Contract No. FA64WA-5223

IBM 9020D/E DATA PROCESSING SYSTEM

FOR

UNITED KINGDOM 9020 TRIPLEX

FIELD ACCEPTANCE TEST REPORT

FOR

ITEMS TESTED IN AMENDMENT 88

January 28, 1974 - January 31, 1974

INTERNATIONAL BUSINESS MACHINES CORPORATION

CONTENTS

INTRODUCTION

The Field Acceptance Test for the United Kingdom 9020 Triplex System was conducted from January 28, 1974 thru January 31, 1974. The test was run in accordance with the concurred upon Test Check List entitled, "IBM 9020D/E System Acceptance Test Check List" and "IBM 9020D/E Data Processing Factory and Field Acceptance Test Specification - Revision 7."

All tests that were scheduled to be performed as a part of the Acceptance Test were completed successfully.

The errors encountered during this test are placed into the following categories:

1. Transient Failure - an error which does not recur upon repeated runs of the same routine.

2. Malfunction - an error which recurs upon repeated runs of the same routine or, in the case of the SEVA exercise, the same error occurring on successive passes of the program.

During the Field Acceptance Test, ten (10) malfunctions and nine (9) transients occurred.

ACCEPTANCE TEST SUMMARY

The Field Acceptance Test consisted of Element Manual Tests, Element Subsystem and System Functional tests. At the completion of the System Functional Tests, at 0020 time on January 30, 1974, the United Kingdom 9020D Triplex System was placed in Idle and Order. At 2235 time of the same day the system was removed from this code and the Element Manual Test (U-021) and Element Subsystem Test (U-139) was conducted on the additional Printer/Keyboards (1052-07).

During the Element Subsystem Functional Tests five (5) malfunctions and two (2) transients were encountered. These failures are described as follows:

M-01 Test U-106 IOCE #1 failure occurred while running IOCE #1 Selector Channel #2. D-3152 with Tape Drive #221. Data Read errors required off-line maintenance for Tape Drive #221. Reruns were completed successfully.

M-02 Test U-114 Tape Drive #521 Write errors while running D4060. Corrective action required replacement of Capstan Motor P/N 5391708. Reruns were completed successfully.

M-03 Test U-127 SE #6 picking and dropping bits randomly in high/even BSM. Corrective action required replacement of Card P/N 5804957 at location 03A-B1C4. Reruns were completed successfully.

M-04 Test U-135 PAM #1 Unit Check while running INTO adapter "1B". Bit #6 picking. Corrective action required reseating card at location H-D1F2. Reruns were completed successfully.

M-05 Test U-127 SE #5 Storage Logout problem. Corrective action required replacement of Card P/N 5803358 at location 03C-C2H2. Reruns were completed successfully.

T-01 Test U-112 Tape Drive #112 Unit Check on write operation.

T-02 Test U-116 Tape Drive #932 Unit Check on write operation.

During the System Functional Tests one (1) malfunction and two (2) transients occurred. These failures are described as follows:

M-07 Test S-160 SE #1 picking bit #46 low/odd BSM. Corrective action required replacing Card P/N 5801708 at location 03A-A3F6. All elements were configured into the active system for two passes of SEVA.

T-02 Test S-003 CE #2 would not clear DAR bit for CE own and IOCE #3.

T-09 Test S-131 PAM #1 configured State Zero test switch on, during the Power Interlock test dropped power by means of the Power On/Off switch.

During the twelve-hour System Evaluation Program (SEVA) one (1) malfunction and five (5) transients occurred. These failures are described as follows:

M-06 Test S-101 Tape Drive #221 indicated condition code #1. Corrective action required replacement of Prolay Assembly P/N 528540. After corrective action this unit was placed into the active system at pass 2E and reruns were successful.

T-04 Test S-101 CE #1 Machine Check Interrupt, ROS Parity error Bits 66-99.

T-05 Test S-101 Tape Drive #933 indicated a read error while reading from the System Load Tape.

T-06 Test S-101 DSU #3 indicated a data check on drive #950.

T-07 Test S-101 SE #2 Data Error, Bytes 2 and 3 indicated incorrect parity.

T-08 Test S-101 DSU #2 indicated seek check on drive #560.

During the Element Test and Element Subsystem Test for the additional Printer/Keyboards (1052-07) three (3) malfunctions occurred. These failures are described as follows:

M-08 Test U-139 1052-07 S/N 30141 Jammed space key. Corrective action required adjustment of the key bar. Reruns were completed successfully.

M-09 Test U-139 1052-07 S/N 30138 Equipment Checks required adjustment of the carriage return contact. Reruns were completed successfully.

M-10 Test U-021 1052-07 S/N 30069 blowing fuses in the 48v line from PAM #1. Corrective action required removing a piece of wire shorting two contacts. Reruns were completed successfully.

QUALITY CONTROL COMMENTS

A quality control inspection was performed by the FAA Test Directors at the conclusion of the Acceptance Test. The discrepancies noted are listed in a separate letter forwarding this report.

EC/REA STATUS

There were no pending EC/REAs as of this Acceptance Test.

EQUIPMENT IDENTIFICATION LIST

IBM EQUIPMENT IDENTIFICATION LIST

Location United Kingdom 9020D Triplex Date 31-1-74

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Integrated Control Unit	2821-01	1	18869
	2821-02 ✓	2	24095
Compute Element	7201-02 ✓	1	50050
		2	50051
		3	50052
Input/Output Control Element	7231-02 ✓	1	11084
		2	11085
		3	11086
Storage Element	7251-09 ✓	1	51986
		2	51987
		3	51988
		4	51989
		5	51990
		6	51991
		7	51992
System Console	7265-02 ✓	1	65025
Tape Control Unit	2803-01 ✓	1	12227
		2	12228
		3	12229
Peripheral Adapter Modules Adapters	7289-02 ✓	1	89072
20 CD			
7 TTY			
6 FDEP			
3 GPI			
26 GPO			
7 1052			
5 INTI			
5 INTO			

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	213, 213.1 29 a+e		

Approval Gordon L. Hurst Date 31/1/74

IBM EQUIPMENT IDENTIFICATION LIST

Location United Kingdom 9020D Triplex Date 31-1-74

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Peripheral Adapter Modules Adapters: 20 CD 6 TTY 5 FDEP 2 GPI 27 GPO 7 1052 5 INTI (B) 5 INTO (B)	7289-02	2	89073
Peripheral Adapter Modules Adapters 20 CD 7 TTY 5 FDEP 3 GPI 27 GPO 7 1052 4 INTI (B) 4 INTO (B)	7289-02	3	89074
Storage Control Unit	2314-A1	1 2 3	19271 19272 19273
Disk Storage Unit	2312-A1	1-1 2-1 3-1	17253 17254 17255
Reader/Punch	2540-01		23054
Printer	1403-02	1 2	21332 21333

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	213, 213.1 29 a+e		

Approval Gordon L. Hirst Date 31/1/74

IBM EQUIPMENT IDENTIFICATION LIST

Location United Kingdom 9020D Triplex Date 31-1-74

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Printer/Keyboard	1052-07 ✓		30069 ✓ 30125 ✓ 30128 ✓ 30133 ✓ 30135 ✓ 30137 ✓ 30138 ✓ 30139 ✓ 30140 ✓ 30141 ✓ 30142 ✓ 30143 ✓ 30144 ✓ 30145 ✓ 30146 ✓
Tape Drives (all 9-Track)	2401-03 ✓		36000 ✓ 36001 ✓ 36002 ✓ 36003 ✓ 36004 ✓ 36005 ✓ 36006 ✓ 36007 ✓ 36011 ✓ 36012 ✓ 36013 ✓ 36014 ✓ 36015 ✓ 36016 ✓

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	213, 213.1 29 a+e		

Approval Gordon L Hurst Date 31/1/74

IBM EQUIPMENT IDENTIFICATION LIST

Location United Kingdom 9020D Triplex Date 31-1-74

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Disk Pack	2316-01 ✓		0D9505 0D9506 0D9507 0D9508 0D9509 0D9510 0D9511 0D9512 0D9513 0D9514 0D9515 0D9516 0D9517 0D9518 0D9519

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	213, 213.1 29 a+e		

Approval Gordon L. Hunt Date 31/1/74

SPECIAL FEATURES AND RPQ LIST

SPECIAL FEATURES AND RPQs INSTALLED ON THE UNITED KINGDOM 9020D TRIPLEX (cont)

Tape Unit Control		2803-A01
RPQ F12928	Switching to IOCEs	
Direct Access Storage Facility		2314-A01
RPQ FA0418	Configuration Control Modification to 2314A1 for connection to 9020A and 9020D	
Feature 8170	Two Channel Switch	
Integrated Control Unit		2821-01
Feature 8637	Universal Character Set Adapter	
Integrated Control Unit		2821-02
Feature 8637	Universal Character Set Adapter	
Feature 8100	Two Channel Switch	
Printer/Keyboard (Local)		1052-07
Feature 9572	Extended BCD Code Print Element	
Feature 9104	10 Characters/Inch Horizontal Spacing	
Feature 9509	Pin Feed Platen	
Feature 9162	Line Spacing 6 LPI, 13-1/8" Hole-to-Hole Width	
RPQ F13197	Cable and Power On Indicator	
RPQ F14713	Single Enter and Cancel Keys	
Feature 9903	208V 60Hz	
Printer/Keyboard (Remote)		1052-07
Feature 9104	10 Characters/Inch Horizontal Spacing	
Feature 9509	Pin Feed Platen	
Feature 9162	Line Spacing 6 LPI, 13-1/8" Hole-to-Hole Width	
RPQ F13197	Cable and Power On Indicator	
RPQ F14713	Single Enter and Cancel Keys	
RPQ FD0674	Extended Cable for 1052 (one only-one time charge item 29e)	

IBM 9020D/E DATA PROCESSING SYSTEM

SPECIAL FEATURES AND RPQs INSTALLED ON THE UNITED KINGDOM 9020D TRIPLEX

The following features and/or RPQs are installed on each of the units listed below:

Compute Element — 7201-02

RPQ FA0416 CCR/DAR Modification for 2314A1 Connection to 9020D

RPQ F30767 Wrap Bus Modification

RPQ FB0140 Convert and Sort Symbols/Convert Weather Lines

Input/Output Control Element — 7231-02

RPQ F16374 Address Translation

RPQ F27112 Expanded Addressing

RPQ F21241 Processor Mode

RPQ F20974 Storage Element (64K) Interface Mod.

System Console — 7265-02

RPQ F16378 Single Enter-Cancel Keys

RPQ F16379 Patch Panel and Adapter Unit

RPQ F20421 SMMC Interface Mod.

RPQ F16373 Fourth CE Modification

RPQ FA0417 Configuration and State Display Modification for 2314A1 Connection to 9020D

Peripheral Adapter Module — 7289-02

RPQ F26474 Power Mod.

RPQ F19673 Two Level Shared Priority

RPQ FA1771 Power Mod. 1052

RPQ EE2682 Teletype End of Message

SPECIAL FEATURES AND RPQs INSTALLED ON THE UNITED KINGDOM 9020 TRIPLEX (cont)

Printer/Keyboard (Remote) Contd

Feature	2814	235V 50Hz
RPQ	EE2260	CAA Print Element (one time charge item 29 a - no charge on remaining items)
RPQ	EE2259	Keytop Change (Reference QC deficiency letter)

Printer 1403-02

Feature	8641	Universal Character Set
Feature	4740	Interchangeable Chain Cartridge Adapter
Feature	9631	PN-2 Print Arrangement (2 each) (1 AT CENTRE)

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Date: 31/1/74

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DELIVERABLE ITEMS LIST

IBM 9020D/E DATA PROCESSING SYSTEM DELIVERABLE ITEM LIST

UNITED KINGDOM 9020D TRIPLEX

MAINTENANCE DIAGNOSTIC PROGRAMS		CERTIFICATION
1	Set Internal Specifications (Writeups, Flowcharts)	WL
1	Set Program Listing	WL
1	Reel Program Library Tape	WL
1	Set Program Object Deck	WL
5	Reels FLT Tapes	WL
2	Sets SCOPEX	WL

ACCEPTANCE TEST PROGRAMS		
1	Set Internal Specifications (Writeups, Flowcharts)	WL
1	Set Program Listings	WL
1	Reel Program Library Tape	WL
2	Reels FLT Tapes (3 for 9020E - 2 for 9020D)	WL

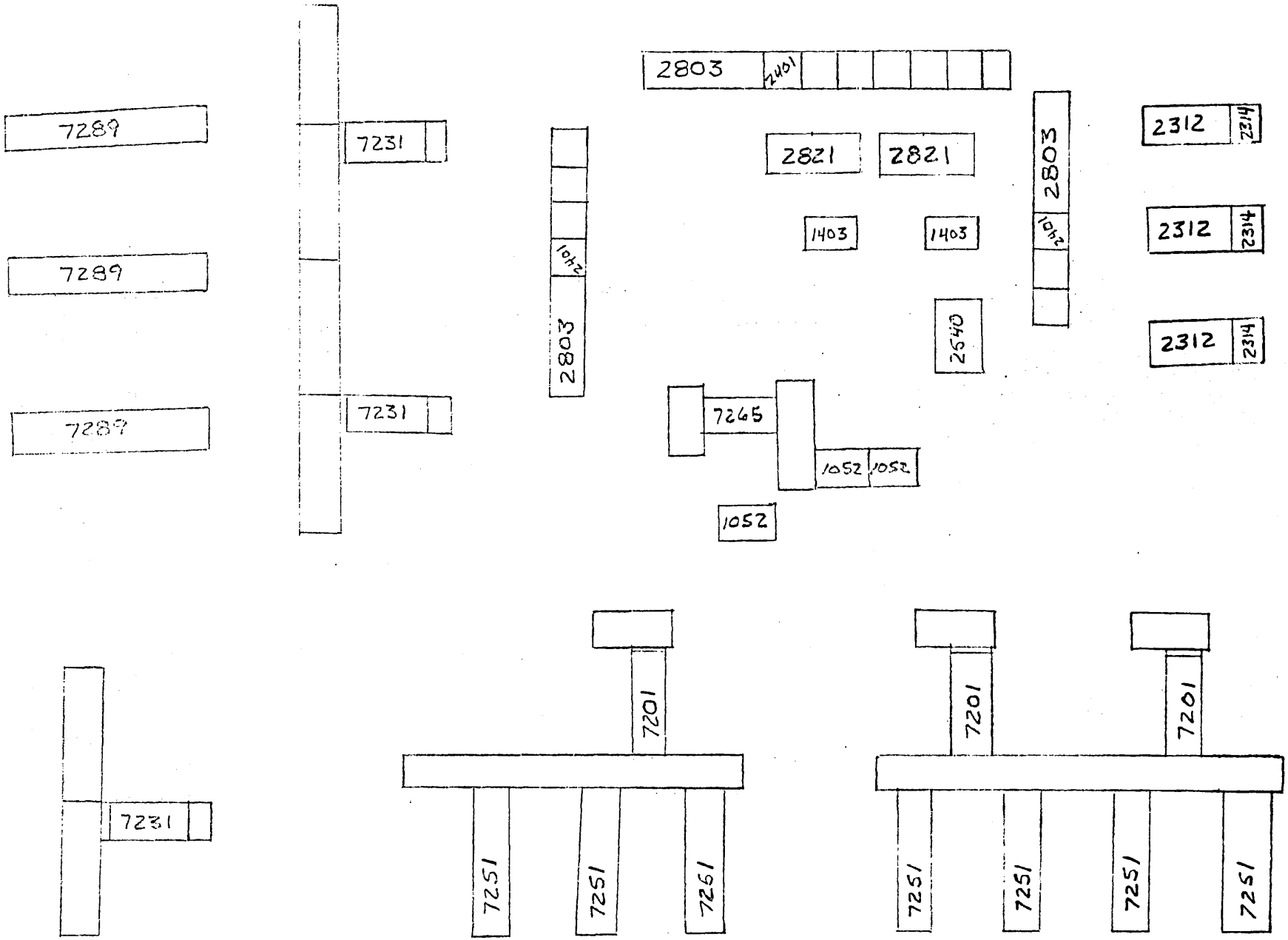
INSTRUCTION BOOKS (FE MANUALS)		
1	Set Instruction Manuals Reference P.C. Letter	WL
1	Set Automated Logic Diagrams Manuals	WL
1	Set Illustrated Parts Catalogs Reference P.C. Letter	WL

MAGNETIC TAPE - CUSTOMER REEL 14 REELS (WL)
(One reel supplied with each new tape drive.)

Approval: Gordon L. Hurst

Date: 31/1/74

FIELD FLOOR DIAGRAM



UNITED KINGDOM 9020 TRIPLEX

9020D/E ACCEPTANCE TEST LOG AND RECORDS

UNITED KINGDOM

ACCEPTANCE TEST LOG

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD	COMMENTS	OPERATOR
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	NO.		
28	01	74	0855	1105	UT	S				U-001		R.J. Remy
28	01	74	0855	1205	UT	S				U-002	See comment on Test Data Record Sheet	R.J. Remy
28	01	74	0855	1140	UT	S				U-003		R.J. Remy
28	01	74	0855	1142	UT	S				U-004		R.J. Remy
28	01	74	0855	0901	UT	S				U-013		R.J. Remy
28	01	74	0901	0930	UT	S				U-014		R.J. Remy
28	01	74	0930	1009	UT	S				U-018		R.J. Remy
28	01	74	1010	1040	UT	S				U-019		R.J. Remy
28	01	74	1040	1115	UT	S				U-020		R.J. Remy
28	01	74	1120	1150	UT	S				U-021	Test completed on four local 1052's. The fourth is a spare being tested on BAM adapter address of 3C. The remote 1052's will be tested upon completion of the Triplex test.	R.J. Remy
28	01	74	1125	1200	UT	S				U-017		R.J. Remy
28	01	74	1145	1245	UT	S				U-006		R.J. Remy
28	01	74	1205	1240	UT	S				U-007		R.J. Remy
28	01	74	1245	1305	ID						Lunch Break!	R.J. Remy
28	01	74	1305	1353	UT	S				U-101		R.J. Remy
28	01	74	1310	1353	UT	S				U-103		R.J. Remy
28	01	74	1337	1420	UT	OE				U-102	Section sense switch "ϕ" entered in error.	R.J. Remy
28	01	74	1353	1430	UT	S				U-105		R.J. Remy
28	01	74	1357	1442	UT	DF	7231-02	11084	M-01	U-106	Failure running TOCF-1 selector channel 2.	R.J. Remy
28	01	74	1400	1420	UT	S				U-108		R.J. Remy

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
28	01	74	M 01	R.J. Remy	R.J. Remy	28/01/74

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED. MAINT.
UM	UNSCHED. MAINT.
FM	FACT. EXER. MARG.

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
OE	OPERATOR ERROR

APPROVAL G. Hurst

DATE 28/1/74

UNITED_KINGDOM ACCEPTANCE TEST LOG

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD	COMMENTS	OPERATOR
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	NO.		
28	01	74	1425	1445	UT	S				U-111		A.J. Remy
28	01	74	1425	1448	UT	S				U-102		A.J. Remy
28	01	74	1430	1447	UT	S				U-107		A.J. Remy
28	01	74	1445	1505	UT	DF	TD112	36002	T-01	U-112	Unit check on Write - rerun successful.	A.J. Remy
28	01	74	1447	1508	UT	S				U-110		A.J. Remy
28	01	74	1442	1448	UM					U-106	IOCE-1 in unscheduled maintenance for M-01.	A.J. Remy
28	01	74	1448	1458	UT	S				U-106		A.J. Remy
28	01	74	1505	1520	UT	S				U-112		A.J. Remy
28	01	74	1510	1526	UT	DF	TD521	36004	M-02	U-114	Unit check on Write - rerun unsuccessful.	A.J. Remy
28	01	74	1520	2350	UM					U-114	TD521 in unscheduled maintenance for M-02.	A.J. Remy
28	01	74	1540	1558	UT	S				U-109		A.J. Remy
28	01	74	1543	1555	UT	DF	TD932	36012	T-02	U-116	Unit check on Write - rerun successful.	A.J. Remy
28	01	74	1543	1620	UT	S				U-117		A.J. Remy
28	01	74	1553	1640	UT	DF	SE-6	51991	M-03	U-127	Unexpected element check - rerun unsuccessful.	A.J. Remy
28	01	74	1555	1620	UT	S				U-116		A.J. Remy
28	01	74	1558	1715	UT	S				U-126		A.J. Remy
28	01	74	1620	1650	UT	S				U-128		A.J. Remy
28	01	74	1654	1730	UT	DF	PAM-1	89074	M-04	U-135	Unit check while running INTO "1B"	A.J. Remy
28	01	74	1640	1715	UM					U-127	SE-6 in unscheduled maintenance for M-03	A.J. Remy
28	01	74	1715	1725	UT	DF	SE-5	51990	M-05	U-127	SE-6 reran successfully, SE-5 Layout failure.	A.J. Remy
28	01	74	1755	1815	UM					U-127	SE-5 in unscheduled maintenance for M-05.	A.J. Remy
28	01	74	1730	1755	UM		PAM-1	89074	M-04	U-135	PAM-1 in unscheduled maintenance for M-04.	A.J. Remy
28	01	74	1755	1935	UT	S				U-135	INTO "1B" reran successfully.	A.J. Remy
28	01	74	1813	1845	UT	S				U-144		A.J. Remy

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
28	01	74	02	A.J. Remy	M. Malin	28/01/74
28	01	74	03	A.J. Remy	A.J. Remy	28/01/74
28	01	74	04	A.J. Remy	A.J. Remy	28/01/74
28	01	74	05	A.J. Remy	A.J. Remy	28/01/74

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED. MAINT.
UM	UNSCHED. MAINT.
FM	FACT. EXER. MARG.

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
OE	OPERATOR ERROR

APPROVAL H. Hurst

DATE 29/1/74

UNITED KINGDOM ACCEPTANCE TEST LOG

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD	COMMENTS	OPERATOR
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NUMBER	TYPE -NO	NO.		
28	01	74	1815	1825	UT	S				U-127	SE-5 RERAN Successfully	
28	01	74	1850	1944	UT	S				U-145		
28	01	74	1915	1944	UT	S				U-142		
28	01	74	1920	1945	UT	S				U-125		
28	01	74	1945	1955	UT	S				U-123		
28	01	74	1945	2010	UT	S				U-124		
28	01	74	1950	2022	UT	S				U-139		
28	01	74	2020	2050	UT	S				U-143		
28	01	74	2020	2125	UT	S				U-137		
28	01	74	2021	2126	UT	S				U-148		
28	01	74	2052	2010	ST	S				S-122		
28	01	74	2100	2115	UT	S				U-147		
28	01	74	2118	2220	UT	S				U-136		
28	01	74	2128	2225	UT	S				U-119		
28	01	74	2128	2230	UT	S				U-118		
28	01	74	2230	2240	UT	S				U-138		
28	01	74	2250	0020	UT	S				U-146		
28	01	74	2350	0001	UT	S				U-114		
29	01	74	0001	0125	UT	S				U-133		
29	01	74	0125	0150	ST	S				S-001		
29	01	74	0150	0230	ST	OE				S-002		
29	01	74	0230	0245	ST	DF	7201-02	50051	T-03	S-003		
29	01	74	0250	0315	ST	S				S-002		
29	01	74	0320	0325	ST	S				S-004		

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED MAINT
UM	UNSCHED MAINT
FM	FACT EXER MARGINS

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
UF	UNDETECTED FAILURE
OE	OPERATOR ERROR

APPROVAL H. Hurst

DATE 31/1/74

UNITED KINGDOM ACCEPTANCE TEST LOG

DATE DA	DATE MO	DATE YR	TIME START	TIME STOP	USAGE CODE	OPER CODE	FAILURE DATA UNIT OR ELEMENT	FAILURE DATA SERIAL NUMBER	FAILURE DATA TYPE-NO	TEST RECORD NO.	COMMENTS	OPERATOR
29	01	74	0325	0355	ST	S				S-003	Rerun Successful	Mal
29	01	74	0400	0410	ST	S				S-006		Malin
29	01	74	0410	0420	ST	S				S-007		Mal
29	01	74	0420	0425	ST	S				S-124		Mal
29	01	74	0425	0430	SU							Mal
29	01	74	0430	0600	ST	S				S101		Mal
29	01	74	0600	0630	ST	DF	CE-1	50050	T-04	S101	ROS Parity Error	Mal
29	01	74	0630	0816	ST	S				S-101	Reruns for T-04 successful.	Mal
29	01	74	0816	0822	ST					S-101		R.J. Remy
29	01	74	0822	0833	ST	S				S-101		R.J. Remy
29	01	74	0833	0837	SU							R.J. Remy
29	01	74	0837	0850	ST	DF	TD-933	36013	T-05	S-101		R.J. Remy
29	01	74	0850	0908	ST	DF	TD-221	36004	M-06	S-101		R.J. Remy
29	01	74	0908	0925	ST	DF				S-101	Rerun unsuccessful for M-06.	R.J. Remy
29	01	74	0925	1157	ST	DF	DSU-950	17253	T-06	S-101	Data check on Disk drive 950.	R.J. Remy
29	01	74	1157	1230	ST	S				S-101	Rerun for T-06 successful.	R.J. Remy
29	01	74	1230	1235	SU					S-101		R.J. Remy
29	01	74	1235	1246	ST	S				S-101		R.J. Remy
29	01	74	1246	1250	SU					S-101		R.J. Remy
29	01	74	1250	1302	ST	S				S-101		R.J. Remy
29	01	74	1302	1307	SU					S-101		R.J. Remy
29	01	74	1307	1518	ST	S				S-101		R.J. Remy
29	01	74	1518	1524	SU					S-101	M-07 Reruns successful	R.J. Remy
29	01	74	1524	1540	ST	S				S-101	Pass 2E repeated 3 time. at observer request.	R.J. Remy

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
29	01	74	06	R.J. Remy	Malin	29-01-74

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED MAINT
UM	UNSCHED MAINT
FM	FACT EXER MARGINS

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
UF	UNDETECTED FAILURE
OE	OPERATOR ERROR

APPROVAL H. Hurst

DATE 31/1/74

UNITED_KINGDOM ACCEPTANCE TEST LOG

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD		
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NUMBER	TYPE -NO	NO.	COMMENTS	OPERATOR
29	01	74	1540	1710	ST	S				S-101		Remy
29	01	74	1710	1713	SU					S-101	Excerised 2 passes of I/O	Remy
29	01	74	1713	1724	ST	S				S-101		Remy
29	01	74	1724	1732	SU					S-101		Remy
29	01	74	1732	1847	ST	DF	3R5109	51987	T-07	S-101		Remy
29	01	74	1847	1918	ST	S				S-101	Reruns for T-07 successful	Remy
29	01	74	1918	1950	ST	DF	2312-A1	17254	T-08	S-101		Remy
29	01	74	1950	2016	ST	S				S-101		Remy
29	01	74	2016	2018	ST	S				S-101		Mal
29	01	74	2018	2038	ST	S				S-101	Excerised 2 passes of I/O	Mal
29	01	74	2043	2050	ST	S				S-139		Mal
29	01	74	2050	2054	ST	S				S-140		Mal
29	01	74	2054	2058	ST	S				S-141		Mal
29	01	74	2058	2110	ST	DF	7289-02	89072	T-09	S-131		Mal
29	01	74	2110	2113	ST	S				S-131	Reruns for T-09 successful	Mal
29	01	74	2120	2130	ST	S				S-132		Mal
29	01	74	2120	2200	ST	S				S-133		Mal
29	01	74	2200	2235	ST	S				S-134		Mal
29	01	74	2260	2320	ST	S				S-135		Mal
29	01	74	2200	2335	ST	S				S-136		Mal
29	01	74	2200	2335	ST	S				S-137		Mal
29	01	74	2200	2310	ST	S				S-138		Mal
29	01	74	2340	0000	ST	DF	7251-09	51986	M-07	S-160		Mal
29	01	74	0000	0020	ST	S				S-160	Successfully Completed 2 passes of SEVA	Mal

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
29	01	74	M01	Malin	Malin	290174

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED MAINT
UM	UNSCHED MAINT
FM	FACT EXER MARGINS

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
UF	UNDETECTED FAILURE
OE	OPERATOR ERROR

APPROVAL H. Hurst

DATE 31/1/74

UNITED_KINGDOM ACCEPTANCE TEST LOG

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD	COMMENTS	OPERATOR
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NUMBER	TYPE -NO	NO.		
30	01	74	0020	2035	IT							Mal
30	01	74	2035	2250	UT	S				U-021	1052 S/N 30141, 42, 38, 45	Mal
30	01	74	2250	2315	UT	DF	1052-07	30141	M-08	U-139		Mal
30	01	74	2315	2325	UT	DF	1052-07	30138	M-09	U-139		Mal
30	01	74	2325	2335	UT	S				U-139	1052 S/N's 30142, 45	Mal
30	01	74	2335	2345	UT	S				U-139	1052 S/N's 30141	Mal
30	01	74	2345	0005	UT	DF	1052-07	30069	M-10	U-021	1052 S/N's 30125, 30139, 30069	Mal
31	01	74	0005	0025	UT	S	1052			U-139	1052 S/N's 30139, 30125	Mal
31	01	74	0025	0030	UT	S				U-139	1052 S/N's 30139, 30125	Mal
31	01	74	0030	0035	UT	S				U-021	1052 S/N's 30068, 30137	Mal
31	01	74	0035	0045	UT	S				U-139	1052 S/N's 30068, 30137	Mal
31	01	74	0045	0050	UT	S				U-139	1052 S/N 30130	Mal
31	01	74	0050	0100	UT	S				U-021	1052 S/N's 30144 30146 30143 30140	Mal
31	01	74	0100	0120	UT	S				U-139	1052 S/N's 30144 30146 30143 30140	Mal
31	01	74	0120	0300	ID							Mal
31	01	74	0300	0307	UT	S				U-021	1052 S/N 30069 Reevn Successful	Mal
31	01	74	0307	0320	UT	S				U-139	1052 S/N's 30069, 30138 Reevn Successful	Mal
31	01	74	0320								Test Complete	Mal

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
30	01	74	08	Malin	Malin	30-01-74
30	01	74	09	Malin	Malin	31-01-74
30	01	74	10	Malin	Malin	31-01-74

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED MAINT
UM	UNSCHED MAINT
FM	FACT EXER MARGINS

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
UF	UNDETECTED FAILURE
OE	OPERATOR ERROR

APPROVAL G. Hurst

DATE 31/1/74

IBM 9020D/E SYSTEM

UNIT FUNCTIONAL TEST DATA RECORD

TEST NO.	ELEMENT/UNIT
1	CE#1
2	CE#2
3	CE#3
4	CE#4

TEST DATA RECORD NO. U-001

LOCATION UNITED KINGDOM

DATE 28-01-74

TEST SPEC. REF. 5.1.1

TEST CONFIGURATION

	CE				IOCE			SE					SE/DE					DAU		PAM			SCU			TCU			SCCC	RCU	
	1	2	3	4	1	2	3	1	2	3	4	5	6/1	7/2	8/3	9/4	10/5	1	2	1	2	3	1	2	3	1	2	3	1	1	2
1	X																														
2		X																													
3			X																												
4																															

PROGRAM AND SECTION ID		TEST RESULT	CERTIFICATION
Switch Demonstration	CE#1	Success	
Switch Demonstration	CE#2	Success	
Switch Demonstration	CE#3	Success	
Switch Demonstration	CE#4	N/A	

TEST NO.	MALFUNCTION NO.	RERUN REQ'D	TEST NO.	MALFUNCTION NO.	RERUN REQ'D.
1			3		
2			4		

COMMENTS

APPROVAL G. Hurst

DATE 28/1/74

Contract FA64WA-5223

IBM 9020D/E DATA PROCESSING SYSTEM

FOR

UNITED KINGDOM 9020D TRIPLEX SYSTEM

FACTORY ACCEPTANCE TEST REPORT

FOR ITEMS TESTED AS PER AMENDMENT #88

October 2, 1973 thru October 9, 1973

INTERNATIONAL BUSINESS MACHINES CORPORATION

CONTENTS

Introduction

The Factory Acceptance Test for the United Kingdom Triplex 9020D System was conducted from October 2, 1973 through October 9, 1973. The test was run in accordance with the concurred upon Test Check List entitled, "IBM 9020D/E System Acceptance Test Check List" and "IBM 9020D/E Data Processing System Factory and Field Acceptance Test Specification - Revision 7."

Because of a unique problem with Printer/Keyboard S/N 30136 (Position #3), it was removed from the System configuration and returned to the Raleigh Plant. A replacement Printer/Keyboard will be tested in the #3 position and the results shown in a separate test report.

All other tests that were scheduled to be performed as a part of the Acceptance Test were completed successfully.

The errors encountered during this test are placed into the following categories:

1. Transient Failure - an error which does not recur upon repeated runs of the same routine.

2. Malfunction - an error which recurs upon repeated runs of the same routine or, in the case of the SEVA exercise, the same error occurring on successive passes of the program.

During the Factory Acceptance Test, a total of seventeen (17) transients and fourteen (14) malfunctions occurred.

NOTE 1. Two REAs (06-66548 and 06-66549) were installed on IOCE3 resulting from several related transients identified in the Acceptance Test Summary. The REAs corrected the identified problems and reruns of SEVA were performed to the satisfaction of IBM and the FAA Kingston plant representative.

Acceptance Test Summary

The Factory Acceptance Test consisted of Element Manual Tests, Element, Subsystem and System Functional Tests, and the Factory Exercise (SEVA).

During the Element Manual Tests three malfunctions occurred. These are described below.

M-01 Test U-003 SE3 S/N 51988 encountered Key Checks, Dropping Bit 21 in Storage Protect. Corrective action was the replacement of card P/N 5804631 at location 03CA4G2.

Reruns were completed successfully on SE 3.

M-02 Test U-018 SCU 1 S/N 19271 encountered an E-9 error during in-line Microdiagnostics. The B-Y Register was failing to increment. Corrective action was the replacement of Card P/N 5800015 at Location AA3B5. Reruns were completed successfully on SCU 1.

M-03 Test U-019 Tape Drive 2-1 S/N 36001 would not sense Load Point. Corrective action required increasing the voltage on the Load Point Sense Lamp. Reruns were completed successfully on TD 2-1.

During the Element/Subsystem Functional Tests, one Transient and three Malfunctions occurred. These are described below.

M-04 Test U-127 SE 4 S/N 51989 encountered Storage Checks while acting as the Resident SE for Monitor. Corrective action required replacing the LO/ODD BSM. Reruns were completed successfully with SE 4.

M-05 Test U-127 SE 6 S/N 51991 failed to Log Out Data Error while executing Diagnostic D22A4. Corrective action required replacing an Inverter Card at Location 03C2H5. Reruns were completed successfully.

T-01 Test U-135 PAM 3 S/N 89074 encountered a Data Byte Check at Address 31.

M-06 Test U-139 Printer/Keyboard 3 S/N 30136 printed erroneous characters during the Diagnostic tests. Corrective action required making numerous adjustments to the Printer/Keyboard. Reruns were completed successfully.

During the System Functional tests, three malfunctions occurred. These are described below.

M-07 Test S-002 SCU 1 S/N 19271 Diagnostic D6A2 developed unknown interrupts. Bit 3/Byte 4 of sense information was intermittently not setting. Corrective action required replacing the card at Location A A1J2. Reruns were completed successfully on SCU 1.

M-08 Test S-134 IOCE 2 S/N 11085 does not indicate on Battery or go On Battery. Corrective action required reseating the Battery Recharge Relay Card. Reruns were completed successfully.

M-09 Test S-134 A faulty switch was found on the Main Line circuit breaker on SE 5 S/N 51990. Corrective action required replacing the Circuit Breaker on SE 5. Reruns were completed successfully.

During the Factory SEVA Exercise, sixteen transients and five malfunctions occurred. These problems are described below in the order that they occurred.

T-02 PAM 2 indicated "GPO Busy"

M-10 Tape Drive 2-1 S/N 36001 failed a Read Backward operation. Corrective action required replacing a card in Location 01A1D10. Reruns were successful.

T-03 SE 3 S/N 51988 SDBI Check CE 3 to SE 3.

M-11 SE 1 S/N 51986 SEVA pass A9 failed IOCE processor program, with Storage Bus In Errors. (IOCE 3 to SE 1). Corrective Action: Straighten Pin in Termination Socket at Location 02S-B3A1 (Bit 5 was unterminated) Reruns were successful.

T-04[1] IOCE 3 S/N 11086 I/O Processor Program E3B5 failed indicating MACH data area not clear to zeroes.

T-05 TCU 2 S/N 12228 caused a Program Interrupt - F20 Hang.

M-12 CE 3 S/N 50052 encountered SDBI and Local Store Parity Checks. Corrective action required reseating a card at Location AA4E5. Reruns were successful.

T-06[1] IOCE 3 S/N 11086 encountered a Program Interrupt - MACH Data area not cleared to zeroes.

T-07[1] IOCE 3 S/N 11086 encountered a Program Interrupt - MACH Data area not clear to zeroes. (Section E3B5).

T-08[1] IOCE 3 S/N 11086 encountered a Section E3B5 failure - MACH Data area not cleared to zeroes.

T-09 CE 1 S/N 50050 encountered a Compare Error during a Convert Weather Line instruction.

T-10[1] IOCE 3 S/N 11086 encountered a Program Interrupt - Section E3B5.

T-11 SE 7 S/N 51992 encountered a Storage Data Bus Out Check (CE2/SE7)

M-13 Tape Drive 3-1 S/N 36000 encountered a Compare Error. Corrective action required replacing an FHA card at Location 01AD8. Reruns were successful.

M-14 SE 7 S/N 51992 encountered a Storage Data Bus Out Check. Corrective action required replacing the array for the Lo: Even BSM. Reruns were successful.

T-12 CE 2 S/N 50051 encountered a Machine Check Interrupt at SEVA Pass B7.

T-13[1] IOCE 3 S/N 11086 encountered a Section E3B5 error. MACH area not cleared to zeroes.

T-14[1] IOCE 3, S/N 11086 encountered a Section E3B5 Program Interrupt.

T-15[1] IOCE 3 S/N 11086 encountered a Section E3B5 MACH Area not cleared to zeroes error.

T-16 CE2 S/N 50051 encountered an Invalid Logout at Pass Count 34 (Parallel Adder Full Sum Check 64-67 with other errors).

T-17 CE3 S/N 50052 encountered a Parallel Adder Full Sum Check 32-39/40-47.

Quality Control Comments

It was decided by FAA and IBM that the Certified Quality Analysis Factory Inspection performed prior to shipment would fulfill the Acceptance Test Quality Control requirements as outlined in the IBM 9020D/E System Acceptance Test Check List, Section 2.1

EC/REA Status

The following EC and REAs were installed on the System prior to shipment to the United Kingdom.

EC 739453 - installed on all 7289-02 PAMs (Teletype End of Message modification)

REA 06-66548 - installed on all 7231-02 IOCEs to prevent possibility of intermittent improper reset of "Proceed on Interrupt" latch.

REA 06-66549 - installed on all 7231-02 IOCEs to prevent possibility of intermittent improper Condition Code setting.

IBM EQUIPMENT IDENTIFICATION LIST

Location United Kingdom 9020D Triplex (Factory) Date OCT 9 1973

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Compute Element	7201-02	1	50050
		2	50051
		3	50052
Input/Output Control Element	7231-02	1	11084
		2	11085
		3	11086
Storage Element	7251-09	1	51986
		2	51987
		3	51988
		4	51989
		5	51990
		6	51991
		7	51992
System Console	7265-02	1	65025
Tape Control Unit	2803-01	1	12227
		2	12228
		3	12229
Tape Drives	2401-03	10	36005
		11	36006
		~~20~~ 21	36001 ✓
		~~21~~ 20	36004
		~~30~~ 31	36000 ✓
		~~31~~ 30	36012
Peripheral Adapter Modules	7289-02	1	89072
Adapters:			
20 CD			
7 TTY			
6 FDEP			
3 GPI			
26 GPO			
7 1052			
5 INTI			
5 INTO			

1 2 3 4 5 6

CONTRACT #FA64WA-5223

AMENDMENT	ITEM	AMENDMENT	ITEM
147	213, 213.1		

Approval [signature] Date OCT 9 1973

IBM EQUIPMENT IDENTIFICATION LIST

Location United Kingdom 9020D Triplex (Factory) Date OCT 9 1973

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Peripheral Adapter Modules Adapters: 20 CD 6 TTY 5 FDEP 2 GPI 27 GPO 7 1052 5 INTI (B) 5 INTO (B)	7289-02	2	89073
Peripheral Adapter Modules Adapters: 20 CD 7 TTY 5 FDEP 3 GPI 27 GPO 7 1052 4 INTI (B) 4 INTO (B)	7289-02	3	89074
Storage Control Unit	2314-A1	1 2 3	19271 19272 19273
Disk Storage Unit	2312-A1	1-1 2-1 3-1	17253 17254 17255
Reader/Punch	2540-01		23054
Printer	1403-02	1 2	21332 21333
Integrated Control Unit	2821-01 2821-02	1 2	18869 24095

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	213, 213.1		

Approval Kenneth A Wood Date OCT 9 1973

IBM EQUIPMENT IDENTIFICATION LIST

Location United Kingdom 9020D Triplex (FActory) Date OCT 9 1973

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Printer/Keyboard	1052-07	1	30128
		2	30135
		* ~~3~~	~~30136~~

* Removed from System due to unsatisfactory performance. Position #3 will be replaced with Another 1052-07.

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	213, 213.1		

Approval _____ Date OCT 9 1973

IBM 9020D/E DATA PROCESSING SYSTEM

SPECIAL FEATURES AND RPQ's INSTALLED ON THE UNITED KINGDOM 9020D TRIPLEX

The following features and/or RPQ's are installed on each of the units listed below:

Compute Element		7201-02
RPQ FA0416	CCR/DAR Modification for 2314A1 Connection to 9020D	
RPQ F30767	Wrap Bus Modification	
RPQ FB0140	Convert and Sort Symbols/Convert Weather Lines	

Input/Output Control Element		7231-02
RPQ F16374	Address Translation	
RPQ F27112	Expanded Addressing	
RPQ F21241	Processor Mode	
RPQ F20974	Storage Element (64K) Interface Mod.	
~~RPQ F27111~~	~~Power Mod.~~	
~~RPQ F16375~~	~~SE Bus Mod.~~	

System Console		7265-02
RPQ F16378	Single Enter-Cancel Keys	
RPQ F16379	Patch Panel and Adapter Unit	
RPQ F20421	SMMC Interface Mod.	
RPQ F16373	Fourth CE Modification	
RPQ FA0417	Configuration and State Display Modification for 2314A1 Connection to 9020D	

Peripheral Adapter Module		7289-02
RPQ F26474	Power Mod.	
RPQ F19673	Two Level Shared Priority	
RPQ FA1771	Power Mod. 1052	

SPECIAL FEATURES AND RPQ's INSTALLED ON THE UNITED KINGDOM 9020D TRIPLEX (cont'd)

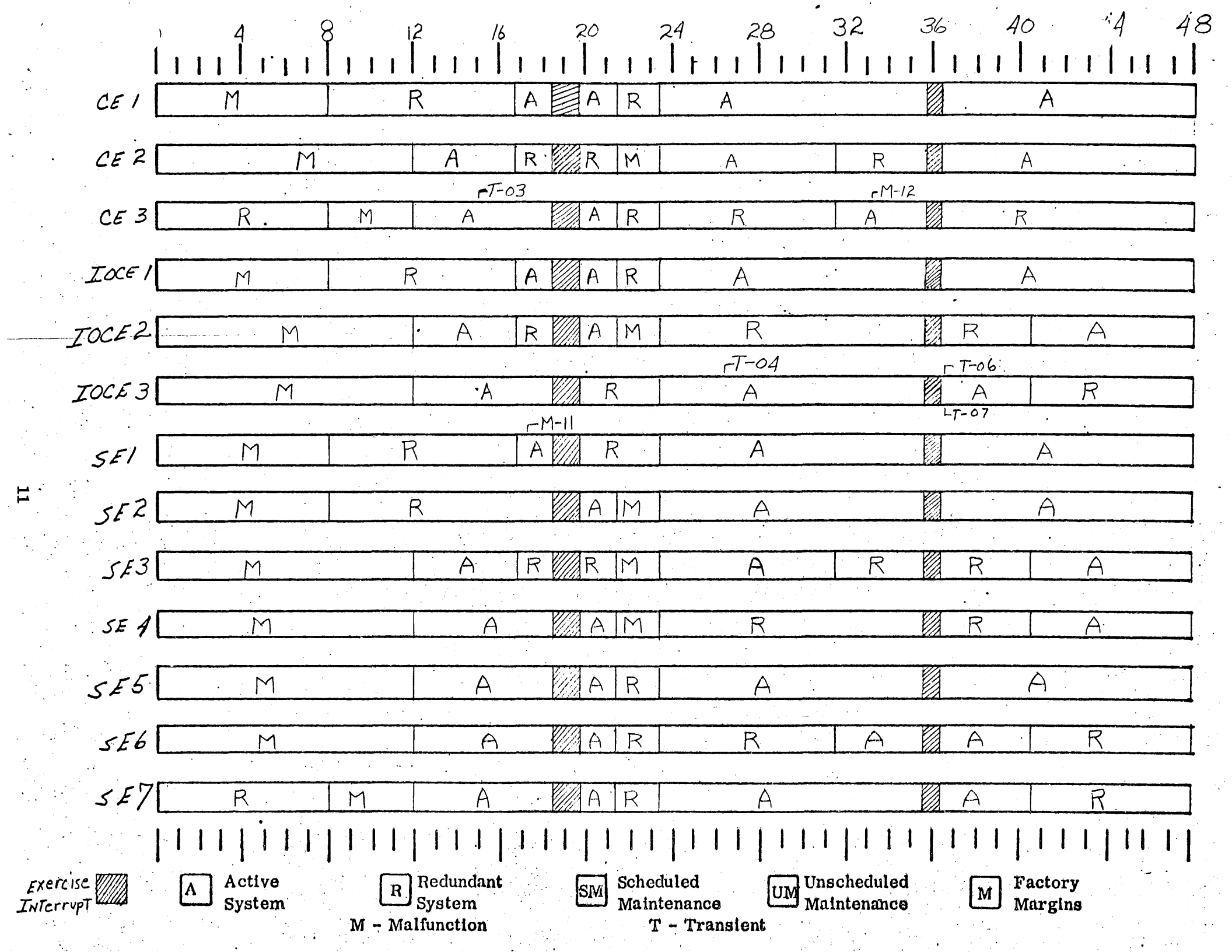
Tape Unit Control		2803-A01
RPQ F12928	Switching to IOCE's	
Direct Access Storage Facility		2314-A01
RPQ FA0418	Configuration Control Modification to 2314A1 for connection to 9020A and 9020D	
Feature 8170	Two Channel Switch	
Integrated Control Unit		2821-01
Feature 8637	Universal Character Set Adapter	
Feature 9241	1403-02 Attachment 01 and 02	
Integrated Control Unit		2821-02
Feature 8637	Universal Character Set Adapter	
Feature 8100	Two Channel Switch	
Feature 9241	1403-02 Attachment 01 and 02	
Printer/Keyboard		1052-07
Feature 9572	Extended BCD Code Print Element	
Feature 9104	10 Characters/Inch Horizontal Spacing	
Feature 9509	Pin Feed Platen	
Feature 9162	Line Spacing 6 LPI, 13-1/8" Hole-to-Hole Width	
RPQ F13197	Cable and Power on Indicator	
RPQ F14713	Single Enter and Cancel Keys	
Feature 9903	208v 60 Hz	
Printer		1403-02
Feature 8641	Universal Character Set	

SPECIAL FEATURES AND RPQ's INSTALLED ON THE UNITED KINGDOM 9020D TRIPLEX (cont'd)

Feature 4740	Interchangeable Chain Cartridge Adapter
Feature 9631	PN-2 Print Arrangement

Approval: [signature]

Date: OCT 9 1973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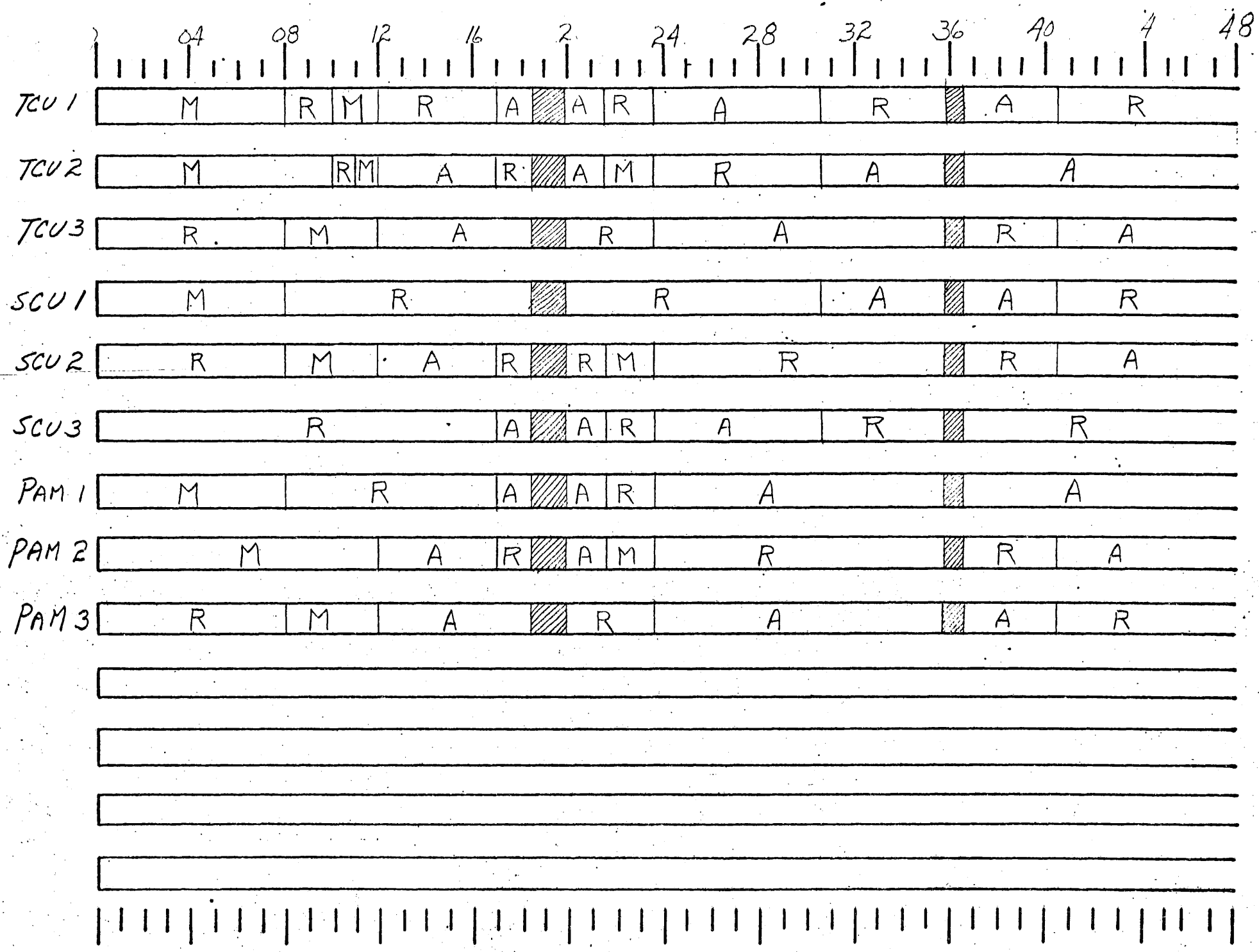
8
12
16
20
24
28
32
36
40
4
48
CE 1
CE 2
CE 3
IOCE 1
IOCE 2
IOCE 3
SE1
SE2
SE3
SE 4
SE5
SE6
SE7
T-03
M-12
T-04
T-06
T-07
M-11
Exercise Interrupt
A Active System
R Redundant System
SM Scheduled Maintenance
UM Unscheduled Maintenance
M Factory Margins
M - Malfunction
T - Transient


04
08
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16
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28
32
36
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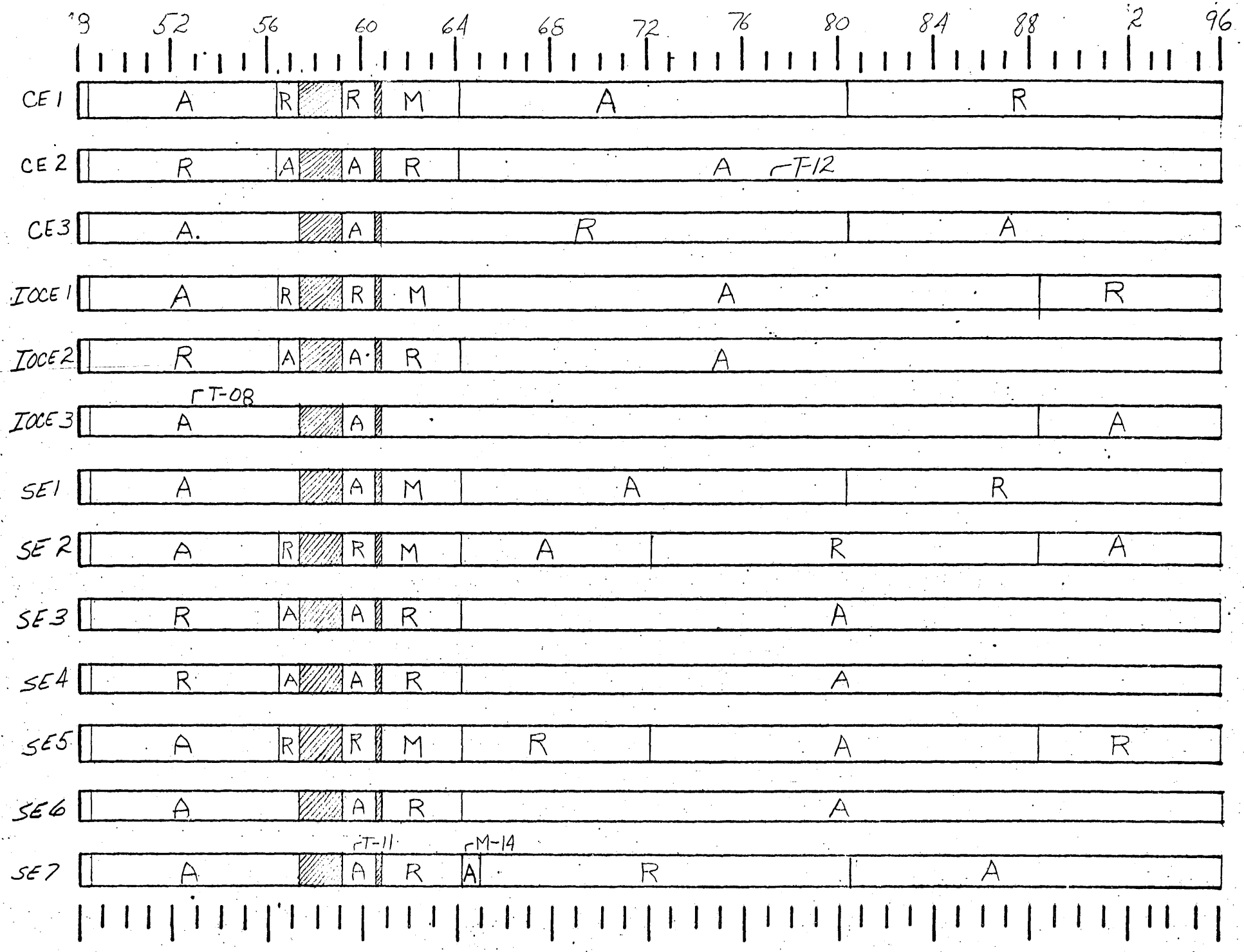
TCU 1
TCU 2
TCU 3
SCU 1
SCU 2
SCU 3
PAM 1
PAM 2
PAM 3
EXERCISE INTERRUPT
A Active System
R Redundant System
SM Scheduled Maintenance
UM Unscheduled Maintenance
M Factory Margins
M - Malfunction
T - Transient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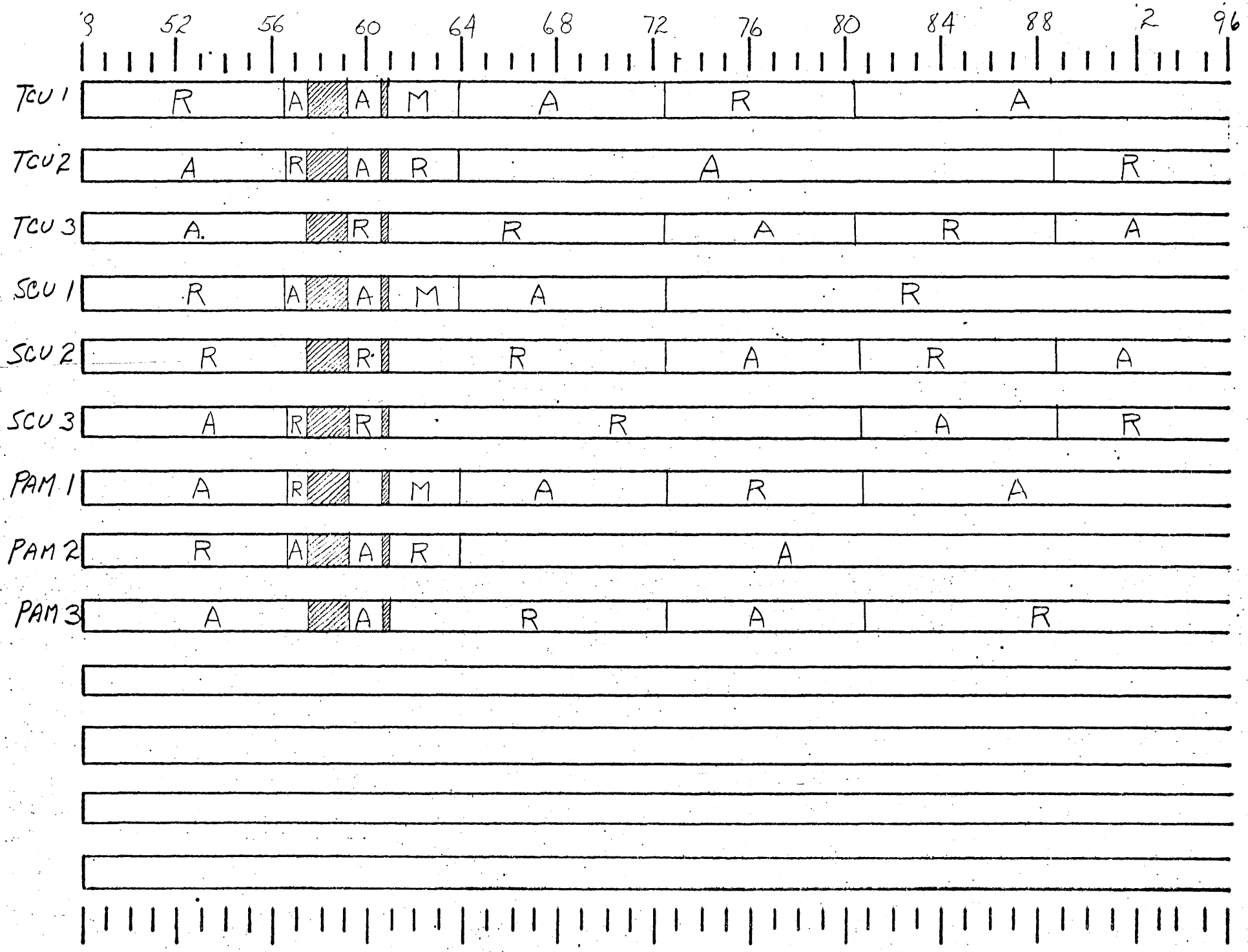
CE 1
CE 2
CE 3
IOCE 1
IOCE 2
IOCE 3
SE 1
SE 2
SE 3
SE 4
SE 5
SE 6
SE 7
T-12
T-08
T-11
M-14
EXERCISE INTERRUPT
A Active System
R Redundant System
SM Scheduled Maintenance
UM Unscheduled Maintenance
M Factory Margins
M - Malfunction
T - Transient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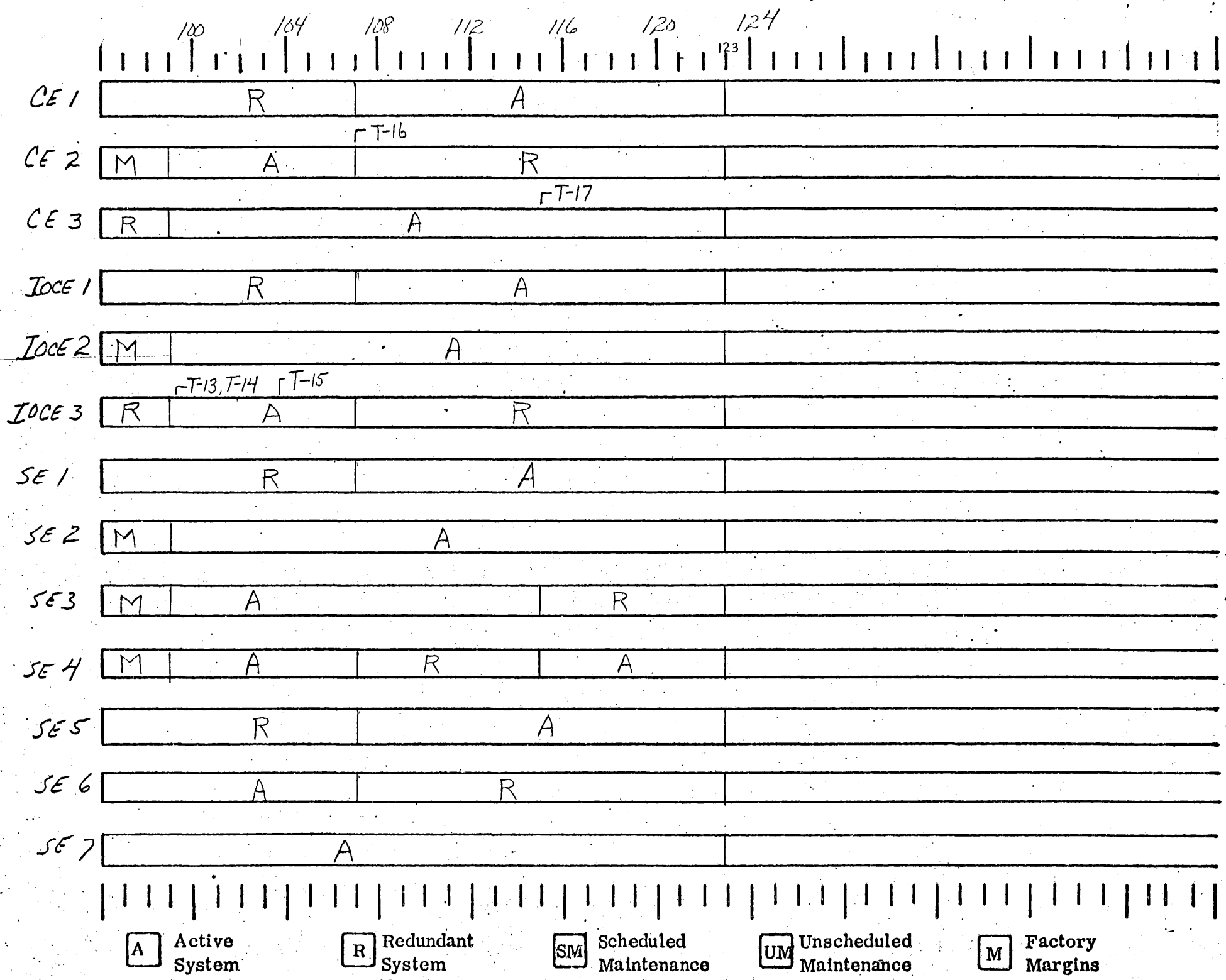
TCU 1
TCU 2
TCU 3
SCU 1
SCU 2
SCU 3
PAM 1
PAM 2
PAM 3
EXERCISE INTERRUPT
A Active System
R Redundant System
SM Scheduled Maintenance
UM Unscheduled Maintenance
M Factory Margins
M - Malfunction
T - Transient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R
A
T-16
CE 2
M
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R
T-17
CE 3
R
A
IOCE 1
R
A
IOCE 2
M
A
T-13, T-14
T-15
IOCE 3
R
A
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SE 1
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SE 2
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SE 3
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SE 4
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SE 5
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SE 6
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SE 7
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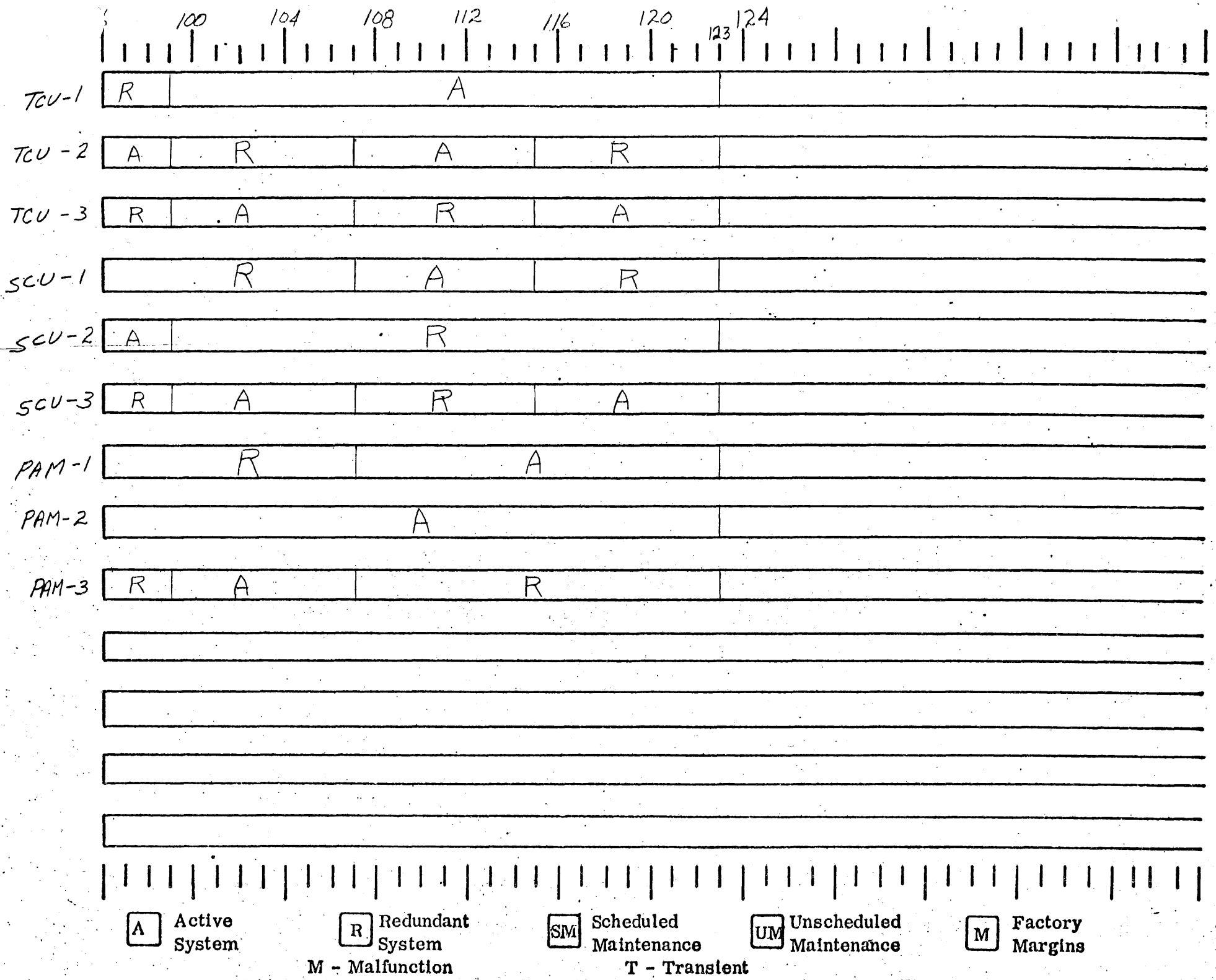
A Active System
R Redundant System
SM Scheduled Maintenance
UM Unscheduled Maintenance
M Factory Margins
M - Malfunction
T - Transient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TCU-2
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TCU-3
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SCU-3
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PAM-1
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PAM-2
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PAM-3
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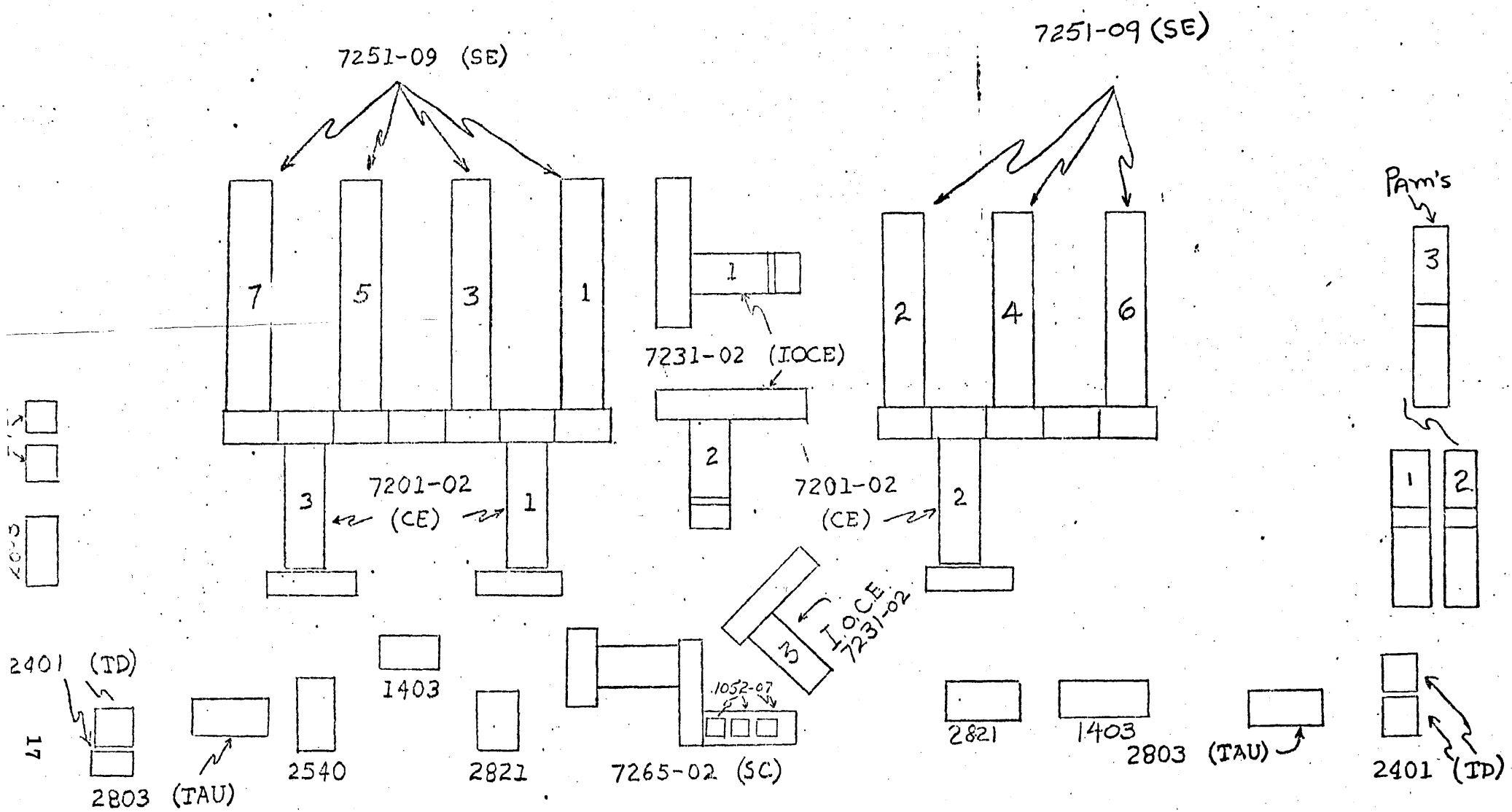
A Active System
R Redundant System
SM Scheduled Maintenance
UM Unscheduled Maintenance
M Factory Margins
M - Malfunction
T - Transient



UNITED KINGDOM TRIPLEX 9020 D

FACTORY FLOOR DIAGRAM

OCTOBER 2, 1973

U.K. FACTORY ACCEPTANCE TEST LOG #1

DATE			TIME		USAGE CODE	OPER CODE	FAILURE DATA			TEST RECORD NO.	COMMENTS	OPERATOR
DA	MO	YR	START	STOP			UNIT OR ELEMENT	SERIAL NUMBER	TYPE -NO			
02	10	73	0845	1130	UT	S				U-001		[signature]
02	10	73	0845	1025	UT	S				U-002		[signature]
02	10	73	0845	1200	UT	S				U-003, U-004, U-006, U-007		[signature]
02	10	73	0845	0915	UT	S				U-017		[signature]
02	10	73	0916	1300	UT	S				U-018		[signature]
02	10	73	0845	0930		DF	7250-04	51988	M-01		SE#3 KEY CHECK TEST U-003	[signature]
02	10	73	0930	1000	UM						WORKING ON SE#3	[signature]
02	10	73	0845	0915		DF	2314 A1	19271	M-02		SCU#1 E-9 ERROR	[signature]
02	10	73	0915	1300	UM						WORKING ON SCU #1	[signature]
02	10	73	1025	1040	UT	S				U-013		[signature]
02	10	73	1041	1125	UT	S				U-014		[signature]
02	10	73	1100	1210	UT	S				U-019		[signature]
02	10	73	1145	1200	UT	S				U-020		[signature]
02	10	73	1146	1205	UT	S				U-021		[signature]
02	10	73	1100	1120		DF	2401-03	36001	M-03	U-019	TD 2-1 DOES NOT SENSE LOAD POINT	[signature]
02	10	73	1215	1525	ST	S					PAM TWO LEVEL SHARED PRIORITY	[signature]
			—	—							DEMONSTRATION AMEND. #88 ATTACHMENT #1	[signature]
02	10	73	1300	1410	UT	S				U-101	CE1 DIAGS.	[signature]
02	10	73	1411	1440	UT	S				U-102	CE2 DIAGS.	[signature]
02	10	73	1441	1500	UT	S				U-103	CE3 DIAGS.	[signature]
02	10	73	1501	1525	UT	S				U-105	ATR TEST	[signature]
02	10	73	1530	1536	UT	S				U-106		[signature]
02	10	73	1537	1545	UT	S				U-107		[signature]
02	10	73	1546	1555	UT	S				U-108		[signature]
02	10	73	1245	1300	UT	S				U-018	RERUN DASF 1 (M-02)	[signature]

FAILURE TYPE: T-TRANSIENT M-MALFUNCTION

MALFUNCTION RECORD

DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
02	10	73	01	[signature]	[signature]	11/2/73
02	10	73	02	[signature]	[signature]	11/2/73
02	10	73	03	[signature]	[signature]	11/2/73

USAGE CODES

UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED MAINT
UM	UNSCHED MAINT
FM	FACT EXER MARGINS

OPERATION CODES

S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
UF	UNDETECTED FAILURE
OE	OPERATOR ERROR

APPROVAL [signature]

DATE 11/9/73

U K FACTORY ACCEPTANCE TEST LOG #2

DATE DA	MO	YR	TIME START	STOP	USAGE CODE	OPER CODE	FAILURE DATA UNIT OR ELEMENT	SERIAL NUMBER	TYPE -NO	TEST RECORD NO.	COMMENTS	OPERATOR
02	10	73	1600	1705	UT	S				U-126		
02	10	73	1600	1730	UT	S				U-127		
02	10	73	1600	1640	UT	S				U-128		
02	10	73	1600	1615		DF	7251-09	51989	M-04		SE#4 (U-127) STORAGE CHECK	
02	10	73	1615	1745	UM						WORK ON SE 4 (M-04)	
02	10	73	1600	1700		DF	7251-09	51991	M-05		SE#6 DATA ERROR LOG-OUT FAILURE	
02	10	73	1700	1740	UM						WORK ON SE6 (M-05)	
02	10	73	1710	1720	UT	S				U-109	DASF 1	
02	10	73	1715	1740	UT	S				U-127	RERUN SUCCESFUL ON SE6 (M-05)	
02	10	73	1720	1740	UT	S				U-110	DASF 2	
02	10	73	1740	1755	UT	S				U-111	DASF 3	
02	10	73	1800	1825	UT	S				U-112	TCU 1	
02	10	73	1800	1845	UT	S				U-127	RERUN SE#4 (M-04)	
02	10	73	1826	1840	UT	S				U-114	TCU 2	
02	10	73	1840	1902	UT	S				U-116	TCU 3	
02	10	73	1900	1910	UT	S				U-118	DASF TCS	
02	10	73	1910	1920	UT	S				U-119	TCU DUAL INTF	
02	10	73	1921	1930	UT	S				U-123	IOCE 1	
02	10	73	1931	1945	UT	S				U-124	IOCE 2	
02	10	73	1946	2000	UT	S				U-125	IOCE 3	
02	10	73	2000	2053	UT	S				U-133	CE1, CE2, CE3	
02	10	73	2015	2200	UT	DF	7284-02	89074	T-01	U-135	PAM DIAGS, PAM 3 AIDCESS 31 DATA BYTECK	
02	10	73	2200	2208	UT	S				U-137		F.O. Stanford
02	10	73	2205	2300	UT	S				U-135	RERUNS SUCCESSFUL TEST Complete	F.O. Stanford

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD

DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
02	10	73	04			10/2/73
02	10	73	05			10/2/73

USAGE CODES		OPERATION CODES	
UT	UNIT TEST	S	SUCCESSFUL
ST	SYSTEM TEST	DF	DETECTED FAILURE
FE	FACTORY EXERCISE	PF	PROGRAM FAILURE
ID	IDLE IN ORDER	MF	MATERIAL FAILURE
SU	SETUP TIME	XF	EXTERNAL FAILURE
SM	SCHED MAINT	UF	UNDETECTED FAILURE
UM	UNSCHED MAINT	OE	OPERATOR ERROR
FM	FACT EXER MARGINS		

APPROVAL

DATE 10/4/73

UK FACTORY ACCEPTANCE TEST LOG #3

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD	COMMENTS	OPERATOR
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	NO.		
02	10	73	2205	2215	UT	S				U-138		
02	10	73	2215	0045	UT	S				U-139		
02	10	73	2215	2240		DF	1052-07	30136	11-06		PRINTING WRONG CHARACTERS	
02	10	73	2240	03/1800	UM						WORK ON 1052 #3 (M-06)	
02	10	73	2220	2250	UT	S				U-142	10CE 1	
02	10	73	2220	2235	UT	S				U-143	10CE 2	
02	10	73	2235	0045	UT	S				U-145	10CE 1, 2, 3	
03	10	73	0045	0107	UT	S				U-136		
03	10	73	0110	0147	UT	S				U-146		
03	10	73	0111	0125	UT	S				U-144		
03	10	73	0125	0200	UT	S				U-147		
03	10	73	0200	0230	UT	S				U-148		
03	10	73	0231	0300	ST	S				S-120		
03	10	73	0300	0330	ST	S				S-123		
03	10	73	0331	0410	ST	S				S-001		
03	10	73	0410	0510	ST	S				S-002		
03	10	73	0410	0425		DF	2314 A1	19271	11-07		INCORRECT SENSE INFO FROM SCU #1	
03	10	73	0425	1445	UM						WORK ON SCU #1 (M-07)	
03	10	73	0511	0630	ID						MAINT SUBSYSTEMS BEING USED FOR	
											1052 #3 AND SCU #1 PROBLEMS.	
03	10	73	0640	1530	ST	S				S-135	COMPLETED AS EQUIP. BECAME AVAILABLE	
03	10	73	0645	1530	ST	S				S-136	COMPLETED AS EQUIP. BECAME AVAILABLE	
03	10	73	0645	1530	ST	S				S-137	COMPLETED AS EQUIP. BECAME AVAILABLE	
03	10	73	0645	1530	ST	S				S-138	COMPLETED AS EQUIP. BECAME AVAILABLE	

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD

DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
02	10	73	06			10/3/73
03	10	73	07			10/3/73

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED. MAINT.
UM	UNSCHED. MAINT.
FM	FACT. EXER. MARG.

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
OE	OPERATOR ERROR

APPROVAL

DATE 10/9/73

UK FACTORY ACCEPTANCE TEST LOG #4

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD	COMMENTS	OPERATOR
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	NO.		
03	10	73	1430	1445	ST	S				S-002	RERUN ON SCU#1 (M-07)	
03	10	73	1446	1515	ID							
03	10	73	1516	1530	ST	S				S-004		
03	10	73	1535	1550	ST	S				S-003		
03	10	73	1555	1625	ST	S				S-006		
03	10	73	1630	1745	ST	S				S-007		
03	10	73	1750	1800	ST	S				S-124		
03	10	73	1801	1820	ST	S				S-131		
03	10	73	1821	1900	ST	S				S-132		
03	10	73	1821	1900	ST	S				S-133		
03	10	73	1900	1915	UT	S				U-139	RERUN ON 1052#3 SUCCESSFUL (M-06)	
03	10	73	1916	2110	ST	S				S-134		
03	10	73	1916	1930		DF	7231-02	11085	M-08		IOCE#2 DOES NOT INDICATE OR GO ON BATTERY	
03	10	73	1930	1935	UM						RESEATED BATTERY RECHARGE RELAY (CB4)	
03	10	73	1935	1940	ST	S				S-134	RERUN OK ON IOCE#2 (M-08)	
03	10	73	1916	1940		DF	7251-09	57890	M-09		SE#5 BAD MAIN LINE CB (CB1)	
03	10	73	1940	0400	UM						WORK ON BAD CB - NEEDS NEW CB. CRACKED AND REPLACE	
			—	—								
03	10	73	2115	2229	ID						PRE SEVA CLEANUP	
03	10	73	2230	2345	FM	S				S-150	SEVA, 2 PASSES I/O, -BIAS	
03	10	73	2230	0345		DF	7259-02	87073	F-02		PAM#2 INDICATES EDO BUSY	
04	10	73	0345	0630	FM	S				S-150	APPLIED +BIAS AT 0430 (RERUN TO OK)	
04	10	73	0630	0640	SU						RECONFIGURE SEVA	

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FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
03	10	73	08			10/3/73
03	10	73	09			10/4/73

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED. MAINT.
UM	UNSCHED. MAINT.
FM	FACT. EXER. MARG.

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
OE	OPERATOR ERROR

APPROVAL

DATE 10/9/73

UK FACTORY ACCEPTANCE TEST LOG #5

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD	COMMENTS	OPERATOR
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	NO.		
04	10	73	0640	0840	FM	S				S-150	SEVA RECONFIGURED, +BIAS,	
04	10	73	0640	0840		DF	2401-03	36001	M-10		TD 2-1 FAILS READ BACKWARD	
04	10	73	0840	0900	UM						REMOVED TCU #2 TO WORK ON	
											TD 2-1 - ADDED TCU #1 INTO SYSTEM	
04	10	73	0840	1015	FM	S				S-150	RESUME SEVA AT +BIAS WITH	
											TCU 1 AND TCU 3	
04	10	73	1015	1515	FM	S				S-150	RECONFIGURED TCU 2 (TD) 2-1	
											BACK INTO SYSTEM, REMOVED +	
											BIAS FROM SYSTEM.	
04	10	73	1515	1524	SU						RECONFIGURE SEVA	
04	10	73	1524	1700	FE	S				S-150	RESUME SEVA, 2 PASSES I/O	
04	10	73	1015	1420		DF	7251-09	51988	T-03		CE3/SE3 SDBI CHECK /REruns OK	
04	10	73	1524	1700		DF	7251-09	51956	M-11		SDBI CHKS. IOE 3 TO SE1	
04	10	73	1700	1755		DF	7251-09	51986	M-11	S-150	5TH RERUN FAILS (M-11) PASS A9	
04	10	73	1755	1930	FE	S				S-150	RECONFIGURE SEVA WITH REMAINT	
											ELEMENT TO ENABLE MAINT.	
											ON IOE 3/SE1	
04	10	73	1930	2230	FE	S				S-150	CONFIGURED FOR 3 HR MAINT.	
											MODE	
04	10	73	2230	2239	SU						RECONFIGURE SEVA	
04	10	73	2240	0630	FE	S				S-150	RESUME SEVA IN A-1 MODE	
04	10	73	2240	—							REMIR CONNECTED ON SE1 (M-11)	
04	10	73	2223	0230		DF	723102	11086	T-04		IOP PGM. E3B5 (MARK WAS NOT	
			—	—							CLEAR TO ZEROES)	

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
04	10	73	10			10/4/73
04	10	73	11			10/4/73

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED. MAINT.
UM	UNSCHED. MAINT.
FM	FACT. EXER. MARG.

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
OE	OPERATOR ERROR

APPROVAL

DATE 10/9/73

UK FACTORY ACCEPTANCE TEST LOG #6

DATE DA	MO	YR	TIME START	STOP	USAGE CODE	OPER CODE	FAILURE DATA: UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	TEST RECORD NO.	COMMENTS	OPERATOR
05	10	73	0630	0640	SU						RECONFIGURE SEVA	
05	10	73	0640	0950	FE	S				S-150	RESUME SEVA 2 PASSES I/O	
05	10	73	0640	0651		MF					RENT CARD IN READER - CARDS JAM	
05	10	73	0640	0750		DF	2803 A1	12228	T-05		PROGRAM INTERRUPT - F20 HANG IOU2	
05	10	73	~~0640~~ 0650	0830	FE	S				S-150	5 RERUNS OF PASS 0A OK (T-05)	
05	10	73	0640	0950		DF	7201-02	50052	M-12		SDI CHK, L.S. PTY CHK. CE 3	
05	10	73	0950	1025		DF	7201-02	50052	M-12		RERUNS FAILED WITH CE 3 (M-12)	
05	10	73	1025	~~1338~~	SU						RECONFIGURE WITH REDUNDANT ELEMENT	
05	10	73	1030	1455	FE	S				S-150	RESUME SEVA	
05	10	73	1031	0255	UM						WORK ON CE 3 (M-12)	
05	10	73	1030	1325		DF	7231-02	11086	T-06		PGM. INTERRUPT 2C-3A - MACH AREA NOT CLEARED TO ZEROES 5 RERUNS OK.	
05	10	73	1030	1335		DF	7231-02	11086	T-07		E3B5 PGM INTERRUPT 2F-3C MACH AREA NOT CLEARED TO ZEROES 5 RERUNS OK	
05	10	73	~~1455~~ 1455	~~0255~~ 1510	SU						RECONFIGURE SEVA	
05	10	73	~~1510~~ 1510	2755	FE	S				S-150	RESUME SEVA	
05	10	73	~~05~~ 1510	1620		MF					TAPE SHATTERED ON DRIVE 3-1	
05	10	73	2255	2305	SU							
05	10	73	2305	0055	FE	S				S-150	5 RERUNS OF PASS 16 FOR M-12 ALSO 2 PASSES OF I/O	
05	10	73	2305	2315		MF					PAPER JAM IN 1403 #2	
05	10	73	2305	0745		DF	7231-02	11086	T-08		E3B5 ALIGN DATA AREA NOT CLEARED TO 0'S	
05	10	73	2305	0330		DF	7201-02	50050	T-09		COMPARE ERROR ON CONVERT WEATHERLINES	
05	10	73	0655	0705		SU					RECONFIGURE SEVA	
05	10	73	0705	0900	FE	~~FES~~					RESUME SEVA	

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
05	10	73	12			10/4/73

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED. MAINT.
UM	UNSCHED. MAINT.
FM	FACT. EXER. MARG.

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
OE	OPERATOR ERROR

APPROVAL

DATE 16/9/73

UK FACTORY ACCEPTANCE TEST LOG #7

DATE DA	MO	YR	TIME START	STOP	USAGE CODE	OPER CODE	FAILURE DATA UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	TEST RECORD NO.	COMMENTS	OPERATOR
06	10	73	0705	0707		OE					INCORRECT LOADER MOUNTED	
			—	—							ADAPTER R Ø NOT A LEGAL ADDRESS	
06	10	73	0705	0755		DF	2401-03	36000	(M13)		TD 3-1 COMPARE ERROR	
06	10	73	0755	0900		DF	2401-03	36000	(M13)		REruns ON TD 3-1 FAIL	
06	10	73	0705	0836		DF	7231-02	11086	~~DF~~ T-10		PROG E385 PGM. INTERRUPT	
06	10	73	0705	0900		ID(TD 3-1)					REMOVED TCU #3 FOR INSPECTION	
											(TD 3-1 HAD FRAGMENTS FROM A	
											SHATTERED TAPE 5/10/73 1620 IN COLS.)	
06	10	73	0905	1045	FE	S				S-150	RESUME SEVA WITH TCU 1 AND 2	
06	10	73	0905	0937		DF	7251-09	51992	T-11		STORAGE DATA CHECK CE2/SE7 SW20	
06	10	73	1045	1050	SU						ADDING TCU #3 WITH NEW TAPE ON	
											TD 3-1	
06	10	73	1050	1055		DF	2401-03	36000	M-13		TD 3-1 SENSE COMPARE ERROR	
06	10	73	1055	1105	SU						RECONFIGURE SEVA	
06	10	73	1105	1405	FE	S				S-150	SEVA IN SCHED. MAINT. MODE	
06	10	73	1105	1126		MF					PRINT CARD IN READER	
06	10	73	1405	1420	SU						RECONFIGURE FOR A-1 MODE	
06	10	73	1420	1500	FE	S			M-14	S-150	SEVA IN A-1 MODE	
06	10	73	1420	1500		DF	7251-09	51992	~~DF~~		SE-7 SABO CHK	
06	10	73	1500	2300	UM						WORK ON SE 7 (COULD NOT RERUN	
					~~SU~~						WOULD NOT OPERATE)	
06	10	73	1500	1515	~~FE~~					S-150	RECONFIGURE SE 7 OUT, SE 3 IN	
06	10	73	1515	2220	FE	S				S-150	RESUME SEVA	
06	10	73	2220	2235	SU						RECONFIGURE SEVA	

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
06	10	73	13			10/6/73
06	10	73	14			10/6/73

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED. MAINT.
UM	UNSCHED. MAINT.
FM	FACT. EXER. MARG.

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
OE	OPERATOR ERROR

APPROVAL

DATE 10/9/73

UK FACTORY ACCEPTANCE TEST LOG #8

DATE DA	MO	YR	TIME START	STOP	USAGE CODE	OPER CODE	FAILURE DATA: UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	TEST RECORD NO.	COMMENTS	OPERATOR
06	10	73	2235	0630	FE	S				S-150	RESUME SEVA	
07	10	73	2235	0610		DF	7201-02	50051	T-12		CE#2 MACH. CK. INT. PGM HUNG.	
07	10	73	0630	0645	SU						RECONFIGURE SEVA	
07	10	73	0645	1430	FE	S				S-150	RESUME SEVA	
07	10	73	1430	1445	SU						RECONFIGURATION	
07	10	73	1446	2205	FE	S				S-150	RESUME SEVA	
07	10	73	1446	1500		OE					PAM 2 WAS NOT CONFIGURED. —	
07	10	73	1520	1591	SU						ADDED PAM 2 AND CONTINUED	
07	10	73	2205	2220	SU						RECONFIGURE SEVA	
07	10	73	2220	0105	FE	S				S-150	SEVA IN SCHED. MAINT. MODE	
08	10	73	0105	0120	SU						RECONFIGURE SEVA	
08	10	73	0120	0200	FE	DF	7231-02	11086	T-13	S-150	SEVA IN A-1 MODE [E3B5 - MACH AREA NOT CLR]	
08	10	73	0200	0225		S					RERUN PASS 07 5 TIMES OK (T-13)	
08	10	73	0225	0215		DF	7231-02	11086	T-14		E3B5 PRG. INT.	
08	10	73	0215	0240		S					RERUN PASS 07 5 TIMES OK. (T-14)	
08	10	73	0240	0520		DF	7231-02	11086	T-15		E3B5 MACH AREA NOT CLEARED.	
08	10	73	0520	0542		S					RERUN PASS 2-3 5 TIMES OK (T-15)	
08	10	73	0542	0905	FE	S				S-150	RESUME SEVA - 2 PASSES I/O	
08	10	73	0905	0914	SU						RECONFIGURATION	
08	10	73	0914	1705	FE	S				S-150	RESUME SEVA	
08	10	73	0914	1330		DF	7201-02	50051	T-16		CE2 MACH. CHK. INTERRUPT - PARALLEL	
											MAYER FULL SUM CHK. 64-67 WITH OTHER ERRORS	
09	10	73	1330	1410	FE	S					(RERUNS OF T-16 OK) INVALID LOGIC	
08	10	73	1410	1515		DF	7201-03	50052	T-17		PARALLEL MAYER FULL SUM CHK. CE 3	

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE

USAGE CODES		OPERATION CODES	
UT	UNIT TEST	S	SUCCESSFUL
ST	SYSTEM TEST	DF	DETECTED FAILURE
FE	FACTORY EXERCISE	PF	PROGRAM FAILURE
ID	IDLE IN ORDER	MF	MATERIAL FAILURE
SU	SETUP TIME	XF	EXTERNAL FAILURE
SM	SCHED. MAINT.	OE	OPERATOR ERROR
UM	UNSCHED. MAINT.		
FM	FACT. EXER. MARG.		

APPROVAL

DATE 10/9/73

UK FACTORY ACCEPTANCE TEST LOG #9

DATE			TIME		USAGE	OPER	FAILURE DATA			TEST RECORD	COMMENTS	OPERATOR
DA	MO	YR	START	STOP	CODE	CODE	UNIT OR ELEMENT	SERIAL NO.	TYPE NO.	NO.		
08	10	73	1515	1600	FE	S				S-150	REruns OK FOR T-17	
08	10	73	1600	1705	FE	S				S-150	OSMALERED 8 HR. RUN IN PROGRESS	
08	10	73	1705	1720	SU						RECONFIGURE	
08	10	73	1720	0105	FE	S				S-150	RESUME SEVA A-1 MODE	
09	10	73	0105	0121	FE	S				S-150	2 I/O PASSES - A-1 MODE	
09	10	73	0121	0123	ST	S				S-160	FILLED EPO SWITCH - VERIFY PWR OFF	
09	10	73	0125	0130	ST	S				S-160	BEGAIN POWER	
09	10	73	0130	0143	FE	S				S-150	STARTED 2 PASSES OF SEVA	
09	10	73	0143	—							END OF TEST	

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE

USAGE CODES	
UT	UNIT TEST
ST	SYSTEM TEST
FE	FACTORY EXERCISE
ID	IDLE IN ORDER
SU	SETUP TIME
SM	SCHED. MAINT.
UM	UNSCHED. MAINT.
FM	FACT. EXER. MARG.

OPERATION CODES	
S	SUCCESSFUL
DF	DETECTED FAILURE
PF	PROGRAM FAILURE
MF	MATERIAL FAILURE
XF	EXTERNAL FAILURE
OE	OPERATOR ERROR

APPROVAL

DATE 10/9/73

IBM 9020D/E SYSTEM

UNIT FUNCTIONAL TEST DATA RECORD

TEST NO.	ELEMENT/UNIT
1	CE#1
2	CE#2
3	CE#3
4	CE#4

TEST DATA RECORD NO. U-001

LOCATION U K FACTORY

DATE OCT 2 1973

TEST SPEC. REF. 5.1.1

TEST CONFIGURATION

	CE				IOCE			SE					SE/DE					DAU		PAM			SCU			TCU			SCCC	RCU	
	1	2	3	4	1	2	3	1	2	3	4	5	6/1	7/2	8/3	9/4	10/5	1	2	1	2	3	1	2	3	1	2	3	1	1	2
1	X							X					X																		
2		X						X																							
3			X											X																	
4																															

PROGRAM AND SECTION ID		TEST RESULT	CERTIFICATION
Switch Demonstration	CE#1	success	G. J. Franks
Switch Demonstration	CE#2	success	G. J. Franks
Switch Demonstration	CE#3	success	G. J. Franks
Switch Demonstration	CE#4	N/A	

TEST NO.	MALFUNCTION NO.	RERUN REQ'D	TEST NO.	MALFUNCTION NO.	RERUN REQ'D.
1			3		
2			4		

COMMENTS

APPROVAL

DATE OCT 9 1973

ATTACHMENT I

PAM TWO LEVEL SHARED PRIORITY

RPQ F19673

TEST DEMONSTRATION

CONTENTS

INTRODUCTION

This Attachment will outline the procedure for the verification of RPQ F19673 - PAM Two Level Shared Priority.

All references in this document made to Appendicies will apply to this document only.

APPENDIX A

ACCEPTANCE TEST

SEQUENCE SCHEDULE

The following test schedule will be used in conjunction with the procedure listed in Appendix B.

Elements	Description	Appendix "B" Ref.
PAM 1 & 3	Test RPQ F19673	1.0
PAM 1 & 2	Test RPQ F19673	1.0
PAM 2 & 3	Test RPQ F19673	1.0

APPENDIX B

TEST PROCEDURE

1.0 Two Level Shared Priority (RPQ F19673)

The Two Level Shared Priority RPQ will allow a high priority adapter in the secondary PAM to have a higher priority than the low priority adapters of the primary PAM. The priority sequence will be primary PAM high priority, secondary PAM high priority, primary PAM low priority, and finally secondary PAM low priority.

The following procedure will demonstrate the operation of PAM Two Level Shared Priority (RPQ F19673) by first showing operation with the RPQ enabled and then with the RPQ disabled. The card loaded program provided for the demonstration is attempting to write to a high priority secondary PAM 1052 while continuously reading sense information from two low priority primary PAM Teletype adapters.

The equipment required for this demonstration is an IOCE in diagnostic mode with the primary and secondary PAMs configured.

A. Test Procedure

1. Plug a secondary PAM 1052 adapter to the same address as the highest priority INTI adapter in the secondary PAM (Refer to Appendix C, Instruction 1).
2. Plug the INTI adapter with the highest priority in the secondary PAM to the address vacated by the 1052 adapter in Step 1 (Refer to Appendix C, Instruction 2).
3. Plug the PAM common priority boards in the secondary PAM to accommodate the address changes caused by Steps 1 and 2 (Refer to Appendix C, Instruction 3).

4. Select two Teletype adapters in the Primary PAM and install a jumper on each from location U1-F4B05 to U1-F4D08.

5. Load the card deck provided through the IOCE.

6. When the Wait light comes on, store the new address of the secondary PAM high priority 1052 adapter in register 1 of the IOCE.

7. Store the address of the first primary PAM Teletype adapter (with the jumper installed) in register 2 of the IOCE.

8. Store the address of the second primary PAM Teletype adapter (with the jumper installed) in register 3 of the IOCE.

9. Depress the Interrupt pushbutton.

10. The 1052 will print "START," Carrier Return, and print 112 characters with no noticeable time lost.

11. Install a jumper in the secondary PAM from location B-D3N2D04 to B-D3N2D08. This will disable the RPQ.

12. Reload the card deck provided

13. When the Wait light comes on, repeat Steps 6 through 9.

14. The 1052 will print "START," Carrier Return, and one character. It will then stop for approximately 30 seconds and then complete printing the 112 characters.

15. Return the PAM priority boards and the adapter addresses to the normal address and priority assignments.

16. Repeat this procedure on all possible primary/secondary PAM configurations.

SPECIAL INSTRUCTIONS

APPENDIX C

INSTRUCTION 1

NOTE: Refer to page ZV500 of PAM Logic Volume 7 for this instruction.

Plug the 1052 address card located at X-U1A7 as per Chart 5 of ZV500, remembering to ground unused bits for a 1052.

INSTRUCTION 2

NOTE: Refer to page ZV500 of PAM Logic Volume 7 for this instruction.

Plug the INTI address card located at X-W1A7 as perChart 1 of ZV500.

INSTRUCTION 3

NOTE: Refer to page ZT300 in PAM Logic Volume 7 for this instruction.

Locate the correct priority board and line for both adapters, using the known priority or decimal address and referencing page ZT300. The respective priority jumpers should be tagged before relocating to assist in restoring the adapters to their original priorities.

Remove the two jumpers for SEL PA and PRI REQ from the priority board pins for the 1052 adapter.

Remove the two jumpers for SEL PA and PRI REQ from the priority board pins for the INTI adapter.

Relocate the jumpers removed from the 1052 priority pins to the INTI priority pins. Relocate the jumpers removed from the INTI priority pins to the 1052 priority pins.

The 1052 adapter should now have the original address and priority of the INTI adapter (High Secondary) and the INTI adapter should have the address and priority of the 1052 adapter (Low Secondary).

Contract No. FA64WA-5223

IBM 9020D/E DATA PROCESSING SYSTEM

FACTORY AND FIELD ACCEPTANCE TEST

CHECK LIST AND SPECIFICATION - AMENDMENT #88

UNITED KINGDOM 9020 D TRIPLEX SYSTEM

September, 1973

INTERNATIONAL BUSINESS MACHINES CORPORATION

PREFACE

This amendment, used in conjunction with the documents entitled, "IBM 9020D/E Data Processing System Factory and Field Acceptance Test Check List" and "IBM 9020D/E Data Processing System, Factory and Field Acceptance Test Specification", dated May 6, 1970, hereafter called "Reference Check List" and "Reference Specification", comprises the Acceptance Test Check List and Specifications for the United Kingdom 9020D Triplex System.

The purpose of this amendment is to list the schedule of tests to be performed for the United Kingdom 9020D Triplex Acceptance Test.

CONTENTS

INTRODUCTION

The Factory Test will be conducted in the IBM Manufacturing Facility at Kingston, New York.

The Field Test will be conducted after installation at the London Air Traffic Control Center, West Drayton, Middlesex, England.

Paragraph numbers used in this amendment correspond to those of the Reference Check List and Reference Specification.

APPENDIX A

FACTORY ACCEPTANCE TEST

SEQUENCE SCHEDULE

9020D SYSTEM UNIT TESTS

TEST No.	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
U-001	CE	Switch Demonstration	5.1.1
U-002	IOCE	Switch Demonstration	5.1.2
U-003	SE 1-4	Switch Demonstration	5.1.3
U-004	SE 5-7	Switch Demonstration	5.1.3
U-006	SE 1-4	Timing Demonstration	5.1.4
U-007	SE 5-7	Timing Demonstration	5.1.4
U-013	SC	Switch Demonstration	5.1.7
U-014	SC	Interface Demonstration	5.1.7
U-017	PAM	Switch Demonstration	5.1.9
U-018	DASF	Switch Demonstration	5.1.10
U-019	TCU	Switch Demonstration	5.1.11
U-020	I/O Tester 1403	Switch Demonstration	5.1.12
U-021	1052	Switch Demonstration	5.1.13
U-101	CE 1	Functional Test	5.2.1
U-102	CE 2	Functional Test	5.2.1
U-103	CE 3	Functional Test	5.2.1
U-105	CE/SE	ATR Test	5.2.1
U-106	IOCE 1	Selector Channel Functional Test	5.2.2
U-107	IOCE 2	Selector Channel Functional Test	5.2.2
U-108	IOCE 3	Selector Channel Functional Test	5.2.2
U-109	DASF 1	Functional Test	5.2.2
U-110	DASF 2	Functional Test	5.2.2

9020 SYSTEM UNIT TESTS

TEST NO	ELEMENT/UNIT	DESCRIPTION	SPEC. REF
U-111	DASF 3	Functional Test	5.2.2
U-112	TCU #1	Functional Test	5.2.2
U-114	TCU #2	Functional Test	5.2.2
U-116	TCU #3	Functional Test	5.2.2
U-118	DASF	Two Channel Switch Test	5.2.2
U-119	TCU	Dual Interface Tests	5.2.2
U-123	IOCE 1	Multiplexor Channel Functional Test	5.2.3
U-124	IOCE 2	Multiplexor Channel Functional Test	5.2.3
U-125	IOCE 3	Multiplexor Channel Functional Test	5.2.3
U-126	SE 1-3	Functional Test	5.2.4
U-127	SE 4-6	Functional Test	5.2.4
U-128	SE 7	Functional Test	5.2.4
U-133	SC	Functional Test	5.2.6
U-135	PAM	Functional Test	5.2.8
U-136	PAM	Dual Interface Tests	5.2.8
U-137	2821	Functional Test 1403	5.2.9
U-138	2821	Two Channel Switch Test	5.2.9
U-139	1052	Functional Test	5.2.10
U-142	IOCE 1	Diag. Mode Functional Demonstration	5.2.12
U-143	IOCE 2	Diag. Mode Functional Demonstration	5.2.12
U-144	IOCE 3	Diag. Mode Functional Demonstration	5.2.12
U-145	IOCE	I/O Processor Operation Demonstration	5.2.13
U-146	CE/IOCE/SE	Log-Out Demonstration	5.2.14

9020 SYSTEM UNIT TESTS

TEST NO	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
U-147	IOCE	FLT Functional Test	5.1.15
U-148	CE	FLT Functional Test	5.1.15

SYSTEM TEST

TEST NO.	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
S-001	System	Reconfiguration Test A	6.1.1
S-002	System	Reconfiguration Test B	6.1.2
S-003	System	Reconfiguration Test B	6.1.2
S-004	System	Reconfiguration Test B	6.1.2
S-006	System	Reconfiguration Test C	6.1.3
S-007	System	Reconfiguration Test D	6.1.4
S-120	System	Eight Time Sample Problems	6.3.1
S-123	System	360-9020 Compatibility	6.3.4
S-124	System	360 Mode Recall Test	6.3.5
NOTE 1	System	PAM Two Level Shared Priority	
S-131	System	Power Interlock Test	7.1.1
S-132	System	Test State - Power On/Off	7.1.2
S-133	System	MPO Switch Test	7.1.3
S-134	CE/IOCE/SE	Abnormal Power Loss and Battery Recharge	7.2
S-135	System	Thermal Warning and Protection	7.3
S-136	System	Over Voltage	7.4.1
S-137	System	Over Current	7.4.2
S-138	System	Under Voltage	7.4.3
S-150	System	Factory Acceptance Exercise	8.0
S-160	System	System EPO	7.6

NOTE 1 The PAM Two Level Shared Priority test procedure is defined in Attachment I to this Amendment

APPENDIX B

FIELD ACCEPTANCE TEST

SEQUENCE SCHEDULE

9020D SYSTEM UNIT TESTS

TEST NO.	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
U-001	CE	Switch Demonstration	5.1.1
U-002	IOCE	Switch Demonstration	5.1.2
U-003	SE 1-4	Switch Demonstration	5.1.3
U-004	SE 5-7	Switch Demonstration	5.1.3
U-006	SE 1-4	Timing Demonstration	5.1.4
U-007	SE 5-7	Timing Demonstration	5.1.4
U-013	SC	Switch Demonstration	5.1.7
U-014	SC	Interface Demonstration	5.1.7
U-017	PAM	Switch Demonstration	5.1.9
U-018	DASF	Switch Demonstration	5.1.10
U-019	TCU	Switch Demonstration	5.1.11
U-020	I/O Tester 1403	Switch Demonstration	5.1.12
U-021	1052	Switch Demonstration	5.1.13
U-101	CE 1	Functional Test	5.2.1
U-102	CE 2	Functional Test	5.2.1
U-103	CE 3	Functional Test	5.2.1
U-105	CE/SE	ATR Test	5.2.1
U-106	IOCE 1	Selector Channel Functional Test	5.2.2
U-107	IOCE 2	Selector Channel Functional Test	5.2.2
U-108	IOCE 3	Selector Channel Functional Test	5.2.2
U-109	DASF 1	Functional Test	5.2.2
U-110	DASF 2	Functional Test	5.2.2

9020D SYSTEM UNIT TESTS

TEST NO.	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
U-111	DASF 3	Functional Test	5.2.2
U-112	TCU #1	Functional Test	5.2.2
U-114	TCU #2	Functional Test	5.2.2
U-116	TCU #3	Functional Test	5.2.2
U-118	DASF	Two Channel Switch Test	5.2.2
U-119	TCU	Dual Interface Tests	5.2.2
U-123	IOCE 1	Multiplexor Channel Functional Test	5.2.3
U-124	IOCE 2	Multiplexor Channel Functional Test	5.2.3
U-125	IOCE 3	Multiplexor Channel Functional Test	5.2.3
U-126	SE 1-3	Functional Test	5.2.4
U-127	SE 4-6	Functional Test	5.2.4
U-128	SE 7	Functional Test	5.2.4
U-133	SC	Functional Test	5.2.6
U-135	PAM	Functional Test	5.2.8
U-136	PAM	Dual Interface Tests	5.2.8
U-137	2821	Functional Test 1403	5.2.9
U-138	2821	Two Channel Switch Test	5.2.9
U-139	1052	Functional Test	5.2.10
U-142	IOCE 1	Diag. Mode Functional Demonstration	5.2.12
U-143	IOCE 2	Diag. Mode Functional Demonstration	5.2.12
U-144	IOCE 3	Diag. Mode Functional Demonstration	5.2.12
U-145	IOCE	I/O Processor Operation Demonstration	5.2.13
U-146	CE/IOCE/SE	Log-Out Demonstration	5.2.14

9020D SYSTEM UNIT TESTS

TEST NO.	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
U-147	IOCE	FLT Functional Test	5.2.15
U-148	CE	FLT Functional Test	5.2.15

SYSTEM TEST

TEST NO.	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
S-001	System	Reconfiguration Test A	6.1.1
S-002	System	Reconfiguration Test B	6.1.2
S-003	System	Reconfiguration Test B	6.1.2
S-004	System	Reconfiguration Test B	6.1.2
S-006	System	Reconfiguration Test C	6.1.3
S-007	System	Reconfiguration Test D	6.1.4
S-101	System	SEVA	6.2.1
S-122	System	FLT Practical Test	6.3.3
S-124	System	360 Mode Recall Test	6.3.5
S-131	System	Power Interlock Test	7.1.1
S-132	System	Test State-Power On/Off	7.1.2
S-133	System	MPO Switch Test	7.1.3
S-134	CE/IOCE/SE	Abnormal Power Loss and Battery Recharge	7.2
S-135	System	Thermal Warning and Protection	7.3
S-136	System	Over Voltage	7.4.1
S-137	System	Over Current	7.4.2
S-138	System	Under Voltage	7.4.3
S-139	System	System Main Line Power Loss	7.5
S-140	System	System Main Line Power Loss	7.5
S-141	System	System Main Line Power Loss	7.5
S-160	System	System EPO	7.6

APPENDIX G

FACTORY FLOOR DIAGRAM

(To be supplied at a later date)

APPENDIX H

FIELD FLOOR DIAGRAM

(To be supplied at a later date)