Contract No. FA64WA-5223

IBM 9020D/E DATA PROCESSING SYSTEM

FOR

UNITED KINGDOM 9020 SIMPLEX

FIELD ACCEPTANCE TEST REPORT

FOR

ITEMS TESTED IN AMENDMENT 89

January 30, 1974 - January 31, 1974

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INTERNATIONAL BUSINESS MACHINES CORPORATION

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INTRODUCTION

The Field Acceptance Test for the United Kingdom 9020D Simplex System was conducted from January 30, 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, with the exception of Test S-160, which was waived due to the absence of an EPO Switch.

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, four (4) malfunctions and three (3) 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, 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 Tests one (1) malfunction and two (2) transients were encountered. These failures are described below:

M-01	Test U-126, SE #2 picking bits randomly. The Z Driver P/N 5804805 was replaced at location 03B-B1G4 and the test was rerun successfully.
T-01	Test U-101, IOCE #1 picking ROS Bits at Plane address 902.
T-02	Test U-114 Tape Drive #223 indicated a data check in sense during a read operation.

During the twelve-hour System Evaluation Program (SEVA) a transient (T-03) occurred on SE #4. Compute Element #1 took a machine check interrupt. Reruns of the same pass were successful. Also encountered were an external failure and an operator error. These conditions are described as follows:

XL DSU #1 encountered data checks. Disk Pack S/N 7049319 was cleaned and returned to the system without failure to demonstrate that the errors encountered were fault of the disk pack and not DSU #1. This pack was a CE bring up pack and not one of the Disk Packs (2316) delivered with the system.

OE A Subsystem IPL was performed to run 2 passes of I/O. Without terminating this operation the loader tape was changed to the other Tape Control Unit to meet the Tape Drive configuration requirements. After this a Subsystem IPL was performed which did not reset the other interface previously used. Proper operation is to initiate a System IPL to release the interface or properly terminate the previous operation.

During the Element Test and Element Subsystem Test for the additional Printer/Keyboard (1052-07) three (3) malfunctions occurred. These conditions are described below:

M-02 Test U-021 1052-07 S/N 30149 indicated intervention required during the switch demonstration. Corrective action required adjustment of the paper sensing micro switch. Rerun of this test was successful.

M-03 Test U-139 1052-07 S/N 30147. The rotate tape was kinked and off the pulley. Corrective action required replacement of the Rotate Tape P/N 1134817 and minor adjustments. Rerun of this test was successful.

M-04 Test U-139 1052-07 S/N 30149 indicated intervention required, this condition noted in M-02 description, required further adjustment and 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 Simplex Date January 31, 1974

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Compute Element	7201-02	1	50053
Input/Output Control Element	7231-02	1	11087
Storage Element	7251-09	1 2 3 4	51993 51994 51995 51996
Peripheral Adapter Module Adapters 9 CD 2 TTY 2 FDEP 2 GPI 9 GPO 4 1052	7289-02	1	89071
Tape Control Unit	2803-01	1 2	12230 12231
Storage Control Unit	2314-A1	1	19274
Disk Storage Unit	2312-A1	1-1	17256
Integrated Control Unit	2821-01		18871
Reader/Punch	2540-01		23055
Printer	1403-02		21335

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	214, 214.1 27		

Approval Gordon L. Hurst Date 31/1/74

IBM EQUIPMENT IDENTIFICATION LIST

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

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Printer Keyboard	1052-07		7 30068 6 30127 5 30130 4 30134 3 30147 2 30148 1 30149
Tape Drives (all 9-Track)	2401-03		36017 18 36018 16 36019 17 36020 15 36021 19 36022 20 36023 21 36024 22
Disk Packs	2316-01		OD9501 OD9502 OD9503 OD9504

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	214, 214.1 27		

Approval Gordon L. Hurst Date 31/1/74

SHEET 2 of 2

SPECIAL FEATURES AND RPQ LIST

IBM 9020D/E DATA PROCESSING SYSTEM

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

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 F27061	1052 Adapter	
RPQ F30767	Wrap Bus Modification	
RPQ FB0140	Convert and Sort Symbols/Convert Weather Lines Conversion Kit D+	

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.	

Peripheral Adapter Module		7289-02
RPQ F19673	Two Level Shared Priority	
RPQ FA1771	Power Mod. 1052	
RPQ EE2682	Teletype End of Message	

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	

SHEET 1 OF 2

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

Integrated Control Unit			2821-01
Feature	8637	Universal Character Set Adapter	
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	
Feature	2814	235V 50Hz	
RPQ	EE2260	CAA Print Element	
RPQ	EE2259	Keytop Change (Reference QC deficiency letter)	
Printer			1403-02
Feature	8641	Universal Character Set	
Feature	4740	Interchangeable Chain Cartridge	
Feature	9631	PN-2 Print Arrangement (2 each) (1 AT CENTRE)	

Approval: Gordon L. Hurst

Date: 31/1/74

SHEET 2 OF 2

DELIVERABLE ITEMS LIST

IBM 9020D/E DATA PROCESSING SYSTEM DELIVERABLE ITEM LIST

UNITED KINGDOM 9020D SIMPLEX

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

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

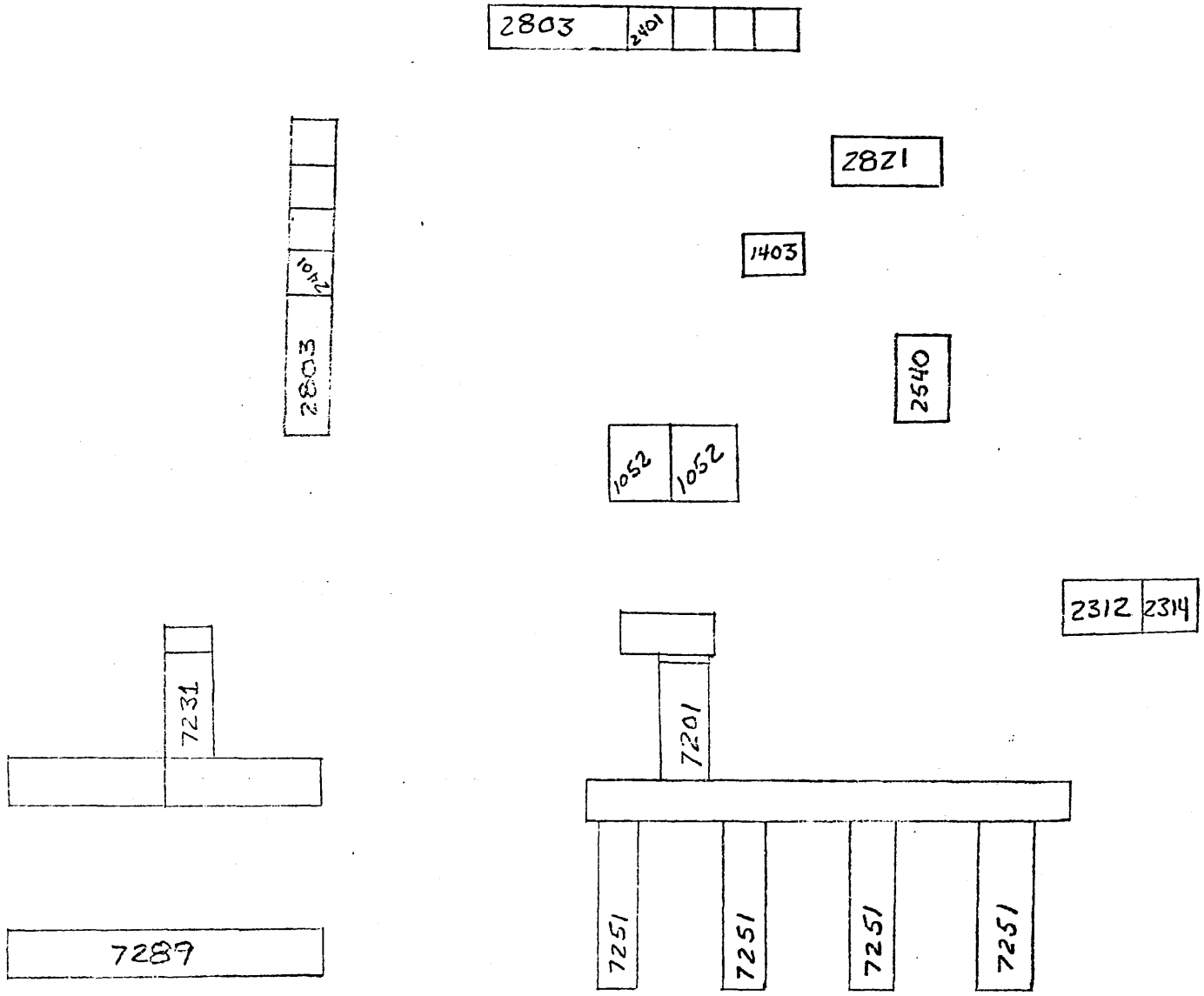
INSTRUCTION BOOKS (FE MANUALS)		
1	Set Instruction Manuals reference Q.C. Letter	
1	Set Automated Logic Diagrams Manuals	
1	Set Illustrated Parts Catalogs reference Q.C. letter	

MAGNETIC TAPE - CUSTOMER REEL 8 REELS
(One reel supplied with each new tape drive.)

Approval: Gordon L. Hurst

Date: 31/1/74

FIELD FLOOR DIAGRAM



UNITED KINGDOM 9020 SIMPLEX

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 NUMBER	TYPE -NO	NO.		
30	01	74	0100	0135	UT	S				U-001		Mal
30	01	74	0100	0130	UT	S				U-002		Mal
30	01	74	0100	0215	UT	S				U-003		Mal
30	01	74	0100	0130	UT	S				U-017		Mal
30	01	74	0130	0215	UT	S				U-006		Mal
30	01	74	0135	0200	UT	S				U-019		Mal
30	01	74	0135	0150	UT	S				U-018		Mal
30	01	74	0150	0235	UT	S				U-021		Mal
30	01	74	0150	0200	UT	S				U-020		Mal
30	01	74	0200	0320	UT	DF	7231-02	11087	T-01	U-101	Reruns successful	Mal
30	01	74	0320	0345	UT	S				U-101		Mal
30	01	74	0345	0347	UT	S				U-109		Mal
30	01	74	0347	0400	UT	S				U-109		Mal
30	01	74	0400	0403	UT	S				U-106		Mal
30	01	74	0403	0420	UT	S				U-112		Mal
30	01	74	0430	0425	UT	DF	2401	36023	T-02	U-114		Mal
30	01	74	0425	0445	UT	S				U-114	Reruns Successful.	Mal
30	01	74	0445	0448	UT	S				U-123		Mal
30	01	74	0448	0510	UT	S				U-137		Mal
30	01	74	0510	0535	UT	S				U-142		Mal
30	01	74	0535	0555	UT	S				U-145		Mal
30	01	74	0555	0610	UT	S				U-139		Mal
30	01	74	0610	0620	UT	S				U-148		Mal
30	01	74	0620	0625	UT	S				U-147		Mal

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 D. 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	0620	0630	ST	S				S-122		Mal
30	01	74	0630	0700	UT	DF				U-126		Mal
30	01	74	0700	0705	UT	DF	7251-09	51994	M-01	U-126		Remy
30	01	74	0705	0725	UT	S				U-126		Remy
30	01	74	0725	0740	UT	S				U-127		Remy
30	01	74	0740	0950	UM					U-126	Maintenance subsystem required for SE #2	Remy
30	01	74	0950	1030	UT	S				U-126	Rerun for M-01 successful	Remy
30	01	74	1030	1118	UT	S				U-146		Remy
30	01	74	1118	1125	ST	S				S-001		Remy
30	01	74	1125	1133	ST	S				S-002		Remy
30	01	74	1133	1200	ST	S				U-135		Remy
30	01	74	1200	1205	SU					S-101		Remy
30	01	74	1205	1210	ST	S				S-101	START OF SEVA - 2 passes of I/O Run	Remy
30	01	74	1210	1605	ST	S				S-101		Remy
30	01	74	1605	1613	SU					S-101		Remy
30	01	74	1613	1614	ST	OE				S-101		Remy
30	01	74	1614	1622	ST	OE				S-101		Remy
30	01	74	1622	1747	UM	OE				S-101		Remy
30	01	74	1747	2152	ST	S				S-101		Mal
30	01	74	2152	2200	ST	S				S-101	Excersised 2 passes of I/O Run	Mal
30	01	74	2200	2207	SU							Mal
30	01	74	2207	2306	ST	XF				S-101		Mal
30	01	74	2306	0140	ST	S				S-101		Mal
31	01	74	0140	0150	ST	DF	7251-09	51996	T-03	S-101	Excersised 2 passes of I/o Run.	Mal

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
30	01	74	1	Malin	Remy	30-01-74

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 J. 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.		
31	01	74	0150	0201	ST	S				S-101	Exercised 3 passes of I/O Rerun successful.	Malin
31	01	74	0201	0210	ST	S				S-131		Malin
31	01	74	0210	0225	ST	S				S-133		Malin
31	01	74	0215	0235	ST	S				S-134		Malin
31	01	74	0235	0240	ST	S				S-139		Malin
31	01	74	0240	0315	ST	S				S-136		Malin
31	01	74	0240	0315	ST	S				S-135		Malin
31	01	74	0240	0300	ST	S				S-137		Malin
31	01	74	0240	0215	ST	S				S-138		Malin
31	01	74	0315	0345	UT	S				U-021	30147, 30148	Malin
31	01	74	0330	0350	UT	S				U-139	30148	Malin
31	01	74	0350	0355	UT	DF	1052-07	30149	M-02	U-021	30149	Malin
31	01	74	0400	0410	UT	DF	1052-07	30147	M-03	U-139	30147	Malin
31	01	74	0410	0415	UT	DF	1052-07	30149	M-04	U-139	30149	Malin
31	01	74	0435	0938	ID							Malin
31	01	74	0938	0947	UT	S				U-021	1052 S/N's 30147, 30149 Rerun Successful	Remy
31	01	74	0947	0959	UT	S				U-139	1052 S/N's 30147, 30149 Rerun Successful	Remy
31	01	74	0959								Test Complete	Malin

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
31	01	74	02	Malin	Malin	31-01-74
31	01	74	03	Malin	Malin	31-01-74
31	01	74	04	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 30-01-74

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																															
3																															
4																															

PROGRAM AND SECTION ID		TEST RESULT	CERTIFICATION
Switch Demonstration	CE#1	Success	D. Hurst
Switch Demonstration	CE#2	N/A	
Switch Demonstration	CE#3	N/A	
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 31/1/74

Contract No. FA64WA-5223

IBM 9020D/E DATA PROCESSING SYSTEM

FOR

UNITED KINGDOM 9020D SIMPLEX SYSTEM

FACTORY ACCEPTANCE TEST REPORT

FOR ITEMS TESTED AS PER AMENDMENT #89

October 2, 1973 thru October 6, 1973

This information is furnished in accordance with requirements of Contract No. FA64WA-5223 and is subject to Clause 24 thereof entitled, "Reproduction and Use of Technical Data" which provides for its use, reproduction or disclosure by the Government for Government purposes.

INTERNATIONAL BUSINESS MACHINES CORPORATION

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INTRODUCTION

The Factory Acceptance Test for the United Kingdom Simplex 9020D System was conducted from October 2, 1973 through October 6, 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."

The System EPO demonstration, test S-160, could not be performed at this time due to the absence of a System Console on the Simplex System. This test will be accomplished at the field installation.

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 four (4) transients and five (5) malfunctions occurred.

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 Unit Functional Tests, the following malfunction occurred:

M-01 Test U-106-1 Tape Drive 2-0, S/N 36015, failed Diagnostic D3153 with sense errors. The Read Amplifiers on Drive 2-0 were adjusted and the failing test was re-run successfully.

During the System Functional Test the following malfunction occurred:

M-02 Test S-138. A loose pin was discovered on the Voltage Sensing Card (loose pin on potentiometer for 6v non-marginal supply) in CE1, S/N 50053. The card was replaced and the test was rerun successfully.

During the Factory Exercise (SEVA) the following errors were encountered.

M-03 Tape Drive 2-0, S/N 36015, encountered Read and Compare errors.

A card at location 01A1D11 was replaced and the SEVA pass reruns were successful.

M-04 IOCE1, S/N 11087, encountered ROS failures (dropping Bit 6). The ROS Preamp card at location 01CE1G2 was replaced and the SEVA pass reruns were successful.

M-05 DSU1, S/N 17256, encountered continual Unit Checks. The Transducer Assembly Cable (P/N 2218578) was replaced and the SEVA pass reruns were successful.

T-01 DSU1, S/N 17256, encountered a Read Error.

T-02 DSU1, S/N 17256, encountered a Read Error.

T-03 Tape Drive 1-0, S/N 36013, had the tape rewind off the reel.

T-04 SE2, S/N 51994, encountered an SDB0 Check with CE1.

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.

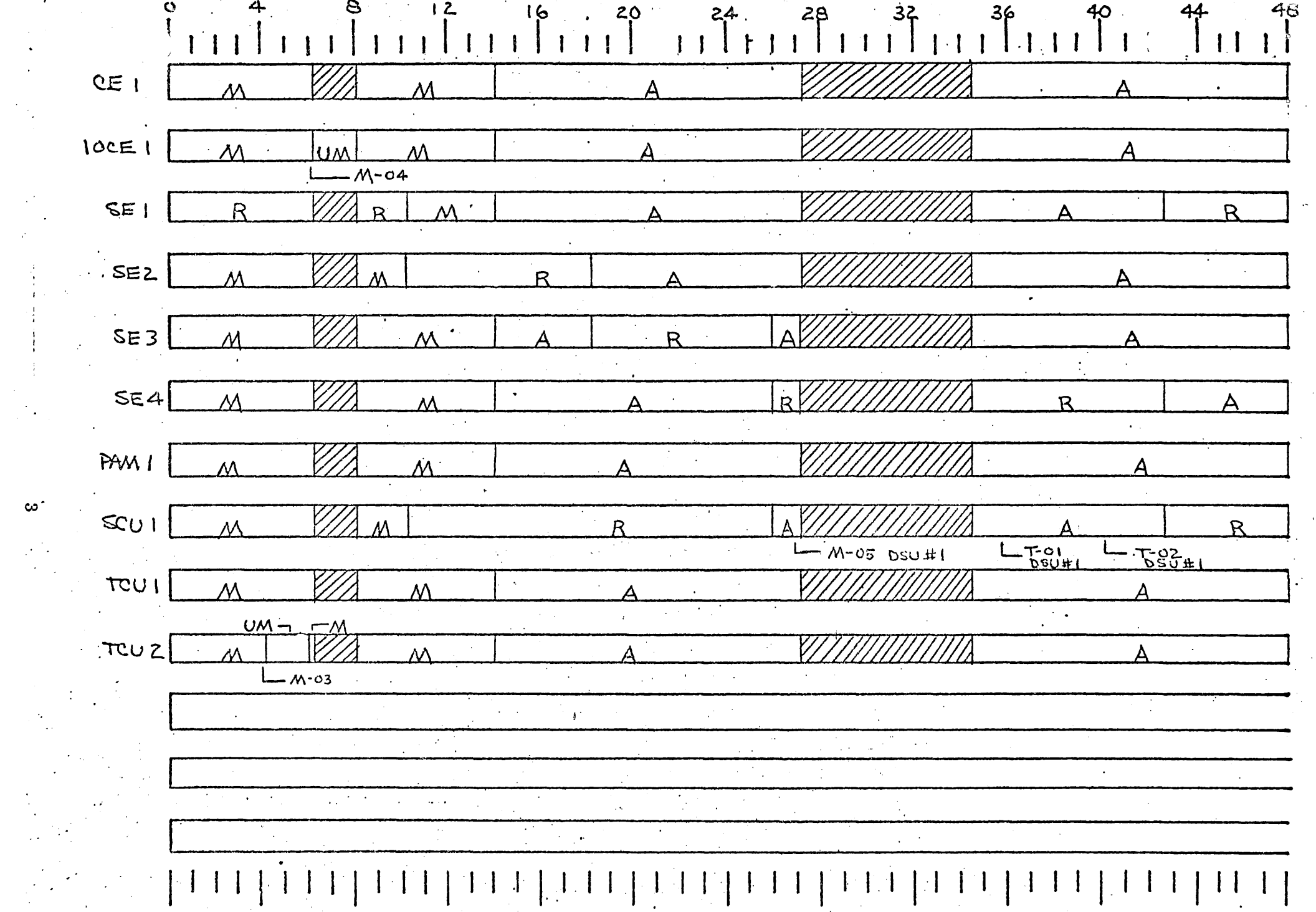
EC/REA STATUS

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

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

REA 06-66548 - installed on 7231-02 IOCE to correct intermittent improper reset of "Proceed on Interrupt" latch.

REA 06-66549 - installed on 7231-02 IOCE to correct intermittent improper Condition Code setting.


0
4
8
12
16
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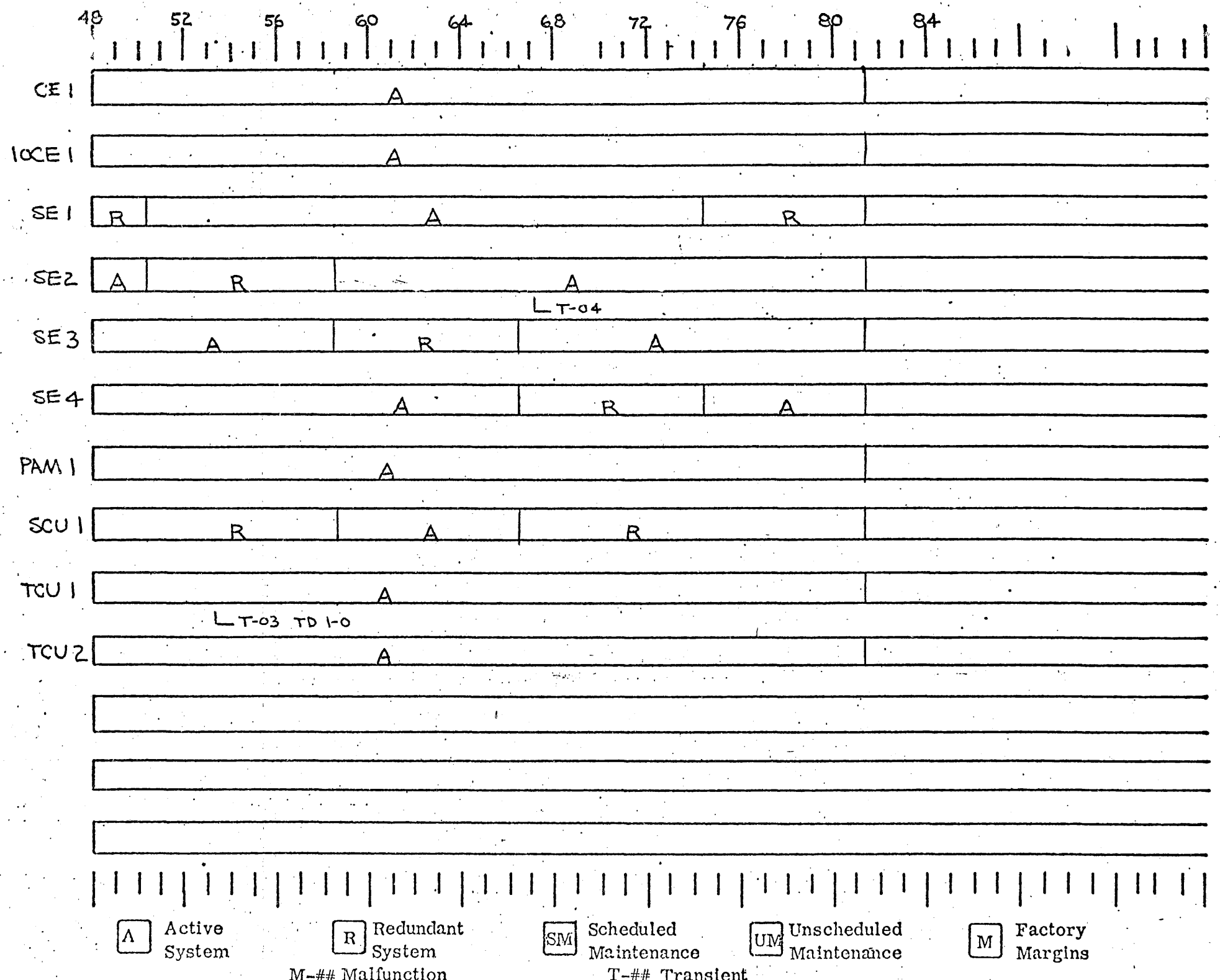
40
44
48
CE 1
IOCE 1
SE 1
SE 2
SE 3
SE 4
PAM 1
SCU 1
TCU 1
TCU 2
M
A
R
UM
M-04
M-05 DSU #1
T-01 DSU #1
T-02 DSU #1
M-03
Exercise Interrupt
Active System
Redundant System
Scheduled Maintenance
Unscheduled Maintenance
Factory Margins
M-## Malfunction
T-## Transient


48
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CE 1
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IOCE 1
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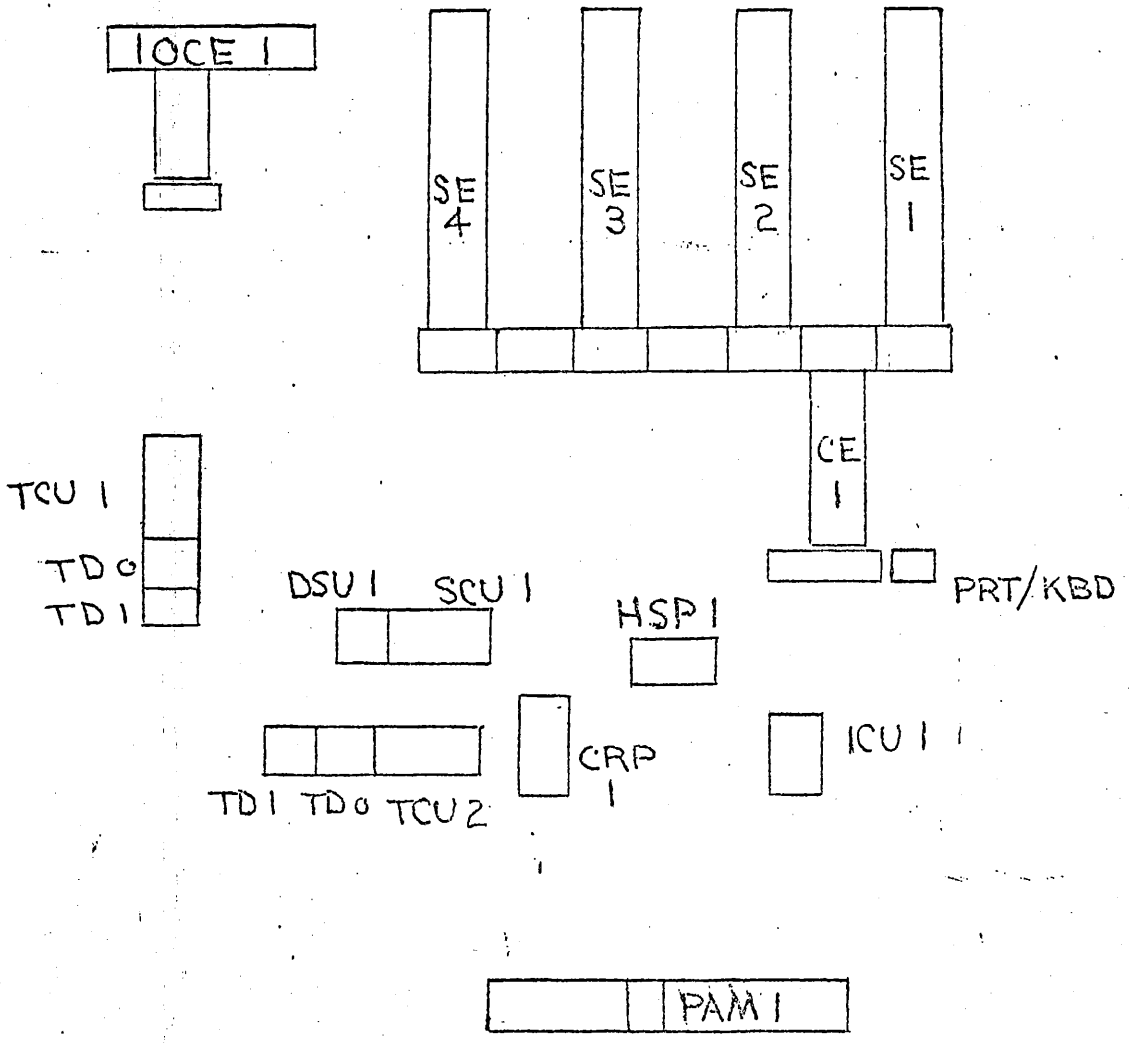
SE 1
R
A
R
SE 2
A
R
A
T-04
SE 3
A
R
A
SE 4
A
R
A
PAM 1
A
SCU 1
R
A
R
TCU 1
A
T-03 TD 1-0
TCU 2
A
A Active System
R Redundant System
M-## Malfunction
SM Scheduled Maintenance
UM Unscheduled Maintenance
T-## Transient
M Factory Margins



UNITED KINGDOM SIMPLEX 9020 D
FACTORY FLOOR DIAGRAM
OCTOBER 2, 1973

IBM EQUIPMENT IDENTIFICATION LIST

Location United Kingdom 9020D Simplex (Factory) Date OCT 8 1973

EQUIPMENT NAME	MODEL NO.	POSITION/ ADDRESS	SERIAL NO.
Compute Element	7201-02	1	50053
Input/Output Control Element	7231-02	1	11087
Storage Element	7251-09	1	51993
		2	51994
		3	51995
		4	51996
Peripheral Adapter Module Adapters:	7289-02	1	89071
9 CD			
2 TTY			
2 FDEP			
2 GPI			
9 GPO			
4 1052			
Tape Control Unit	2803-01	1	12230
		2	12231
Tape Drives	2401-03	10	36013
		11	36014
		20	36015
		21	36016
Storage Control Unit	2314-A1	1	19274
Disk Storage Unit	2312-A1	1-1	17256
Printer/Keyboard	1052-07	1	30127
Integrated Control Unit	2821-01		18871
Reader/Punch	2540-01		23055
Printer	1403-02		21335

CONTRACT #FA64WA-5223			
AMENDMENT	ITEM	AMENDMENT	ITEM
147	214, 214.1		

Approval [signature] Date OCT 8 1973

IBM 9020D/E DATA PROCESSING SYSTEM

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

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.~~	

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

Tape Control Unit		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	

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

Integrated Control Unit		2821-01
Feature 8637	Universal Character Set Adapter	
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	
Feature 4740	Interchangeable Chain Cartridge Adapter	
Feature 9631	PN-2 Print Arrangement	

Approval: [signature]

Date: OCT 9 1973

U K FACTORY ACCEPTANCE TEST LOG #1

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.		
2	10	73	0830	0925	UT	S				U-001		
2	10	73	0925	1035	UT	S				U-002		
2	10	73	1035	1125	UT	S				U-003		
2	10	73	1125	1155	UT	S				U-006		
2	10	73	1155	1230	ID						LUNCH	
2	10	73	1230	1250	UT	S				U-017		
2	10	73	1240	1305	UT	S				U-018		
2	10	73	1250	1330	UT	S				U-019		
2	10	73	1305	1350	UT	S				U-020		
2	10	73	1310	1315	UT	S				U-021		
2	10	73	1350	1420	UT	S				U-101	CEI DIAGS	
2	10	73	1421	1453	UT	S				U-105	AIR TEST	
2	10	73	1500	1545	UT	S				U-106		
2	10	73	1506	1536		DF	2401-03	36015	M-01		DRIVE ON TCU#2 SENSE ERROR	
2	10	73	1530	1540	UM						CHECKING SENSE ERROR ON 2-0	
2	10	73	1545	1610	UT	S				U-109		
2	10	73	1612	1620	UT	S				U-106	RERUN ON TCU#2 (M-01)	
2	10	73	1625	1800	UT	S				U-126/U-127	SE DIAGS.	
2	10	73	1805	1815	UT	S				U-139	1052 FUNCT.	
2	10	73	1816	1830	UT	S				U-112	TCU1 DIAGS	
2	10	73	1830	1845	UT	S				U-114	TCU2 DIAGS.	
2	10	73	1846	1945	ID						CHECKING OUT 1403	
2	10	73	1950	2015	UT	S				~~U-135~~ U-123		
2	10	73	2015	2055	UT	S				U-135		

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD						
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
2	10	73	01	[illegible]	[illegible]	2/10/73

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.	OE	OPERATOR ERROR
UM	UNSCHED. MAINT.		
FM	FACT. EXER. MARG.		

APPROVAL [signature]

DATE 10/8/73

UK FACTORY ACCEPTANCE TEST LOG #2

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	2055	2125	UT	S				U-145		L.A. Stanford
02	10	73	2110	2120	UT	S				U-142		L.A. Stanford
02	10	73	2120	2125	ST	S				S-120		L.A. Stanford
02	10	73	2125	2150	ST	S				S-001		L.A. Stanford
02	10	73	2150	2155	ST	S				S-002		L.A. Stanford
02	10	73	2155	2235	UT	S				U-146		L.A. Stanford
02	10	73	2235	2320	UT	S				U-147		L.A. Stanford
02	10	73	2320	2400	UT	S				U-148		L.A. Stanford
03	10	73	0000	0100	ST	S				S-131		L.A. Stanford
03	10	73	0100	0200	ST	S				S-133		L.A. Stanford
03	10	73	0200	0240	ST	S				S-134		L.A. Stanford
03	10	73	0240	0300	ST	S				S-135		L.A. Stanford
03	10	73	0300	0310	ST	S				S-136		L.A. Stanford
03	10	73	0310	0330	ST	S				S-137		L.A. Stanford
03	10	73	0310	0325		DF	7201-01	50053	M-02	S-138	LOOSE PIN ON POT. FOR 6V NON MARGINAL P.S	L.A. Stanford
03	10	73	0400	0500		DF	2401-03	36015	M-03	S-150	RANDOM DATA ERRORS - TD 2-0	L.A. Stanford
03	10	73	0500	0510	SU						SWITCH TAPE DRIVES (REMOVE TD. 120)	L.A. Stanford
03	10	73	0510	0810	FM	S					RESTART SEVA	L.A. Stanford
03	10	73	0810	0950	FM	S				S-150	REMOVED TCU2 FOR MAINT.	L.A. Stanford
03	10	73	0950	1010	FM	S				S-150	ADDED TCU2 INTO SYSTEM	L.A. Stanford
03	10	73	0950	1010	M	DF	7231-02	11087	M-04	S-150	IOCE1 BIT 6 Drops (ROS)	L.A. Stanford
03	10	73	1010	1230	UM						STOPPED SEVA TO WORK ON IOCE1	L.A. Stanford
03	10	73	1230	1430	FM	S				S-150	RESUME SEVA + BIAS	L.A. Stanford
03	10	73									REruns OK FOR IOCE1	L.A. Stanford

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD							USAGE CODES		OPERATION CODES	
DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE	UT	UNIT TEST	S	SUCCESSFUL
03	10	73	02	L.A. Stanford	L.A. Stanford	10/6/73	ST	SYSTEM TEST	DF	DETECTED FAILURE
03	10	73	03	L.A. Stanford	[illegible]	10/6/73	FE	FACTORY EXERCISE	PF	PROGRAM FAILURE
03	10	73	04	[illegible]	[illegible]	10/9/73	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 [signature]

DATE 10/8/73

UK FACTORY ACCEPTANCE TEST LOG #3

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
03	10	73	1430	2230	FM	S				S-150	RECONFIGURE SEVA + BIAS	L.A. Stanford
03	10	73	2230	2235	SU					S-150	RECONFIGURE SEVA	L.A. Stanford
03	10	73	2235	0630	FE	S				S-150	BIAS REMOVED	L.A. Stanford
04	10	73	0630	0635	SU					S-150		L.A. Stanford
04	10	73	0635	0740		DF	2312-A1	17256	M-05	S-150	DISK DRIVE GIVING UNIT CHECKS	L.A. Stanford
04	10	73	0740	1515	UM						WORKON DISK PROBLEM (M-05)	L.A. Stanford
04	10	73	1400	1415	UT	S				U-137	THIS TEST NOT PREVIOUSLY COMPLETED	L.A. Stanford
04	10	73									DUE TO A PROBLEM WITH THE 2821 WHILE	L.A. Stanford
04	10	73									NOT UNDER TEST. REPAIR ACTION WAS TAKEN	L.A. Stanford
04	10	73									AND U-137 RUN AT THIS TIME	L.A. Stanford
04	10	73	1515	2315	FE	S				S-150	RESTART SEVA	L.A. Stanford
04	10	73	1515	1635		DF	2312-A1	17256	T-01	S-150	READ ERROR DSU #1	L.A. Stanford
04	10	73	1515	2100		DF	2312-A1	17256	T-02	S-150	READ ERROR DSU #1	L.A. Stanford
04	10	73	1515	2315	FE	S				S-150	RESUME SEVA	[illegible]
04	10	73	2315	2325	SU						RECONFIGURE SEVA	[illegible]
04	10	73	2325	0715	FE	S				S-150	RESUME SEVA	[illegible]
05	10	73	0715	0720	SU						RECONFIGURE	[illegible]
05	10	73	0720	1515	FE	S				S-150	RESUME SEVA	[illegible]
05	10	73	0720	1015		DF	2401-03	36013	T-03		TAPE OFF ~~END~~ REEL DR 1-0 5 RECONS OK	[illegible]
05	10	73	1515	1521	SU						RECONFIGURE	[illegible]
05	10	73	1521	2321	FE	S				S-150	RESUME SEVA	[illegible]
05	10	73	2321	2330	SU						RECONFIGURE SEVA	L. Stanford
05	10	73	2330	0721	FE	S				S-150	RESUME SEVA	L. Stanford
05	10	73	2330	0005		DF	7251-09	51994	T-04		SDBO CK SE #2	L. Stanford

FAILURE TYPE: T - TRANSIENT M - MALFUNCTION

MALFUNCTION RECORD DA	MO	YR	NO	OPENED BY	CLOSED BY	DATE
04	10	73	05	[illegible]	Changed 2218378 [illegible]	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 [illegible]

DATE 10/8/73

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.		
06	10	73	0721	0725	SU						RECONFIGURE SEVA	
06	10	73	0725	1405	FE	S				S-150	RESUME SEVA	
06	10	73	—	1405							SEVA RUN COMPLETED	
06	10	73	1410	1440	ST	S				S-138	REFERENCE M-02, REPLACED	
											CARD IN PWR. CIRCUITRY IN CE 1	
											COMPLETED CANCER VOLTAGE TEST	
06	10	73	—	1440							END OF ACCEPTANCE 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 10/8/73

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																														
2																															
3																															
4																															

PROGRAM AND SECTION ID		TEST RESULT	CERTIFICATION
Switch Demonstration	CE#1	Successful	Kirt Lang
Switch Demonstration	CE#2	N/A	
Switch Demonstration	CE#3	N/A	
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 8 1973

Contract FA64WA-5223

IBM 9020 D/E DATA PROCESSING SYSTEM

FACTORY AND FIELD ACCEPTANCE TEST

CHECK LIST AND SPECIFICATION - AMENDMENT #89

UNITED KINGDOM 9020D SIMPLEX SYSTEM

September, 1973

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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 Simplex System.

The purpose of this Amendment is to list the Schedule of tests to be performed for the United Kingdom 9020D Acceptance Test.

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FACTORY FLOOR DIAGRAM - APPENDIX G	G-1
FIELD FLOOR DIAGRAM - APPENDIX H	H-1

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

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-006	SE 1-4	Timing Demonstration	5.1.4
U-017	PAM 1	Switch Demonstration	5.1.9
U-018	DASF 1	Switch Demonstration	5.1.10
U-019	TCU	Switch Demonstration	5.1.11
U-020	I/O Tester 2540/1403	Switch Demonstration	5.1.12
U-021	1052	Switch Demonstration	5.1.13
U-101	CE 1	Functional Test	5.2.1
U-105	CE/SE	ATR Test	5.2.1
U-106	IOCE 1	Selector Chan. Functional Test	5.2.2
U-109	DASF 1	Functional Test	5.2.2
U-112	TCU 1	Functional Test	5.2.2
U-114	TCU 2	Functional Test	5.2.2
U-123	IOCE 1	Multiplexor Chan. Functional Test	5.2.3
U-126	SE 1-3	Functional Test	5.2.4
U-127	SE 4	Functional Test	5.2.4
U-135	PAM 1	Functional Test	5.2.8
U-137	2821	Functional Test, 2540, 1403	5.2.9
U-139	1052	Functional Test	5.2.10
U-142	IOCE 1	Diag. Mode Functional Demonstration	5.2.12

TEST NO.	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
U-145	IOCE 1	I/O Processor Operation Demonstration	5.2.13
U-146	CE/IOCE/SE	Log-Out Demonstration	5.2.14
U-147	IOCE 1	FLT Functional Test	5.2.15
U-148	CE 1	FLT Functional Test	5.2.15
S-001	System	Reconfiguration Test A	6.1.1
S-002	System	Reconfiguration Test B	6.1.2
S-120	System	Eight Time Sample Problems	6.3.1
S-131	System	Power Interlock Test	7.1.1
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 & 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

APPENDIX B

FIELD ACCEPTANCE TEST

SEQUENCE SCHEDULE

TECT 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-006	SE 1-4	Timing Demonstration	5.1.4
U-017	PAM 1	Switch Demonstration	5.1.9
U-018	DASF 1	Switch Demonstration	5.1.10
U-019	TCU 1	Switch Demonstration	5.1.11
U-020	I/O Tester 2540/1403	Switch Demonstration	5.1.12
U-021	1052	Switch Demonstration	5.1.13
U-101	CE 1	Functional Test	5.2.1
U-105	CE/SE	ATR Test	5.2.1
U-106	IOCE 1	Selector Chan. Functional Test	5.2.2
U-109	DASF 1	Functional Test	5.2.2
U-112	TCU 1	Functional Test	5.2.2
U-114	TCU 2	Functional Test	5.2.2
U-123	IOCE 1	Multiplexor Chan. Functional Test	5.2.3
U-126	SE 1-3	Functional Test	5.2.4
U-127	SE 4	Functional Test	5.2.4
U-135	PAM 1	Functional Test	5.2.8
U-137	2821	Functional Test, 2540, 1403	5.2.9
U-139	1052	Functional Test	5.2.10
U-142	IOCE 1	Diag. Mode Functional Demonstration	5.2.12

TEST NO	ELEMENT/UNIT	DESCRIPTION	SPEC. REF.
U-145	IOCE 1	I/O Processor Operation Demonstration	5.2.13
U-146	CE/IOCE/SE	Log-Out Demonstration	5.2.14
U-147	IOCE 1	FLT Functional Test	5.2.15
U-148	CE 1	FLT Functional Test	5.2.15
S-001	System	Reconfiguration Test A	6.1.1
S-002	System	Reconfiguration Test B	6.1.2
S-101	System	SEVA	6.2.1
S-122	System	FLT Practical Test	6.3.3
S-131	System	Power Interlock Test	7.1.1
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 & 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-160	System	System EPO	7.6

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APPENDIX G

FACTORY FLOOR

DIAGRAM

(To be supplied at a later date)

1

APPENDIX H

FIELD FLOOR DIAGRAM

(To be supplied at a later date)

1