

COVER Book Cover

Personal System/2

**Engineering Change
Announcements**

Document Number SA38-0093-02

NOTICES Notices

This Feature pamphlet is a component of PS/2 Bill of Forms number
SB0F-2480-00.

EDITION Edition Notice
Fourth Edition (April 1993)

The drawings and specifications contained herein shall not be reproduced in whole or in part without written permission.

IBM has prepared this publication for the use of customer engineers in the installation, maintenance, or repair of the specific machines indicated. IBM makes no representations that it is suitable for any other purpose.

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time.

Requests for copies of IBM publications should be made to your IBM representative or to the IBM branch office servicing your locality.

Address comments concerning the content of this publication to IBM Corporation, Dept. 90A, Bldg. 234-2, Internal Zip 4307, 951 NW 51st St., Boca Raton, Florida, U.S.A. 33432. IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

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

|| Copyright International Business Machines Corporation 1990, 1992,
|1993. All rights reserved.

Note to US Government users - Documentation related to Restricted rights - Use, duplication, or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.

LEGEND Special Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights or other legally protectible rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, programs, or services, except those expressly designated by IBM, is the user's responsibility.

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the IBM Director of Commercial Relations, IBM Corporation, Purchase, NY 10577.

The following terms, denoted by an asterisk (*) in this publication, are trademarks of the IBM Corporation in the United States and/or other countries:

IBM	Micro Channel
Personal System/2	PS/2

The following terms, denoted by a double asterisk (**) in this publication, are trademarks of other companies as follows:

MicroMASTER	Aox, Inc.
Microsoft	Microsoft Corporation
Novell	Novell, Inc.
SY-TOS	Sytron Corporation
Windows	Microsoft Corporation

CONTENTS Table of Contents

COVER	Book Cover
NOTICES	Notices
EDITION	Edition Notice
LEGEND	Special Notices
CONTENTS	Table of Contents
1.0	Engineering Change Announcements (ECAs)
1.1	PS/2 ECA Summary and ECA-to-FRU Matrix
1.1.1	ECA Summary
1.1.2	ECA-to-FRU Matrix
1.2	ECA 001: 8560/80 System Board Connector Change
1.3	ECA 009: 2401 Errors
1.4	ECA 011: 8580 System Board Hang Condition
1.5	ECA 014: 8573 Conversion Level 1 to Level 2 FRUs
1.6	ECA 015: 8525 Diskette Drive Shield
1.7	ECA 017: 8513 Out of Focus
1.8	ECA 020: 8570 Fixed Disk Drive
1.9	ECA 021: 8570 A21 System Board
1.10	ECA 022: Mouse Port
1.11	ECA 023: 8525 Display Characters
1.12	ECA 024: 8550/55/70/73 Fixed Disk Drive
1.13	ECA 028: System Board
1.14	ECA 029: 8570 Busmaster Adapter Failure
1.15	ECA 030: 8550 031/061 Dual Async Cards
1.16	ECA 031: 8580 Compatibility with Wizard/Busmaster Adapters
1.17	ECA 039: 8530 286 POST Hang Condition
1.18	ECA 042: Enhanced 80386 Memory Expansion Option
1.19	ECA 045: ALL PS/2 Defective Power Cords
1.20	ECA 048: 8580 Potential Data Problem
1.21	ECA 051: 8580 Memory Parity Errors
1.22	ECA 052: 8560/80 ESDI Fixed Disk Adapter/A
1.23	ECA 053: 8590/95 Intermittent Memory Parity Errors
1.24	ECA 054: 8580/90/95 Potential Data Loss
1.25	ECA 055: 8550/55/70 Potential Data Loss
1.26	ECA 056: ARTIC Multiport/2 Errors
1.27	ECA 057: Wizard Adapter Replacement
1.28	ECA 059: 8570 Parity Check Errors
1.29	ECA 060: 8570 25MHz Color Changing
1.30	ECA 061: 8513 Blank Screen/Power On LED
1.31	ECA 062: 8573 POST System Hang
1.32	ECA 063: External SCSI Terminator
1.33	ECA 066: EPROM Change/Token-Ring Adapter
1.34	ECA 068: 8573 System Hang
1.35	ECA 069: 162/601 Error at Power-On
1.36	ECA 070: 8573 Static Damage Diskette Drive Cover
1.37	ECA 071: 8570 System Hangs Running Program Applications
1.38	ECA 073: 8573 P75 Early Ship Upgrade
1.39	ECA 077: 8570 Fails With Busmaster Adapter
1.40	ECA 081: ARTIC Selectable Interface Comm Failures
1.41	ECA 082: 8525-286: 305 Error
1.42	ECA 083: 8570 Incompatibility Problems
1.43	ECA 084:
1.44	ECA 088: Image Adapter/A
1.45	ECA 089: 8535/8540 RIPL
1.46	ECA 092: 8570 Data Modification Patch
1.47	ECA 094: SCSI 2.3GB Tape Data Modification
1.48	ECA 095: 8535/8540 Extra Characters
1.49	ECA 098: 8535/40 Backup/Restore Problem
1.50	ECA 102: 8543 Data Fax Modem
1.51	ECA 103: 8550/55/70 Seagate 60MB Fixed Disk
1.52	ECA 104: 8573 Disk/Diskette Errors

1.0 Engineering Change Announcements (ECAs)

ECAs announce product quality, new production, or safety engineering changes for the field, which are available for customers when the conditions specified within the ECA are met. When an ECA is announced, it should be made available for customers at no charge. However, it may be appropriate to bill for on-site service.

The following are on-site ECA billing guidelines:

Machine Status	ECA with On-Site Provision	ECA with Carry-In Provision
Carry-in Warranty	Not Billable	Incident Charge
On-Site Warranty Upgrade	Not Billable	Not Billable
Maintenance Contract	Not Billable	Not Billable
Non-Contract	Not Billable	Billable*

* When installed on-site the customer should be billed for CE travel time and expenses at the applicable rate and terms. When installed at a designated service location there is no charge.

Personal System/2* ECAs do not use the Machine Level Control (MLC) System. Therefore, all maintenance parts required for an ECA are ordered by the customer engineer through normal parts distribution. Because of this customer engineers MUST use Service Code 33 (instead of 01), ECAXXX (XXX = the appropriate ECA number), and other branch office 9XX for the branch office to receive credit from the product division for time and parts associated with the ECA.

ECA information is available in the following publications and/or systems:

Service Memorandums (SM)

Personal System/2 ECAs are automatically sent to SM System Library Subscription Service (SLSS) subscribers. The form number to order Industry Systems and PS/2* SMs is S230-9094. Orders can be placed through the branch office SLSS coordinator.

Hardware Support Facility (HSF)

The HSF database, accessible via RETAIN is an on-line, realtime database which contains various technical information, including all released ECAs.

To review PS/2 ECAs, use search argument "PSY2ECA". ECAs should be reviewed at least monthly by the PS/2 branch office support representative (BDS). The BDS should then distribute newly released ECAs to customer engineers trained on PS/2 Products.

Personal System/2 ECAs

This pamphlet contains PS/2 ECAs which were available at the time this publication was printed. It will be updated periodically with newly released information.

Be sure to **POWER OFF** the system before installing, removing, or reseating cards.

Subtopics

- 1.1 PS/2 ECA Summary and ECA-to-FRU Matrix
- 1.2 ECA 001: 8560/80 System Board Connector Change
- 1.3 ECA 009: 2401 Errors
- 1.4 ECA 011: 8580 System Board Hang Condition
- 1.5 ECA 014: 8573 Conversion Level 1 to Level 2 FRUs
- 1.6 ECA 015: 8525 Diskette Drive Shield
- 1.7 ECA 017: 8513 Out of Focus
- 1.8 ECA 020: 8570 Fixed Disk Drive
- 1.9 ECA 021: 8570 A21 System Board
- 1.10 ECA 022: Mouse Port
- 1.11 ECA 023: 8525 Display Characters
- 1.12 ECA 024: 8550/55/70/73 Fixed Disk Drive
- 1.13 ECA 028: System Board
- 1.14 ECA 029: 8570 Busmaster Adapter Failure
- 1.15 ECA 030: 8550 031/061 Dual Async Cards
- 1.16 ECA 031: 8580 Compatibility with Wizard/Busmaster Adapters
- 1.17 ECA 039: 8530 286 POST Hang Condition
- 1.18 ECA 042: Enhanced 80386 Memory Expansion Option
- 1.19 ECA 045: ALL PS/2 Defective Power Cords
- 1.20 ECA 048: 8580 Potential Data Problem
- 1.21 ECA 051: 8580 Memory Parity Errors

PS/2 ECA

Engineering Change Announcements (ECAs)

1.22 ECA 052: 8560/80 ESDI Fixed Disk Adapter/A
1.23 ECA 053: 8590/95 Intermittent Memory Parity Errors
1.24 ECA 054: 8580/90/95 Potential Data Loss
1.25 ECA 055: 8550/55/70 Potential Data Loss
1.26 ECA 056: ARTIC Multiport/2 Errors
1.27 ECA 057: Wizard Adapter Replacement
1.28 ECA 059: 8570 Parity Check Errors
1.29 ECA 060: 8570 25MHz Color Changing
1.30 ECA 061: 8513 Blank Screen/Power On LED
1.31 ECA 062: 8573 POST System Hang
1.32 ECA 063: External SCSI Terminator
1.33 ECA 066: EPROM Change/Token-Ring Adapter
1.34 ECA 068: 8573 System Hang
1.35 ECA 069: 162/601 Error at Power-On
1.36 ECA 070: 8573 Static Damage Diskette Drive Cover
1.37 ECA 071: 8570 System Hangs Running Program Applications
1.38 ECA 073: 8573 P75 Early Ship Upgrade
1.39 ECA 077: 8570 Fails With Busmaster Adapter
1.40 ECA 081: ARTIC Selectable Interface Comm Failures
1.41 ECA 082: 8525-286: 305 Error
1.42 ECA 083: 8570 Incompatibility Problems
1.43 ECA 084:
1.44 ECA 088: Image Adapter/A
1.45 ECA 089: 8535/8540 RIPL
1.46 ECA 092: 8570 Data Modification Patch
1.47 ECA 094: SCSI 2.3GB Tape Data Modification
1.48 ECA 095: 8535/8540 Extra Characters
1.49 ECA 098: 8535/40 Backup/Restore Problem
1.50 ECA 102: 8543 Data Fax Modem
1.51 ECA 103: 8550/55/70 Seagate 60MB Fixed Disk
1.52 ECA 104: 8573 Disk/Diskette Errors

1.1 PS/2 ECA Summary and ECA-to-FRU Matrix

Subtopics

1.1.1 ECA Summary

1.1.2 ECA-to-FRU Matrix

PS/2 ECA
ECA Summary

1.1.1 ECA Summary

The following provides a brief summary of valid ECAs.

Note: Before installing any FRUs, review the entire ECA to determine if the product meets all the ECA requirements.

ECA	Model	ECA Description	Expires
001	8560, 80	System board connector change	See ECA
009	8512	2401 Error	See ECA
011	8580	System board hang condition	06/30/93
014	8573	Conversion level 1 to level 2 FRUs	See ECA
015	8525	Diskette drive shield	06/30/93
017	8513	Out of focus	See ECA
020	8570	Fixed disk drive	06/30/93
021	8570	A21 system board	06/30/93
022	8570	Mouse port	06/30/93
023	8525	Display characters	12/31/93
024	8550, 55, 70,73	Fixed disk drive	06/30/93
028	8570	System board	06/30/93
029	8570	Busmaster adapter failure	12/31/93
030	8550	031/061 Dual async cards	06/30/93
031	8530	Compatibility with Wizard/Busmaster adapters	06/30/93
039	8530	POST hang condition	06/30/93
042	8570, 73, 80	Enhanced 80386 memory expansion option	See ECA
045	All PS/2s	All PS/2 defective power cords	See ECA
048	8580	Potential data problem	06/30/93
051	8580	Memory parity errors	See ECA
052	8560, 80	ESDI Fixed disk adapter/A	06/30/93
053	8590, 95	Intermittent memory parity errors	See ECA
054	8580, 90, 95	Potential data loss	12/31/93
055	8550, 55, 70	Potential data loss	See ECA
056	8595	ARTIC multiport/2 errors	06/30/93
057	8570, 73	Wizard adapter replacement	06/30/93
059	8570	Parity check errors	See ECA
060	8570	25 MHz color changing	06/30/93
061	8513	Blank screen/power-on LED	21/31/93
062	8573	POST system hang	06/30/93
063	8550	External SCSI terminator	06/30/93
066	8525-95	EPROM change Token-Ring Adapter	06/30/93
068	8573	System hang	06/30/93
069	8550-80	162/601 error at power-on	06/30/93

PS/2 ECA
ECA Summary

070	8573	Static damage diskette drive cover	06/30/93
071	8570 (E61, U61, 061, 121)	System hangs running program applications	06/30/93
073	8573 P75	Early ship upgrade	06/30/93
077	8570 (E61, U61, 061, 121)	Fails with Busmaster adapter	06/30/93
081	8550, 80	ARTIC selectable interface comm failures	06/30/93
082	8525-286	305 Error	06/30/93
083	8570	Incompatibility problems	See ECA
084	8590	Mixed SIMMs, TRAP 002/NMI/POST error	06/30/93
088	8550, 95	Image Adapter/A	06/30/93
089	8535, 40	RIPL	06/30/93
092	8570 Models A16, A81, B16, B81	Data modification patch	06/30/93
094	3511, 3532, 8595	SCSI 2.3GB tape data modification	06/30/93
095	8535, 40	Extra characters	06/30/93
098	8535, 40	Backup/restore problem	06/30/93
102	8543	Data fax modem	06/30/93
103	8550, 55, 70	Seagate 60MB fixed disk	09/30/93
104	8573	Disk / diskette errors	See ECA

PS/2 ECA
ECA-to-FRU Matrix

1.1.2 ECA-to-FRU Matrix

The following matrix provides the FRU numbers associated with each ECA.

Note: Before installing any FRUs, review the entire ECA to determine if the product meets all the ECA requirements.

Model	ECA and FRU Replacement
3511	094-21F8792
3532	094-21F8792
8512	009-61X8924
8513	017-68X3088, 061-68X3088
8525	015-33F4904, 023-96F7390, 066-92F9122
8525-286	082-96F7435
8530	066-92F9122
8530-286	039-34F0046
8535	089-92F2434, 095-79F3529, 098-92F2434
8540	089-92F2434, 095-92F0107, 098-92F2434
8543	102-79F0996
8550	024-6128294, 030-34F0008, 055-92F0619, 066-92F9122, 069-See ECA, 081-84F7540, 103-6128294
8555	024-85F0049, 055-92F0619, 066-92F9122, 069-See ECA, 081-84F7540, 103-85F0049
8560	001-72X8538, 001-33F8416, 001-33F5950, 052-92F0062, 066-92F9122, 081-84F7540
8565	066-92F9122, 069-See ECA, 081-84F7540
8570	020-6128291, 021-92F0580, 022-92F0580, 024-6128291, 024-612894, 028-57F2859, 029-92F0580, 042-88F0075, 055-92F0619, 057-88F0063, 059-92F0580, 059-91F0581, 060-92F0580, 060-92F0581, 066-92F9122, 069-See ECA, 071-96F7309, 071-96F7308, 077-33F5835, 077-96F7308, 077-96F7402, 081-84F7540, 083-96F7402, 103-6128294
8573	014-38F4686, 014-38F4737, 014-38F4734, 014-38F5939, 024-6128291, 024-6128294, 042-88F0075, 053-64F0198, 057-88F0063, 062-38F5969, 062-65X1564, 066-92F9122, 068-65X1567, 070-79F3239, 073-78F9896, 073-64F8789, 073-78F9897, 104-07G1680
8580	011-33F8416, 011-92F0756, 031-92F0756, 042-88F0075, 048-92F0756, 051-85F0046, 052-92F0062, 054-92F0618, 066-92F9122, 069-See ECA, 081-84F7540
8590	053-64F0198, 054-92F0618, 057-88F0063, 084-81F8823
8595	053-64F0198, 054-92F0618, 056-09F1888, 056-09F1962, 057-88F0063, 066-92F9122, 094-21F8792
Indust PS/2s	081-84F7540
All Models	045-62X1045, 063-92F0057, 088-06G8824

1.2 ECA 001: 8560/80 System Board Connector Change

M/T 8560/8580: MANUFACTURING CHANGE IN CONNECTORS

MACHINES AFFECTED:

8560, Models 041/071, S/N Range from 8000500 - 8009000

8580, Models 041/071, S/N Range from 8000001 - 8000200

DETAIL: A connector change was made by manufacturing which may produce a connectivity problem if the system board, speaker/battery assembly, or speaker/battery assembly cable is replaced. The original connectors were used in S/Ns ranging from 8000500 through 8009000 (8560) and S/Ns ranging from 8000001 through 8000200 (8580). All FRUs will be stock with the current level. The following chart describes the differences in connector types:

	System	Model	Original	Current
Sys.Bd. (P/N72X8538)	8560	041,071	FEMALE	MALE
Sys.Bd. (P/N72X6668)	8580	041,071	FEMALE	MALE

The following parts have the same P/N for both 8560 and 8580:

Speaker/Battery Asm. (P/N72X8511)			FEMALE	MALE
Speaker/Battery Asm. Cable (P/N72X8558)			MALE	FEMALE

If any of the three FRUs listed above must be replaced, the other two corresponding FRUs must also be replaced to maintain connectivity between connector types (MALE vs. FEMALE). Some of the diskette drive cables have a small adapter card P/N72X6889 to permit plugging into the original system board. This card must be removed to enable plugging of the diskette cable into the current system board. Scrap this card locally.

NOTES: After warranty, if the customer is billable, the FRU which failed must be billed to the customer. However, the two corresponding FRUs, which are replaced to maintain connectivity, must not be billed. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA001, AND OTHER OFFICE 990.

| 1.3 ECA 009: 2401 Errors

M/T 8512 - 2401 ERRORS, CHANGING OR FLICKERING COLORS

PHYSICAL CHECK: Failing 8512 displays that meet all three of the following specifications:

1. Serial number with a "72" prefix
 AND
2. Serial number range
 72-0000000 thru 72-0539999 -- ECA EXPIRES 2/29/92
 72-0540000 thru 72-0650000 -- ECA EXPIRES 6/30/92
 AND
3. Display exhibits failing symptoms as described in the DETAIL section of this ECA.

DETAIL: A limited number of 8512 color displays may fail, causing a 2401 error during power-on self-test (POST), or a 2402 or 2409 error code when VGA Advanced Diagnostics are executed. The problem may also appear as flickering or changing colors on the display during use. These symptoms may be very intermittent. A 2401 error code can be bypassed in most cases by pressing the "F1" Key. Subsequent operation will not harm the display or system unit.

2401, 2402, 2409, and 2410 error codes may be caused by either a defective display or system unit planar board. The following symptom and action chart will help to minimize unnecessary replacement of the system unit planar board. 2401 is a POST error; 2402, 2409, and 2410 are Advanced Diagnostic error codes.

Reported Symptom	Corrective Action
Customer reports flickering or changing colors on the display with no error code occurring	Replace the 8512 color display
2401 or 2402 error displayed in a color other than white on a black background	Replace the 8512 color display
2401, 2402, or 2410 error displayed in white numbers on black background, and no reported flickering or changing colors on the display	Replace the system unit planar board (see NOTES)
2409 error code	Replace the 8512 color display

NOTES:

1. Only an 8512 display replacement will be covered by this ECA. System unit planar board replacement must be done consistent with the terms and conditions of the system unit warranty or service agreement, if applicable.
2. This ECA expires on the dates given in the serial number range fields. If the customer's 8512 is displaying, the symptoms given and the date for their serial number has expired, the customer may receive a replacement display if they can provide the original "Proof of Purchase" for the 8512. With the "Proof of Purchase," this ECA is effective for 3 years from the date of purchase. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA009, OTHER OFFICE 990. All defective displays should be returned via UPR.

1.4 ECA 011: 8580 System Board Hang Condition

|M/T 8580: 80386/80387 CONFLICT CAUSES SYSTEM HANG CONDITION

THIS ECA EXPIRES 6-30-93.

MACHINES AFFECTED:

Models 041 and 071 without system board FRU P/N33F8416

| Models 111 and 311

|PHYSICAL CHECK: On the Model 041/071, locate the FRU P/N on the system board. If the system board has FRU P/N72X6668, or the FRU P/N cannot be determined, this ECA will apply. On the Model 111/311, check the FRU P/N located on the label near the I/O card sockets. If the system board has FRU P/N90X7390, or the FRU P/N cannot be determined, this ECA will apply.

|DETAIL: The 8580 hangs under certain conditions as a result of a conflict between the Intel 80386 processor and the 80387 co-processor. All 8580 models are affected by this problem, but it will manifest itself only under certain operating conditions. It must be assumed that data has been lost if the system hangs. Turning the system off and on is necessary to regain control of the system.

|If the system is equipped with a math co-processor and is encountering conditions as described earlier, replace the system board with a current level board.

|The math co-processor should be removed from the old system board and installed on the new one.

NOTES: Order parts through normal distribution. All down-level system boards should be returned via UPR. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA011, AND OTHER OFFICE 990.

|1.5 ECA 014: 8573 Conversion Level 1 to Level 2 FRUs

|M/T 8573 MODELS 061 AND 121: FRU LEVEL CONVERSION

PHYSICAL CHECK: Systems that have a S/N range from 23-0000001 through 23-0003000 for Model 061 or a S/N range from 23-1000001 through 23-1003000 for a Model 121 and a 5-pin in-line male connector on the plasma display power cable are eligible under this ECA. The connector pins on the level one cable connector are arranged in a row (see figure below) and are located on a connector that is plugged into a 3-inch long cable/connector that exits the power supply.

PICTURE 1

PREREQUISITES: Systems must have the associated level one parts installed in them.

DETAIL: If the previous checks and prerequisites are satisfied and the system has a failure in one or more of the four FRUs listed below, the failing FRU(S) will be replaced under the customer's service offering in effect at the time of system failure, for example, Warranty, IOR, CCR, or a per call method.

This ECA will replace the remainder of the associated level one operational FRUs for conductivity purposes and convert the system to current FRU replacement parts. Therefore, this ECA will only need to be performed once on level one systems. The associated level two FRU P/Ns are:

Plasma Display Unit	P/N38F4737
Video Adapter Card	P/N38F4686
Plasma Display Power Cable	P/N38F5939
Power Supply	P/N38F4734

NOTES: Order parts through normal distribution. Return all removed parts through normal channels. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA014, AND OTHER OFFICE 990.

1.6 ECA 015: 8525 Diskette Drive Shield

M/T 8525: DISKETTE DRIVE SHIELD

| THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: Any 8525 with a color display.

DETAIL: Magnetic interference, generated by the 8525 color monitor, can create diskette read errors on the "A" drive. Drive "B" and monochrome 8525 systems are not affected. If a color model 8525 is exhibiting diskette read errors during normal use, but the diskette drive does not fail when tested with the starter diskette or advanced diagnostics, a metal shield (FRU P/N33F4904) should be installed on drive "A." This shield must be attached directly to the diskette drive, covering the top and both sides of the drive. The shield, attaching screws, and installation instructions are available by ordering FRU P/N33F4904. Only the shield and its installation are covered by this ECA. Replacement of other parts, such as the diskette drive, should be consistent with the terms and conditions of the 8525 warranty or maintenance agreement, if applicable.

NOTES: Order parts through normal distribution. RECORD TIME AND MATERIAL TO SERVICE CODE 33, ECA015, AND OTHER OFFICE 990.

1.7 ECA 017: 8513 Out of Focus

M/T 8513: OUT OF FOCUS CONDITION

THIS ECA HAS BEEN EXTENDED

PHYSICAL CHECK: Failing 8513 displays that meet all three of the following requirements:

1. Serial number with "72" prefix
AND
2. Serial number range
72-0000000 thru 72-0339999 -- ECA EXPIRES 02/29/92
72-0340000 thru 72-0439999 -- ECA EXPIRES 06/30/92
72-0440000 thru 72-0539999 -- ECA EXPIRES 09/30/92
72-0540000 thru 72-0640000 -- ECA EXPIRES 12/31/92
AND
3. Displayed text or graphics is out of focus.

DETAIL: A limited number of 8513 color displays may fail, exhibiting text or graphics that is out of focus. This ECA provides a replacement display at no charge to the customer for an 8513 display that meets all of the PHYSICAL CHECK requirements above.

Before replacing the display, verify that the controls are adjusted in the following manner:

1. Turn the contrast (front knob) to its maximum position. This is toward the front of the display.
2. Adjust the brightness (rear knob) until the right and left borders are not visible against a black background. If an application with a black background is not available, make this adjustment with the system unit powered off.
3. Leave the brightness control as set and adjust the contrast control for clarity and viewing comfort.

NOTES: If the customer provides "Proof of Purchase," this ECA is effective for 4 years from date of purchase. Order replacement display (FRU P/N68X3088) through normal distribution. Displays received from FRU stock may be within the serial number range of affected units, but have been through a rework process that replaces defective components. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA017, AND OTHER OFFICE 990. All defective displays should be returned via UPR.

1.8 ECA 020: 8570 Fixed Disk Drive

M/T 8570, MODELS A21 AND 121: 10483 POST ERRORS

|THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK:

Model 121 systems with a S/N below 72-9027617 and
Model A21 systems with a S/N below 72-6000679 that contain a 120MB
fixed disk with a S/N of CXXXXXXX OR 20133643 and below (X = any
alphanumeric character) are eligible for this ECA.

|DETAIL: 8570 Model A21 or 121 fixed disks P/N90X9286 within the above
|specified serial number range can fail POST or advanced diagnostics with
|intermittent or solid 10483 POST or 10458 advanced diagnostic errors
|during or immediately following a cold power-on routine. All customers
|were provided the option of on-site inspection and/or installation of this
|ECA until February 15, 1990. After February 15, 1990, the ECA's standard
|service offering is carry-in service. ECA on-site service will be
|available to customers with on-site service contracts. For all other
|customers, the ECA will be installed on a carry-in basis.

NOTES: The PHYSICAL CHECK section of this ECA will be performed at the
customer's request or while servicing the system for any system failure.
Ensure that the customer has a current system backup before replacing the
fixed disk. Systems with a solid 10483 POST error cannot do system
backup. The servicer or customer may temporarily eliminate the POST error
and allow the backup program to run with these procedures. Once the error
is eliminated, it will not recur unless the system is turned off.

Turn the system on, and wait for the normal completion of the power-on
cycle (example, power-on password or time/date menu). If the POST error
occurs, run the above on/off procedure several times. The starting torque
of the drive motor should start the drive. If the 10483 POST error still
occurs, the servicer should turn the power off, and remove and restart the
original fixed disk. The movement caused by the removal and installation
process should cause the fixed disk platter to move. This will eliminate
the POST 10483 error. The disk data can now be backed up by the customer.

|If these procedures do not eliminate the solid 10483 error, call your IBM*
|Support Center for further information. Those customers expressing a
|desire to retain the removed fixed disk due to security reasons may do so
|at no cost when utilizing the following procedure in conjunction with
|ECA020:

1. Make a photocopy of the barcode label area of the fixed disk as
indicated in the following figure.
2. Cut the ribbon cable that goes from the HDA assembly to the HDA
controller card.
3. Enclose the photocopy and the cable/connector in the FRU box and
return them in lieu of the used parts return (UPR) fixed disk.

PICTURE 2

NOTE: RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA020, AND OTHER
OFFICE 990.

|1.9 ECA 021: 8570 A21 System Board

M/T 8570, MODEL A21: SYSTEM BOARD 110 MEMORY ERROR

|**THIS ECA EXPIRES 6-30-93.**

PHYSICAL CHECK: Model A21 systems with S/N range from 6000001 through 6015499 and with barcode labels of B1HC8XXXXXX, B1HC9XXXXXX, or B1HCAXXXXXX (X = any alphanumeric character).

|DETAIL: 8570 Model A21 system boards, P/N92F0580, can be replaced if the system complies with the PHYSICAL CHECK section of this ECA. The ECA will be performed at customer request, while servicing the system for any system failure, or if a POST error 110 with five question marks (?????) occurs after a memory upgrade.

NOTES: Order FRU P/N33F9955; this is a substituted FRU part number that is comprised of the system board FRU P/N15F7657 and the processor board FRU P/N15F7659. Return the removed FRU P/N15F7657 and P/N15F7659 through normal channels. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA021, AND OTHER OFFICE 990.

|1.10 ECA 022: Mouse Port

M/T 8570 MODEL A21: MOUSE PORT INCOMPATIBILITY

|THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: Model A21 systems with a S/N range from 6000001 through 6015499 and with system board barcode labels of B1HC8XXXXXX, B1HC9XXXXXX, B1HCAXXXXXX, B1HCBXXXXXX, or B1HCCXXXXXX (X = any alphanumeric character).

DETAIL: 8570 Model A21 system boards, P/N15F7657, can be replaced using this ECA if the two following conditions are met:

- |1. The Microsoft** mouse operates in the system board serial port but not in the system board mouse port.
2. The system complies with the PHYSICAL CHECK portion of this ECA.

NOTES: Order FRU P/N33F9955; this is a substituted part that is comprised of the system board FRU P/N15F7657 and the processor board FRU P/N15F7659. Return the original FRU P/N15F7657 and P/N15F7659 through normal channels. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA022, AND OTHER OFFICE 990.

PS/2 ECA
ECA 023: 8525 Display Characters

|1.11 ECA 023: 8525 Display Characters

|M/T 8525: ERRONEOUS/FALSE DISPLAY CHARACTERS

|**THIS ECA EXPIRES 12-31-93.**

PHYSICAL CHECK: Affected 8525 systems will have part number 72X8300 printed on the video control gate array chip. This chip is in position U11 on the 8525 system board. U11 is a 1-inch square chip located near the system board memory. Only system boards with P/N72X8300 printed on the chip are eligible for replacement under this ECA.

DETAIL: If problems are experienced with an 8525 using an application that loads more than one character font into memory, the system board may require replacement. An additional character font may also be referred to as an "extended character set." These problems may be reported as erroneous or unidentifiable characters, or characters that are unexpectedly underlined, and may occur intermittently. If these symptoms are reported, and if the chip in position U11 meets the physical check requirements, replace the 8525 system board with FRU P/N96F7390. Changes have been made to the current level 8525 system boards to eliminate these problems.

NOTES: Order parts through normal distribution. All replaced system boards should be returned via UPR. RECORD ALL TIME AND MATERIALS TO SERVICE CODE 33, ECA023, AND OTHER OFFICE 990.

1.12 ECA 024: 8550/55/70/73 Fixed Disk Drive

M/T 8550/8555/8570/8573: 113 ERROR/SYSTEM HALT

|THIS ECA EXPIRES 6-30-93.

MACHINES AFFECTED:

Type-Mod	Fdisk	FRU P/N	EC Label
8550-021 (OPT)	60MB	90X8627	A79678
8550-031 (OPT)	60MB	90X8627	A79678
8550-061	60MB	90X8627	A79678
8555-061	60MB	6128272	A79678
8570-A21	120MB	90X9286	A79678
8570-E61	60MB	90X8627	A79678
8570-121	120MB	90X9286	A79678
8573-061	60MB	90X8627	A79678
8573-121	120MB	90X9286	A79678

PHYSICAL CHECK: Identify affected fixed disk by locating a label on the fixed disk marked with EC A79678. Only fixed disks that meet the conditions described in the DETAIL below should be replaced.

DETAIL: Certain fixed disks may cause a 113 (DMA Timeout) error/system halt when the fixed disk and other devices perform concurrent operations in a multitasking environment. When this condition occurs the system halts and/or displays a DMA timeout error message appropriate for the operating system being used. There is no data loss from this condition. To restart, the system must be powered off then back on. If the above condition exists and the fixed disk matches the PHYSICAL CHECK, replace the fixed disk.

NOTES: Some examples of multitasking systems are: OS/2, AIX, XENIX, and tape backup routines that run on DOS or a multitasking operating system. Some examples of system halts are non-maskable interrupt errors (NMI), 113 direct memory access (DMA) errors. Order parts through normal distribution. All affected fixed disks should be returned via UPR. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA024, AND OTHER OFFICE 990.

|1.13 ECA 028: System Board

|M/T 8570 A21/A61: SYSTEM BOARD UNRELIABLE CONNECTOR

|THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: Model A21 systems with serial numbers below 6033500 and Model A61 systems with serial numbers below 6515600 containing a processor board with no bar code label or a bar code label below B1NC4XXXXXX. NOTE: Label characters B1NC do not change. The fifth character from the left should not be below 4 and X = any alphanumeric character.

DETAIL: The 8570 Models A21 & A61 processor board, as identified in the physical check, has a connector that can become unreliable after it has been unplugged. For this reason, ECA028 will be used to replace the processor board after:

1. Replacing a defective system board;
2. Diagnostic removal to determine a failing FRU after normal diagnostics fail to isolate the failing component.

|NOTES: If the processor board is found to be defective, this ECA is not applicable. Service codes 01 through 18 should be used to record failing processor boards as normal maintenance activity. All of the current processor board FRU stock and processor board manufacturing stock have a new level of connector that can be plugged and unplugged for FRU replacement. The snap/processor board release tool P/N57F2859, shipped with the processor board and system board, is used to remove and replace the processor board. Remove the original tool, P/N72X8574, from the system and replace it with the new tool when done.

+--- IMPORTANT PLEASE READ -----+

| REFER TO THE SERVICE TIP H007917 FOR DETAILED REMOVAL AND REPLACEMENT
| INFORMATION. |

NOTE: RECORD ALL TIME AND MATERIALS TO SERVICE CODE 33, ECA028, AND OTHER OFFICE 990.

1.14 ECA 029: 8570 Busmaster Adapter Failure

M/T 8570, MODELS A21/A61: FAILS W/NEW BUSMASTER ADAPTER

THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: An 8570 25MHz 386 system having a system board with a bar code label of B1HCHXXX or lower printed on it that contains a SCSI hardfile adapter or other busmaster adapter that has experienced out of box failures.

To check the bar code label, look at the fifth letter from the left.

PICTURE 3

NOTE: Busmaster adapters usually contain a microprocessor and have the capability of controlling data transfer on the microchannel bus, independently of the system microprocessor. Due to variations in design, visual identification of a busmaster may be difficult. In these cases referring to the adapter documentation should help determine if the failing adapter is a busmaster adapter.

DETAIL: Some 8570 Model A61 or A21 systems require a later level system board when operating with some busmaster adapters. Busmaster adapters that fail to operate properly after being installed correctly require this ECA if they pass diagnostics and meet the requirements of this ECA's PHYSICAL CHECK.

NOTES: Current FRU part stock is at the proper level. Order parts through normal parts channels. Return used parts via UPR. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA029, AND OTHER OFFICE 990.

|1.15 ECA 030: 8550 031/061 Dual Async Cards

|M/T 8550 MODELS 031/061: 1210/1225 ERRORS

|**THIS ECA EXPIRES 12-31-93.**

PHYSICAL CHECK: Affected Dual Async cards (FRU P/N34F0008) are identified by locating raw card part number 90X8074 (upper left corner) on the component side of the card.

DETAIL: Error code 1210 indicates a Dual Async Port 1 register test failure. Error code 1225 indicates a Dual Async Port 2 register test failure. Error code 1210 or 1225 may occur while running diagnostics on an 8550 Model 031 or Model 061 with a Dual Async card installed. If this condition exists and the Dual Async card matches the above PHYSICAL CHECK, replace the card (FRU P/N34F0008).

NOTES: Order Dual Async cards through normal distribution. Affected cards should be returned via UPR. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA030, AND OTHER OFFICE 990.

ECA 031: 8580 Compatibility with Wizard/Busmaster Adapters

|1.16 ECA 031: 8580 Compatibility with Wizard/Busmaster Adapters

|M/T 8580 MODELS 111/311: 110 PARITY ERRORS, WIZARD/BUSMASTER

|**THIS ECA EXPIRES 6-30-93.**

MACHINES AFFECTED: M/T 8580, Models 111 and 311. This ECA is not applicable to 8580 Models 041 and 071.

|NOTE: The IBM SCSI adapter with Cache Memory and SCSI adapter without Cache Memory are busmasters. This ECA is not applicable to 8580 Models |041 and 071.

PHYSICAL CHECK: Inspect the installed system board for a FRU part number. The FRU P/N is located near the lower rear corner of the system board and will be printed in white letters or on a white label. Removal of adapters may be necessary to locate the FRU part number. This ECA is only applicable to 8580 Models 111 and 311 which have FRU P/N90X7390, or those Model 111 and 311 systems where the installed system board FRU part number cannot be determined. This ECA is not applicable to 8580 Models 111 and 311 which have system board FRU P/N33F8415 installed (FRU P/N33F8415 was previously released with ECA011).

DETAIL: If 110 errors are experienced when using a busmaster adapter card such as the IBM WIZARD adapter and the system board FRU part number is applicable for this ECA, as described in the PHYSICAL CHECK section, replace the system board with the currently available system board FRU. If the system board FRU part number does not apply to this ECA, as defined by the PHYSICAL CHECK, and problems are being experienced with a busmaster adapter, use normal problem determination procedures for problem resolution. Marketing literature refers to EC C00835 as being required on 8580 systems using the WIZARD adapter. This EC has been incorporated on all system boards except FRU P/N90X7390, which was the initial system board for 8580 Models 111 and 311.

NOTES: Return parts using normal parts return procedures. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA031, AND OTHER OFFICE 990.

|1.17 ECA 039: 8530 286 POST Hang Condition

|M/T 8530 286 MODELS E01, E21, LA0: HANGS DURING POST, F1 TO CONTINUE

|**THIS ECA EXPIRES 6-30-93.**

|FEATURE/DEVICE: System board FRU P/N27F4069 with a BIOS module number of:
|30F9579 and 30F9580 OR 30F9543 and 30F9544 OR 33F8645 and 30F8646 OR
|37F6652 OR 41F0258 OR 27F4092

MACHINES AFFECTED: 8530 286, Models E01/E21/LA0

PURPOSE: To provide a replacement system board, FRU P/N34F0046, which will allow POST to proceed without operator intervention when using the remote IPL feature of network adapter cards.

PHYSICAL CHECK: The following PHYSICAL CHECK requirements must be met on systems that have a Network Adapter, IBM or OEM, with a remote IPL:

There are two levels of the 8530 286 system board, FRU P/N27F4069. One level has a pair of BIOS modules with numbers of 30F9579 and 30F9580 or 30F9543 and 30F9544 or 33F8645 and 33F8646. The other level has one BIOS module with a number of 37F6652 or 41F0258 or 27F4092. If any other numbers are found printed on the top of the BIOS modules, this ECA does not apply.

DETAIL: Early level system boards required a user to press "F1" to continue processing during POST. With this ECA, all models and levels of the 8530 286 will be consistent in the manner that remote IPL is invoked.

NOTES: Order System Board FRU P/N34F0046 through normal distribution.
RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA039, AND OTHER OFFICE 990.

|1.18 ECA 042: Enhanced 80386 Memory Expansion Option

|M/T 8570/8573/8580: ENHANCED 80386 EXPANSION MEMORY OPTION

|PURPOSE: To make available to the field a mandatory replacement Enhanced 80386 Memory Expansion Option. Only cards identified with P/N49F5507 are eligible for this ECA. This ECA is a precautionary measure due to a possibility of undetected data modification when 4MB SIMMs are installed on the adapter.

|PHYSICAL CHECK: Viewing the adapter from the back, with the Micro Channel* interface edge connector facing down, locate the part number along the left-hand bracket. Only when P/N49F5507 is printed on the card will the adapter be eligible for this ECA.

|DETAIL: Enhanced 80386 Memory Expansion Options, meeting the description in the PHYSICAL CHECK section with 4MB SIMMs installed, must be replaced with FRU P/N88F0075. Adapters with card P/N49F5507 having 1MB and/or 2MB SIMMs installed with not have an exposure to potential data modification. In these cases, this ECA is optional. Only when customers are using or plan to use 4MB SIMMs is this ECA mandatory.

|The 1MB, 2MB, and/or 4MB SIMMs installed on the adapter should not be replaced as part of this ECA. The standard service offering for this ECA will be carry-in service. On-site service will be available when the adapter is installed in a system unit having an IBM Agreement for on-site maintenance. Card P/N49F5507 (once replaced) should be returned through normal channels.

|NOTES: Only memory adapters identified by card P/N49F5507 are eligible for this ECA. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA042, AND OTHER OFFICE 990.

1.19 ECA 045: ALL PS/2 Defective Power Cords

M/T ALL PS/2 SYSTEMS: DEFECTIVE PS/2 POWER CORDS (REVISED)

PURPOSE: Important safety instruction to replace PS/2 power cords manufactured by Multilec. A potential shock hazard exists in some PS/2 power cords. This ECA provides instructions to identify and replace Multilec power cords.

PHYSICAL CHECK: PS/2 power cords should be inspected for the word "Multilec" molded into the plug ends. If "Multilec" is molded into the connector, the power cord is suspect and should not be used. All Multilec power cords manufactured for IBM are "piggyback" type cords (the end of the cord which plugs into the wall receptacle has female connectors allowing another cord to be attached). Although all Multilec cords are piggyback, not all IBM piggyback cords were manufactured by Multilec. It is NOT necessary to inspect any cord that is not a piggyback type cord. The affected power cords were shipped to Canada and Latin America for use on all PS/2 models. Within the United States, shipment of Multilec power cords was limited to PS/2 Model 55SX systems between Serial Numbers 9000000 and 9499999. However, since the cords are compatible with other PS/2 systems and peripherals, and may be shipped with PS/2 models originating from other countries, it is advised that all PS/2 products be inspected for a Multilec power cord. Any customer with a Multilec power cord is entitled to on-site replacement of the cord at no charge.

NOTE: Do not attempt to install or to test suspect power cords.

DETAIL: A potential defect exists in PS/2 power cords manufactured by Multilec. Affected power cords have an improperly wired plug in which line voltage could be present on the ground terminal at the system end of the cord. If a system is connected to power with an improperly wired cord, 120 volts can be applied to the system chassis and metal covers, as well as any other attached devices and/or cables. Under these conditions, a potential exposure exists for electric shock which could cause personal injury. Using the information included in the PHYSICAL CHECK section, all PS/2 system power cords should be inspected if the system has not been previously installed or is to be reinstalled. Inspect the cord and replace it if manufactured by Multilec.

If the system has been physically installed but not powered on, or if the system will not operate at initial installation, do not touch the system or any attached peripheral devices. If possible, request that the customer remove power from the system at the appropriate circuit breaker. Disconnect the cord from the wall outlet and inspect the plug ends. If manufactured by Multilec, replace the power cord with one from FRU stock. PS/2 systems which are installed and operational are safe to use but should not be unplugged and plugged into another outlet, reconfigured, or repaired before replacing the Multilec power cord.

All suspect power cords must be destroyed. Be sure that the cord is not plugged into a power source, then cut off the connector at each end of the cord.

REPLACEMENT POWER CORD: FRU P/N62X1045

NOTES: Order replacement power cords through normal distribution. RECORD ALL TIME AND MATERIALS TO ECA045, SERVICE CODE 33, AND OTHER OFFICE 990.

IMPORTANT: CEs must complete an individual QSAR for each Multilec power cord replaced. A completed QSAR represents destruction of the Multilec power cord for the reported machine type and serial number.

|1.20 ECA 048: 8580 Potential Data Problem

|M/T 8580 MODELS 111/311/121/321: POTENTIAL MODIFIED/LOST DATA

|THIS ECA EXPIRES 6-30-93.

Note: Busmaster Adapters usually contain a microprocessor and have the capability of controlling data transfer on the Micro Channel bus independently of the system microprocessor. Due to variations in design, visual identification of a busmaster may be difficult. Therefore, the documentation accompanying the adapter in question should be referenced.

MACHINES AFFECTED:

8580, Mod 111, S/N 6000000 thru 6101499
 8580, Mod 121, S/N 4500000 thru 4999999 and 9000000 thru 9014999
 8580, Mod 311, S/N 6500000 thru 6553499
 8580, Mod 321, S/N 6000000 thru 6499999 and 9200000 thru 9215499

PHYSICAL CHECK: 8580s in the eligible serial number range with system board FRU (Field Replaceable Unit) P/N33F8415 or FRU P/N90X7390 located near the edge of the system board by the Micro Channel slots, or those boards which are not identified with a visible FRU part number. If any FRU part number is visible other than P/N33F8415 or P/N90X7390, this ECA is not applicable.

PREREQUISITES: Any one of the following conditions applies:

- An eligible busmaster currently installed in the system.
- When an eligible busmaster is on order to be installed in the future.
- Optionally, at customer request, if an eligible busmaster is to be installed in the future.
- Installation in systems currently in dealer inventory if it is to be configured with an eligible busmaster.

DETAIL: Only 20MHz models (8580-111, 311, 121, 321) which have system board FRU P/N33F8415 or P/N90X7390 installed may exhibit this problem. Systems with the affected system boards may exhibit various symptoms, or no symptoms at all, dependent on the actual busmaster adapter installed. 8580 systems which meet the PHYSICAL CHECK requirements and have installed or are planning to install one or more of the following busmaster adapters are eligible for system board replacement:

Eligible for Replacement	
Manufacturer	Busmaster Name
Aox Inc.	Micro MASTER 386
Aox Inc.	Micro MASTER 486
BICC Data Networks	Isolan 4110-3 Controller
Bustek Corp.	SCSI Host Adapter BT640A
Comtech International	Channel/2
Comtech International	Channel/2 Plus
IBM Corp.	Wizard CoProcessor
IBM Corp.	Portmaster Adapter/A, 512KB
IBM Corp.	Portmaster Adapter/A, 1MB
IBM Corp.	Portmaster Adapter/A, 2MB
IBM Corp.	Extended Graphics Array (XGA)
IBM Corp.	Token-Ring Network 16/4 Adpt/A
Madge Networks, Inc.	Straight Blue 16/4 MC32 Token Ring
Metacomp	PSConnect
Northern Telecom	Lanstar/MC(PCLink/MC)
Proteon	P1840 Pronet-4 Busmaster
Racore Computer Prod.	Racore 4X16MBPS 802.5
Storage Dimensions	SDC-3211B
Yarc Systems	Micro785+

As of the above date, any other currently shipping busmaster adapters listed in the IBM Micro Channel catalog (G360-2824-04) will not be affected and are not eligible for replacement. IBM will continue to monitor future busmaster releases, and will update this listing as required.

NOTES: Replacement system board FRU P/N85F0434 should be ordered using normal FRU parts ordering procedures. All orders for FRU P/N33F8415 and FRU P/N90X7390 will be automatically substituted to the current FRU part number. All customers will be provided the option of on-site service for this ECA. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA048, AND OTHER OFFICE 990. Return all used parts via normal UPR procedures.

1.21 ECA 051: 8580 Memory Parity Errors

M/T 8580 MODELS A21, A31 AND A16: INTERMITTENT OS/2 TRAP ERRORS

PURPOSE: To provide a replacement system board for 25MHz 8580 systems with 8MB of system board memory installed which are experiencing intermittent planar memory parity errors, such as OS/2 Trap 0002 or NMI errors on other complex operating systems.

PHYSICAL CHECK: Examine the modules in position "U24" and "U34" located near J8 and J9, the system board memory sockets. If the part number on the module is FCT841, the system board should be replaced using this ECA.

```
+--- IMPORTANT PLEASE READ -----+
|
| INFORMATION PRINTED ON THE SYSTEM BOARD NEAR THE MODULE SHOULD BE
| IGNORED. ONLY INFORMATION PRINTED ON THE MODULE SHOULD BE USED WHEN
| MAKING THIS PHYSICAL CHECK.
|
+-----+
```

Modules with any identification other than "FCT841" (such as F841, 841D, 72F841, 72F841D, etc.) are good and the system board does not qualify for this ECA.

DETAIL: Intermittent Trap 0002 errors may be experienced on 25MHz 8580 systems running OS/2 due to a timing condition on the system planar. Other complex operating systems may experience NMI or other errors depending upon the characteristics of the operating system.

NOTES: This ECA only applies to the 25MHz 8580 models listed above which have the affected module numbers in position "U24" and "U34." Other 8580 models are not affected and are not eligible for this ECA. Order the current level system board FRU P/N85F0046, using normal parts ordering procedures. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA051, AND OTHER OFFICE 990. Return all used parts via normal UPR procedures.

| 1.22 ECA 052: 8560/80 ESDI Fixed Disk Adapter/A

M/T 8560/8580: NEW EPROM MODULE FOR ESDI FIXED DISK ADAPTER/A

| THIS ECA EXPIRES 6-30-93.

MACHINES AFFECTED: 8560 MODEL 071, 8580 MODEL 071/111/311

PHYSICAL CHECK: Inspect the module in location U16 for P/N04G3759 printed on the top surface. If present, this ECA has already been applied. Modules with any other P/N should be replaced by using this ECA. (NOTE: This ECA replaces ECA006.)

Module location U16, as noted below:

PICTURE 4

Install the new EPROM with the locator notch toward edge connector J3. On some ESDI adapters, U16 may be mounted horizontally. In this case, the locator will face the left side of the card (the notch will face component C4).

DETAIL: The downlevel modules are:

P/N90X7399, P/N90X8635, P/N15F6587, P/N15F6807, and P/N91F7430

Module P/N15F6587: Caused a diagnostic formatting problem and an intermittent hardfile delay during system operation (the hardfile light would remain "on" for approximately 13 seconds). Also, in rare instances, a write fault could result in a data shift problem during error recovery, which would be detected during read operations and during diagnostics as a "10473" error (ECC error; Read error).

Module P/N15F6807: Caused a highly intermittent problem of undetected write faults on the last 1/3 of the last sector written (detected during system read operations and by diagnostics as error code 10473, ECC read errors).

Module P/N91F7430: Experienced a highly intermittent system "hang" only on 115MB ESDI fixed disks.

Warning: Some older versions of direct driver software, which bypass BIOS (Basic Input/Output System) may experience failures accessing the fixed disk after the installation of this ECA. This may occur because changing this module may alter how the fixed disk subsystem "appears" to the software. Software which uses BIOS is not affected and will function normally. DOS and OS/2 use BIOS.

If the user software fails after this module is changed, the original module should be reinstalled, and the appropriate software support function should be contacted for any possible software patches or updates.

After replacement of the module, FRU P/N92F0062, the Advanced Diagnostics ESDI Fixed Disk(s) routine should be run to ensure proper hardfile operation.

NOTES: Order FRU P/N92F0062 through normal distribution. RECORD ALL TIME AND MATERIAL USING SERVICE CODE 33, ECA052, AND OTHER OFFICE 990.

|1.23 ECA 053: 8590/95 Intermittent Memory Parity Errors

M/T 8590 MODEL 0K9, 8595 MODEL 0KD: INTERMITTENT MEMORY PARITY ERRORS

PURPOSE: To provide a replacement 33MHz processor board for 8590 and 8595 systems which are experiencing intermittent, difficult to diagnose memory parity errors such as OS/2 TRAP 0002, DOS parity check or AIX NMI memory errors. All these errors will require system re-boot and will display an error code of 00011800 (118 error) during POST (Power-on System Test).

PHYSICAL CHECK: Inspect the 33MHz processor board for Manufacturing Part Number 84F9356 on the bar code label. If P/N84F9356 is present and the system is experiencing memory parity errors, but diagnostics run error-free, the processor board should be replaced.

|IMPORTANT: Only the bar code part number should be used to determine if the processor board is affected.

The bar code label is located on the edge of the board as illustrated below:

PICTURE 5

DETAIL: Error code 00011800 (118 error) will be displayed at POST. The memory diagnostic must be run at this time to clear the 118 POST error. The following question will be displayed with the memory diagnostics run: "A memory failure has been detected, have you replaced a SIM?" The servicer should reply "YES" to this question. The memory diagnostic will then test the memory and terminate with no error detected (the memory is not at fault). The diagnostic will reset the 118 error which appears at POST. Only the 33MHz processor board, Manufacturing P/N84F9356, is eligible for replacement under this ECA. If the processor has any other manufacturing part number, this change is already installed and this ECA is not applicable.

NOTES: RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA053, AND OTHER OFFICE 990. All parts should be ordered using normal parts ordering procedures. Return of used parts should be expedited using the UPR process.

| 1.24 ECA 054: 8580/90/95 Potential Data Loss

M/T 8580, 8590, 8595: POTENTIAL DATA LOSS USING 160MB FIXED DISK

| THIS ECA EXPIRES 12-31-93.

PURPOSE: To assist customers requesting help to load the self-booting "IBM PS/2 160MB SCSI FIXED DISK MODE-SELECT RESTORATION DISKETTE" to 160MB SCSI fixed disks.

MACHINES AFFECTED:

8580, MODEL 161, S/N RANGE 23-TV259 TO 23-TY577
 8590, MODEL OJ9, S/N RANGE 23-CGVCZ TO 23-CHPRD
 8595, MODEL OJ9, S/N RANGE 23-AA145 TO 23-AB006

PHYSICAL CHECK: This ECA applies to the IBM manufactured 160MB fixed disk drives. Some systems in the above system serial number ranges have had the affected drives installed in them during the manufacture of the system. This ECA can be used to install the restoration fix on systems within the serial number ranges.

For the following reasons, some systems outside the serial number ranges will also be eligible for this ECA.

- Any system that has had a 160MB replacement FRU installed (some FRU stock was affected)
- Any Canadian system that has had a 160MB option or 160MB replacement FRU installed (some Canadian option and FRU stock was affected).

NOTE: If the system is opened, the 160MB drives with the wrong values can be identified by drive serial number ranges. The range is from B1WC3-05227 through B1WC3-043980. This number is located on top of the drive on a white label that also contains a bar code strip.

DETAIL: Customers should install the "IBM PS/2 160MB SCSI FIXED DISK MODE-SELECT RESTORATION DISKETTE" using the installation instructions contained in the diskette/FRU package. They may obtain this diskette and installation information by calling 1-800-845-4263 or they can elect to have their servicer install the fixed disk restoration diskette using this ECA. The fixed disk restoration installation is designed to correct values given to mode select pages of disk code installed during the manufacture of the affected disk drives. The installation is permanent and cannot be erased during a format. The incorrect values could cause data loss when soft fixed disk errors occur. Where needed, mode select page values will be restored to the default range after this diskette is booted. Other disk drives outside the affected drive range will not be altered if this diskette is used on them.

To install the correct values insert the diskette in Drive "A" and boot the system. The following messages can occur during the execution of the program:

1. "WARNING! SHARE SHOULD BE LOADED FOR LARGE MEDIA." This message is produced by the diskette's operating system and is not applicable for this situation. Disregard this message!
2. "RESTORATION COMPLETE. REMOVE THE DISKETTE, THEN RESTART THE SYSTEM."
3. "RESTORATION NOT REQUIRED FOR THIS SYSTEM. REMOVE THE DISKETTE THEN RESTART THE SYSTEM."
4. "UNEXPECTED ERROR, RUN SYSTEM CHECKOUT."

NOTE: The fix program will not load to drives that do not require the restoration. The incorrect values given to the disk drive is a code problem, not a hardware failure. Therefore, hardware failures will be resolved by using the customer's current service agreement.

THIS ECA IS NOT TO BE USED FOR ANY HARDWARE REPLACEMENT.

NOTES: Current subscribers to the PS/2 SIM F/N SBOF-2480 will automatically receive the fix diskette package through SLSS. Other servicers can order the diskette FRU package, P/N92F0618, through normal parts channels. RECORD THE DISKETTE AND INSTALLATION TIME TO ECA054, SERVICE CODE 33, AND OTHER OFFICE 990.

| 1.25 ECA 055: 8550/55/70 Potential Data Loss

M/T 8550/8555/8570: POTENTIAL DATA LOSS USING 60MB FIXED DISK

PURPOSE: To assist customers requesting help to load the self-booting "60MB FIXED DISK BUFFER TEST UPDATE DISKETTE" to Seagate 60MB fixed disk drives.

MACHINES AFFECTED:

8550, MODEL 061, S/N RANGE 7679204 TO 7761999
 8555, MODEL 061, S/N RANGE ALL ALPHA SERIALS
 8555, MODEL 061, S/N RANGE 1116983 TO 1309668
 8555, MODEL 061, S/N RANGE 9290267 TO 9329525
 8555, MODEL T61, S/N RANGE ALL NUMBERS
 8555, MODEL U61, S/N RANGE ALL NUMBERS
 8555, MODEL W61, S/N RANGE ALL NUMBERS
 8570, MODEL 061, S/N RANGE 8000500 TO 8132999
 8570, MODEL A61, S/N RANGE 6500500 TO 6523999
 8570, MODEL B61, S/N RANGE 4625421 TO 4630249
 8570, MODEL E61, S/N RANGE ALL ALPHA SERIALS
 8570, MODEL E61, S/N RANGE 7160500 TO 7271849
 8570, MODEL U61, S/N RANGE ALL NUMBERS
 8570, MODEL W61, S/N RANGE ALL NUMBERS

PHYSICAL CHECK: This ECA applies to Seagate 60MB fixed disk drives, FRU P/N90X8627. Some systems in the above serial number ranges have the affected drives installed in them. This ECA can be used to install the update diskette on systems in the system serial number ranges above. It is not necessary to open the system to check the actual disk drive serial numbers ranges before attempting to install this ECA.

NOTE: If the system is opened, the 60MB drives that are affected can be identified by a supplier code of 820850 on a label located on the top of the drive.

See the DETAIL section for failure symptoms. These do not have to occur in order to apply this ECA. Some operating systems such as DOS do not have a discernible failure symptom, but because the operating systems are often changed during the life of a system, this code installation is required on all systems with the above disk drive.

DETAIL: Customers may install the "60MB Fixed Disk Buffer Test Update Diskette" using the installation instructions contained in the diskette/FRU package. They may obtain this diskette and installation information by calling 1-800-845-4263 or they can elect to have their servicer obtain and install the update diskette using this ECA.

This code installation is designed to prevent data loss problems while running OS/2 and to prevent NMI errors while running AIX. This can happen when file interrupts occur during automatically executed disk drive diagnostic routines contained within the drive code. Some of the symptoms that can occur are:

- Systems with AIX operating systems can display a message that reads "PANIC MESSAGE SYSTEM WILL REBOOT IN xx SECONDS."
- Systems with OS/2 operating systems can experience intermittent halts that require a system reboot to reset. To install the update code, insert the diskette and boot the system. The following messages can occur during the execution of the program:
 1. "WARNING! SHARE SHOULD BE LOADED FOR LARGE MEDIA." This message is produced by the diskette's operating system and is not applicable for this situation. Disregard this message!
 2. "FOR MORE DETAILS ON THE UPDATE PROCESS, PRESS CTRL-BRK AND VIEW THE README FILE. OTHERWISE, PRESS ANY KEY TO CONTINUE." This message is informational and can be accessed by keying:
 - (TYPE README)
 - Just remember to use the pause key to stop scrolling.
 3. "UPDATE COMPLETE, REMOVE THE DISKETTE, THEN RESTART THE SYSTEM."
 4. "UPDATE NOT REQUIRED FOR THIS SYSTEM, REMOVE THE DISKETTE, THEN RESTART THE SYSTEM."
 5. "UNEXPECTED ERROR, RUN SYSTEM CHECKOUT."

| ERROR RECOVERY PROCESS: Interruptions in the transfer of code from the
 | "60MB Fixed Disk Buffer Test Update Diskette" to the fixed disk may cause
 | a partial load of new code. This can cause failures to occur during
 | startup. Interruptions can be caused by a power failure, defective
 | diskette, or other hardware failure occurring at the time of data transfer.
 | To recover, use the following procedure:

- | 1. Leave the diskette in the system.
- | 2. Turn the system off for 30 seconds, then turn the system on.
- | 3. If a diskette "FAIL ABORT RETRY" occurs, boot another "60MB Fixed Disk
 | Buffer Test Update Diskette". A completion message indicates a
 | successful code transfer.
- | 4. If a 10483 error occurs, see the following note and proceed to the
 | next step.

- NOTE: A 10483 error means either the drive did not receive all of the code or a hardware error has occurred. In most cases the drive did not receive all the code. Because of the POST error, the following load procedure is needed to reload the fixed disk code:
5. Press "F1"; another message will appear briefly and the A: prompt will be displayed.
 6. Level "C" drive (identified by P/N6373575 on white label). At the A: prompt, type "REVCFIX". Files will transfer to the fixed disk. If files do not transfer, try another diskette. If the files have transferred and a 10483 error occurs during normal customer reboot, go to the next step.
 7. Follow the step to get to the A: prompt, then go to the next step.
 8. Level "B" drive (identified by P/N6373526 on white label). At the A: prompt, type "REVBFIX". The files will transfer to the fixed disk. If this is your first time here and the files do not transfer, try another diskette. If the files still do not transfer, go to the last step.
 9. Reboot the system with the diskette removed. Normal customer boot. Program completes. If a 10483 error or other problems occur during reboot, go to the final step.
 10. Call Support and request plant-level support for further instructions.

NOTE: This code information will only load to a fixed disk that requires it. The information in the code of the drive is corrected with the update diskette. Therefore, hardware failures will be resolved by using the customer's current service agreement to replace defective FRUs. THIS ECA IS NOT TO BE USED FOR ANY HARDWARE REPLACEMENT.

NOTES: Current subscribers to the PS/2 SIM F/N SBOF-2480 will automatically receive the fix diskette package through SLSS. Other servicers can order the diskette FRU package, P/N92F0619, through normal parts channels. RECORD THE DISKETTE AND INSTALLATION TIME TO ECA055, SERVICE CODE 33, AND OTHER OFFICE 990.

|1.26 ECA 056: ARTIC Multiport/2 Errors

M/T 8595: ARTIC MULTIPORT/2 INTERMITTENT ERRORS

|THIS ECA EXPIRES 6-30-93.

|PHYSICAL CHECK: Check for part number 09F1877 or 57F2712 on the gate array (large silver component located above the bus connector) and for the presence of components in positions U21 and U22. Affected adapters will have one of the above part numbers and components in positions U21 and U22.

DETAIL: The Multiport/2 Adapter may cause the following intermittent errors when installed in an 8595:

- 111 errors
- System hang conditions.
- Memory failures while running diagnostics.

These failures may be system and slot sensitive.

NOTES: Replace the ARTIC Multiport/2 Adapter P/N09F1888 (512KB) or P/N09F1962 (1MB) as appropriate. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA056, AND OTHER OFFICE 990. Order and return parts through normal distribution.

|1.27 ECA 057: Wizard Adapter Replacement

|M/T 8570, 8573 Models 161/401, 8580, 8590, 8595: WIZARD ADAPTER DATA
|INTEGRITY

|**THIS ECA EXPIRES 6-30-93.**

PHYSICAL CHECK: Not all Wizard adapters are affected. Only those meeting the following criteria should be replaced by this ECA: Wizard adapters eligible for replacement can be identified by a printed level number, located on each card. View the adapter with the component side up and the "Intel I860" chip on the left side of the card. The level number of the adapter is printed on a white label located to the left side of the Intel I860 chip.

Any Wizard adapter with level number PBA600391-004 or PBA600391-005 is eligible for replacement under this ECA.

REPLACEMENT WIZARD ADAPTER: FRU P/N88F0063.

DETAIL: Affected Wizard adapters may fail during operation resulting in possible undetected data modification when the adapter writes to system memory as a busmaster. This ECA provides inspection and, if necessary, replacement of the Wizard adapter at no charge to the customer. Only adapter levels PBA600391-004 and PBA600391-005 are eligible for replacement under this ECA. Adapter levels PBA600391-006 and higher are not susceptible to the data modification problem and should not be replaced.

Replace eligible Wizard adapters with FRU P/N88F0063. If the Wizard memory expansion option is installed on the Wizard adapter, it does not need to be replaced and may be transferred to the new adapter.

NOTES: Order parts through normal distribution. Return all used parts via the normal UPR process. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA057, AND OTHER OFFICE 990.

1.28 ECA 059: 8570 Parity Check Errors

M/T 8570, MODELS Ax1/Bx1: PARITY CHECK ERRORS

MACHINES AFFECTED:

- 8570, MODELS A61/A21 386 25MHZ
- 8570, MODELS B61/B21 486 25MHZ

PHYSICAL CHECK: Before installing hardware FRUs, all software fixes should be applied to the installed operating system of the 8570 25MHz systems. To be eligible for this ECA, the following conditions must be met:

1. 8570 Models A61 and A21 (386/25MHZ) systems must be experiencing the parity check on systems containing system board FRU P/N15F7657; 8570 Models B61 and B21 (486/25MHZ) systems must contain system board FRU P/N64F0122.
2. Both system boards must have a date code of 8933CP or higher on the module located in location U142. DATE CODE INFO: 89 = Year, 33 = Week of Year, CP = Plant. MODULE LOCATION: U142 is the longest module next to the innermost memory module socket J17. NOTE: The processor card does not have to be removed to see the Date Code.
3. The system board must have memory installed in more than one system board socket in order to experience this problem.

DETAIL: Intermittent errors caused by the condition normally occur at POST, or during operation shortly after POST. Because this error is normally caused by defective memory SIMMs, it is recommended that system board memory be considered before the system board is replaced. Failing memory is not covered by this ECA. Advanced Diagnostics must be run so solid hardware failures, not associated with this failure, can be eliminated. All software operating systems should have the latest upgrades applied to them. For example, OS/2 1.1 Extended requires the WR03089 Corrective Service Diskette (CSD) and OS/2 1.2 Extended requires the WR04098 CSD.

This ECA covers system board replacement when:

1. All requirements in the PHYSICAL CHECK are met.
2. All the symptoms of the operating systems listed below are met.

The following examples show how various operating systems display this parity error:

All levels of DOS will display a message that reads "Parity Check 1"

OS/2 will display Trap Error 0002. The screen will read "The system detected a hardware memory error on the system board. The system stopped. Run the diagnostics supplied with your system to determine the cause of your problem."

TRAP 0002

(Other variable information will be here)

ERRCD=0001

(Other variable information will be here)

AIX will display a message that reads: NMI_ERR: MEMORY PARITY ERROR

Xenix and Unix will display a message that reads: "PANIC: NMI : ERROR: MEMORY FAILURE - PARITY ERROR" If the Xenix or Unix systems have a file called OEM.O Driver or they are at Version 2.34 or higher the following message will also be included: "NON MASKABLE INTERRUPT, CAUSE = XX" (THE XX CAN BE ANY CHARACTERS).

NOTES: For the 8570 Model A61 or A21, order system board FRU P/N92F0580. For the 8570 Model B61 or B21, order system board FRU P/N92F0581. These system boards are now the current FRU part numbers and will be automatically substituted for old FRU part orders. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA059, AND OTHER OFFICE 990.

|1.29 ECA 060: 8570 25MHz Color Changing

|M/T 8570 MODELS A61/A21, B61/B21: CRT COLOR BLEEDING/SMEARING

|THIS ECA EXPIRES 6-30-93.

MACHINES AFFECTED:

8570, Models A61/A21 386 25 MHZ
8570, Models B61/B21 486 25 MHZ

PHYSICAL CHECK:

1. 25MHz 386 systems must contain a system board FRU P/N15F7657 that falls within the system board bar code range of B1HCJXXXXXX and B1HCTXXXXXX. (NOTE: (1) X = any character; (2) the significant character is the 5th from the left (J through T); and (3) the bar code is located on the side of the system board next to Position U126.)
2. 25MHz 486 systems must contain a system board FRU P/N64F0122.
3. These systems must be experiencing a color changing problem on displays to be eligible for this ECA.

DETAIL: These problems will happen most frequently in text mode. Some of the symptoms are: background color changes, missing pixels in characters, and a smearing/breaking up of characters. The color changing problem will occur more often as the heat within the system rises. Therefore, options that create more heat will increase the symptoms. This situation is limited to the systems identified in the MACHINES AFFECTED section of this ECA.

NOTES: Order 25MHz 386 System Board FRU P/N92F0580 for the 8570 Models A61 & A21. Order 25MHz 486 System Board FRU P/N92F0581 for the 8570 Models B61 & B21. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA060, AND OTHER OFFICE 990.

1.30 ECA 061: 8513 Blank Screen/Power On LED

M/T 8513: BLANK SCREEN, POWER ON LED NOT LIT

THIS ECA EXPIRES 12-31-93.

PHYSICAL CHECK: Failing 8513 displays must meet all three of the following requirements:

1. Display dead, screen blank
AND
2. Display power LED off
AND
3. Serial number range with "23" prefix:
 - 23-D7300 thru 23-Z9999 -- ECA EXPIRES 12/31/93.
 - 23-AA000 thru 23-ZZ999 -- ECA EXPIRES 12/31/93.
 - 23-AAA00 thru 23-PCB00 -- ECA EXPIRES 12/31/93.

DETAIL: A limited number of 8513 color displays may fail causing a blank screen that cannot be corrected using the brightness and contrast controls. The power on LED will not be on. This ECA provides a replacement display at no charge to the customer for a failing 8513 display that meets all of the PHYSICAL CHECK requirements above.

NOTES: If the customer provides "Proof of Purchase," this ECA is effective for three (3) years from date of purchase. Order replacement displays through normal distribution. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA061, AND OTHER OFFICE 990. All defective displays should be returned via used parts returnable (UPR) process.

1.31 ECA 062: 8573 POST System Hang

M/T 8573 MODELS 031/061: POST HANG, POWER/DSKT LIGHT, NO BEEP

THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: Systems with Serial Numbers of 49999 or earlier that experience solid or intermittent POST hangs with the power and diskette drive light on solidly during the hang qualify for this ECA. Prerequisite to check metal coating on the inside surface of the diskette drive cover where the diskette enters. Refer to ECA070 for related information.

8573, Model 031, S/N Below 49999, FRU P/N 38F5969

8573, Model 061, S/N Below 49999, FRU P/N 65X1564

8573, Model 121, S/N Below 49999, FRU P/N 65X1564

DETAIL: Static from a person inserting a diskette into the diskette drive can cause a system board gate array to fail or be damaged. To solve this problem the diskette drive cover has been redesigned and is available as a prerequisite ECA and FRU.

A system board that has experienced a static charge will exhibit solid or intermittent POST hangs with no POST beep and will have a constant power good and diskette drive light on during the hang condition. If this is occurring, a new diskette drive cover must first be installed using ECA 070, then the system board can be replaced using this ECA.

NOTES: This ECA does not apply to 8573 P70 systems above serial number 50000 because they are not subject to this type of static discharge. Order parts through normal distribution channels. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA062, AND OTHER OFFICE 990.

|1.32 ECA 063: External SCSI Terminator

|M/T 8550: TERMINATOR MAY CAUSE HANG CONDITION

|**THIS ECA EXPIRES 6-30-93.**

|PHYSICAL CHECK: Inspect the IBM External 50-pin SCSI Device Terminator
|for a FRU part number. Only 50-pin IBM terminators without FRU P/N92F0057
|are eligible for this ECA.

DETAIL: Inspect the IBM terminator that is attached to the external SCSI
device. If the terminator is not identified with a FRU part number, it is
eligible for this ECA. If your system is experiencing a hang condition,
replace the old terminator, FRU P/N34F0016, with the new terminator, FRU
P/N92F0057. The old terminator was not identified with a FRU part number.

|Do not confuse the above terminator with the 60-pin external SCSI adapter
|terminator, FRU P/N33F8464, which has an imprint of P/N15F6743. This
|terminator is required on SCSI adapters with Cache that do not have
|external SCSI devices attached.

NOTE: RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA063, AND OTHER
OFFICE 990.

|1.33 ECA 066: EPROM Change/Token-Ring Adapter

|M/T 8525/30/50/55/56/57/60/65/70/73/80/90/95: EPROM CHANGE ON TOKEN-RING
|16/4 ADAPTER/A

|**THIS ECA EXPIRES 6-30-93.**

PHYSICAL CHECK: Affected Token-Ring 16/4 Adapters can be identified by the part numbers of the two EPROM modules on the card. If EPROM part numbers 74F9325 and 74F9326 are present, this ECA is required. You can also check for microcode level C24550 by running the Token-Ring diagnostics from the Reference Diskette. If level C24550 is present, the affected EPROMS are on the adapter.

DETAIL: This ECA provides replacement EPROMS for Token-Ring 16/4 Adapters meeting the PHYSICAL CHECK requirements. Systems with affected Token-Ring 16/4 cards may exhibit the following symptoms:

- Loss of communication between the server and client
- Lost sessions
- Server hang or lock-up.

These symptoms may be intermittent. Only PS/2s used as servers and operating with non-IBM network software are affected. Workstations which are not used as servers do not require this ECA. Replacement EPROMS are shipped with installation instructions, and are available by ordering FRU P/N92F9122.

NOTES: Order P/N92F9122 through normal distribution. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA066, AND OTHER OFFICE 990. Scrap the removed EPROMS locally.

|1.34 ECA 068: 8573 System Hang

|M/T 8573 MODELS 061/121: FAILURE TO LOAD OS/2, AIX, UNIX OR XENIX

|THIS ECA EXPIRES 6-30-93.

|MACHINES AFFECTED:

| 8573, Model 061, S/N Below XX50000
| 8573, Model 121, S/N Below XX50000

|MACHINES NOT AFFECTED:

| P70 8573-031 All
| P70 8573-061 Above S/N XX50000
| P70 8573-121 Above S/N XX50000
| P75 8573-161 All
| P75 8573-401 All

PHYSICAL CHECK: Check bus interface assembly P/N 65X1567 for a 1000MF capacitor installed on the bottom of the card. The capacitor is the only electronic component on the card. If an option card is installed in the lower connector, it may be necessary to remove the card to view the capacitor.

NOTE: When using the Removal/Replacement procedures, the bus interface assembly is referred to as the Option-Connector Assembly. In some cases bus interface assemblies have a small black shrink-wrapped component on them. This is not the correct component.

NOTE: The first two places in the serial number are not part of the serial number range and should not be used to determine ECA eligibility.

DETAIL: This ECA provides for the replacement of bus interface assemblies not having a capacitor present on the connector card. Current level bus interface assemblies have the capacitor on the bus connector card eliminating a data transfer noise that can prevent loading OS/2, AIX, UNIX or XENIX operating systems to the fixed disk.

NOTE: Order P/N65X1567 through normal distribution. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA068, AND OTHER OFFICE 990.

|1.35 ECA 069: 162/601 Error at Power-On

M/T 8550/55/65/70/80: 162/601 ERROR AT POWER-ON

|THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: Only diskette drives "Manufactured for IBM Corporation" with a "YD" as the first characters of the top line of print on the identification label and a revision code of C01, C02 and C03 are affected by this problem. The affected drives may be identified by referring to the last number in the bottom line of print of the label identified in the following diagram:

PICTURE 6

DETAIL: Under certain conditions, the head leadscrew assembly may bind, causing diskette drive errors. After power-on or warm boot, if the machine shows 162 and 601 errors, check the diskette drive for the conditions listed under PHYSICAL CHECK above. Only revision levels C01, C02 and C03 are affected by this condition. All other levels of diskette drives manufactured for IBM are unaffected and therefore not eligible for this ECA.

NOTES: RECORD ALL TIME AND MATERIAL TO ECA069, SERVICE CODE 33, AND OTHER OFFICE 990.

1.36 ECA 070: 8573 Static Damage Diskette Drive Cover

| THIS ECA EXPIRES 6-30-93.

M/T 8573, MODELS 031/061/121: STATIC SUPPRESSING DISKETTE DRIVE COVER

| MACHINES AFFECTED:

| 8573, Model 031, S/N Below XX49999
| 8573, Model 061, S/N Below XX49999
| 8573, Model 121, S/N Below XX49999

PHYSICAL CHECK: Remove the diskette drive cover on systems with serial numbers below XX49999 and check for a metalized coating on the inside of the drive area where the diskette opening is located. Covers with a coating in this area should be replaced with the new level of diskette drive cover.

| NOTE: The first two places in the serial number are not part of the serial number range, but are to be used to determine ECA eligibility.

DETAIL: Static from a person inserting a diskette into the diskette drive can cause a system board gate array to fail or to be damaged. This will cause solid or intermittent POST hangs to occur with a solid power and diskette drive light on. If the cover has a metal coating on the inside where the diskette passes through, replace the old level diskette drive cover with the new cover, FRU P/N 79F3239. If the system is also experiencing a POST hang condition, use ECA062 to install a system board. Check the model and serial number of the system to determine the system board FRU number.

| NOTES: This ECA does not apply to 8573 P70 systems above serial number XX500000 because they are not subject to this type of static discharge. Order parts through normal distribution. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA070, AND OTHER OFFICE 990.

1.37 ECA 071: 8570 System Hangs Running Program Applications

M/T 8570 MODELS E61/U61/061/121: PROGRAM APPLICATIONS HANG

THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: 8570 models that contain:

1. A 16MHZ system board FRU P/N90X9355 or a 20MHZ system board FRU P/N90X8623. These system boards are in 8570s listed in the following table.
2. A processor in position U143 with XXX386-20 written on its surface (XXX = ANY CHARACTER)
3. Application programs that install but lock up
4. A math coprocessor.

Model	System Serial Number Range	MHZ	FRU Part Number
E61	1500000 to 1999999	16	P/N90X9355
	2500000 to 2515999	16	P/N90X9355
	7000000 to 7163999	16	P/N90X9355
	F000000 to F000999	16	P/N90X9355
U61	U000000 to U001476	16	P/N90X9355
061	5000000 to 5001499	20	P/N90X8623
121	0500000 to 0999999	20	P/N90X8623
	3750000 to 3999999	20	P/N90X8623
	5500000 to 5505499	20	P/N90X8623
	8000000 to 8006999	20	P/N90X8623
	9000000 to 9075499	20	P/N90X8623

The system boards in the following 8570 systems cannot be identified by serial number ranges. In these cases, the system board must be identified by its FRU part number and processor module mentioned above.

Model	System Serial Number Range	MHZ	FRU Part Number
E61	4000000 to 4499999	16	?
061	3000000 to 3249999	20	?
121	3500000 to 3749999	20	?

DETAIL: Certain applications will not operate in the above systems with system board FRU P/N90X9355 or FRU P/N90X8623 installed. It is necessary to upgrade this level system to a new level of system board to use the application.

Original System Board	Replacement System Board
16MHZ FRU P/N90X9355	16MHZ FRU P/N96F7309
20MHZ FRU P/N90X8623	20MHZ FRU P/N96F7308

Systems experiencing this will lock up when the program application is run on the system.

NOTES: The original FRU part numbers will substitute for the new level numbers when ordered. Order all FRU parts locally and RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA071, AND OTHER OFFICE 990.

|1.38 ECA 073: 8573 P75 Early Ship Upgrade

|M/T 8573 MODELS 161/401: EARLY SHIP PARTS UPGRADE

|THIS ECA EXPIRES 6-30-93.

MACHINES AFFECTED:

8573, Model 161, S/N 23-AAAAXXX (XXX=Any number)
8573, Model 401, S/N 23-AAAAXXX (XXX=Any number)

PHYSICAL CHECK: System models and serial number ranges identified in the above section that have "DVT" written on the following FRUs qualify for this ECA:

System Board
Processor Card
Video Adapter

DETAIL: Early ship P75 systems have been shipped to internal IBM sites only. These internal customers have been instructed to request a system upgrade from IBM US Service using ECA073. This can be done at the customer/servicer's convenience. This ECA replaces the following DVT parts:

System Board
486 Processor Card
Plasma Display Card
Reference Diskette

All four DVT parts must be replaced with the three FRUs and Reference Diskette listed below. A copy of the IBM Personal System/2 Model P75 Reference Diskette Version 1.00 or higher can be obtained by ordering F/N S84F8526-00 or the enhanced PS/2 SIM Manual version, F/N SA380102-00.

System Board	FRU P/N78F9896
486 Processor Card	FRU P/N64F8789
Plasma Display Card	FRU P/N78F9897

NOTES: Order all FRU parts locally. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA073, AND OTHER OFFICE 990.

| 1.39 ECA 077: 8570 Fails With Busmaster Adapter

| M/T 8570 MODELS E61/U61/121: FAILS WITH BUSMASTER ADAPTER

| THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: When installing a busmaster adapter on 8570 systems check the following table to determine if a 16MHZ system board FRU P/N90X9355 or a 20MHZ system board FRU P/N90X8623 is installed.

Model	System Serial Number Range	MHZ	FRU Part Number
E61	1500000 to 1999999	16	P/N90X9355
	2500000 to 2515999	16	P/N90X9355
	7000000 to 7163999	16	P/N90X9355
	F000000 to F000999	16	P/N90X9355
U61	U000000 to U001476	16	P/N90X9355
061	5000000 to 5001499	20	P/N90X8623
121	0500000 to 0999999	20	P/N90X8623
	3750000 to 3999999	20	P/N90X8623
	5500000 to 5505499	20	P/N90X8623
	8000000 to 8006999	20	P/N90X8623
	9000000 to 9075499	20	P/N90X8623

The system boards in the following 8570 systems cannot be identified by serial number ranges. In these cases, the system board must be identified by its FRU part number.

Model	System Serial Number Range	MHZ	FRU Part Number
E61	4000000 to 4499999	16	?
061	3000000 to 3249999	20	?
121	3500000 to 3749999	20	?

NOTE: Busmaster adapters usually contain a microprocessor and have the capability of controlling data transfer on the Micro Channel bus independently of the system microprocessor. Due to variations in design, visual identification of a busmaster may be difficult. For further assistance read the adapter's accompanying information or contact the point of sale for the adapter description.

DETAIL: Busmaster adapters will not operate when installed in the above systems that use system board FRU P/N90X9355 or FRU P/N90X8623. It is necessary to upgrade to a new level of system board to use this type of adapter.

Original System Board	Replacement System Board
16MHZ FRU P/N90X9355	16MHZ FRU P/N96F7309
20MHZ FRU P/N90X8623	20MHZ FRU P/N96F7308

Systems requiring this upgrade will lock up when the busmaster adapter card is used or when a system POST occurs.

NOTES: The original FRU part numbers will sub to the new level numbers when ordered. Order all FRU parts locally. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA077, AND OTHER OFFICE 990.

|1.40 ECA 081: *ARTIC Selectable Interface Comm Failures*

|M/T 8550-80, 7541/42, 7561/62, 7568: ARTIC SELECTABLE INTERFACE
|COMMUNICATIONS FAILURE

|**THIS ECA EXPIRES 6-30-93.**

MACHINES AFFECTED: 8550, 8555, 8560, 8565, 8570, 8580, 7541/42, 7561/62,
7568 (ALL MODELS)

PHYSICAL CHECK: Check for the presence of Part Number B9159XXXXX on the
bar code label located on the connector. Only boards beginning with P/N
B9159 are affected by this ECA.

DETAIL: Cannot establish communications with certain V.35 devices.
Diagnostics will not fail. This failure will not occur with all V.35
devices. Dependent on design characteristics of the specific device,
communications may work.

NOTES: Order FRU P/N84F7540 through normal distribution. RECORD ALL TIME
AND MATERIAL TO SERVICE CODE 33, ECA081, AND OTHER OFFICE 990. Return
parts using normal return procedures.

|1.41 ECA 082: 8525-286: 305 Error

M/T 8525-286: 305 ERROR

|THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: Only 8525-286 systems meeting both of the following requirements are eligible for this ECA:

1. System fails with a 305 POST error. The 305 error cannot be bypassed by pressing F1.
2. The system emits no beeps at POST.

|DETAIL: This ECA provides a replacement system board FRU P/N96F7435 for 8525-286 systems meeting the PHYSICAL CHECK requirements. Systems not meeting the PHYSICAL CHECK requirements should use normal diagnostic procedures for problem isolation.

NOTES: Only the system board is eligible for replacement under this ECA. Any other parts, such as keyboard or cable, are not covered. Order replacement system boards through normal parts distribution. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA082, AND OTHER OFFICE 990. Return used system boards using normal UPR procedures.

|1.42 ECA 083: 8570 Incompatibility Problems

|M/T 8570 MODELS 061/081/121/161: TRAP 0002, 110 ERROR, NMI ERROR

PHYSICAL CHECK: An incompatibility problem can occur on certain 8570 systems in the following serial number ranges. A module in position U20 can be used to identify system boards that may have this compatibility problem. The first line of data written on this module will contain 63F7615. Modules having other part numbers on them are not affected.

8570 Model	Serial Number Ranges
061	8045000 through 8053499 8071918 through 8071999 8092678 alone 8093000 through 8096695 8101001 through 8124999 8121424 through 8131479 8133000 through 8134999
081	23HXATM through 23HZPPY 90TGMPA through 90TGPMN 78PTALN through 78PTNTX
121	9159413 through 9257511
161	23KGVYK through 23KHPLH 23KHRFA through 23KHWAZ 23KKBRA through 23KRYBY 90TMXRZ through 90TNBDA 78PYGDW through 78PYRZZ 78PYTAA through 78PYTZG 78PYXAX through 78PZAXK

DETAIL: METHOD OF DELIVERY--ON-SITE OR CARRY-IN. Some 8570 20MHZ system boards, FRU P/N33F5835, may experience a compatibility problem between system board components. This incompatibility can cause OS/2 0002 traps that contain "ERRCD=0001," DOS 110 errors with 5 question marks (?????) or non-maskable interrupt errors (NMI) on other operating systems. The incompatibility problem is limited to those system boards identified in the PHYSICAL CHECK.

To resolve the problem, replace FRU P/N33F5835 with FRU P/N96F7402 when one of the above error conditions occurs or if the customer requests the ECA for systems that meet the system board module identification parameters in the PHYSICAL CHECK section of this ECA.

NOTES: The 8570 systems identified in the PHYSICAL CHECK are the only systems that can have this problem. All FRU stock is at the correct level. Order all FRU parts locally. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA083, AND OTHER OFFICE 990.

|1.43 ECA 084:

|M/T 8590: MIXED SIMMS, TRAP 002/NMI/POST ERROR

|THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: Inspect the memory riser cards for FRU P/N33F4905.

DETAIL: If memory riser card FRU P/N33F4905 is populated with "MIXED
|SIMMs" and is experiencing any of the following errors: DOS NMI, OS/2
|TRAP 0002, POST, or diagnostic memory errors, replace both memory riser
cards with new FRU P/N81F8823 (two required).

NOTE: "MIXED SIMMs" is defined as SIMMs with 12 modules or more per SIMM,
mixed with SIMMs having less than 12 modules per SIMM mounted on the same
riser card. If FRU P/N81F8823 is already installed, this ECA is not
applicable.

NOTES: Memory diagnostics should run error-free after installation of
this ECA. Order parts through normal parts distribution. RECORD ALL TIME
AND MATERIAL TO SERVICE CODE 33, ECA084, AND OTHER OFFICE 990.

|1.44 ECA 088: Image Adapter/A

|M/T 85XX: SYSTEMS SUPPORTING THE IMAGE ADAPTER/A

|THIS ECA EXPIRES 6-30-93.

MACHINES AFFECTED: All 85XX Micro Channel systems and models supporting the PS/2 Image Adapter/A

PHYSICAL CHECK: To qualify for replacement of the Image Adapter/A card, the following requirements must be met:

1. The system configuration must include a Micro Channel memory card and an Image Adapter/A.
2. The system must be a PS/2 8557-any model (NOTE: A PS/2 8557 system with an Image Adapter/A card installed does not require a Micro Channel memory card installed to experience the system hang symptom).
- |3. The Image Adapter/A FRU part number must be one of the following:
 - | P/N07F4401
 - | P/N07F2481*
 - | P/N07F2508

| * Note:P/N06G8224 and eight VRAM modules P/N75X5894 must be
| ordered when replacing P/N07F2481. The eight DRAM modules,
| P/N07G4407, must be transferred from P/N07F2481 to the new card
| P/N06G8224.

Systems containing Image Adapter/A card FRU part numbers not listed above are not affected and are not eligible for this ECA.

PREREQUISITES: IBM PS/2 Image Adapter/A Option Diskette, Version 1.03, F/N S15F-2240.

DETAIL: Any PS/2 system configured with an Image Adapter/A and a Micro Channel memory adapter may exhibit a system hang due to a bus contention or busmaster problem generated by the Image Adapter/A.

Any PS/2 Model 8557 may exhibit a system hang condition with an Image Adapter/A installed, due to a bus contention problem, with or without a Micro Channel memory card installed.

|A replacement Image Adapter/A card (FRU P/N06G8224) will be provided, at no charge to the customer, for systems that meet the PHYSICAL CHECK requirements above.

The Image Adapter/A Option Diskette Version 1.03 must be used in conjunction with the Reference Diskette to configure the new Image Adapter/A card. The new Image Adapter/A card, FRU P/N 06G8224, will contain a Version 1.03 Option Diskette that should be left with the customer.

NOTES: Order parts through normal distribution. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA088, AND OTHER OFFICE 990.

|1.45 ECA 089: 8535/8540 RIPL

|M/T 8535/8540 RIPL, VIDEO, KBD, COPROC, OEM ADAPTER PROBLEMS

|THIS ECA EXPIRES 6-30-93.

|PURPOSE: This ECA provides a ROM* BIOS** replacement kit for the 8535 or 8540 system that experiences one or more of the following symptoms:

- | Network adapter card fails to remote initial program load (RIPL)
- | Video adapter card fails to operate
- | Keyboard related errors
- | System hang with math coprocessor installed
- | OEM adapter fails upon initial installation.

|* ROM=Read Only Memory

|** BIOS=Basic Input/Output System

|NOTE: Both ROM BIOS modules are on the system board at locations U19 and U31. Installation instructions are included in the ROM BIOS kit.

|PHYSICAL CHECK: To qualify for the ROM BIOS replacement kit, the system must meet the following requirements:

|1. The system unit serial number must fall within the following ranges:

| 8535 Systems

| Model 8535-040 Serial Number 23-A0001 to 23-D5499

| Serial Number 23-AAAAA to 23-ACXDL

| Model 8535-043 Serial Number 23-AA000 to 23-BW999

| Serial Number 23-AVPAF to 23-BLXKA

| Serial Number 23-DG000 to 23-DY499

| Model 8535-045 Serial Number 23-XGCT0 to 23-XKTY0

| Model 8535-14X Serial Number 23-CGVAM to 23-DBHAP

| Serial Number 23-AAA00 to 23-CVP99

| Model 8535-24X Serial Number 23-BNDAH to 23-CGVAL

| Serial Number 23-TD000 to 23-ZK999

| 8540 Systems

| Model 8540-040 Serial Number 23-CYZWT to 23-CZFH Y

| Serial Number 23-AA000 to 23-AL875

| Model 8540-043 Serial Number 23-AAA00 to 23-ATF67

| Serial Number 23-DTNWH to 23-DTVKC

| Model 8540-045 Serial Number 23-AAA00 to 23-AHNA6

| Serial Number 23-FMCVR to 23-FNFLC

|2. The system BIOS data must be 2-13-92 or earlier. The following procedure should be used to determine the system BIOS date:

| a. At the C:>, type "BASIC", then press "ENTER".

| b. For medialess systems, disconnect the LAN cable and unplug the LAN adapter card to get to "BASIC".

| c. At the "OK", type the following exactly as shown: DEF SEG=-1:FOR X=5 TO 12:PRINT CHR\$(PEEK(X));:NEXT

| d. If "SYNTAX ERROR" is displayed instead of a date, verify that the line was type exactly as shown above.

| e. If the date displayed is 2-14-92 or later, the system is not eligible for this ECA.

| f. If the date displayed is 2-13-92 or earlier, the system is eligible for this ECA if requirement 3 is met.

|3. The system board FRU part number must be P/N92F0108, P/N92F0140, or P/N85F0077.

|NOTE: The system board FRU part numbers that are not listed above are not exposed to these problems are not eligible for this ECA.

|DETAIL: A limited number of 8535 and 8540 systems may experience one or more of the following failures:

- | Failure to RIPL with a network card.
- | When a video adapter is installed, the monitor attached to the video adapter may display unintelligible video patterns or remain completely blank.
- | Various keyboard related failures that are not resolved with a keyboard replacement.
- | System hang condition may occur when a math coprocessor is installed. The hang condition may occur at any time, but primarily when Window** type software is running or when exiting these type applications.
- | A known good OEM (other equipment manufacturer) adapter fails to be recognized, or to function properly, upon initial installation. This may also appear as a system hang. The system operates properly with the adapter removed.

|In all five cases above, if the system unit meets all of the requirements called out in the PHYSICAL CHECK section of this ECA, a replacement set of system ROM BIOS (FRU P/N92F2434) will be provided at no charge to the customer.

|NOTES: A replacement starter diskette, Version 1.20 or higher, is included with the replacement ROM BIOS kit. The old level starter

PS/2 ECA

ECA 089: 8535/8540 RIPL

|diskette, Version 1.10 or earlier, is not compatible with the replacement
|ROM BIOS and should be promptly discarded. This ECA replaces ECA 085.
|ECA 085 was obsoleted upon release of this ECA. Order parts through
|normal distribution. All ROM BIOS modules removed should be scrapped
|locally. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA089, AND
|OTHER OFFICE 990.

|1.46 ECA 092: 8570 Data Modification Patch

|M/T 8570 MODELS A81/A16 AND SYSTEMS UPGRADED FROM A81 OR A16 TO B81/B16:
|DATA MODIFICATION PATCH

|**THIS ECA EXPIRES 6-30-93.**

PURPOSE: Upon customer request, assist in the loading of the "8570 Models A81/A16 BIOS Patch Diskette" to the 8570 A16 and A81 Models and upgraded B16 and B81 models. This patch diskette eliminates the potential for unreported data modification errors.

PHYSICAL CHECK: This ECA applies to all 25MHz 8570 systems that contain an 80MB or 160MB hardfile that are running DOS or OS/2. The 8570s that contain those hardfiles are Models A81 and A16 and upgraded 486 Models B81 and B16. **THIS ECA IS APPROVED FOR ON-SITE OR CARRY-IN INSTALLATION.**

DETAIL: The **8570 Models A81/A16 BIOS Patch Diskette** will prevent unreported data modification problems from occurring on 8570 A16, A81, B16 and B81 models that are identified in the PHYSICAL CHECK section of this ECA.

If the system boots to both DOS and OS/2 the patch must be loaded for each operating system. It is not required on AIX and Novell** Netware operating systems; these operating systems already contain equivalent code.

If a hardfile is replaced or formatted the 8570 DOS and OS/2 patch must be reinstalled. The 8570 Patch Diskette should be retained by the customer in case reloading is necessary.

NOTE: The patch diskette is used on DOS and OS/2 operating systems only.

The following BIOS Patch Installation Instructions are also included with the **8570 Models A81/A16 BIOS Patch Diskette** package:

DOS Systems:

1. Turn on the computer.
2. After DOS has completed loading, insert the patch diskette in the default drive (drive A:).
3. At the DOS prompt (>), type A:INSTALL, then press ENTER.
4. The Installation Menu will appear. Carefully read the information on the screen, then press 1 or 2 accordingly.
5. Your patch diskette already contains the driver program. Press ENTER to continue.
6. After the installation program completes, the DOS prompt will appear. Remove the patch diskette from the diskette drive.
7. Restart the system to activate the BIOS (basic input/output system) patch.

OS/2 Systems:

1. Turn on the computer.
2. Select an OS/2 full screen session. You cannot use an OS/2 window or a DOS window.
3. Insert the patch diskette in the default drive (drive A:).
4. At the OS/2 prompt, type A:OS2INST, then press ENTER.
5. The ABIOS (advanced basic input/output system) Patch information screen will appear, press ENTER to continue with the installation procedure.
6. Select the drive that contains OS/2, then press ENTER.
7. After the installation program completes, the Option Menu will appear. Select 3, then press ENTER.
8. Remove the patch diskette from the diskette drive.
9. Restart the system to activate the BIOS patch.

SERVICER: If an error message appears on the screen after installing the DOS or OS/2 Patch Program, contact IBM Support. These could be POST errors, DIAGNOSTIC errors, or a message such as ABORT or RETRY the operation. If these are intermittent errors, the customer will be able to continue operation until the system can be serviced.

NOTES: Customers may install the **8570 Models A81/A16 BIOS Patch Diskette** using the installation instructions contained in the patch diskette package. They may obtain this diskette with installation information by calling 1-800-845-4263 and requesting the 8570 Models A81/A16 BIOS Patch Diskette package 41G2930, or they may elect to have their servicer obtain the patch and install it using this ECA.

SLSS subscribers to the PS/2 SIM, F/N SBOF-2480, will automatically receive this Patch Diskette package (F/N G41G-2930). Other servicers may order it separately as a publication using the same form number (G41G-2930), or they may order the diskette FRU package, P/N10G4144, through normal parts channels. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA092, AND OTHER OFFICE 990. Diskettes obtained from the above sources may be copied and distributed for use as necessary.

|1.47 ECA 094: SCSI 2.3GB Tape Data Modification

M/T 3511/3532/8595: SCSI 2.3GB TAPE DATA MODIFICATION

|THIS ECA EXPIRES 6-30-93.

IMPORTANT NOTE: After the installation of this ECA, a software upgrade will be required by users of DOS versions of the SY-TOS** PLUS device driver. Omission of this required upgrade will result in operational failures once this new microcode is installed. DO NOT install this ECA until the required SY-TOS upgrade is on hand and ready for immediate installation.

MACHINES AFFECTED:

3532, S/N 2602533 thru 2603446
8595, All, with Option 6451121 installed
3511, All, with Option 6451121 installed

PHYSICAL CHECK: Most of the affected drives were installed in 3532-023 External SCSI Tape Drives. A very small quantity (approximately 40) of the affected tape drives may be installed internally in 8595s and 3511 SCSI Enclosures (Option 6451121, 2.3GB SCSI Tape Drive). The affected EPROM module, which is located on the "MX Board" inside the tape drive, may be positively identified by **262S, P/N21F8723** on the label attached to the module. If any other label is found on this module, this ECA is not applicable.

8595 AND 3511 MACHINE TYPES: If the label on the top of the tape drive (above and to the left of the inspection window) is P/N21F8641, EC894913, this ECA is applicable and should be installed.

MACHINE TYPE 3532: The 3532-023 SCSI Tape Drives with faulty microcode are confined to Machine Serial Numbers 2602533 through 2603446. Not all of the 3532s within this serial number range will require this ECA, as some were upgraded prior to shipment. The **PHYSICAL CHECK** will require removing the 3532 covers to access the rear of the tape drive.

If the label located on the right side of the rear of the tape drive shows P/N21F8716, EC894908, this ECA should be installed. This ECA is not applicable to any other part number or EC level.

The customer should be advised of the following information. In conjunction with this microcode problem, a conflict with the DOS Version of the **SY-TOS PLUS FILE BACKUP MANAGER** has been identified. Errors E130, E21, and W32 are displayed when running SY-TOS PLUS with the new version (263X) microcode. None of these errors or warnings are displayed with previous versions of the microcode.

In Backup Device Setup: Edit, after selecting OK, W32 is displayed. This does not appear with previous versions of microcode (262S) in this drive.

To resolve this conflict, SY-TOS PLUS must be upgraded from SPED-130IBA-927 to SPED-130IBB-927. A dealer can obtain the upgrade through the IBM NDD National Support Center Bulletin Board, or it can also be obtained free of charge by contacting the Customer Service Department at Sytron by calling (508)898-0100. Information on how to retrieve files from the bulletin board is provided in the Bill of Material, FRU P/N21F8792.

DETAIL: A limited number of tape drives were shipped with a version of microcode, which under certain conditions could allow a data block to be overwritten erroneously, thereby causing lost data.

If a customer uses applications that rewrite selective portions of a previously written tape, the tape could become unreadable. If previously written tapes are appended, data could be overwritten.

FRU P/N21F8792 provides a Bill of Material (B/M) which includes an up-level EPROM, TORX T-8 and T-10 wrenches, detailed instructions, and upgrade identification labels.

NOTES: Order the required B/M, FRU P/N21F8792, from the Mechanicsburg Parts Distribution System using normal parts ordering procedures. Scrap all used parts according to local procedures. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA094, OTHER OFFICE 997, AND THE APPROPRIATE MACHINE TYPE.

|1.48 ECA 095: 8535/8540 Extra Characters

|M/T 8535/8540 EXTRA CHARACTERS DURING PRINT

|THIS ECA EXPIRES 6-30-93.

|PHYSICAL CHECK: To qualify for replacement of the riser card, the system must meet the following requirements:

- |1. The system unit serial number must fall within the following ranges:
 - | 8535 Systems
 - | Model 8535-040 Serial Number 23-A0001 to 23-A5370
 - | Model 8535-043 Serial Number 23-AA300 to 23-AX523
 - | Model 8535-24X Serial Number 23-TH000 to 23-TL426
 - | 8540 Systems
 - | Model 8540-040 Serial Number 23-AA000 to 23-AA853
 - | Model 8540-043 Serial Number 23-AAA02 to 23-AGM57
 - | Model 8540-045 Serial Number 23-AAAA3 to 23-ACBK6
- |2. The system board FRU must be P/N85F0077
- |3. The riser card FRU must be P/N79F3444 for an 8535, or P/N85F0028 for an 8540.

|DETAIL: A small number of 8535/8540 systems may experience extra random characters during (parallel port) hardcopy printing operations. Only systems that meet all three of the PHYSICAL CHECK requirements of this ECA are eligible for a replacement riser card free of charge.

|This ECA replaces the hardcopy print portion of ECA 087. ECA 087 was obsoleted by release of this ECA and ECA 098. Any orders for the old level bus card FRU will automatically substitute for the new FRU listed as follows:

	Old FRU P/N	New FRU P/N
8535 Bus Adapter Card	P/N79F3444	P/N79F3529
8540 Bus Adapter Card	P/N85F0028	P/N92F0107

|NOTES: Order parts through normal distribution. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA095, AND OTHER OFFICE 990.

|1.49 ECA 098: 8535/40 Backup/Restore Problem

|M/T 8535/8540: BACKUP/RESTORE PROBLEM

|THIS ECA EXPIRES 6-30-93.

|PURPOSE: This ECA provides a ROM* BIOS** replacement kit for the 8535 or 8540 system that experiences corrupted hardfile data during restore operations from a diskette drive or tape unit.

|*ROM=Read Only Memory

**BIOS=Basic Input/Output System.

|NOTE: Both ROM BIOS modules are on the system board at locations U19 and U31. Installation instructions are included in the ROM BIOS kit.

|PHYSICAL CHECK: To qualify for the ROM BIOS replacement kit, the system must meet the following requirements:

1. The system unit serial number must fall within the following ranges:

8535 Systems	
Model 8535-040	Serial Number 23-A0000 to 23-M9999 Serial Number 78-TXD00 to 78-XPV99
Model 8535-043	Serial Number 23-AA000 to 23-TC999 Serial Number 78-AAAA0 to 78-BLTG9
Model 8535-24X	Serial Number 23-TD000 to 23-ZK999 Serial Number 78-BLTH0 to 78-CYKP9
8540 Systems	
Model 8540-040	Serial Number 23-AA000 to 23-NN999 Serial Number 78-NM000 to 78-PM999
Model 8540-043	Serial Number 23-AAA00 to 23-LGX99 Serial Number 78-YMKW0 to 78-ZFFY9
Model 8540-045	Serial Number 23-AAAA0 to 23-LYDX9 Serial Number 78-XBX00 to 78-YDG99
2. The system BIOS date must be 09-24-91 or earlier. The following procedure should be used to determine the system BIOS date:
 - a. At the C:>, type "BASIC", then press "ENTER".
 - b. At the "OK", type the following exactly as shown: DEF SEG=-1:FOR X=5 TO 12:PRINT CHR\$(PEEK(X));:NEXT
 - c. If "SYNTAX ERROR" is displayed instead of a date, verify the line was typed exactly as shown above.
 - d. If the date displayed is 09-25-91 or later, the system is not eligible for this ECA.
 - e. If the date displayed is 09-24-91 or earlier, the system is eligible for this ECA if requirement 3 is met.
3. The system board FRU part number must be P/N92F0108 or P/N85F0077.

|NOTE: System board FRU part numbers that are not listed above are not exposed to these problems and are not eligible for this ECA.

|DETAIL: A limited number of 8535 and 8540 systems may experience corrupted data on the hardfile during a restore operation from a tape unit or diskette drive. This problem can only occur with hardware which attaches to the system board diskette drive connector (J15). If the system unit meets all of the requirements called out in the PHYSICAL CHECK section of this ECA, a replacement set of system ROM BIOS (FRU P/N92F2434) will be provided at no charge to the customer.

|NOTE: A replacement starter diskette, Version 1.20 or higher, is included with the replacement ROM BIOS kit. The old level starter diskette, Version 1.10 and earlier, is not compatible with the replacement ROM BIOS and should be promptly discarded. This ECA replaces the backup/restore portion of ECA 087. ECA 087 was obsoleted by release of this ECA and ECA 095.

|NOTES: Order parts through normal distribution. All ROM BIOS modules removed should be scrapped locally. RECORD ALL TIME AND MATERIAL TO SERVICE CODE 33, ECA098, AND OTHER OFFICE 990.

|1.50 ECA 102: 8543 Data Fax Modem

|M/T 8543: DATA FAX MODEM UPGRADE TO A FULL "CLASS 1" SUPPORT

|THIS ECA EXPIRES 6-30-93.

PHYSICAL CHECK: To qualify for this ECA, the Internal Data Fax Modem must:

1. Pass FAX diagnostics.
2. Fail when running FAX programs.
3. Not have P/N06G9210 written on the edge of the module in the drawing below.

PICTURE 7

DETAIL: Some downlevel Data Fax Modems may not operate with class one FAX programs. If the system is experiencing FAX program hangs when trying to transmit or receive data, run the advanced FAX diagnostic from the reference diskette. If this operates correctly, check the modem for the part number in the PHYSICAL CHECK section. If P/N06G9210 is NOT on the FAX modem, the modem may be replaced using this ECA. If the FAX diagnostic calls out a FRU replacement, the system does not qualify for this ECA.

NOTES: Order FRU P/N79F0996 through normal distribution. All FRU stock has been purged of downlevel stock. RECORD ALL TIME AND MATERIAL USING SERVICE CODE 33, ECA102, AND OTHER OFFICE 990. Fill out the appropriate parts return information and include it when returning the downlevel modem. Indicate that this replacement was for ECA 102.

|1.51 ECA 103: 8550/55/70 Seagate 60MB Fixed Disk

|M/T. 8550/8555/8570 S/60MB DRIVE: SEAGATE 60MB FAILS TO SPIN

|THIS ECA EXPIRES 9-30-93.

|PHYSICAL CHECK: Affected drives are known to have been shipped in the
|above system models. However, not all of these systems will have the
|affected fixed disks. To determine if a drive is eligible for this ECA,
|inspect the drive to ensure that it is an ST-177I 60MB fixed disk
|manufactured for IBM by Seagate. Only this model Seagate drive that fails
|POST with the following symptoms is eligible for this ECA:

- The system will display the memory count.
- The drive will make a clicking or tapping noise at POST.
- The system will display a 10483 POST error.

|NOTE: If the fixed disk has an LED light on the drive, the light will
|blink nine times at POST. The light will stay on approximately 1 minute,
|then begin blinking again, and the 10483 error will remain displayed.
|Some 8570 fixed disks do not have an LED. The 8570 hardfile external LED
|(near power switch) will not blink, and should not be used to identify
|this failure.

|DETAIL: Some 60MB fixed disks in 8550, 8555, and 8570 systems may fail to
|spin at power-on. This ECA provides a replacement drive for those meeting
|the PHYSICAL CHECK requirements. If an affected fixed disk fails to spin
|after multiple power-on attempts, and the customer's data is not backed
|up, the following procedure may restore temporary operation of the disk:

- |1. Remove the drive from the system. Place it on a sheet of paper on a
|flat surface. The paper is used to avoid scratching the flat surface.
|The drive should be resting on its plastic slide mount rails, in its
|normal operating position.
- |2. Keeping the drive against the flat surface, rotate it in a brisk
|clockwise/counter-clockwise motion. Do not hit, bang, drop, or
|otherwise shock the fixed disk. This rotating action should provide
|sufficient torque to release any bound internal parts.
- |3. Install the drive. If POST completes successfully, the customer
|should back up the fixed disk immediately.

|Replace the 60MB fixed disk with FRU P/N85F0049 for the 8555 and with FRU
|P/N6128294 for the 8550 and 8570 systems.

|NOTES: Order parts through normal distribution. RECORD ALL TIME AND
|MATERIAL TO SERVICE CODE 33, ECA103, AND OTHER OFFICE 990. Return
|defective drives using normal UPR procedures.

