The values displayed in this field are explained where appropriate in this manual. See also field e.

X72:xxxxxx  
X72:ERROR

Contents of CCU X'72' output register.  
Error when accessing the register. Register contents cannot be displayed.

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

Field l is displayed along with field f. See field f description.

## Scanner Information

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

Field m displays information on the selected scanner:

**NO SCANNER SELECTED:**

You selected a scanner function before selecting a scanner.

**SCANNER xx yyyyyyyyyyy**

Where xx is the number of the selected scanner (1, 3, or 5 to 16), and yyyyyyyyyyy is any of the following:

**CONNECTED**

The scanner is operational and under control of the CCU control program.

**INITIALIZED**

The control code is loaded and the front end adapter is operational.

**DISCTD-STOP**

Disconnected-stop - The control code is no longer under control of the CCU control program, either after command STOP or after a scanner address compare HIT.

**DISCTD-GO**      Disconnected-go - You entered command GO while in status DISCTD-STOP. The scanner remains disconnected but the control code execution resumes.

**RESET**            You entered command RESET; you may initiate an IML or a DUMP.

**UNKNOWN-MODE**    The scanner is selected but it is impossible to identify its status.

a	b	c	d	e	f
g	h	i	j	k	l
m		n	service personnel only		

**Field n** displays the scanner option:

**IML**                    A scanner IML is being started.

**DUMP**                A scanner dump is in progress.

### CCU/Scanner IPL Information

CCU/Scanner IPL information, instead of Scanner information, is displayed on the third line.

A short delay after successful completion of the IPL, the third line of the MSA is cleared if the IPL was requested from the control panel or from the host. If the IPL was requested from the operator console (function IPL CCU/TSS), the third line is cleared when selecting function Terminate.

a	b	c	d	e	f		
g	h	i	j	k	l		
r		s	t	u	v	w	x

**Field r** displays IPL to indicate that an IPL is started.

**Field s** displays PHASE 1 to indicate the start of phase 1 (CCU test and initialization). This field is blank when phase 1 is bypassed.

**Field t** displays PHASE 2 to indicate the start of phase 2 (load from the diskette and start the control program loader/dump). This field is always present.

**Field u** displays PHASE 3 to indicate the start of phase 3 (load and initialize the scanners). This field is blank when phase 3 is bypassed.

**Field v** displays PHASE 4 to indicate the start of phase 4 (load from the host and initialize the control program). This field is always present.

**Field w** displays any of the following:

#### CA IPL DETECTED ON CA x

The control program loading/dumping is started on a channel-attached 3725. (A Write IPL command has been detected by the 3725.) x is the channel adapter number.

*Action:*

- If this message appears temporarily, no action required.
- If this message appears permanently, follow the procedure "Unable to Load/Dump Control Program (Channel-Attached 3725)" on page 8-10.

#### CONTROL PROGRAM LOADED

The control program is loaded.

#### DUMP IN PROGRESS ON CA x

A control program dump is being taken on a channel-attached 3725. The progression of the dump is indicated in MSA field k that displays control program storage addresses. x is the channel adapter number.

*Action:*

- If this message appears temporarily, no action required.
- If this message appears permanently, follow the procedure "Unable to Load/Dump Control Program (Channel-Attached 3725)" on page 8-10.

#### DUMP IN PROGRESS ON L xxx

A control program dump is being taken on a link-attached 3725. The progression of the dump is indicated in MSA field k that displays control program storage addresses. xxx is the channel adapter number.

*Action:*

- If this message appears temporarily, no action required.
- If this message appears permanently, follow the procedure "Unable to Load/Dump Control Program (Link-Attached 3725)" on page 8-12.



## ENABLED PORTS CA xxxxxx L xxxxxxxx

Indicates which channel adapters or link IPL ports are enabled. x can be either Y or N.

In the CA field, Ys indicate which channel adapters are enabled, and Ns, which channel adapters are not enabled. The position of the Ys and Ns gives the channel adapter number.

Example: CA YYNNNY means that channel adapters 1, 2, and 6 are enabled.

In the L field, Ys indicate which link IPL ports are enabled. N is used for the link IPL ports not enabled. The position of each letter (Y or N) gives the position of the link IPL port in the Link IPL Port table (from 1 to 8).

### IPL CANCELED

The 3725 initialization is canceled by:

- The operator (immediate function Terminate).
- 3727 power-off when the IPL was requested from the console.
- The switching from one console to the other (primary/alternate) when the IPL was requested from the initial console.
- The operator console switching from normal mode to test mode, or
- Two MOSS automatic re-IMLs during a CCU/scanner IPL.

### IPL CHECK xxx

The IPL ends abnormally. The check code (xxx) is also displayed on the Hex Display of the control panel. Check codes are described in Chapter 8.

### IPL CHECK F1B CLDP ABEND xxxx

The IPL ends abnormally. xxxx is the hexadecimal control program loader/dump abend code. Contact the appropriate service representative.

### IPL COMPLETE

The IPL is successfully completed.

### IPL COMPLETE + ERRORS

The IPL is complete although an error has been encountered. If the error comes from a scanner, Alarm A11 is displayed (Chapter 8).

For any other intermittent errors (for example, diskette errors) no alarm is displayed. The 3725 should run normally.

- If it does, take note of the error code for the record. No other action is required.
- If it does not, contact the appropriate service representative. A BER is created: Type 01, ID 00.

#### LINK IPL DETECTED ON L xxx

The control program loading/dumping is started on a link-attached 3725. A Set Initialization Mode (SIM) command has been detected by the 3725.

*Action:*

- If this message appears temporarily, no action required.
- If this message appears permanently, follow the procedure "Unable to Load/Dump Control Program (Link-Attached 3725)" on page 8-12.

#### LINK IN PROGRESS ON CA x

The control program is being loaded on a channel-attached 3725. The progression of the load is indicated in MSA field k where CCU storage addresses are displayed. x is the channel adapter number.

*Action:*

- If this message appears temporarily, no action required.
- If this message appears permanently, follow the procedure "Unable to Load/Dump Control Program (Channel-Attached 3725)" on page 8-12.

#### LINK TEST PROGRAM LOADED

The stand-alone link test program is loaded. Refer to 3725 *Communication Controller Stand-Alone Link Tests*, GA33-0028.

#### LOAD IN PROGRESS ON L xxx

The control program is being loaded on a link-attached 3725. The progression of the load is indicated in MSA field k where CCU storage addresses are displayed. xxx is the decimal communication line address.

#### RPO DETECTED ON L xxx

The Remote Power Off (RPO) command is detected on the communication line xxx. xxx is the decimal communication line address.

*Action:* If the Power Control switch is set to Network with Auto-Power On, the 3725 will be powered off. If it is not powered off, follow the procedure "Unable to Power Off the 3725," on page 8-4.

#### SCANNER(S) NOT IMLED: xxxx

Indicates that one or more scanners are not IMLed.

*Action:* Re-IML the indicated scanner(s) (page 5-65). If the problem persists, contact the appropriate service representative. xxxx gives the number of each scanner not IMLed. This code consists of four hexadecimal digits (16 bits). Each bit corresponds to a scanner (CS) number, as shown in Figure A-3, at the end of this chapter.

**X IPL STOP**

Indicates that the IPL stopped at the beginning of a phase or on operator request's (PF1:STOP).

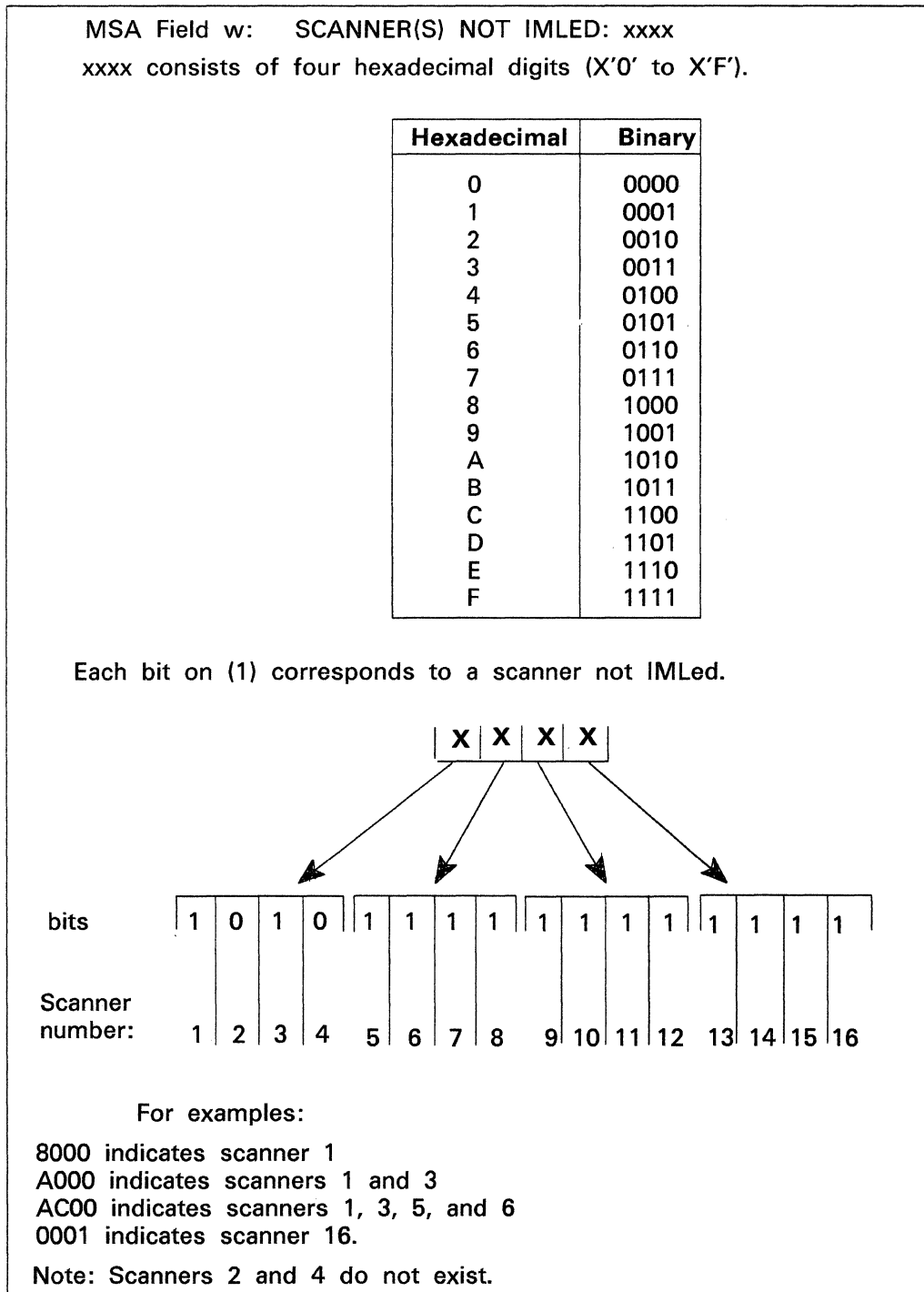


Figure A-3. How to Read MSA Field w: SCANNER(S) NOT IMLED: xxxx.

## Appendix B. Correspondence Between Line Addresses and Scanners

### LAB Position 1 (type A)

Decimal Line Address	Hex Line Address	Dec. Line Interface Address	Hex. Line Interface Address	LIC Pos.	CS No.
00	00	000/001	000/001	1	1
01	01	002/003	002/003		
02	02	004/005	004/005		
03	03	006/007	006/007		
04	04	008/009	008/009	2	1
05	05	010/011	00A/00B		
06	06	012/013	00C/00D		
07	07	014/015	00E/00F		
08	08	016/017	010/011	3	1
09	09	018/019	012/013		
10	0A	020/021	014/015		
11	0B	022/023	016/017		
12	0C	024/025	018/019	4	1
13	0D	026/027	01A/01B		
14	0E	028/029	01C/01D		
15	0F	031/031	01E/01F		
16	10	032/033	020/021	5	1
17	11	034/035	022/023		
18	12	036/037	024/025		
19	13	038/039	026/027		
20	14	040/041	028/029	6	1
21	15	042/043	02A/02B		
22	16	044/045	02C/02D		
23	17	046/047	02E/02F		
24	18	048/049	030/031	7	1
25	19	050/051	032/033		
26	1A	052/053	034/035		
27	1B	054/055	036/037		
28	1C	056/057	038/039	8	1
29	1D	058/059	03A/03B		
30	1E	060/061	03C/03D		
31	1F	062/063	03E/03F		

**Note:** Scanner number 2 does not exist.

**LAB Position 2 (type A)**

Decimal Line Address	Hex Line Address	Dec. Line Interface Address	Hex. Line Interface Address	LIC Pos.	CS No.
32	20	64/065	040/041	1	3
33	21	066/067	042/043		
34	22	068/069	044/045		
35	23	070/071	046/047		
36	24	072/073	048/049	2	3
37	25	074/075	04A/04B		
38	26	076/077	04C/04D		
39	27	078/079	04E/04F		
40	28	080/081	050/051	3	3
41	29	082/083	052/053		
42	2A	084/085	054/055		
43	2B	086/087	056/057		
44	2C	088/089	058/059	4	3
45	2D	090/091	05A/05B		
46	2E	092/093	05C/05D		
47	2F	094/095	05E/05F		
48	30	096/097	060/061	5	3
49	31	098/099	062/063		
50	32	100/101	064/065		
51	33	102/103	066/067		
52	34	104/105	068/069	6	3
53	35	106/107	06A/06B		
54	36	108/109	06C/06D		
55	37	110/111	06E/06F		
56	38	112/113	070/071	7	3
57	39	114/115	072/073		
58	3A	116/117	074/075		
59	3B	118/119	076/077		
60	3C	120/121	078/079	8	3
61	3D	122/123	07A/07B		
62	3E	124/125	07C/07D		
63	3F	126/127	07E/07F		

**Note:** Scanner number 4 does not exist.

**LAB Position 3 (type A or B)**

<b>Decimal Line Address</b>	<b>Hex Line Address</b>	<b>Dec. Line Interface Address</b>	<b>Hex. Line Interface Address</b>	<b>LIC Pos.</b>	<b>CS No.</b>
64	40	128/129	080/081	1	5
65	41	130/131	082/083		
66	42	132/133	084/085		
67	43	134/135	086/087		
68	44	136/137	088/089	2	5
69	45	138/139	08A/08B		
70	46	140/141	08C/08D		
71	47	142/143	08E/08F		
72	48	144/145	090/091	3	5
73	49	146/147	092/093		
74	4A	148/149	094/095		
75	4B	150/151	096/097		
76	4C	152/153	098/099	4	5
77	4D	154/155	09A/09B		
78	4E	156/157	09C/09D		
79	4F	158/159	09E/09F		
80	50	160/161	0A0/0A1	5	5
81	51	162/163	0A2/0A3		or
82	52	164/165	0A4/0A5		6
83	53	166/167	0A6/0A7		
84	54	168/169	0A8/0A9	6	5
85	55	170/171	0AA/0AB		or
86	56	172/173	0AC/0AD		6
87	57	174/175	0AE/0AF		
88	58	176/177	0B0/0B1	7	5
89	59	178/179	0B2/0B3		or
90	5A	180/181	0B4/0B5		6
91	5B	182/183	0B6/0B7		
92	5C	184/185	0B8/0B9	8	5
93	5D	186/187	0BA/0BB		or
94	5E	188/189	0BC/0BD		6
95	5F	190/191	0BE/0BF		

**LAB Position 4 (type A or B)**

<b>Decimal Line Address</b>	<b>Hex Line Address</b>	<b>Dec. Line Interface Address</b>	<b>Hex. Line Interface Address</b>	<b>LIC Pos.</b>	<b>CS No.</b>
96	60	192/193	0C0/0C1	1	7
97	61	194/195	0C2/0C3		
98	62	196/197	0C4/0C5		
99	63	198/199	0C6/0C7		
100	64	200/201	0C8/0C9	2	7
101	65	202/203	0CA/0CB		
102	66	204/205	0CC/0CD		
103	67	206/207	0CE/0CF		
104	68	208/209	0D0/0D1	3	7
105	69	210/211	0D2/0D3		
106	6A	212/213	0D4/0D5		
107	6B	214/215	0D6/0D7		
108	6C	216/217	0D8/0D9	4	7
109	6D	218/219	0DA/0DB		
110	6E	220/221	0DC/0DD		
111	6F	222/223	0DE/0DF		
112	70	224/225	0E0/0E1	5	7
113	71	226/227	0E2/0E3		or
114	72	228/229	0E4/0E5		8
115	73	230/231	0E6/0E7		
116	74	232/233	0E8/0E9	6	7
117	75	234/235	0EA/0EB		or
118	76	236/237	0EC/0ED		8
119	77	238/239	0EE/0EF		
120	78	240/241	0F0/0F1	7	7
121	79	242/243	0F2/0F3		or
122	7A	244/245	0F4/0F5		8
123	7B	246/247	0F6/0F7		
124	7C	248/249	0F8/0F9	8	7
125	7D	250/251	0FA/0FB		or
126	7E	252/253	0FC/0FD		8
127	7F	254/255	0FE/0FF		

LAB Position 5 (type A or B)

Decimal Line Address	Hex Line Address	Dec. Line Interface Address	Hex. Line Interface Address	LIC Pos.	CS No.
128	80	256/257	100/101	1	9
129	81	258/259	102/103		
130	82	260/261	104/105		
131	83	262/263	106/107		
132	84	264/265	108/109	2	9
133	85	266/267	10A/10B		
134	86	268/269	10C/10D		
135	87	270/271	10E/10F		
136	88	272/273	110/111	3	9
137	89	274/275	112/113		
138	8A	276/277	114/115		
139	8B	278/279	116/117		
140	8C	280/281	118/119	4	9
141	8D	282/283	11A/11B		
142	8E	284/285	11C/11D		
143	8F	286/287	11E/11F		
144	90	288/289	120/121	5	9 or 10
145	91	290/291	122/123		
146	92	292/293	124/125		
147	93	294/295	126/127		
148	94	296/297	128/129	6	9 or 10
149	95	298/299	12A/12B		
150	96	300/301	12C/12D		
151	97	302/303	12E/12F		
152	98	304/305	130/131	7	9 or 10
153	99	306/307	132/133		
154	9A	308/309	134/135		
155	9B	310/311	136/137		
156	9C	312/313	138/139	8	9 or 10
157	9D	314/315	13A/13B		
158	9E	316/317	13C/13D		
159	9F	318/319	13E/13F		



**LAB Position 8 (type A or B)**

Decimal Line Address	Hex Line Address	Dec. Line Interface Address	Hex. Line Interface Address	LIC Pos.	CS No.
224	E0	448/449	1C0/1C1	1	15
225	E1	450/451	1C2/1C3		
226	E2	452/453	1C4/1C5		
227	E3	454/455	1C6/1C7		
228	E4	456/457	1C8/1C9	2	15
229	E5	458/459	1CA/1CB		
230	E6	460/461	1CC/1CD		
231	E7	462/463	1CE/1CF		
232	E8	464/465	1D0/1D1	3	15
233	E9	466/467	1D2/1D3		
234	EA	468/469	1D4/1D5		
235	EB	470/471	1D6/1D7		
236	EC	472/473	1D8/1D9	4	15
237	ED	474/475	1DA/1DB		
238	EE	476/477	1DC/1DD		
239	EF	478/479	1DE/1DF		
240	F0	480/481	1E0/1E1	5	15 or 16
241	F1	482/483	1E2/1E3		
242	F2	484/485	1E4/1E5		
243	F3	486/487	1E6/1E7		
244	F4	488/489	1E8/1E9	6	15 or 16
245	F5	490/491	1EA/1EB		
246	F6	492/493	1EC/1ED		
247	F7	494/495	1EE/1EF		
248	F8	496/497	1F0/1F1	7	15 or 16
249	F9	498/499	1F2/1F3		
250	FA	500/501	1F4/1F5		
251	FB	502/503	1F6/1F7		
252	FC	504/505	1F8/1F9	8	15 or 16
253	FD	506/507	1FA/1FB		
254	FE	518/519	1FC/1FD		
255	FF	510/511	1FE/1FF		

## Abbreviations

AARR	allow additional register range bit
ABEND	abnormal end of task
AC	address compare
ACF	advanced communications function
ANS	auto-network shutdown
ASCII	american national standard code for information interchange
ATTN	attention (3727 operator console key)
BER	box error record
bps	bits per second
BSC	binary synchronous communication
BT	branch trace
CA	channel adapter
CCITT	comite consultatif international telegraphe et telephone
CCU	central control unit
CCW	channel status word
CDF	configuration data file
CE	customer engineer (WTC term for FE)
CLAB	channel and line attachment base
CLDP	controller load/dump program
CNM	communication network management
CP	control program (NCP, EP)
CPT	checkpoint trace
CRC	cyclic redundancy check
CS	communication scanner
CSP	communication scanner processor
CSS	control subsystem
CTS	clear to send (signal)
DCE	data circuit-terminating equipment
DCM	diagnostic control monitor
DLE	data link escape (BSC)
DSR	data set ready (signal)
DSRS	data signalling rate selection (signal)
DTE	data terminal equipment
DTR	data terminal ready (signal)
EBCDIC	extended binary-coded decimal interchange code
EC	engineering change
EOM	end of message
EOT	end of transmission (BSC)
EP	emulation program
EPO	emergency power off
ESC	emulation subchannel
ESCH	emulation subchannel high
ESCL	emulation subchannel low
ETB	end-of-transmission-block character (BSC)
ETX	end-of-text character (BSC)
FES	front end scanner (card)

FNCTN	function (CCU FNCTN) (3727 operator console key)
GCF	graphic configuration file
HDX	half-duplex
HW	hardware
IAR	instruction address register
ICC	internal clock control
IML	initial microcode load(er)
IOC	input/output control
IPL	initial program load(er)
L	load (instruction)
LAB	line attachment base
LABA	line attachment base type A
LABB	line attachment base type B
LCD	line control definition (storage)
LIC	line interface coupler
LIC1	line interface coupler type 1 (card)
LIC2	line interface coupler type 2 (card)
LIC3	line interface coupler type 3 (card)
LIC4A	line interface coupler type 4A (card)
LIC4B	line interface coupler type 4B
LSR	local storage register (CSP)
LSSD	level sensitive scan design
MES	miscellaneous equipment specifications
MLT	machine load table (diskette)
MOSS	maintenance and operator subsystem
MSA	machine status area (console)
NCCF	network communication control facility (CNM)
NCP	network control program
NPDA	network problem determination application (CNM)
NRZI	non return-to-zero inverted
OEF	origin element field (SNA)
OEM	original equipment manufacturer
OLTEP	online test execution program
OLTS	online test system
OLTT	online terminal test
PCF	primary control field (storage)
PCW	processor control word
PEP	partitioned emulation program
PF	program function (3727 operator console keys)
RAM	random access memory
RAS	reliability, availability, and serviceability
RD	receive data (signal)
RDV	redrive (card)
RFS	ready for sending (signal) (or clear to send CTS)
RH	request/response header (SNA)
RI	register to immediate operand (instruction)

ROS	read-only storage
RPO	remote power off
SCF	secondary control field (storage)
SDF	serial data field (storage)
SDLC	synchronous data link control (SNA)
SELN	selection (3727 operator console key)
SES	secondary status (storage)
SIT	scanner interface trace
SNA	Systems Network Architecture
SS	start-stop
SSP	system support programs
SYN	synchronous character (BSC)
SYSGEN	system generation
TCAM	telecommunication access method
TPS	two-processor switch (feature)
TSS	transmission subsystem
TTA	translate table area
UEPO	unit emergency power off
USASCII	(see ASCII)
VTAM	virtual telecommunication access method
V.24	CCITT V.24 recommendation
V.25	CCITT V.25 recommendation
V.28	CCITT V.28 recommendation
V.35	CCITT V.35 recommendation
XREG	external registers
ZAP	control program modifier function



**addressing:** A technique where the control station selects, among the DTEs that share a transmission line, the DTE to which it is going to send a message.

**asynchronous transmission:** Transmission where 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').

**availability:** The degree to which a system or resource is ready when needed to process data.

**binary synchronous communication (BSC):** A link protocol for synchronous transmission of coded data (see also 'synchronous transmission').

**box error record (BER):** Information about an error detected by the controller. It is recorded on the diskette and can be displayed on the operator console for error analysis.

**central control unit (CCU):** In the 3725, the processor that executes the network control program and controls the storage and channel adapters.

**channel adapter (CA):** A circuit that attaches a host processor channel.

**channel interface:** The interface between the controller and the host processors.

**channel and line attachment base (CLAB):** A board that includes the first CAB and LAB of the controller.

**communication controller:** A communication control unit which is controlled by a program stored and executed in the unit. Examples are the IBM 3705 or 3725/3726.

**Communication Network Management (CNM):** An IBM product program that assists the user in identifying network problems from a control point. It is stored in the host processor and comprises the Network Problem Determination Application (NPDA) and the Network Communication Control Facility (NCCF).

**communication scanner:** See 'scanner'.

**configuration data file (CDF):** A file of the diskette that contains a description of all the hardware features (presence, type, address, and characteristics).

**control panel:** A panel on the 3725 that contains switches and indicators for the use of the customer's operator and service personnel.

**control subsystem (CSS):** The part of the controller that stores and executes the control program, and monitors the data transfers over the channel and transmission interfaces.

**controller:** The IBM 3725/3726 Communication Controller and Expansion.

**customer engineer (CE):** A person who provides field services for IBM products.

**cyclic redundancy check (CRC):** A method of error checking performed at the receiving station after a block check character has been received.

**direct attachment:** When a DTE is connected to the controller without a DCE.

**diskette:** A thin, flexible magnetic disk, and its protective jacket, that records the 3725 microcode, diagnostics, error logs, and monitored data.

**duplex transmission:** A simultaneous two-way independent transmission in both directions (contrast with 'half duplex').

**Emulation Program (EP):** The function of a network control program to perform activities equivalent to those performed by a 270X.

**front end scanner (FES):** A circuit that scans the transmission lines, serializes and deserializes the transmitted characters, and manages the line services. It is part of the scanner.

**half duplex:** An alternate, one way at a time, independent transmission (contrast with 'duplex').

**host processor:** A data processing system connected to and communicating with a user application network through the controller (also called 'host').

**initial program load (IPL):** The process by which a configuration image is loaded into storage at the beginning of a work day or after a system malfunction.

**input/output control (IOC):** The circuit that controls the input/output from/to the channel adapters and scanners via the IOC bus.

**interface:** A shared boundary between two machines.

**internal clock circuit (ICC):** An optional circuit that provides, through the LICs, the clock control to the DCEs or DTEs that need it.

**line:** See 'transmission line'.

**line attachment base (LAB):** The unit of modularity of the transmission subsystem. It corresponds to one board and includes mainly the scanners and the line interface couplers.

**line interface coupler (LIC):** A circuit that attaches up to four transmission cables to the controller.

**maintenance and operator subsystem (MOSS):** The part of the controller that provides operating and servicing facilities to the customer's operator and customer engineer.

**microcode:** Code, created by IBM, that is loaded in a processor (the MOSS processor, for example) to replace a hardware function. The microcode is not accessible to the customer.

**modem (MODulator-DEMODulator):** A functional unit that transforms logical signals from a DTE into analog signals suitable for transmission over telephone lines (modulation), and vice-versa (demodulation). A modem is a DCE. It may be integrated in the DTE.

**multiplexing:** The division of a transmission facility into two or more channels by allotting the common channel to several different channels, one at a time.

**network:** See 'user application network'.

**Network Control Program (NCP):** A program, generated by the user from a library of IBM-supplied modules, that operates the controller.

**nonswitched line:** A permanent dedicated transmission line that connects two or more DTEs. The connection can be point-to-point or multipoint. The line can be leased or private - contrast with 'switched line'.

**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 3727 Operator Console that is used to operate and service the 3725 through the MOSS. A primary operator console must be located within 5m (16ft) of the 3725. Optionally an alternate operator console may be installed up to 150m (492ft) from the 3725.

**Partitioned Emulation Program (PEP):** A feature of NCP that permits some lines to operate in network control mode and some in 270X emulation mode.

**reliability:** The ability of a functional unit to perform its intended function under stated conditions for a stated period of time.

**scanner:** A device that scans and controls the transmission lines. It is composed of one communication scanner processor (CSP) and one front end scanner (FES).

**serviceability:** The capability to perform effective problem determination, diagnosis, and repair on a data processing equipment.

**start-stop:** A link protocol for asynchronous transmission of coded data (see 'asynchronous transmission').

**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 link protocol for synchronous transmission of coded data (see also 'synchronous transmission').

**synchronous transmission:** Transmission where the character synchronism is controlled by timing signals generated at the sending and receiving stations. The BSC or SDLC protocols, for example, use synchronous transmission (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.

**timeout:** The time interval allotted for certain operations to occur.

**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 the transmission interface.

**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 PTT (also called a 'user network').





## A

AARR bit setting codes 6-16  
 AARR setting 6-15  
 AC HIT, MSA A-4  
 ACF/NCF 1-1  
 ACF/SSP 1-1  
 activate line problem 8-33  
 address compare and branch trace parameter  
   display 5-50  
 address compare function 5-16  
   cancel 5-52  
   messages 8-61  
   MSA A-4  
 address trace  
   NCP function 6-18  
   start, procedure 7-28  
   stop, procedure 7-31  
 address trace block 6-23  
 address trace table 6-22  
 alarm 2-14, 8-79  
   A0 8-101  
   A1 8-102  
   A2 8-103  
   A3 8-104  
   A4 8-105  
   A5 8-106  
   A6 8-107  
   A7 8-108  
   A8 8-109  
   A9 8-110  
   A10 8-111  
   A11 8-112  
   A12 8-113  
   A13 8-114  
   A14 8-115  
   A15 8-116  
 alarm area 2-10, 2-14  
 alert 8-98  
 all channel adapters disabled lamp 3-2  
 allow additional register range bit 6-15, 6-16  
 alphanumeric keys 2-3  
 alter (*see* display/alter function)  
   alternate operator console 1-2, 3-3  
 arrow signs 2-15, 5-4  
 asterisk character 5-92  
 asynchronous line protocol 2-1  
 ATTN key 2-4  
 audible alarm 2-7  
 auto-answer subroutine, NCP 6-7  
 auto-network shutdown (ANS) 6-17  
 auto select mechanism, channel adapter 5-55, 5-57  
 auto-restart 4-1

## B

back tab key 2-8  
 backspace key 2-8  
 BER  
   detail 5-94  
   list 5-92

  summary 5-91  
 BER file 2-6, 5-90  
 BER file printout 8-119  
 BER file transfer 8-117  
 block mode, operator console 2-1  
 branch trace and address compare parameter  
   display 5-16  
 branch trace buffer 5-23  
   address 5-33  
   allocation 5-21, 5-33  
   display 5-38  
   length 5-33  
 branch trace extra records 5-24  
 branch trace function 5-20  
   cancel 5-52  
   messages 8-62  
   MSA A-7  
 buffer, branch trace (*see* branch trace buffer)  
 BYP-CCU-CHK, MSA A-3  
 BYP-IOC-CHK, MSA A-6

## C

cancel address compare function 5-52  
   messages 8-63  
 cancel branch trace function 5-52  
   messages 8-64  
 catalog procedure tool 7-20  
 cataloged control program procedures 7-21  
   printout 8-120  
   transfer 8-117  
 CCB, display of 6-32  
 CCB area byte expansion 6-33  
 CCU 1-2  
   check mode A-3  
   check reset function 5-43  
   functions 5-1, 5-6, 5-15  
   input register X'71' to X'7F' display 5-35  
   IPL (*see* IPL, CCU)  
   level 1 interrupt 5-17  
   level 3 interrupt function 5-43  
   mode A-3  
   status A-6  
   storage display 5-29, 5-35  
   X'71' output register A-4  
   X'72' output register A-7  
 CCU FNCTN key 2-6  
 CCU FNCTN, primary menu 5-15  
 CCU Reset function 5-13, 5-58  
 CCU Start function 5-12  
 CCU Stop function 5-13  
 CCU/Scanner IPL 5-60, 5-61  
   messages 8-89  
   MSA A-8  
 central control unit (CCU) 1-2  
 CE01 - text to 3270 - BSC in  
   EBCDIC (NCP) procedure 7-39  
 CE02 - text to 3270 - BSC in EBCDIC (EP, PEP)  
   procedure 7-45  
 CE03 - text to 2740 - S/S (NCP) procedure 7-52  
 CE04 - text to 2740 - S/S (EP/PEP)

- procedure 7-57
- change set mode data subroutine, NCP 6-9
- channel adapter 1-3, 4-2
  - auto-select mechanism 5-55, 5-57
  - IPL ports 5-85
  - reset (MSLA), EP/PEP 6-40
  - state/register display function 5-53
    - messages 8-65
  - trace function, NCP 6-25
- channel-attached 3725
  - initialization from control panel 4-1
  - initialization from the host 4-4
  - power on from the control panel 4-1
  - power on from the host 4-4
  - re-initialization 4-3
- channel disconnect function, NCP 6-17
- character control block (CCB), display of 6-32
- check code, MOSS A-6
- check reset, CCU 5-43
- come-from address, branch trace 5-21, 5-38
- come-from interrupt level, branch trace 5-21, 5-38
- CONNECTED, MSA A-7
- console switch 3-3
- control field, LIBD 5-71
- control keys 2-3
- control panel 3-1
- control program load 4-2
- control program procedures 2-4, 7-1, 7-21
  - messages 8-68
- control program procedure tools 7-2
- control programs 1-1
- control subsystem 1-1
- conventions used in this manual 1-4, 6-2, 7-34
- copy procedure tool 7-7, 7-14
- correspondence between line addresses
  - and scanners B-1
- CONTROL PROGRAM LOADED, MSA A-9
- CP01 - SDLC test frames (NCP) procedure 7-22
- CP02 - 3270 BSC general poll (NCP/EP)
  - procedure 7-24
- CP03 - 2740 start/stop poll (NCP/EP)
  - procedure 7-26
- CP04 - start address trace (NCP) procedure 7-28
- CP05 - stop address trace (NCP) procedure 7-31
- create procedure tool 7-7
- cursor 2-8, 2-9
- cursor rest position 2-15
- customer menu, primary 2-11
- cycle steal mechanism 5-14, 5-18

## D

- data exchange function 5-48, 6-1, A-4, A-7
  - messages 8-74
- date and time 2-15, 5-15, 8-91
- default parameters 5-5
- DEL CHAR key 2-5
- dial digit load subroutine, NCP 6-7
- dial operate subroutine, NCP 6-8
- directory procedure tool 7-4
- disable subroutine, NCP 6-9
- DISCTD-GO, MSA A-8
- DISCTD-STOP, MSA A-8
- diskette 1-1, 1-2
- DISP instruction 7-13

- display buffer subroutine, EP 6-28
- display last message subroutine, EP 6-29
- display long function 5-35
  - messages 8-76
- display LTS subroutine, NCP 6-8, 6-9
- display mode 2-15
- display of character control block, EP/PEP 6-32
- display of register function, NCP 6-15
- display of storage function
  - EP 6-39
  - NCP 6-14
- display procedure tool 7-5
- display receive compare character, EP 6-28
- display swap character, EP 6-28
- display/alter and display long, differences
  - between 5-37
- display/alter function 5-29
  - messages 8-75
- display, hexadecimal 3-5, 8-44
- displaying branch trace buffer 5-37
- double address compare function 5-16
- dump
  - CLDP 8-117
  - MOSS 3-4, 8-117
  - scanner 8-117
  - 3725 main storage 8-117
- dynamic store function, NCP 6-12

## E

- emulation program (EP) 1-1
- enable line subroutine, EP 6-29
- enable subroutine, NCP 6-7
- end function subroutine, NCP 6-9
- END instruction 7-13
- end test subroutine
  - EP 6-29
  - NCP 6-9
- entering LIC weight 5-76
- entering 3725 function parameters 5-4
  - EP 1-1
- EP functions
  - display of storage function 6-39
  - line test function 6-26
  - subchannel switching (MSLA) function 6-41
- EP/PEP functions
  - channel adapter reset (MSLA) 6-40
  - display of character control block 6-32
  - line trace 6-35
  - present status on channel 6-38
  - scanner interface trace (SIT) 6-35, 8-117
- ERASE key 2-5
- erase procedure tool 7-15
- error code flashing 3-5
- error log function 5-90
  - messages 8-77
- errors while running lines 8-25
- example of function selection 5-3, 5-9
- execute procedure tool 7-18

## F

FE01 - install a ZAP (NCP/PEP) procedure 7-35  
fields, unprotected 5-4, 5-5  
file printing 8-117  
file transfer 8-117  
function  
    address compare 5-16  
    address compare and branch trace display 5-50  
    alter 5-31  
    branch trace 5-21  
    cancel address compare 5-52  
    cancel branch trace 5-52  
    CCU 5-1, 5-6, 5-15  
    CCU check reset 5-43  
    CCU level 3 interrupt 5-43  
    CCU Reset 5-13  
    CCU/scanner IPL 5-63  
    CCU Start 5-12  
    CCU Stop 5-13  
    channel adapter state/register display 5-53  
    data exchange 5-48, 6-1  
    display long 5-35  
    display/alter 5-29  
    error log 5-90  
    GCF 5-75  
    IML 5-60  
    immediate 5-12  
    IPL CCU/TSS 5-60  
    IPL ports 5-83  
    line 5-65  
    line interface block display (LIBD) 5-66  
    maintenance 5-95  
    MOSS offline 5-47  
    MOSS online 5-46  
    one scanner IML 5-62  
    primary menu 5-2  
    query date and time 5-13  
    reset bypass CCU check 5-44  
    reset CCU/LSSD 5-58  
    reset IOC 5-45  
    reset IOC check stop 5-45  
    reset I-step 5-42  
    set bypass CCU check 5-44  
    set I-step 5-42  
    set IOC check stop 5-45  
    system control 5-40  
    terminate 5-14  
    3725 IPL 5-63  
function messages 8-57  
function select switch 3-4  
function selection 5-1  
function start switch 3-4

## G

GCF function 5-75  
    messages 8-78  
    printout 8-118  
    transfer 8-117  
GOTO instruction 7-10  
go-to address, branch trace 5-21, 5-38  
go-to interrupt level, branch trace 5-21, 5-38  
graphic configuration file function 5-75

graphic configuration file printout 8-118  
graphic configuration file transfer 8-117

## H

half-duplex mode, operator console 2-1  
HALT instruction 7-10  
HARDCHK, MSA A-6  
HARDSTOP, MSA A-6  
hardware ID exchange subroutine, NCP 6-9  
hexadecimal codes 8-44  
hexadecimal display 3-5  
hexadecimal mask, LIBD 5-73  
hexadecimal value, convention 1-4

## I

ICC 5-75, 8-118  
I-STEP, MSA A-3  
IML  
    MOSS 4-9  
    scanner 5-62  
immediate functions 5-12  
indicator, MOSS message 2-15  
initialization  
    channel attached 3725  
        from the control panel 4-1  
        from the host 4-4  
    link-attached, from the host 4-6  
initialization errors 3-5  
initialization phases  
    channel-attached 3725 4-2  
    link-attached 3725 4-5  
initialization subroutine, NCP 6-7  
initialize transmit buffer off set  
    subroutine, NCP 6-9  
INITIALIZED, MSA A-7  
input registers X'71' to X'7F' display, CCU 5-35  
input register X'E' 5-55  
INS CHAR key 2-5  
INSERT 8-96  
install a ZAP (NCP/PEP) procedure 7-35  
instruction-step mode 5-12, A-3  
interface A channel adapters switch 3-3  
interface B channel adapters switch 3-3  
internal clock control 1-3  
interrupt, MOSS 5-17  
IOC check A-6  
IPL, CCU 5-60  
IPL CANCELED, MSA A-10  
IPL, CCU/scanners 5-60  
IPL CCU/TSS functions 5-60  
IPL CHECK MSA A-10  
IPL COMPLETE+ERRORS, MSA A-10  
IPL COMPLETE, MSA A-10  
IPL duration 4-3  
IPL port function 5-83  
    messages 8-80  
IPL STOP, MSA A-11  
IPL-REQ, MSA A-6

## K

### key

- alphanumeric 2-3
  - ATTN 2-4
  - back tab 2-8
  - backspace 2-8
  - CCU FNCTN 2-6
  - control 2-3
  - DEL CHAR 2-5
  - ERASE 2-5
  - INS CHAR 2-5
  - lock 2-6
  - move-cursor-down 2-9
  - move-cursor-left 2-9
  - move-cursor-right 2-9
  - move-cursor-up 2-9
  - MSG 2-6
  - new line 2-8
  - non-labeled 2-7
  - numeric 2-3
  - program function (PF) 2-6
  - repeat action 2-3
  - RESET 2-4
  - SELN AREA 2-6
  - SEND 2-4, 2-6
  - shift 2-5
  - tab 2-8
  - typamatic 2-3
- keyboard elements, operator console 2-1

## L

LAB 1-3, 5-76, 8-118

### lamp

- all channel adapters disabled 3-2
  - MOSS inoperative 3-2, 8-39
  - MOSS message 2-15, 3-2, 8-40
  - power check 3-2, 3-4, 8-41
  - power on 3-2, 4-2
  - PRGM wait 3-2
- lamp testing (*see* MOSS message lamp)
- last MOSS check code A-6
  - layout, operator console 2-10
  - level 1 interrupt, CCU 5-17
  - level 2, level 3, display codes 6-30
  - level 3 interrupt, CCU 5-43
  - LIBD field description 5-68
  - LIC 5-75, 8-118, B-1
  - LIC weight 5-76
  - line address and scanner correspondence B-1
  - line functions 5-65
  - line interface block display (LIBD) 5-66
    - messages 8-82
  - line protocol 5-77
  - line speed 5-78
  - line test function
    - EP 6-26
    - NCP 6-5
  - line trace, EP/PEP 6-35
  - link-attached 3725
    - initialization from the host 4-6
    - re-initialization from the control panel 4-6
    - re-initialization from the host 4-6

- link IPL port 5-86
- link tests 5-60
- load instruction 5-17, 5-18
- load addressing character subroutine, NCP 6-10
- load hardware ID subroutine, NCP 6-10
- load polling characters, NCP 6-10
- load receive compare character subroutine, EP 6-28
- load transmit buffer subroutine, EP 6-28
- load transmit buffer subroutine, NCP 6-9
- loading the control program 4-2, 4-5
- local store register display 5-29, 5-35
- LOCK-FORMAT CHECK 8-96
- lock key 2-6
- LOCK-LINE CHECK 1 8-96
- LOCK-LINE CHECK 2 8-97
- LOCK-RE-KEY 8-97
- LOCK-SENDING 8-97
- LOCK-SYSTEM COMMAND 8-97
- logic element, operator console 2-1
- LOOP instruction 7-12
- lowercase mode 2-5
- LSSD reset 5-58

## M

- machine status area (MSA) 2-11, A-1
- main storage dump, 3725 8-117
- maintenance and operator subsystem (MOSS) 1-2, 1-3
- maintenance functions 5-95
- maintenance menu, primary 2-12
- manual dial, NCP 6-7
- menu
  - primary
    - customer 2-11
    - maintenance 2-12
    - secondary 2-12
    - tertiary 2-39
- message areas 8-48
- message indicator, MOSS 2-15
- message lamp, MOSS 2-15, 3-2, 8-40
- messages
  - function 8-57
    - address compare 8-61
    - branch trace 8-62
    - cancel AC 8-63
    - cancel BT 8-64
    - CCU/scanner IPL 8-89
    - channel adapter state and register display 8-65
    - control program procedure 8-68
    - data exchange 8-74
    - display long 8-76
    - display/alter 8-75
    - error log 8-77
    - GCF 8-78
    - IPL ports 8-80
    - line interface block display 8-82
    - link test 8-29
    - reset CCU/LSSD 8-87
    - scanner IML 8-84
    - stand-alone link test 8-29
    - system control 8-88
    - 3725 IPL 8-89
  - NPDA 8-98

- operator console information 8-96
- operator control 2-15, 8-91
- messages list 8-50
- microprocessor 1-1
- mode, CCU A-3
- modem-out field, LIBD 5-72
- modify CCB field subroutine, EP 6-29
- modify procedure tool 7-16
- MOSS 1-2, 1-3
  - check code A-6
  - error 8-39
  - IML 4-9
  - inoperative lamp 3-2, 8-39
  - interrupt 5-17
  - message indicator 2-15
  - message lamp 2-15, 3-2, 8-40
  - offline function 5-47
  - online function 5-46
  - status A-3
- MOSS offline function 5-47
- MOSS online function 5-46
- MOSS-ALONE, MSA A-3
- MOSS-OFFLINE, MSA A-3
- MOSS-ONLINE, MSA A-3
- move-cursor-down key 2-9
- move-cursor-left key 2-9
- move-cursor-right key 2-9
- move-cursor-up key 2-9
- MSG key 2-6

## N

- NCP functions 6-1
  - address trace function 6-18
  - channel adapter trace function 6-25
  - channel discontact function 6-17
  - display of register function 6-15
  - display of storage function 6-14
  - dynamic store function 6-12
  - line test function 6-5
- new line key 2-8
- non-labeled keys 2-7
- NPDA messages 8-98
- numeric keys 2-3

## O

- one-scanner IML 5-62
- operator console
  - area
    - alarm 2-10, 2-14
    - message 8-48
    - operator control message 2-15
    - operator console information 2-15
    - primary menu 2-11
    - secondary menu 2-12
    - selection 2-14
    - work 2-14
  - keyboard element 2-1
  - layout 2-10
  - logic element 2-1
  - power on/off 2-1, 2-2
  - screen layout 2-10

- test messages 8-95
- video element 2-1
- operator console information messages 8-95
  - area 2-15
- operator console not operational 8-42
- operator control message 8-91
  - area 2-15
- operator information area 2-15
- operator set instruction (OSET) 7-9
- OSET instruction 7-9
- output X'71' instruction A-4
- output X'72' instruction A-7

## P

- PF keys 2-4, 2-6
- power check lamp 3-2, 3-4, 8-41
- power check reset (PCR) 3-3, 3-4
- power control switch 3-3
- power errors 3-5
- power faults 8-1, 8-41
- power off
  - operator console 2-1, 2-2
  - 3725 4-6
- power on
  - operator console 2-1, 2-2
  - 3725
    - from control panel 4-1
    - from host 4-4
- power on lamp 3-2, 4-2
- power on light 2-1
- power on reset 3-3, 3-4
- power on/off switch
  - control panel 3-1, 3-3
  - operator console 2-1, 2-2
- precataloged control program procedures 7-21
- present status on channel, EP/PEP 6-38
- PRGM wait lamp 3-2
- primary menu area 2-11
- primary menu functions 5-2
- printing 3725 file 8-117
- problem determination start page 8-1
- procedure tools
  - catalog 7-20
  - create/copy 7-7, 7-14
  - copy 7-7, 7-14
  - directory 7-4
  - display 7-5
  - erase 7-15
  - execute 7-18
  - modify 7-16
- PROCESS, MSA A-3
- program function keys 2-4, 2-6

## Q

- query date and time function 5-13, 8-91

## R

- receive mode subroutine, NCP 6-8
- receive/reply using
  - buffers 1, 2, or 3 subroutine, EP 6-29
- re-initialization, 3725 4-3
- refresh mode 5-34
  - cancel 2-4
- register display, channel adapter 5-53
- repeat action keys 2-3
- reset bypass CCU check function 5-44
- reset function, CCU 5-13
- reset CCU/LSSD function 5-58
  - messages 8-87
- reset I-step function 5-42
- reset IOC check stop function 5-45
- reset IOC function 5-45
- RESET key 2-4
- RESET, MSA A-6, A-8
- reverse slash 2-7
- RUN, MSA A-6

## S

- scanner and line address correspondence B-1
- scanner dump, MSA A-8
- scanner IML 5-62
  - messages 8-84
  - MSA A-8, A-9
- scanner interface trace (SIT)
  - EP/PEP 6-35, 8-117
  - NCP 8-117
- screen layout, operator console 2-10
- SDLC test frame procedure 7-22
- secondary control field (SCF) 5-69
- secondary menu area 2-12
- select set mode data byte subroutine, NCP 6-9
- selecting 3725 functions 5-3
- selection area 2-14
- selective scanner IML 5-62
- SELN AREA key 2-6
- SEND key 2-4, 2-6
- serial data field, LIBD 5-68
- SERVICE-MODE, MSA A-3
- set bypass CCU check function 5-44
- set immediate instruction (SETI) 7-9
- set I-step function 5-42
- set IOC check stop function 5-45
- set mode field, LIBD 5-69
- SETI instruction 7-9
- shift key 2-5
- simultaneous address compare and
  - branch trace 5-27
- single address compare function 5-16
- SIT (*see* scanner interface trace)
- space bar 2-3
- stand-alone link test function 5-65
- start address trace (NCP) procedure 7-28
- start function, CCU 5-12
- state display, channel adapter 5-53
- status, CCU A-6
- stop address trace (NCP) procedure 7-31
- stop function, CCU 5-13
- stop on line error subroutine, EP 6-29

- STOP-AC, MSA A-6
- STOP-BT, MSA A-6
- STOP-CCU-CHK, MSA A-3
- STOP-IOC-CHK, MSA A-6
- STOP-PGM, MSA A-6
- STOP-X70, MSA A-6
- storage, 3725 1-2
- storage dump, 3725 main 8-117
- store instruction 5-17, 5-18
- subchannel switching (MSLA) function, EP 6-41
- swap character subroutine, EP 6-28
- switch
  - console 3-3
  - function select 3-4
  - function start 3-4
  - interface A channel adapters 3-3
  - interface B channel adapters 3-3
  - power control 3-3
  - power on/off 3-3
  - unit emergency 3-4
- switching between CCU and primary menu
  - functions 5-6
- switching control to EP mode 6-4
- switching control to NCP mode 6-3
- system control functions 2-4, 5-40
  - messages 8-88

## T

- tab key 2-8
- terminate function 5-14
- tertiary menu 2-39
- testing lamps (*see* MOSS message lamp)
- test/normal switch 2-1
- test messages, operator console 8-95
- text to 2740 - S/S (EP/PEP) procedure 7-57
- text to 2740 - S/S (NCP) procedure 7-52
- text to 3270 - BSC in EBCDIC (EP, PEP)
  - procedure 7-45
- text to 3270 - BSC in EBCDIC procedure 7-39
- trace
  - address (NCP) 6-18
  - channel adapter (NCP) 6-25
  - start address 7-28
  - stop address 7-31
- trailing blanks 2-5
- transferring 3725 files 8-117
- translate for buffer 1, 2, or 3 subroutine, EP 6-29
- transmission subsystem (TSS) 1-3
- transmit buffer subroutine
  - EP 6-29
  - NCP 6-9
- TSS 1-3
- two-processor switch 3-3
- two-single address compare function 5-16
- typamatic keys 2-3

## U

- unable to load/dump the control program
  - in channel-attached 3725 8-10
- unable to load/dump the control program

in link-attached 3725 8-12  
unable to power off the 3725 8-4  
unable to power on the 3725 8-2  
unexpected characters 2-4  
unit emergency switch 3-4  
UNKNOWN-MODE, MSA A-8  
unprotected fields 5-4, 5-5  
UP SHIFT 8-97  
uppercase mode 2-1, 2-5, 5-4  
US ASCII character set 2-1

## V

video element, operator console 2-1

## W

WAIT instruction 7-10  
work area 2-14  
work register display 5-29, 5-35  
wrap test function 2-4, 5-65

## 1

12-key numeric keypad 2-3

## 2

2740 Start/Stop Poll (NCP/EP) procedure 7-26

## 3

3270 BSC general poll (NCP/EP) procedure 7-24  
3725 component parts 1-1  
3725 drops power 8-2  
3725 initialization  
    channel-attached  
        from the control panel 4-1  
        from the host 4-4  
    link-attached, from the host 4-6  
3725 initialization problem 8-10  
3725 IPL 5-60  
3725 main storage dump 8-117  
3725 messages (*see* messages)  
3725 power off 4-10  
3725 power on  
    from control panel 4-1  
    from host 4-4  
3725 procedure tools 7-1  
3725 re-initialization  
    channel-attached 4-3  
    link-attached 4-6  
3725 storage 1-1, 1-2  
3727 operator console power on/off 2-1, 2-2  
3727 operator console problem 8-8





This manual is part of a library that serves as a reference source for systems analysts, programmers, and operators of IBM systems. You may use this form to communicate your comments about this publication, its organization, or subject matter, with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you. Your comments will be sent to the author's department for whatever review and action, if any, are deemed appropriate.

*Note: Copies of IBM publications are not stocked at the location to which this form is addressed. Please direct any requests for copies of publications, or for assistance in using your IBM system, to your IBM representative or to the IBM branch office serving your locality.*

Possible topics for comments are:

Clarity      Accuracy      Completeness      Organization      Coding      Retrieval      Legibility

If you wish a reply, give your name, company, mailing address, and date:

.....  
.....  
.....  
.....

Note: Staples can cause problems with automated mail sorting equipment.  
Please use pressure sensitive or other gummed tape to seal this form.

What is your occupation? .....

Number of latest Newsletter associated with this publication: .....

Thank you for your cooperation. No postage stamp necessary if mailed in the USA. (Elsewhere, an IBM office or representative will be happy to forward your comments or you may mail directly to the address in the Edition Notice on the back of the title page.)

GA33-0014-3

Reader's Comment Form

Cut or Fold Along Line

3725 Communication Controller, Operating Guide (File No. S/370/30xx/4300-09) Printed in USA GA33-0014-3

Fold and tape

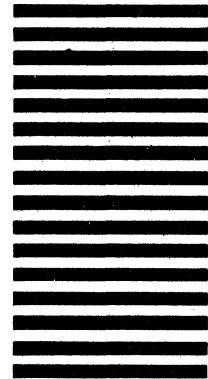
Please Do Not Staple

Fold and tape



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**  
FIRST CLASS PERMIT NO. 40 ARMONK, N.Y.



POSTAGE WILL BE PAID BY ADDRESSEE:

International Business Machines Corporation  
Department 812LG  
1133 Westchester Avenue  
White Plains, New York 10604

Fold and tape

Please Do Not Staple

Fold and tape



Publication Number  
GA33-0014-3

File Number  
S/370/30xx/4300-09

Printed in  
USA

**IBM**<sup>®</sup>