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## DEFENSE DOCUMENTATION CENTER

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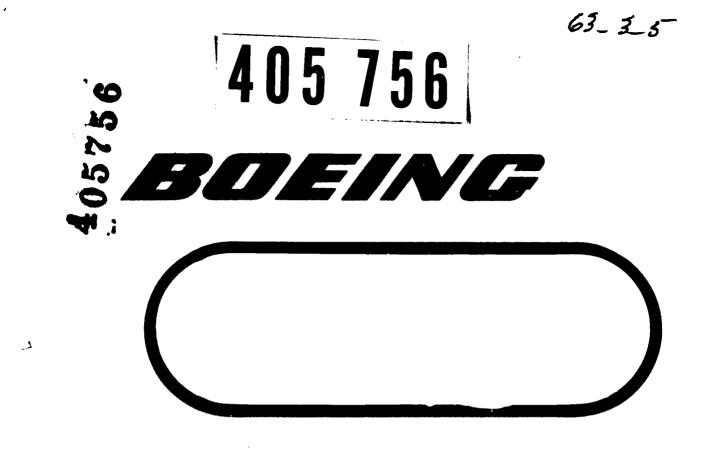
### SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA. VIRGINIA



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SEATTLE, WASHINGTON

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#### FOREWORD

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This document, D2-14934-3, entitled "WS-133A Maintainability Progress Report", is submitted to BSD/STL in accordance with the requirements of Technical Directive 62-4488, "Maintainability Requirement Program," dated 28 May 1962.

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#### REFERENCES

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- a. MIL-M-26512B, "Maintainability Requirements for Aerospace Systems and Equipment," dated 23 March 1962.
- b. 6120-7822-DU-RD1, "Maintainability Criteria, Preliminary," dated 16 March 1962.
- c. T.D. 62-4488, "Maintainability Requirements Program", dated 28 May 1962.
- d. CCN 448, dated 28 May 1962.
- e. CCP 803, dated 5 October 1962.
- f. D2-14475, "WS-133A Maintainability Program Plan."
- g. D2-4747-1, "Maintainability Design Criteria for Minuteman Electronic Equipment."
- h. D2-4747-2, "Maintainability Design Criteria for Minuteman Transportation and Handling Equipment."
- i. D2-4747-3, "Maintainability Design Criteria for Minuteman Facilities and Facilities Equipment."
- j. Boeing letter 2-5261-2-249, dated December 20, 1962, with enclosure, "List of WS-133A Equipment Selected for Maintainability Demonstrations."

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h. D2-14256 "Minuteman Maintainability Guide for Design Criteria."

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This document constitutes The Boeing Company's monthly status report to the Air Force on Maintainability Activities pertaining to the WS-133A Minuteman Weapon System. The Maintainability Program is a contractual obligation of The Boeing Company under CCN 448 of Contract Number AF 04(648)-289.

#### 2.0 PURPOSE

The Air Force has requested that The Boeing Company develop Maintainability Criteria and conduct a Maintainability Program in accordance with this criteria. This is being accomplished in accordance with the WS-133A Maintainability Program Plan (D2-14475) based on the requirements set forth in MIL-M-26512B as amended by Technical Directive 62-4488.

The purpose of this document is to report to the appropriate Air Force agencies the progress achieved in execution of the Maintainability Plan and to detail the work accomplished during the reporting period.

#### **3.0** INTRODUCTION

This document is the third of the monthly reports that outline the progress achieved by the contractor in the WS-133A Maintainability Program. The first report covered the period from 18 October 1962 thru 31 December 1962. Each succeeding report covers a monthly period from the first thru the last day of each month. This report covers the month of February, 1963.

The Maintainability Program Plan for the Minuteman Weapon System is two-fold; it provides both a Design Review and Evaluation Plan and a Test and Demonstration Plan. The monthly reports contain status of progress and problem areas encountered in each of these plans.

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#### 4.0 MAINTAINABILITY REVIEW AND EVALUATION

#### 4.1 MAINTAINABILITY REVIEWS

#### 4.1.1 Program

As part of the Maintainability (M) effort under CCP-803 and the WS-133A Maintainability Program Plan (D2-14475), specific figure "A" items are being reviewed for M and soldering in accordance with criteria as specified in 6120-7822-DU-RDI. Major M problem areas revealed by these reviews are reported through initiation of a Maintainability Action Request (MAR). Minor M problems of the product improvement type are reported to the Design Project through a Maintainability Review Report (MRR).

#### 4.1.2 Figure "A" Items To Be Reviewed

- a. The following figure "A" items were selected by the customer for M review:
  - 1) 1207 Drier, Air Compressor;
  - 2) 1281 Fault Locator Set, AN/GSM-69;
  - 3) 1288 Battery, Storage;
  - 4) 1337 Distribution Box;
  - 5) 1338 Console, Communications Control;
  - 6) 1367 Motor/Generator, PU-521;
  - 7) 1380 Distribution Box;
  - 8) 1385 Distribution Box;
  - 9) 1412 Signal Assembly, Voice Reporting;
  - 10) 1423 Antenna Group, AN/GRA-72;
  - 11) 1424 Antenna, AS-1213/GRC-113;
  - 12) 1425 Antenna System, H.F., Receiving & Transmitting;
  - 13) 1426 Antenna, H.F., Transmitting, Hardened;

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#### 4.1.2 (Continued)

	14)	1607	Security and Alarm Set;
	15)	3007	Test-set, Explosive Set Circuitry;
	16)	3092	Test-set, Programmer Group;
	17)	4018	Adapter AN/GSM-61;
	18)	4043	Elevator, Work Cage;
	19)	4152	Test Equipment; Electrical Facility, Base Maintenance;
	<b>2</b> 0)	4220	Test-Set, Relay;
	21)	4252	CIV Set, AN/GSQ-65;
	<b>2</b> 2)	4344	Fault Locator, SCN Cable;
	23)	4451	Controller, Azimuth Drive;
	24)	4487	Command Signal Simulator;
	<b>2</b> 5)	4489	Message Generator;
	26)	4490	Simulator Set, Electrical Functions;
	27)	4491	Start-Up Unit;
	28)	4515	Static Frequency Changer;
	29)	4523	Common Power Supply;
	<b>3</b> 0)	4539	Test-Set, VRSA;
	31)	4601	Function Simulator; H.F./UHF Radio;
	32)	4632	Test-Set. Electric Power, LF;
	<b>33</b> )	4633	Test-Set, Electric Power, LCF.
b			s of the Maintainability Review Meetings held at January 1962, and at RCA, on 16 January 1962 (file

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#### 4.1.2 (Continued)

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No. 2-6331-0-366, dated 7 February 1962) listed certain figure "A" items which were not reviewed due to non-availability of hardware. These items are being reviewed on a schedule compatible with equipment availability.

c. Other figure "A" items are being reviewed as problem areas are identified by review of Field Service Reports, System Test Action Requests, Unsatisfactory Reports, M Evaluation/Observation (E/O) Reports, and other field reports prepared by Boeing organizations.

#### 4.2 MAINTAINABILITY ACTION REQUESTS (MAR)

Status of all MAR's initiated to date is contained in the MAR Status Summary Chart (See Section 6.2).

#### **4.3 MAINTAINABILITY REVIEW REPORTS (MRR)**

**During the reporting period MRR's on the following equipments** were completed:

a) Test Adapter Group, Figure A 4018;

b) L.F. Start-up Unit, Figure A 4491;

c) Programmer Group Test Set, Figure A 3092;

d) Simulator Set, Missile Launch, Figure A 4490;

The MRR's have been forwarded to the cognizant design group for consideration as product improvement items. (See Maintainability Review Status Summary Chart Section 6.1).

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#### 4.4 FIELD LIAISON REPORTS

Surveillance of operational activities to obtain additional Maintainability data is being accomplished thru review of STAR's (Systems Test Action Requests), FSR's (Field Service Reports), UR's (Unsatisfactory Reports), and BIAR's (Base Installation Action Requests). During the reporting period, four (4) STAR's, four (4) FSR's, and three (3) BIAR's have been reviewed for Maintainability implications.

#### 4.4.1 MAINTAINABILITY SURVEILLANCE

In those cases where reviews indicate a maintainability problem, <u>M</u> Engineers are assigned to work the solutions with design. If the proposed solutions to problems reported thru the above Field Liaison Reports do not satisfy maintainability requirements then a MAR or MRR will be initiated as appropriate.

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#### 5.0 MAINTAINABILITY TEST AND DEMONSTRATION

#### 5.1 TEST AND DEMONSTRATION PLAN

- a. Tests and performance already scheduled for other purposes at the STP III installation, Vandenberg Air Force Base, and Minuteman Wing installation are being utilized to provide as many Maintainability demonstrations as possible. Maintainability Engineers are participating in those tests and demonstrations which have inherent Maintainability significance, and are documenting their observations.
- b. Items of equipment whose Maintainability features have a major impact upon the operation and maintenance of the Weapon System have been selected. Only demonstrations involving these items are being documented, pending both BSD approval of the equipment list and contractual coverage for any additional tests considered necessary by the Customer.

#### 5.2 TEST AND DEMONSTRATION EQUIPMENT LIST

- a. The "List of WS-133A Equipment Selected for Maintainability Demonstrations" was transmitted to BSD by letter 2-5261-2-249, dated December 20, 1962. This list identified applicable maintenance operations which may be observed during remaining scheduled test and demonstration activities, to provide Maintainability demonstrations of the selected Figure "A" equipment items. It also identified, for each selected equipment item, those maintenance operations which should be demonstrated but were not at that time known to be included within any scheduled test or demonstration.
- b. The "Demonstration Requirements Status Summary" (Section 5.3 of this report) provides monthly amplification and updating of the "List of WS-133A Equipment selected for Maintainability Demonstrations." It contains a tabulation of the maintenance operations which should be demonstrated for each selected "Figure A" equipment item, and identifies any scheduled events which are known to include these operations. It also contains a completion record, which provides completion dates and observer report numbers for all demonstrations which have been accomplished during current and previous reporting periods.
- c. Maintainability Engineers will continue to participate in the scheduled demonstration events listed in the "Demonstration Requirements Status Summary," pending further direction from BSD.

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#### 5.3 MAINTAINABILITY EVALUATION/OBSERVATION (E/O) REPORTS

E/O Reports are prepared for both "dynamic" observations of maintenance and "static" evaluations of M design. The Maintainability E/O's provide the basis for subsequent corrective action on the noted problems, and are submitted in this Progress Report as a demonstration record.

- a) "Static" evaluations are complete visual inspections made on a non-interference basis whenever equipment becomes conveniently available. "Dynamic" observations are made during applicable maintenance operations using actual equipment. In either case the E/O Reports document the demonstration results.
- b) Each completed E/O Report is evaluated by the Maintainability Engineers who have Maintainability-review responsibility for the specific "Figure A" items of equipment identified in the report. When Maintainability deficiencies are identified in the E/O, MAR's and/or MRR's are initiated for appropriate action.
- c) Twelve E/O Reports were written during the report period covered by this document. They were prepared by the Maintainability Engineers who participated in the M demonstrations. The reports are contained in Section 6.4

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#### 6.0 REPORTS

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This section contains status charts; copies of Maintainability Action Requests (MAR's), and Maintainability Evaluation/Observation (E/O) Reports.

#### 6.1 MAINTAINABILITY REVIEW STATUS SUMMARY

The Maintainability Review Status Chart contains an up-to-date summary of all Figure A equipments reviewed in accordance with the discussion contained in Section 4. As additional Figure A items are reviewed they will be entered on this chart with notations as to action taken and date review is completed. This chart will be revised and reproduced in each succeeding monthly status report.

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MAINTAINABILITY REVIEW STATUS CHART

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	ON II W. Tringle		ACTION REPORT	LEPORT	DATE REVIEW	
<u> </u>	ON & Amari	LOUDIN I	MAR NO.	MRR NO.	COMPLETED	
	1367 1282/1288 1243/1338	Motor-Generator, PU-521 (LCF) Battery Storage Consoles (telephone & transmitter control)	3-1282-A1	1-1 <b>3</b> 67 2-1282 3-1243	December 14, 1962 December 14, 1962 December 14, 1962	
1	1369 4488			4-1369 5-4488	122	
	1283 4252	Motor-Generator, PU-515 Code Incenter-Varitien Set	1-1283-AI	6-1283	ີເສົາ	
	1370			8-1370	36	
	452 <b>3</b>	Programmer Group Common Power Supply		9-1201 10-4523	December 21, 1962 December 24, 1962	
	3109	Alarm Set Test Set		11-3109	8, 196;	
	Various	Electrical Equipment Cases, MGE		12-MGE	January 18, 1963	
•	1412	Voice Reporting Signal Assembly		13-1337 14-1412	January 23, 1963 January 21, 1963	_
	6950			15-6950	22. 22.	
	1380	Distribution Box. J-1312		16-1380	January 23, 1963	
	3007	Test Set, Explosive Set Circuitry		17-3007		
	7724	NCU Zero Alignment Test Set	2-7724-AI		January 22, 1963	
	4018	Test Adapter Group		18-4018	2,1	
	4491 2000	Start-Up Unit, LF		19-4491	February 26, 1963	
``	3092	Test Set, Programmer Group		20-3092		
D	4490	Simulator Set Missile Launch		21-4490	February 26, 1963	
)2-]						
49						
34	•	•				
-3						
			•			
Pag	·					
çe 1			•			
4						

#### 6.2 MAR STA?'US SUMMARY

The MAR Etatus Chart contains up-to-date list of MAR's issued and the current status of each MAR. Copies of MAR's will be included in each monthly status report until such time as they are considered closed. MAR's requiring no further consideration by either the originating engineeer or the organization responsible for corrective action will be closed. This status is assigned by the MAR originator only when one of the following has been achieved:

- a) An authorized hardware, procedure, specification or other corrective action has been found to satisfy the MAR problem;
- b) The organization responsible for action rejects the request for corrective action and the MAR originator concurs with reasons given for the rejection;
- c) The MAR originator considers that the MAR requires no further action because of related actions taken, events occurring, or status changing after initiation of the MAR.
- 6.2.1 MAR #2-7724-A1 is "closed" out for the following reasons:
  - 1) The MAR reply from the equipment manager indicates that the M problem has been solved. PRR #11602 has been approved by the Change Board.
  - 2) The PRR eliminates the cable between the NCU and the NCU Test Set. A shorting plug, which attaches to the NCU connector, replaces the cable which was giving all the trouble.
- 6.2.2 MAR # 3-1282-A1 is "closed" out for the following reasons:
  - 1) The "fix" for the battery shock mounts as recommended in this MAR is identical to a fix previously recommended in ECP-391 and FCR187, which were subsequently cancelled.
  - 2) In view of the above, Boeing considers this MAR closed unless further direction is received from PSD to resubmit the ECP.

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**BOEINE:** MD2-14934-3 MGE 15

STATUS Closed\* Closed\* January 22, 1963 December 5, 1962 To Be issued Date Issued MAR STATUS CHART NCU Zero Alignment Test Set Launch Facility Battery Shock Mounts DC Drive Motor Disconnect \*MAR copies impediately follow this chart. SUBJECT 1-1283-A1 2-7724-A1 3-1282-A1 MAR NO.

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$\mathbb{N}$	<u>N</u> A I	NTAINABILITY ACTION REQ WS-133 WEAPON SYSTEM	UEST	2
Aero-S Seattle	ing Company pace Division Washington	ROUTING ACTION: <u>Kazuo Kobauaski</u> ORGAN, <u>2-6433</u> M.S. <u>42-93</u>	PAGE: <u>1 of</u> M A R No. <u>2-7</u> DATE: <u>22 Janua</u>	'724-A
Mall S	ation 2-5261-30 itop 50-66 one JU6-6263	CC: <u>Dan Ranney</u> <u>14-01</u> <u>D. A. Cole</u> <u>43-86</u> <u>Dan Supplee</u> <u>34-03</u>	DATE REPLY DU	JE:
	10	SYSTEM NOZZLE Control Unitsubs	YSTEM <u>BGS-116</u>	Test S
Factors o	ce of the NCU.	· ·	· · · 、	
<b>L</b> .		which mates with the NCU is "mold OU to the test set and proper facilit e at Plant 77.		
2.	Spares Provisio figure A as a sp	oning, organization 2-5274, can not bare.	authorize an en	tire
3.		t provided as a spare; Drawing # 2 to make up this cable.	5-26801 calls ou	t sepa
<b>4.</b>	repair. One uni	are A items have been sent from Plat has been returned to Plant 77 aft hers are still at Boeing after 25 day	er 75 days turn	
5.		ive a high usage factor. BIAR-Plan nnectors become damaged thru cor	<b>,</b> ,	••
Discussio	n:			
conne	ctor is used, rea	with a connector on the NCU and, i sultant damage to the NCU connecto utonetics for repair. Plant 77 has	or requires that	the
J. Nieder		hade R. B. Grobe	stem Analysis	hor
A Engineer E. Hard	Carl Auro	J. S. McExcheran	pprovad by:	•
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#### **Discussion**(Continued)

or pot the connector to the cable. This molding is required because test set is used in a hazardous area.

The current high failure rate for this test set plus the lengthy turn-around time requires that a change be made in the present repair concept or that the quantity authorized at Plant 77 be increased for this figure A.

NOTE: Since the cost of this figure A is only %790, increased authorization for this item at Plant 77 can be provided at a relative low cost; therefore a cost study will not be made. The problem here is not costs but that a maintenance bottleneck is to be prevented.

#### **Recommendation:**

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Redesign of the connector/cable to make it replaceable at Plant 77.

Note:

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This is a preliminary cost study to assertain if the M proposal will result in a savings to the customer. Values used are gross figures and do not constitute official Boeing cost estimates. Their use is limited to planning purposes and trade studies for this M proposal.

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$\mathbf{\Sigma}$	MAIN	ITAINABILITY WS-133 WI	ACTION EAPON SYSTI	•	IEST	<u> 1</u>	$\underline{\checkmark}$
Aero-Spa Seattle MAINTAINA Organizati Mail Sta	ng Company ice DIx sion Wathington BILITY GROUP on 2-5261-30 op 50-66 e JU6-6263	ROUTING ACTION: _F ORGAN, _H&J M.S52- CC: _KNieh _PKoen _JMB _DAC	D Power Un 26 auer ig arker	it 52-26 52-91 50-66 43-86	PAGE: MARNo DATE: <u>Fe</u> (I DATE REPI	. <u>3-1282-</u> bruary 14 December	1963
IGURE A NO	1282	SYSTEME	lectrical	_ SUBSY	STEM Stor	age Batte	ery
Refere	(a) Parson I	Drawing SK-161			• .	•	
	(b) FSR No (c) BSD Dra	MAFB 341 SMW	-53F				
reports This sa	considerable me difficulty o	received from 1 difficulty in ins can be expected fe of the weapon	talling Laun whenever b	cher bat	tery shoc	k mounts	
drawing mainter overall based u	g SK-162 (refer nance problem, savings of app pon effectivity Facility, it is	ew of an alterna ence c) indicate Cost studies a roximately \$65 at Wing III. As recommended t	es eliminations show that du 5,220 can be the saving	on of the e to sime realize s is app	e installati plicity of ed. This roximately	lon and design, a savings is y \$625 pe	un S
	mend ECP be p g SK-162 (refer	ence c).	ange shock i	nounts t	o ones sin	nilar to E	SD .
	1					•	• .
Minutema J. Nieder	n Finance krome	Pile	Minutem R. B. Gr	obe /	m Analysi	2110	he
A Engineers	1 Strong	Approved by:	Si: Gach	ran Ap	proved by:		1 .

<b>3-1282-A</b> I	, Revision 1 COST	EFFECT IVENESS	SUMMARY	Page 2 of 2
WEAPON	SYSTEM ELEMEN S Missile Launch Contr:l Facility Launch Facility OGE MGE RPIE	• •	×	10 SUPPORT Maintenance loading & time lines Manhours and personnel requirements Grew-wehicle hours and trips "On-site" vs SMSB vs Depot repair Spares Test and maintenance equipment Training
CHANGE	TASKS AND FUNCTIONS ECP Processing (or PRR)			Transportation Supply functions
Å.	Research and development Retrofit and TCTO	• •		CONAL FACTORS Downtime or availability
	Special change-retrofit e Publications and drawings Figure A, forms B, C, C-1 Manufacturing changes			Reliability Standardization & interchangeability Compatibility (PAS, 465L, radio nets power, GFE, test equipment, etc.)
	Hardware changes Mandatory, "make-work" ch Customer directed Boeing initiated	anges		Interfaces and secondary faults Schedule impact Safety and hazards Human factors (MIL-STD-803)

#### COST SUMMARY

Boeing initiated '

	Cost	Savings
R&D	\$ 50,000	
Publications & Drawings	5,000	·
Form C	<b>2,000</b>	
Cost of modifying batteries \$17.00/unit		•• •
12 units/LF, 150 LF/wing & 7 wings		
(Wings III through IX)		· .
Total cost of battery change \$17X12X150X7	214,200	• •
Old shock mount \$1800 for material/unit		•
240 manhours for manufacture.	•	· · · ·
New shock mount \$1800 for material/unit		•
184 manhours (56 less manhours) \$10.00/hr.		•
150 LF/wing & 7 wings		
56X \$10X13X150X7 = Manufacturing savings	•	∲588,000
Savings of 2 manhours per unit on installation	•	•
at \$12.40/hr.		• •
<b>\$12,40X2X13X150X7 =</b>	•	338,420
Totals	8-271,200	\$926,420
·		

**Net Savings** 

\$655,220

#### Note:

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This is a preliminary cost study to assertain if the M proposal will result in a savings to the customer. Values used are gross figures and do not constitute official Boeing Cost estimates. Their use is limited to planning purposes and trade studies for this M proposal.

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#### 6.3 DEMONSTRATION REQUIREMENTS STATUS SUMMARY

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The following Demonstration Requirements Status Summary contains an up-to-date summary of scheduled maintainability demonstration events for each selected "Figure A" equipment item, including completion dates and E/O Report numbers for those demonstrations which have occurred during the current and previous reporting periods. The Summary also lists those maintenance operations which should be demonstrated but are currently "unscheduled."

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#### 6.3 DEMONSTRATION REQUIREMENTS STATUS SUMMARY

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The following Demonstration Requirements Status Summary contains an up-to-date summary of scheduled maintainability demonstration events for each selected "Figure A" equipment item, including completion dates and E/O Report numbers for those demonstrations which have occurred during the current and previous reporting periods. The Summary also lists those maintenance operations which should be demonstrated but are currently "unscheduled."

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MAINTENANCE OFEATION         DEMONSTRATION EVENT         DEMONSTRATION EVENT           If said -Lavel         Draver AJ         Vertification: T. O. JIXJ-12-6-2, par.         DMF           (Part No54)         Vertification: T. O. JIXJ-12-6-2, par.         DMF         DMF           (Part No54)         Vertification: T. O. JIXJ-12-6-2, par.         DMF         DMF           (Part No54)         Vertification: T. O. JIXJ-12-6-2, par.         Prizon         Prizon           (Part No54)         Vertification: T. O. JIXJ-12-6-2, par.         Prizon         Prizon           (Part No54)         Vertification: T. O. JIXJ-12-6-2, par.         Prizon         Prizon           (Part No54)         Vertification: T. O. JIXJ-12-6-2, par.         Prizon         Prizon           (Part No54)         Vertification: T. O. JIXJ-12-6-2, par.         Prizon         Prizon           (Part No54)         Vertification: T. O. JIXJ-12-6-2, par.         Prizon         Prizon           (Part No64)         Vertification: T. O. JIXJ-12-6-2, par.         Prizon         Prizon           (Part No64)         Vertification: T. O. JIXJ-12-6-2, pr.         Pr.         Pr.           (Part No64)         Vertification: T. O. JIXJ-12-6-2, pr.         Pr.         Pr.           (Part No64)         Vertification: T. O. JIXJ-	MEVIOUS REPORT	CURREN
MAINTENANCE OFEATION         DEMONSTRATION         DEMONSTRATION         DEMONSTRATION         DATE           [Part No49         Vertification: T. O. 31X3-12-4-2, par.         COMMETED         ComMETED           (Part No49         Vertification: T. O. 31X3-12-4-2, par.         COMMETED           (Part No49         Vertification: T. O. 31X3-12-4-2, par.         Part No49           (Part No49         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No49         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2, par.         Part No40           (Part No40         Vertification: T. O. 31X3-12-4-2,	REPORT	
[Field -Level Drever A]       Vertification: T. O. 31X3-12-0-2, par.         (Part No94)       Vertification: T. O. 31X3-12-0-2, par.         (Part No64)       Vertification: T. O. 31X3-12-0-2, par.         (Part No64)       Vertification: T. O. 31X3-12-0-2, par.         (Part No64)       Vertification: T. O. 31X3-12-0-2, par.         (Part No94)       Vertification: T. O	NO. DAIE	COMPLETED NO. DATE
(Part No54)       Verification: T. O. 31X3-12.4-2, par.         (Part No63)       Verification: T. O. 31X3-12.4-2, par.         (Part No64)       Verification: T. O. 31X3-12.4-2, par.		
(Part No54)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13         (Part No59)       Varification: T. O. 31X3-12-6-2, (Part No56)         (Part No56)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13         (Part No63)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13         (Part No64)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13         (Part No64)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13         (Part No64)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13         (Part No94)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13         (Part No94)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13         (Part No94)       Varification: T. O. 31X3-12-6-2, 7-12A, 7-13	•	
(Part No59)       Varification: T. O. 31X3-12-6-2;         Drawer Ad       Varification: T. O. 31X3-12-6-2;         (Part No54)       Varification: T. O. 31X3-12-6-2;	•	
Drawer A4       Varification: T. O. 31X3-12-8-2.         (Part No53       Varification: T. O. 31X3-12-8-2.         (Part No63       Varification: T. O. 31X3-12-8-2.         (Part No64       Varification: T. O. 31X3-12-8-2.         (Part No54       Narification: T. O. 31X3-12-8-2.	•. •.	
(Part No6.3 Verification: T. O. 31X3-12-6-2, Part No6.3 Verification: T. O. 31X3-12-6-2, Part No6.4 Verification: T. O. 31X3-12-6-2, (Part No5.4 II-17 thru II-23 (Part No5.4 II-17 thru II-23 (Part No5.4 Verification: T. O. 31X3-12-6-2, (Part No5.4 Verification: T. O. 31X3-12-6-2,	<u>,</u>	
(Part No6.)       Varification: T. O. 31X3-12-6-2.         Drawer A6       Varification: T. O. 31X3-12-6-2.         (Part No50       11-17 thru 11-23		
Drawer A6 (Part No40) Nerification; T. O. 31X3-12-0-2, (Part No50) Verification; T. O. 31X3-12-0-2, 11-17 thru 11-23 (Part No51) Verification; T. O. 31X3-12-0-2, 11-17 thru 11-23	. <b>-</b>	
(Part No50) Verification: T. O. 31X3-12-8-2, 11-17 thru 11-23 (Part No51) Verification: T. O. 31X3-12-8-2, 11:17 thru 11-23		
(Part No51	<b>.</b>	
-		•
Drawer A7 Vetification; T.O. 31X3-12-8-2, par. 12-15 thru 12-19	:	•
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						COMPLETIC	COMPLETION RECORD		
PIGUME A					REVIOUS		•	CURRENT	
EQUIMENT ITEM	MAINTENAN	MAINTENANCE OPERATION	DEMONSTRATION EVENT	DATE		REPORT	DATE COMMETED	Q	AEPORT NATE
<b>(12</b> cl)	Field-Level Fault lealation	Drawer Al	UNSCHEDULED					<u>i</u>	
ŝ,		Draver A2	Technical Approval Demonstration 1-14, Malmetrom AFB						<u></u>
		Drawer A3	UNSCHEDULED				יי י		
		Drawer A4	UNICHEDULED			•			
		Drawer A6	<b>DNSCHEDULED</b>						
		Drawer A7	UNICHEDULED				، ج		
				-	•		-		
1211 Launcher Ervirei mental Cortrol System	Organizational -	-Level Checkout	UNSCHEDULED				•	•	
	Organizational-Level Fault Isolation	Lovel Fault	UNSCHEDULED			•		•	
•	Organizational- Level Adjust-	- Dampere D-i, D-2	UNSCHEDULED				•		
	ment	Dampers D-3. D-3A, D-3B	UNSCHE DULE D						
		Damper D-4	UNSCHEDULED	,				•	
		Damper D-5	UNSCHEDULED						
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AGEINE NO. D2-14934-3

,			REPORT DATE																	<b>DUTING</b> NO. D2-14934-3 PAGE 25			
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	COMPLETION RECORD		COMPLETED	•	• •				•			`` 	•				•				•		
>	COMPLETI	•	ORT		-					•	•	••	•							-	•		
×		MEVIOUS 1	REP. NO.			_	•						•			•						•	
S SUMMARY			DA TE COMMETED		-								-			•	•						
DEMONSTRATION REQUIREMENTS STATUS			DEMONSTRATION EVENT	- UNSCHEDULED	UNSCHEDULED	UNSCHEDULED	UNSCHEDULED	UNSCHEDULED	UNSCHEDULED	<b>DNSCHEDULED</b>		UNSCHEDULED	UNSCHEDULED	UNSCHEDULED	UNSCHEDULED	UNSCHEDULED	. UNSCHEDULED	UNSCHEDULED					
			PERATION	Switches PE- 2, PE-3, PE-4	Switch PE-5	Pressure Regulator PC-1	Flow Sasor FA-1	Thew Bassor TA-2	Thermostat TC-1	Thermostat TC-4	Thermostat TC-5	Thermostat RL-1	Thermostat TA-l, TA-6	Thermostat TA-2, TA-5	Thermostat TA-4	Low Temp. Cutout	Oil Pressure Cutout	Pressure Reg PRV-2				•	
, J			MAINTENANCE OPERATION	(Organiantional- , Lovel Adjustment)															•	-		•	
:		FIGURE A	EQUIMENT ITEM	Î														•			•		

FIGURE A MANNTENANCE OFEATION         DEMONSTRATION EVENT           UPAGENET ITEA         MANNTENANCE OFEATION         DEMONSTRATION EVENT           Commandational: Event Appendiational: Event Appendiational: Event Extension         Restrictors         UNSCHEDULED           Commandational: Event Extension         DEMONSTRATION EVENT         DEMONSTRATION EVENT           Commandational: Event Extension         Restrictors         UNSCHEDULED           Commandational: Event Extension         POSCHEDULED         UNSCHEDULED           Commandational: Event Extension         POSCHEDULED         UNSCHEDULED           Press Balance Event         Construct         UNSCHEDULED           Press Balance Event         UNSCHEDULED         UNSCHEDULED           Press Balance Event         UNSCHEDULED         UNSCHEDULED           Press Event	Role         Americanisticani         Description         Constriction         Constriction         Constriction           Reserver (113A         Martineuxici         <	•	•	DEMON	DEMONSTRATION REQUIREMENTS STATUS	SUMMAI	•	•	•
FRUNK A BURGNET TRA         MANTENANCE OFENTION         DEMONSTIATION EVENT         Improves         Improve         Improve <th>Fredukt A ummerint TRA         MANTTRUNKCE OFENDION         DEMONSTRATION FORM         DEMONSTRATION FORM         DEMONSTRATION FORM         DEMONSTRATION FORM         DEMONSTRATION FORM         DEMONSTRATION         DEMONSTRATING         <t< th=""><th></th><th></th><th></th><th>`</th><th></th><th></th><th>INETION RECOU</th><th>1</th></t<></th>	Fredukt A ummerint TRA         MANTTRUNKCE OFENDION         DEMONSTRATION FORM         DEMONSTRATION FORM         DEMONSTRATION FORM         DEMONSTRATION FORM         DEMONSTRATION FORM         DEMONSTRATION         DEMONSTRATING <t< th=""><th></th><th></th><th></th><th>`</th><th></th><th></th><th>INETION RECOU</th><th>1</th></t<>				`			INETION RECOU	1
Commutational         Arear (close         UNSCREDULED         Computibio         Online         Computibio           Event Adjuarancesi Event Adjuarancesi Brian Adjuarance Brianting         Rear (close         UNSCREDULED         Computibio         DARE         Computibio           Are Press         Brianting         UNSCREDULED         UNSCREDULED         DARE         Computibio         DARE         Computibio           Are Press         Are Press         UNSCREDULED         DARE         UNSCREDULED         DARE         Computibio         DARE         Computebio	Computational         Restrictors         UNSCHEDULED         Computation           Even Apparationsi         Restrictors         UNSCHEDULED         Onli - O           Even Apparationsi         Restrictors         UNSCHEDULED         Distribution           Restrictionsi         Restrictors         UNSCHEDULED         Distribution           Air Prov Restrictional:         Restrictionsi         UNSCHEDULED         Distribution           Air Prov Restrictional:         Prove Restrictional:         UNSCHEDULED         Distribution           Commentional:         Events         UNSCHEDULED         Distribution           Commentional:         Events         UNSCHEDULED         Distribution           Constrained:         Events         UNSCHEDULED         Distribution           Constrained:         Events         UNSCHEDULED         Distribution           Field-Lowei         Calibratius         UNSCHEDULED         Distribution           Field-Lowei         Culter Unit         UNSCHEDULED         Distribution           Field-Lowei         Culter Unit         UNSCHEDULED         Distribution           Field-Lowei         Culter DULED         UNSCHEDULED         Distribution           Field-Lowei         Culier Unit         UNSCHEDULED <td< th=""><th>* FIGURE A BOURMENT ITEM</th><th>. MÁINTENANCE</th><th>OPERATION</th><th>DEMONSTRATION EVENT</th><th></th><th>ŏ</th><th>11</th><th>CURRENT</th></td<>	* FIGURE A BOURMENT ITEM	. MÁINTENANCE	OPERATION	DEMONSTRATION EVENT		ŏ	11	CURRENT
Fine Ralacci Reg Ralacci Alter View     UNSCREDULED       Alter Ralacci Alter View     UNSCREDULED       Alter View     UNSCREDULED       Alter View     UNSCREDULED       Alter View     UNSCREDULED       Fielde-Level     UNSCREDULED	File     Matures     UNSCREDULED       Ray     Discrete     UNSCREDULED       Alia Piras     Discrete     Discrete       Alia Piras     Constraine     Discrete       Alia Piras     Discrete     Discrete       Alia Piras     Constraine     Discrete       Alia Piras     Constraine     Discrete       Alia Piras     Constraine     Discrete       Paras     Constraine     Discrete		Organizational-		UNSCHEDULLED	COMPLETED	- <u></u>	• •	oz
Air Free Balaacia Energy Wans Free Balaac- ing Degendraktional.         UNSCREDULED           Cegendraktional.         Preosme Segendraktional.         UNSCREDULED           Preof Caliberius.         Preosme Segendraktional.         UNSCREDULED           Preof Laws         UNSCREDULED         UNSCREDULED           Mats. Com- Baug Bals.         UNSCREDULED         UNSCREDULED           Mats. Com- Baut bedaktor         UNSCREDULED         UNSCREDULED           Preof Laws         UNSCREDULED         UNSCREDULED	And Balancing         Unscriebull?           Analysis         Unscriebull?           Analysis         Unscriebull?           Analysis         Unscriebull?           Analysis         Unscriebull?           Analysis         Unscriebull?           Analysis         Unscriebull.           Predition:         Enarys.           Predition:         Unscriebull.           Predition:         Enarys.           Predition:         Unscriebull.           Predition:         Enarys.           Predition:         Enarys.           Predition:         Unscriebull.           Predition:         Unscriebull.           <						. •		
Preve Mainet- ing     Emerg Wat     UNSCHEDULED       Consultational- cons     Events     UNSCHEDULED       Constituention- cons     Events     UNSCHEDULED       Field-Lavel     Calitar Unit     UNSCHEDULED       Field-Lavel     Calitar Unit     UNSCHEDULED       Field-Lavel     Calitar Unit     UNSCHEDULED       Field-Lavel     Calitar Unit     UNSCHEDULED       Prediction     Emerg Cont     UNSCHEDULED       Prediction     Calitar Unit     UNSCHEDULED       Mance, Cont     UNSCHEDULED     Mance, Cont       Prediction     Calitar Unit     UNSCHEDULED       Mance, Cont     UNSCHEDULED     Mance, Cont       Mance, Cont     UNSCHEDULE	Emerg. Was     Emerg. Was     UNSCREDULED       Cogniticani.     Pressare     UNSCREDULED       Cogniticani.     Pressare     UNSCREDULED       Cogniticani.     Pressare     UNSCREDULED       Field-Larei     Culler Unit     UNSCREDULED       Field-Larei     UNSCREDULED     Emergi	•		Air Flow Balaacing		,	•		
Li. Presente Lim. Gage Carlo Carlo Carlo Chiller Unis Chiller Unis Chiller Unis Chiller Unis Chiller Unis Chiller Unis Chiller Unis Mase, Coon- Mise, Coon- Mise	Line Pressure UnScheDullED Taggaranse UNScheDullED Cage Caller Unit UNScheDulLED Emerg. Conluce Units Mise. Con- UNScheDulLED Mise. Con- UNScheDulLED Mise. Con- UNScheDulLED Mise. Con- UNScheDulLED Mise. Con- UNScheDulLED Mise. Con- UNScheDulLED Mise. Con- UNScheDulLED Mise. Con- UNScheDulLED		•	Emerg. Wher Flow Balanc- ing	UNSCHE DULLE D	• .		· · ·	
Tampasaula UNSCHEDULED Caller Uait UNSCHEDULED Emerg. Cool UNSCHEDULED Mae. Com- VNSCHEDULED Mae. Com- Mae. Com- Mae. Com- Mac. Com- Mic. Com- UNSCHEDULED Mac. Com- Mic. Com-	Tamparatra UNSCHEDULED Gage Childer Unit Hang Unit Emerg. Cool UNSCHEDULED Mise. Coon- UNSCHEDULED Mise. Cool UNSCHEDULED Mise. Cool UNSCHEDULED Mise. Cool UNSCHEDULED Mise. Cool UNSCHEDULED Mise. Cool UNSCHEDULED Mise. Cool UNSCHEDULED Prosents Prosents Prosents		Organizational- Level Calibration	Pressure Gage	UNSCHEDULED			•	
Chiller Unit Resert. Cool Ing Unit Mac. Coon- VNSCHEDULED Femeric Chillor Unit UNSCHEDULED Femeric Mac. Cool UNSCHEDULED Mac. Cool UNSCHEDULED Mac. Cool UNSCHEDULED Femeric Mac. Cool UNSCHEDULED Femeric Mac. Cool UNSCHEDULED	Chilles Unit Resert. Cool Ing Unit Chilles Unit Unit Chilles Unit Chilles Unit Chilles Chilles Unit Chilles	·		Temperature Cage	UNSCHEDULED		•		
Emerg. Cool UNSCHEDULED Mae. Com- Presents Chiller Unit Chiller Unit Emerg, Cool Wisc. Com- UNSCHEDULED Mae. Com- UNSCHEDULED Misc. Com- UNSCHEDULED Presents Presents	Rassrg. Cool Ing Unic Chillor U		Field-Level Checkout	Chiller Unit	UNSCHEDULED			•	
Mise. Com- posside Chilar Usik Emerg. Cool Mise. Com- Wise. Com- UNSCHEDULED Mise. Com- UNSCHEDULED Posside	Mise. Com- possate Chilar Usi Emerg. Cool UNSCHEDULED Mise. Com- UNSCHEDULED Mise. Com- UNSCHEDULED			Emerg. Cool-	UNSCHEDULED		•		
Chiller Unit UNSCHEDULED Emerg, Cool UNSCHEDULED Misc. Cem- UNSCHEDULED possids	Childer Usuk UNSCHEDULED Emarg, Cool UNSCHEDULED Mise, Com- UNSCHEDULED Promitio			Misc. Com-	UNSCHEDULED				
Emerg, Cool UNSCHEDULED ing Unic. Cem- UNSCHEDULED poments	Emers, Cool UNSCHEDULED Misc. Com- Domento		Field-Level Fault lealation	Chiller Unit	UNSCHEDULED		· •		
Miac. Com- UNSCHEDULED pomenta	Mise. Cen-			. Emerg, Cool- ing Unit	NISCHEDULED				
				Misc. Com- posside	UNSCHEDULED		<u> </u>	-	
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DEMONSTRATION REQUIREMENTS STATUS SUMMARY . 4

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FIGURE A MANTBUANCE OFEATION GOURNENT ITEM MAINTBUANCE OFEATION Read Control Cont	PERATION         DEMCNASTRATION EVENT           PREATION         DEMCNASTRATION EVENT           PREATON         UNSCHEDULED           Low Presset         UNSCHEDULED           Low Presset         UNSCHEDULED           Low Presset         UNSCHEDULED           Low Presset         UNSCHEDULED           Coll Presset         UNSCHEDULED           Damper D-1         UNSCHEDULED           Damper D-1         UNSCHEDULED           Damper D-1         UNSCHEDULED           Damper D-2         UNSCHEDULED           Presset         UNSCHEDULED           Presset         UNSCHEDULED	CO BATE COMMETED	REVIOUS REPORT REPORT	ORT DATE	COMPLETED	CUMMENT REPORT · NO. C	2
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Prote-Lavel	ress			DATE	COMPLETED		DATE
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3ettch	Switch PR-5A UNSCHEDULED	,					
awitch Baritch (A., Pi	Switches PE- UNSCHEDULED			•	•		
. Therm	Thermostat ' UNSCHEDULED	• 		•,			
The module	OGIAL UNSCHEDULED				<u> </u>		
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FIGURE A									
					MEVIOUS		•	CURRENT	
	MAINTENANCE OPERATION	NOIN	DEMONSTRATION EVENT	DATE		REPORT	DATE	REPORT	Ĭ
				COMPLETED	vo	<b>PATE</b>	COMPLETED	ġ	DATE
1213 Command-Status Massage Processing	Or_anizational-Level Checkout	Partual	<b>Revalidation: T.O. 21-5M80A-2-3.</b> par. 2-36 thru 2-39		•	•			•
		Complac	<b>UNSCHEDULED</b>	•			-		
4									
•	Organizational Level Fault Seelation	1 T	UNSCHEDULED	•		-	• •	<u></u>	
	Field-Level CV-123	CV-1236 Drawer	Verification; T.O. 31X2-32-3-2, par. 8-5, 8-7						
,	MX-361	MX-3686 Drawer	Verification: T.O. 31X2-32-3-2, par. 8-5, 8-7						
	19K-XM	MX-3687 Drawer	Verification; T.O. 31X2-32-3-2, par. 8-5, 8-7				-		
	CV-124.	CV-1243 Drawer	Vertification; T.O. JIX2-32-3-2, par. 8-5, 8-7				<b>3</b> 4		
	CK-123	CV-1237 Drawer	Verification; T.O. 31X2-32-3-2, par. 8-5, 8-7		•	•			
	нс-хм	MX-3742 Drawer	Vertication; T.O. 31X2-32-3-2, par. 0-5, 0-7						·
	умлж	MU-446 Drawer	Verification; J.O. 31X2-32-3-2, par. 8-5, 8-7				۰ <u>۰</u>		
	CV-124	CV-1249 Drawer	Verufication; T.O. 31X2-32-3-2, par. 0-5, 0-7	-	•		<b>.</b>		
·	CV-1251	CV-1250 Drawer	Verification; T.O. JIX2-32-3-2, par. 8-5, 8-7				· .		
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	•	DEMON	ATION REQUIREMENTS	STATUS SUMMARY	۲				
						COMMETION RECORD	N RECORD	THEFT	
EQUIPMENT ITEM	MAINTENAN	MAINTENANCE OPERATION	DEMONSTRATION EVENT	DATE			- DATE .		AT
F	Field-Lowl	CV-1236 Drawer	UNSCHEDULED	COMPLETE	22	•••			
<u> </u>	noitelos) tine		UNSCHEDULED	,			'	•	
•		MX-3687 Drawer	UNSCHEDULED						
		CV-1243 Drawer.	UNSCHEDULED				•		-
	· .	CV-1237 Drawer	UNSCHEDULED				· · · · · ·		
		MX-3742 Drawer	UNSCHEDULED			•			•
		MU-446 Drawer	UNSCHEDULED				-		
		CV-1249 Drawer	UNSCHEDULED						
		CV-1250 Drawer	UNSCHEDULED	-	, ,	-	• •		
<u>.</u>	Field-Level Adjustment	CV-1237 Drawer	Ver.licztion; T O. 31X2-32-3-2, par. 13-4					<u> </u>	
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FOURT A Balanderir IIBA         MMTBUNCE OFBAUON         DBAONSTMATION FORM         DBAONSTMATION FORM         DBAONSTMATION FORM         DBAONSTMATION FORM         DBAONSTMATION FORM         DBAONSTMATION         DBAONSTMATION         DBAONSTMATION         DBAONSTMATION         DBAONSTMATION         DBAONST         DBAONST <thdbaonst< th=""> <thdbaonst< th=""> <thdbaonst< th=""></thdbaonst<></thdbaonst<></thdbaonst<>	EATION DEMONSTRATION EVENT DATE REPORT Checkout UNSCHEDULED Technical Approval Demonatration Facta_e Technical
Degeneration         Dots         Constitution         Dot         Dots         Dots </th <th>m     Complete     Levol       m     Chackout     UNSCHEDULED     COMPLETO     NO.       Packa_e     Technical Approval Demonatration     COMPLETO     DATE       rison     Technical Approval Demonatration     COMPLETO     NO.     DATE       rison     Technical Approval Demonatration     Date     Date     Date</th>	m     Complete     Levol       m     Chackout     UNSCHEDULED     COMPLETO     NO.       Packa_e     Technical Approval Demonatration     COMPLETO     DATE       rison     Technical Approval Demonatration     COMPLETO     NO.     DATE       rison     Technical Approval Demonatration     Date     Date     Date
Organisational-System Chackout     UNSCHEDULED       Deration     Technical Approval Demonstration       Deration     Technical Approval Demonstration       Organisation     Technical Approval Demonstration       Development     Technical Approval Demonstration       Default     Water Chiller       Field-Level     Water Chiller       Field-Level     Vertification; T.O. 35E9-35-1; par.       Decident     Vertification; T.O. 35E9-35-1; par.       Pried-Level     Vertification; T.O. 35E9-35-1; par.       Pried-Level     Vertification; T.O. 35E9-35-1; par.       Pried-Level     Vertification; T.O. 35E9-35-1; par.       Decident     Vertification; T.O. 35E9-35-1; par.       Pried-Level     Vertification; T.O. 35E9-35-1; par.       Decident     Vertification; T.O. 35E9-35-1; par.       Pried-Level     Vertification; T.O. 35E9-35-1; par.       Decident     Vertification; T.O. 35E9-35-1; par.       Pried-Level     Vertification; T.O. 35E9-35-1; par.       Pried-Level     Vertification; T.O. 35E9-35-1; par.       Pried-Level     Vertification; T.O. 35E9-35-1; par. <th>m Checkout Packa_e Liton conc Con- mplitier</th>	m Checkout Packa_e Liton conc Con- mplitier
Parage Pacha.e     Technical Approval Demonstration       Organizational     1-13, Malmatrom AFB       Dependence     Electronic Con- trol Amplitier     1-13, Malmatrom AFB       Organizational     Level Fault     UNSCHEDULED       Organizational     Level Fault     UNSCHEDULED       Approval Demonstration     1-12, Vandenber, AFB       Approval Demonstration     1-13, Malmatrom AFB       Fald-Level     Variation; T.O. 35Ey-35-1, par- by       Preciout     Variation; T.O. 35Ey-35-1, par- by       Preciout     Variation; T.O. 35Ey-35-1, par- by       Fald-Level     Variation; T.O. 35Ey-35-1, par- by       Fault Tapel     Variati	Pacha_e tion romic Con- implifier
Electronic Con- trol Amplitier       Technical Approval Demonstration         II-Level Fault       UNSCHEDULED         II-Level Fault       UNSCHEDULED         Replace Pumping       Technical Approval Demonstration         II-Level Fault       UNSCHEDULED         Replace Pumping       Technical Approval Demonstration         II-Level Fault       UNSCHEDULED         Replace Pumping       Technical Approval Demonstration         II-13, Malmatron AFB       *         Varier Chiller       1-13, Malmatron AFB         Pumping Assema       Verification; T.O. 35E9-35-1, par.         Buging Assema       Verification; T.O. 35E9-35-1, par.         By       Verification; T.O. 35E9-35-1, par.	roate Con- mplifier Fault
Larvel Fault     UNSCHEDULED       Level Fault     Technical Approval Demonstration       Replace Pumpture     Technical Approval Demonstration       Technical Approval Demonstration     1-15, Malmatron AFB       Water Chiller     Technical Approval Demonstration       Water Chiller     1-13, Malmatron AFB       Water Chiller     Technical Approval Demonstration       Pumpting Assembler, AFB     Vertification; T.O. 3559-35-1, par.       Buy     Vertification; T.O. 3559-35	Fault
Replace Pumping     Technical Approval Demonstration       1-15, Malguattom AFB <ul> <li>Malguattom AFB</li> <li>Malguattom AFB</li> <li>Malguattom AFB</li> <li>Vater Chiller</li> <li>1-12, Vardenberg, AFB</li> <li>Variation AFB</li> <li>Variatron AFB</li> <li>Variation Armplifier</li> <li>VNSCHEDULED</li> <li>Variation Amplifier</li> <li>VNSCHEDULED</li> <li>Variation Amplifier</li> <li>VNSCHEDULED</li> <li>Variation Amplifier</li> <li>VNSCHEDULED</li> <li>VARATIONATIONATIONATIONATIONATIONATIONATION</li></ul>	
Technical Approval Demonstration       Technical Approval Demonstration       Water Chiller     Technical Approval Demonstration       Water Chiller     Technical Approval Demonstration       Pumping Assembler     Verification; T.O. 3559-35-1, par.       Buy     Verification; T.O. 3	Jungany
Water Chiller     Technical Approval Demonstration       1-13, Malmatrom AFB     Vartification; T. O. 35E9-35-1, par.       Ny     Vartification; T. O. 35E9-35-1, par.	
ing Assem- ronic Con- mplifier Chiller ing Assem- ting Assem- tinplifier	Water Chiller Technical Approval Demonstration 1-13, Malmatrom AFB Vertiscation; T.O. 35E3-35-1, par.
mplifier Chiller ing Assem- ronic Con- implifier	
ing Assem- ronic Con- implifier	mplifier - Chiller
	ing Assem-
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SUMMARY
STATUS
REQUIREMENTS
DEMONSTRATION

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					COMPLETK	COMPLETION RECORD		
FIGURE A	•			REVIOUS			CURRENT	
IQUMBNT ITEM	MAINTBUANCE OFERATION	DEMONSILATION EVENT	DATE COMPLETED	NO. REPORT	DATE	COMPLETED	NO.	REPORT DATE
1226 Ratus-Command Message Processing	Organizational-Level Checkout	Technical Approval Demunatration 1-20, Malmatrom AFB	1-7-62	E0-1228-1	29-62-M		•	
F		Techaical Approval Demonstration 1-17, Vandenbert, AFB					•	
	, .¢	٩						
	Organizational-Level Fault Isolation	Technical Approval Demonstration 1-20, Malmstrom AFB	11-7-52	EO-1228-1	11-29-62			
	•	Technical Approval Demonstration 1-17, Vandenberg AFB		•		•	•	
	Field-Level MC-3775 Drawsr Checkow	Vertication; T.O. 31X2-32-3-2, par. 18-5, 18-7			•	•.		
	MX-3776 Drawer	Verification: T.O. 31X2-32-3-2, par. 18-5, 13-7	`			,		
•.	CV-1254 Drawer	Verification; T.O. 31X2-32-3-2, par. 18-5, 18-7			•	· · · ·	•	
•	KY-41) Drawer	Verification; T.O. 31X2-32-3-2, par. 8-5, 8-7				* ,		
	Field-Lével MC-3775 Drawer Fault Bolation	UNSCHEDNTED				, <b></b>	•	
•	MX-3776 Drawer	UNSCHEDULED						•
•	CV-1254 Drawer	UNSCHEDULED				,		•
	KY-411 Drawer	UNSCHEDULED				*	 2	

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PIGURE A					REVIOUS			CURRENT	
ACRIMINAT ITEM	MAINTENA	MAINTENANCE OPERATION	DEMONSTRATION EVENT	DATE	REPORT	DAT	DATE	REP	REPORT
				COMPLETED	NO.	DATE	COMPLETED	vo	DATE
1243 Launch Certrol Centele	Organisational-I	I-Level Checkout	Technical Approval Demonstration 1-22, Elisworth AFB						
			Techaical Approval Demonstration 1-20, Vandenberz AFB	1-29-63	E0-1243-1 1-30-63	1-30-63	•		
	•								
	Organizational-Lavel Fault Isolation	l-Lavel Fault	UNSCHEDULED				ر ، • · · · · ·	· •	
	Tield-Level Checkout	DC Power Filter Assembly	Verification: T.O. 31X3-39-2-1, par. 11-3	•	•		•	,	
		Telephone Xmtr. Control	Verification; T.O. 31X3-3-9-2-1						
`	Field-Level Fault Leolation	DC Power Filter Assembly	UNSCHEDULED	•		•		• .	
		Telephone Xmtr. Control		•		•			
·		Removal, Replacement, and Checkout of Launch, Control Panel	Technical Approval Demonstration 1-18, Vandenberd AFB	1-29-03	E0-1243-1 1-3 -63	[9- [-[	•		
				•			```` <b>`</b>		
			-			_	*'	-	

16-2-052.2-5

Figure Burnment IIIA         MANTENANCE OFENION         DEMONSTIANION FUEL         MANTENANCE OFENION         DEMONSTIANION FUEL         Amothematication         Amoth						COMPLETIO	COMPLETION RECORD		
MARTERMANCE OFEN/ION         DEMONSION/ION         DEMONSION/ION <thdemonsion ion<="" th=""> <thdemonsion ion="" ion<="" th=""> <th< th=""><th></th><th></th><th></th><th></th><th>MEVIOUS</th><th></th><th></th><th>CURRENT</th><th></th></th<></thdemonsion></thdemonsion>					MEVIOUS			CURRENT	
Organizational Level Checked         Technical Approval Demonstration         11-7-62         ED-261-1         11-2-62           Organizational Level Fault         Pechnical Approval Demonstration         11-7-62         EO-1331-1         11-2-62           Organizational Level Fault         Pechnical Approval Demonstration         11-7-62         EO-1331-1         11-2-62           Pridd-Level         317-64 Denver         Verification: T.O. 31X2-32-3-2, par.         11-7-62         EO-1331-1         11-2-64           Pridd-Level         317-64 Denver         Verification: T.O. 31X2-32-3-2, par.         11-7-62         EO-1331-1         11-2-64           Pridd-Level         317-64 Denver         Verification: T.O. 31X2-32-3-2, par.         11-7-62         11-2-64           Pridd-Level         317-54 Denver         Verification: T.O. 31X2-32-3-2, par.         11-7-62         11-2-2, par.           Pridd-Level         31-54 Denver         Verification: T.O. 31X2-32-3-2, par.         11-7-62         11-2-2, par.           Pridd-Level         31-64 Denver         Werlication: T.O. 31X2-32-3-2, par.         11-7-62         11-7-64           Pridd-Level         31-64 Denver         Werlication: T.O. 31X2-32-3-2, par.         11-7-64         11-7-64           Pridd-Level         31-64 Denver         Werlication: T.O. 31X2-3-3-3-2, par. <td< th=""><th></th><th>BUANCE OFEATION</th><th>DEMONSTRATION EVENT</th><th>DATE COMPLETED</th><th>NO.</th><th>DATE</th><th>COMPLETED</th><th>NO.</th><th>DATE</th></td<>		BUANCE OFEATION	DEMONSTRATION EVENT	DATE COMPLETED	NO.	DATE	COMPLETED	NO.	DATE
al-Lewel Fault     Technical Approval Demonstration     11-7-62     E0-1231-1       RT-646 Drawer     Yertification: T. O. 31X2-32-3-2, par.     14-7, 12-62     E0-1231-1       DT-232 Drawer     Yertification: T. O. 31X2-32-3-2, par.     14-5, 14-7     E0-1231-1       MK-3172 Drawer     Yertification: T. O. 31X2-32-3-2, par.     14-5, 14-7     E0-1231-1       MK-3173 Drawer     Yertification: T. O. 31X2-32-3-2, par.     14-5, 16-7       MK-3173 Drawer     Yertification: T. O. 31X2-32-3-2, par.     14-5, 16-7       MK-3773 Drawer     Vertification: T. O. 31X2-32-3-2, par.     14-5, 16-7       DT-233 Drawer     UNSCHEDULED     11X2-32-3-2, par.       DT-234 Drawer     UNSCHEDULED     11X2-32-3, par.       MK-3773 Drawer     UNSCHEDULED		enal-Level Checkout		11-7-62	DO-1251-1	11-2:-62	-		
RT-666 DrawerVerification: T. O. 31X2-32-32, par.DT-332 DrawerVerification: T. O. 31X2-32-32, par.MX-3773 DrawerUNSCHEDULEDDT-253 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3774 DrawerUNSCHEDULEDMX-3779 DrawerUNSCHEDULEDMX-3779 DrawerUNSCHEDULEDMX-3779 DrawerUNSCHEDULEDMX-3779 DrawerUNSCHEDULEDMX-3779 DrawerUNSCHEDULEDMX-3779 DrawerUNSCHEDULEDDr-253 DrawerVerification: T. O. 31X2-32-32, par.Dr-253 DrawerVerification: T. O. 31X2-32-32, par.Dr-253 DrawerVerification: T. O. 31X2-33-32, par.	Organizati	oal-Level Fault	Technical Approval Demonstration 1-20, Malmatrom AFB	11-7-62	E0-1251-1	11-29-62	•	•	
DT-252 DrawerVerification: T. O. 31X2-32-3-2, par.MX-3773 DrawerVerification: T. O. 31X2-32-3-2, par.MX-3773 DrawerVerification: T. O. 31X2-32-3, par.MX-3773 DrawerVerification: T. O. 31X2-32-3, par.GV-1253 DrawerUNSCHEDULEDDT-253 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3773 DrawerUNSCHEDULEDMX-3774 DrawerUNSCHEDULEDMX-3775 DrawerUNSCHEDULEDMX-3778 DrawerUNSCHEDULEDMX-3778 DrawerUNSCHEDULEDMX-3779 DrawerUNSCHEDULEDDT-253 DrawerUNSCHEDULEDDT-2	Field-Low Checknet		Yerification; T.O. 31x2-32-3-2, par. 18-5, 18-7			•		•	
MX-3772 Drawer Verification: T.O. 31X2-32-3-2, par. MX-3773 Drawer Verification: T.O. 31X2-32-3, par. 6-5, 8-7, 8-7, 8-5, 8-7 CV-1253 Drawer Verification: T.O. 31X2-32-3, par. 8.T-646 Drawer UNSCHEDULED DT-254 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED DT-253 Drawer Verification: T.O. 31X2-32-32, par. DT-253 Drawer Verification: T.O. 31X2-32-32, par.		DT-252 Drawer	Verificatica; T.O. 31X2-32-3-2, par. 10-5, 16-7				•	<u> </u>	
MX-3773 Drawer Verification; T.O. 31X2 32-3-2, par. CV-1253 Drawer Verification; T.O. 31X2-32-2, par. BT-646 Drawer Verification; T.O. 31X2-32-2, par. DT-253 Drawer UNSCHEDULED MX-3772 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED MX-3773 Drawer VISCHEDULED MX-3773 Drawer VISCHEDULED DT-253 Drawer Verification; T.O. 31X2-32-32, par. DT-253 Drawer Verification; T.O. 31X2-32-32, par. DT-253 Drawer Verification; T.O. 31X2-32-32, par.	•	MX-3772 Drawer	Verification; T. O. 31X2-32-3-2, par. 18-5, 18-7						
CV-1253 Drawer Verification; T. O. 31X2-32-3, par. a. 5, b.7 b.5, b.7 b.7-353 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED KT-646 Drawer Verification; T. O. 31X2-32-32, par. DT-253 Drawer Verification; T. O. 31X2-32-32, par. DT-253 Drawer Verification; T. O. 31X2-32-32, par.		MX-3773 Drawer	31X2 32-3-2,				•		
RT-646 Draver       UNSCHEDULED         DT-253 Draver       UNSCHEDULED         MX-3773 Draver       UNSCHEDULED         DT-453 Draver       Verification: T.O. 31X2-32-3-2, par.         DT-253 Draver       Verification: T.O. 31X2-32-32, par.		CV-1253 Drawer	Verification; T. O. 31X2-32-3-2, par. 8-5, 8-7		•			*	•
DT-252 Draver UNSCHEDULED MX-3772 Draver UNSCHEDULED MX-3773 Draver UNSCHEDULED CV-1353 Draver UNSCHEDULED CV-1353 Draver UNSCHEDULED RT-646 Draver Verification; T.O. 31X2-32-3-2, par. 27-646 Draver Verification; T.O. 31X2-32-3-2, par. DT-252 Draver Verification; T.O. 31X2-32-3-2, par.	. Tield-Leve		UNSCHEDULED	•					
MX-3772 Drawer UNSCHEDULED MX-3773 Drawer UNSCHEDULED CV-1353 Drawer UNSCHEDULED RT-646 Drawer Verification; T.O. 31X2-32-32, par. 29-8 thru Figure 29-4 DT-252 Drawer Verification; T.O. 31X2-32-32, par.	Fault Jeolatien		UNSCHEDULED				a <sup>1</sup>	•	
CV-1253 Drawer UNSCHEDULED RT-646 Drawer Verification; T.O. 31X2-32-3-2, par. 29-8 thru Figure 29-4 DT-252 Drawer Verification; T.O. 31X2-32-3-2, par. 19-10 thru Fly. 19-6		MX-3772 Drawer MX-3773 Drawer	UNSCHEDULLED UNSCHEDULLED						
RT-646 Drawer Verification; T.O. 31X2-32-3-2, par. 29-8 thru Figure 29-4 DT-252 Drawer Verification; T.O. 31X2-32-3-2, par. 19-10 thru Fly. 19-6		CV-1253 Drawer	UNSCHEDULLED				•		
	Field-Lev Adjustment		Verification; T. O. 31X2-32-3-2, par. 29-8 thru Figure 29-4	-	•				
		DT-252 Drawer	Verification; T. O. 31X2-32-3-2, par. 19-10 thru Fig. 19-6						
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Muntificanti         Date         Date         Date         Date         Date           Departmentional:         Privati         2:	FIGURE A					1.		CURRENT
Departmentional:     Printi     Evaluations:     Frinti       Complete     Complete     UNSCREDULED       Complete     Complete       Complete     UNSCREDULED       Complete     UNSCREDULED       Complete     UNSCREDULED       Public     UNSCREDUL	I ITEM	MAINTENAN	CE OPERATION		DATE COMPLETED	REPOR	COMPLETED	REPOR NO.
Market Level Faith     UNSCREPULED       Organizational - Lovel Faith     UNSCREPULED       Packd-Lovel Faith     UNSCREPULED       Relief     Net States       Verification     T.O. 1022-13-12, per.       MK-305 Draver     Verification       MK-304 Draver	1	Organizational-	Partial		-	<u> </u>	*	
Opputational-Lowel Fast matter     UNSCRFDULED       Constant     T-469 Draver       Privile Lowel     T-469 Draver       Privile Lowel     T-469 Draver       R-1096 Draver     Verification: T.O. 1872-182-132, pur. Hd. 319 Draver       MM-109 Draver     Verification: T.O. 1872-182-132, pur. Hd. 319 Draver       MM-109 Draver     Verification: T.O. 1872-182-132, pur. Hd. 319 Draver       MM-2643 Draver     Verification: T.O. 1872-182-132, pur. Hd. 349 Draver       MC-3643 Draver     Verification: T.O. 1872-182-132, pur. Hd. 345, the formula       MC-3643 Draver     Verification: T.O. 1872-182-132, pur. Hd. 345, the formula       MC-3643 Draver     Verification: T.O. 1872-182-132, pur. Hd. 345, the formula       MC-3643 Draver     Verification: T.O. 1872-182-132, pur. Hd. 345, the formula       MC-3643 Draver     Verification: T.O. 1872-182-132, pur. Hd. 345, the formula <td></td> <td></td> <td></td> <td>UNSCHEDULED</td> <td></td> <td></td> <td>•</td> <td></td>				UNSCHEDULED			•	
Oppendantemail         Level I         Valuation           Public Level I         T-445 Disver:         UNCERFDULED           Public Level I         T-445 Disver:         Variation: T. O. 10X2-13-14, pm.           Public Level I         T-445 Disver:         Variation: T. O. 10X2-13-14, pm.           Receives:         R-195 Disver:         Variation: T. O. 10X2-13-14, pm.           AM - 119 Disver:         Variation: T. O. 10X2-13-14, pm.         Line: State St								,
Publik-Lowel         Verification:         O. 1072-13-12, per.           Receives         Werification:         T. 0. 1072-13-12, per.           Revision:         Werification:         T. 0. 1072-13-12, per.           Alk-1959 Draver         Werification:         T. 0. 1072-13-12, per.           Alk-1959 Draver         Werification:         T. 0. 1072-13-12, per.           Alk-1959 Draver         Verification:         T. 0. 1072-13-12, per.           MC-3613 Draver         Verification:         T. 0. 1072-13-12, per.           MC-3613 Draver         Verification:         T. 0. 1072-33-13, per.           MC-3613 Draver         Verification:         T. 0. 1072-32-13, per.           MC-3613 Draver         Verification:         T. 0. 1072-32-14, per		Organizational-  bodation	Lovel Fault	UNSCHEDULED			•	
B-1006 Drawer       Verification: T. O. 3132-32-3-2, par.         AW-3159 Drawer       Me-3, M-7         ME-461 Drawer       Verification: T. O. 3132-33-3-2, par.         ME-543 Drawer       Verification: T. O. 3132-33-3-2, par.         ME-543 Drawer       Verification: T. O. 3132-33-3-2, par.         ME-543 Drawer       Verification: T. O. 3132-33-3-1, par.         ME-543 Drawer       Verification: T. O. 3132-33-3-1, par.         ME-544 Drawer       Verification: T. O. 3132-32-3-1, par.         ME-543 Drawer       Verification: T. O. 3132-32-3-1, par.         ME-548 Drawer       Verification: T. O. 3132-32-3-1, par.         ME-548 Drawer       Verification: T. O. 3132-32-3-1, par.         D-979 Drawer       Verification: T. O. 3132-32-3-1, par.         ME-548 Drawer       Verification: T. O. 3132-32-32, par.         ME-548 Drawer       Verification: T. O. 3132-32-32, par.         D-979 Drawer       Verification: T. O. 3132-32-32, par.         ME-949 U-97       Verification: T. O. 3132-32-32, par.         ME-949 U-97       Ver			T-469 Drawer	Verification: T.O. 31X2-32-3-2, par. 18-5, 18-7			•• *	
AM-3159 Danver       Verification: T. O. 31X2-32-3-2, par.         MG-361 Drawer       Verification: T. O. 31X2-32-3-2, par.         B-413 Drawer       Verification: T. O. 31X2-32-3-2, par. <td< td=""><td></td><td></td><td>R-1096 Drawer</td><td>Verification; T. O. 31X2-32-3-2, par. 18-5, 18-7</td><td></td><td></td><td></td><td></td></td<>			R-1096 Drawer	Verification; T. O. 31X2-32-3-2, par. 18-5, 18-7				
Vertifications: T. O. 31X2-313-3, par. 18-5, 38-7 Vertifications: T. O. 31X2-313-3, par. 18-5, 18-7 Vertification: T. O. 31X2-32-3, par. 18-5, 18-7		-	AM-3159 Drawer	Verification: T. O. 31X2-32-3-2, par. 18-5, 18-7			( )	
Verifications: T. O. 31X2-31-3. par. 11-5, 18-7 Verifications: T. O. 31X2-31-3. par. 18-5, 18-7 Verifications: T. O. 31X2-31-3.2, par. 18-5, 18-7 Verification: T. O. 31X1-31-3.2, par. 18-5, 18-7 Verification: T. O. 31X1-31-3.2, par. 18-5, 18-7 Verification: T. O. 31X1-31-3.2, par. 18-5, 18-7 Verification: T. O. 31X1-31-2, par. 18-5, 18-7 Verification: T. O. 31X1-31-3.2, par. 18-5, 18-7			MX-3681 Drawer	Vertification: T. O. 31X2-32-3-2, par. 18-5, 18-7			≁	
Vertification: T. O. 31X2-32-3-2, par. 10-5, 10-7 Yertification: T. O. 31X2-32-3-2, par. 10-5, 10-7 Yertification: T. O. 31X2-32-3, par. 10-5, 10-7 Yertification: T. O. 31X2-32-3, par. 10-5, 10-7 Yertification: T. O. 31X2-32-3, par. 10-5, 10-7			MX-3682 Drawer	Verification; T.O. 31XZ-32-3-2, par. 18-5, 18-7	•	•	•	
Verification: T.O. 31X2-32-3. par. 10-5, 10-7 10-5, 10-7 10-5, 10-7 Verification: T.O. 31X7-32-2, par. 10-5, 10-7 Verification: T.O. 31X7-32-2, par. 10-5, 10-7 10-5, 10-7 10-5, 10-7			MX-3643 Drawer	Verification: T.O. 31X2-32-3-2, par. 18-5, 18-7		•		
dis Drawer Verification: T. O. 31X2-32-3-2, par. 16-5, 16-7 Drawer Verification: T. O. 31X7-12-3-2, par. Drawer Verification: T. O. 31X2-12-3-2, par. Drawer Verification: T. O. 31X2-12-3-2, par.			MX-3684 Drawer	Varification: T.O. 31X2-32-3-2, par.		•		•
Drewer Verulication: T. O. 31X7-32-3-2. pur. 16-5, 18-7 Drewer Verulication: T. O. 31X2-12-3-2. pur. 18-5, 18-7			MX-3685 Drawer	Verification; T. O. 31X2-32-3-2, par. 18-5, 18-7				•
Drewer Verufication: T.O. 31X2-34-3-2, ps			ID-979 Drawer	Verulication: T. O. 31X7-32-3-2, par. 18-5, 18-7	,		•	
	• .		R-U31 Drawer	Verification: T.O. 31X2-32-3-2, par. 18-5, 18-7,				
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FIGURE A BOURMENT ITEM						CONFEELOR RECORD			
					REVIOUS		•	CURRENT	
	MAINTENAN	ICE OPERATION	DEFONSION EVENT	DATE	REPORT	RT.	PATE		REPORT
				COMPLETED	v	<b>PATE</b>	COMPLETED	òż	DATE
(1265) Fiel	Field-Level	T-869 Drawer	· UNSCHEDULED			•	• • •	•	
	laolation .	R-1096, Drawer	UNSCHEDULFD		• .		,		
		AM-3159 Drawer UNSCHEDULED	UNSCHEDULED				•	•	· ·
		MX-3681 Drawer UNSCHEDULED	UNSCHEDULED				•	•	•
		WX-3682 Drawer UNSCHEDULED	UNSCHEDULED	•	• •	•			
		TIX-3483 Drawer UNSCHEDULED	UNSCHEDULED			•			
<u>.</u>		MX-3684 Drawer UNSCHEDULED	<b>UNSCHEDULED</b>	,			•		
		MX-3685 Drawer UNSCHEDULED	UNSCHEDULED		•	•	•	:	
		ID-979 Drawer	UNSCHEDULED						
		R-1131 Drawer	UNSCHEDULED						•
<b>.</b> .									
Fiel	Field-Level Adjustment	T-869 Drawer	Verification; T.O. 31X2-32-3-2, par. 46-13						
		R-1096 Drawer	Verification; T. O. 31X2-32-3-2, par. 18-13 thru fig. 19-7				•	•	
		AM-3159 Drawer	Verification; T. O. 31X2-32-3-2, par. 18-13 thru fig. 20-7						
	•	ID-979 Drawer	Verification; T.O. 31X2-32-3-2, par. 23-8						
		R-1131 Drawer	Verification; T.O. 31X2-32-3-2, par. 18-13 thru fig. 23-3		<u>-</u>		د م . ب	•	•

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PIGURE A '					REVIOUS		•	CURRENT	
ADUMMENT ITEM	MAINTENANCE OPERATION	E OPERATION	DEMONSTRATION EVENT	DATE		ORT	. OATE		REPORT
				COMPLETED	ov	DATE	COMPLETED	oz	₩ <b>I</b>
1203 Motor-Gmerator (LJT)	Organisational - L	-Level Checkout	Verification; T.O. 21-SM80A-2-11, par. 2-23				<u>-</u> 		
	Organisations1-Level Fault Isolation	evel Fault	UNSCHEDULED			•	•		
	Organisational-L Adjustment	-Level Brush	UNSCHEDULED			٠	•	. <b></b> .	
	Organiantional-Level Shutdown	evel Shutdown	UNSCHEDULED		•	•	•		,
1284 Power Supply Group (LF)	Organizational- Level Checkout	Voltage and Ckt. Breakers	Verification; T. O. 21-SM80A-2-11, par. 2-26	<del></del>			•	•	÷
<b>.</b>		Relays .	Verification; T.O. 21-5M80A-2-11, par. 2-27	•	•	•			
	Organizati mal- Level Fault Jeolation	Voltage and Ckt. Breakers	Voltage and Ckt. UNSCHEDULFD Breakers			•	•	-	
		Reizya	UNSCHEDULED	•				••	
	Organisational-Level Shutnown	evel Shutown	UNSCHEDULED						
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Reside A Busineding Titles         MANTENANCIC OFERVICION Busined Busi	Reliet A annual Thus         Monthawket Orea (IN)         Demoss (IN) (IN)         EPP/DGA         Consist (IN)         Consist (IN)           Amont Thus         PP-005 depity         Verticentors T_0. 35C-143-1. ptr.         In         In         In         In           Provide Land         PP-005 depity         Verticentors T_0. 35C-143-1. ptr.         In         In         In         In           Provide Land         PP-005 depity         Verticentors T_0. 35C-143-1. ptr.         In         In         In         In           Provide Land         PP-005 depity         Verticentors T_0. 35C-143-1. ptr.         In         In         In         In           Provide Land         PP-005 depity         Verticentors T_0. 35C-143-1. ptr.         In         In         In         In           Provide Land         PP-005 depity         Verticentors T_0. 35C-143-1. ptr.         In         In         In         In           Provide Land         PP-005 depity         Verticentors T_0. 35C-143-1. ptr.         In         In         In         In           Provide Land         PP-005 depity         Verticentors T_0. 35C-143-1. ptr.         In         In         In         In           Particelas         PL         PD-0.05 depity         Verticentors T_0. 35C-143-1. ptr.							COMPLETE	COMMETION. RECORD		
Immediat (The         MultiFlaw/CC OFEA/ION         Delicy:(IA/ION FVIAI         Date: IA/O         Date: IA/O<	Memory (Tex)         MontrevNetC         DeMonissination         Demonstration           FundLevel         FP-1026 Supply         Verifications: T.O.         35C2-2-63-1, part.         Leffort         Leffort           FundLevel         FP-1020 Supply         Verifications: T.O.         35C2-2-63-1, part.         Leffort         Leffort           FundLevel         FP-1020 Supply         Verifications: T.O.         35C2-2-63-1, part.         Leffort         Leffort           FundLevel         FP-1020 Supply         Verifications: T.O.         35C2-2-63-1, part.         Leffort         Commercian           FundLevel         FP-1020 Supply         Verifications: T.O.         35C2-2-63-1, part.         Leffort         Commercian         Commercian<	NGURE A					MEVIOUS			CURRENT	
Render Level     PP-1006 Supply     Vertications: T.O. 35C2-243-1, part.       Contraction     PP-1005 Supply     Vertications: T.O. 35C2-243-1, part.       PP-1015     PP-1005 Supply     Vertications: T.O. 35C2-243-1, part.       PP-1015     PP-1015 Supply     Vertications: T.O. 35C2-243-1, part.       PP-1015     PP-1017 Supply     Vertications: T.O. 35C2-243-1, part.       PP-1017     PP-1017 Supply     Vertications: T.O. 35C2-243-1, part.       Preside     PP-1017 Supply     Vertications: T.O. 35C2-243-1, part.       PP-1017     PP-1017 Supply     Vertications: T.O. 21-SM00A.2.1i.       Preside     Preside     Vertications: T.O. 21-SM00A.2.1i.       Preside     Preside     Vertications: T.O. 21-SM00A.2.1i.       Presid	Model     Converties     PP-3026 Supply     Vertilications: T.O. 35C2-2-63-1, part.       Christ. An 1284     PP-3026 Supply     Vertilications: T.O. 35C2-2-63-1, part.       Christ. An 1284     PP-3027 Supply     Vertilications: T.O. 35C2-2-63-1, part.       Pradici. Lawei     PP-3027 Supply     UNSCHEDULED       Pradici. PP-3027 Supply     Vertilications: T.O. 21-SMB0A.2-1, Lawei     Contractions: Lawei       Pradici. Pault     Procetout     See Fig. A 1284)       Pradici. Lawei     Pault Inclusion     (See Fig. A 1284)	RCAMPAGNT TTEM	MAINTENA		DEMONSTRATION EVENT	DATE	REP	ORT	DATE	REPC	DRT
Tadd. Level         PP-3025 Supply Lot Number         Verifications: T.O. 35C2.2.63-1, par.           Phys. A 1234         PP-3038 Supply Lot Number         Verifications: T.O. 35C2.2.63-1, par.           Pradia Level         PP-3038 Supply Lot Number         Verifications: T.O. 35C2.2.63-1, par.           Pradia Level         PP-3025 Supply Level         Verifications: T.O. 35C2.2.63-1, par.           Paulia Level         PP-3025 Supply Lot Number         Verifications: T.O. 35C2.2.63-1, par.           Paulia Level         PP-3025 Supply UNSCHEDULED         Verifications: T.O. 35C2.2.63-1, par.           Paulia         PP-3015 Supply UNSCHEDULED         Verifications: T.O. 35C2.2.63-1, par.           Paulia         PP-3025 Supply UNSCHEDULED         UNSCHEDULED           Consult I avei Check-sus di I383         Verifications: T.O. 21-SMB0A.3-14.           Organisational-Level Fault         UNSCHEDULED           Consultions         See Fig. A 1284           Pald-Level Fault         (See Fig. A 1284)	Privatul Lavei     PP-1006 Supply     Verification: T.O. 35C2.2.451-1, par.       Press     Press     PP-1000 Supply     Verification: T.O. 35C2.2.451-1, par.       Press     PP-1010 Supply     Verification: T.O. 35C2.2.451-1, par.       Press     PP-1027 Supply     Verification: T.O. 21-SMG0A.2-11, Par.       Press     PP-1027 Supply     Verification: T.O. 21-SMG0A.2-11, Par.       Press     Press     Press     Verification: T.O. 21-SMG0A.2-11, Par.       Press     PP-1027 Supply     Verification: T.O. 21-SMG0A.2-11, Par.       Press     Press     Verification: T.O. 21-SMG0A.2-11, Par.       Press     Press     Verification: T.O. 21-SMG0A.2-11, Par.       Press     Press     Verification: T.O. 21-SMG0A.2-11, Par.					COMPLETED		DATE .	COMPLETED	ġ	DATE
and 1289) PP-1010 Sappiy Verification: T. O. 35C2-2-60-1, par. PP-1027 Suppiy Verification: T. O. 35C2-2-60-1, par. Prediction: PP-1027 Suppiy Verification: T. O. 35C2-2-60-1, par. Prediction: PP-1025 Suppiy UNSCHEDULED Modulis PP-1027 Suppiy UNSCHEDULED PP-1027 Suppiy UNSCHEDULED PP-1027 Suppiy UNSCHEDULED PP-1027 Suppiy UNSCHEDULED PP-1027 Suppix UNSCHE	and 1889)     PP000 Supply     Verifications: T.O. 35C2.2-63-1, par.       PP001 Supply     Verifications: T.O. 35C2.2-63-1, par.       PP002 Supply     Verifications: T.O. 35C2.2-63-1, par.       PP012 Supply     Verifications: T.O. 35C2.2-63-1, par.       PP023 Supply     Verifications: T.O. 35C2.2-63-1, par.       PMMR     PP027 Supply     Verifications: T.O. 35C2.2-63-1, par.       PMMR     PP027 Supply     UNSCHEDULED       PMMR     PP027 Supply     Verification: T.O. 2LSM60A.1.1i.       PMMR     Priot     UNSCHEDULED       Organisational-Level Fault     UNSCHEDULED       Priot<-Lavel Fault	(1204)	Field-Level Checkouk (Fig. A 1284	PP-3026 Supply	Verification; T. O. 35C2-2-63-1, par. 4-4 thru fig. 4-2	٠		••		•	
PP-3027 Supply       Vertication: T.O. 3562-2-63-1, par.         Feid-Lavel       PP-3025 Supply         Vertication:       PP-3023 Supply         Maine       PP-3023 Supply         Modiline       UNSCHEDULED         Modiline       PP-3023 Supply         Maine       Vertification: T.O. 21-SM60A-2-11.         Granizational-Lavel Chectorut       Vertification: T.O. 21-SM60A-2-11.         Granizational-Lavel Chectorut       Vertification: T.O. 21-SM60A-2-11.         Granizational-Lavel Fault       UNSCHEDULED         Granizational-Lavel Fault       USCHEDULED         Field-Lavel Chectorut       (See Fig. A 1204)         Field-Lavel Fault Isolation       (See Fig. A 1204)	PP-3027 Supply     Verification: T. O. 35C2-2-63-1, par.       Public     PP-3026 Supply       Prain     PP-3026 Supply       Postin     UNSCHEDULED       Postin     PP-3020 Supply       Postin     PP-3020 Supply       Postin     PP-3020 Supply       Postin     PP-3021 Supply       Postin     PP-3021 Supply       PP-3027 Supply     UNSCHEDULED       Postin     PP-3027 Supply       Organizational-Level Chectron:     Verification: T. O. 21-SM60A.2-11.       Croup     Organizational-Level Fault       UNSCHEDULED     Verification: T. O. 21-SM60A.2-11.       Condition     UNSCHEDULED       Condition     See Fig. A 1284)       Pald-Level Fault Jaclation     See Fig. A 1284)	· ,4-	(6821 per	<b>PP-</b> 3030 Supply	Verification: T.O. 35C2-2-63-1, par. 4-4 thru fig. 4-2						
Flexis         PP-3016 Supply         UNSCHEDULED           Parall         PP-3010 Supply         UNSCHEDULED           Addiated         PP-3021 Supply         UNSCHEDULED           Addiated         PP-3021 Supply         UNSCHEDULED           Addiated         PP-3021 Supply         UNSCHEDULED           Addiational-Lavel Checkout         Verification: T.O. 21-SM60A-2-11, Galaxiania-Lavel Checkout           Organisational-Lavel Fault         UNSCHEDULED           Organisational-Lavel Fault         UNSCHEDULED           Organisational-Lavel Fault         UNSCHEDULED           Organisational-Lavel Fault         UNSCHEDULED           Field-Lavel Fault         UNSCHEDULED           Fold-Lavel Fault         UNSCHEDULED           Fold-Lavel Fault         UNSCHEDULED           Fold-Lavel Fault         UNSCHEDULED	Predictant         PP-3026 Supply         UNSCHEDULED           Robatism         PP-3020 Supply         UNSCHEDULED           Robatism         PP-3027 Supply         UNSCHEDULED           Robatism         Pre-1027 Supply         UNSCHEDULED           Robatism         Verifications: T. O. 21-SMB0A.2-11.           Robatism         UNSCHEDULED           Robatism			PP-3027 Supply	Verification: T.O. 35C2-2-63-1, par. 4-4 thru fig. 4-2						
Free Action     PP-3021 Supply     UNSCHEDULED       PP-3027 Supply     UNSCHEDULED       PP-3027 Supply     UNSCHEDULED       Organizational-Level Checkout     Verification: T.O. 21-SM60A-2-II.       Granimational-Level Fault     UNSCHEDULED       Fold-Level Fault     UNSCHEDULED       Fold-Level Fault     UNSCHEDULED       Fold-Level Fault     USCHEDULED       Fold-Level Fault     USCHEDULED       Fold-Level Fault     USCHEDULED	Instantional Level Pp-3027 Supply     UNSCHEDULED       Back 1284     PP-3027 Supply     UNSCHEDULED       Pp-3027 Supply     Vertification: T.O. 21-SM60A-2-11.       Amount Level Fault     Vertification: T.O. 21-SM60A-2-11.       Corganisational-Level Fault     UNSCHEDULED       Field-Level Fault Isolation     (See Fig. A 1284)		Field-Lavel Fault	PP-3026 Supply	UNSCHEDULED		•				
PP-3027 Supply       UNSCHEDULED         Organizational-Level Checkruut       Vertification: T. O. 21-SM60A-2-11.         Organizational-Level Fault       UNSCHEDULED         Organizational-Level Fault       UNSCHEDULED         Field-Level Fault       UNSCHEDULED         Field-Level Fault       (See Fig. A 1284)         Field-Level Fault laolation       (See Fig. A 1284)	PP-3027 Supply     UNSCREDULED       were Supply Group     Organizational-Level Checkput     Varification: T. O. 21-SMB0A-2-II.       Organizational-Level Fault     UNSCHEDULED       Organizational-Level Fault     UNSCHEDULED       Fold-Level Fault     UNSCHEDULED       Field-Level Fault loolation     (See Fig. A 1284)	_	[Fig. A 1284 and 1289)	PP-3030 Supply	UNSCHEDULED		_		- ,		
Organizational-Level Checkout Verification: T. O. 21-SM60A-2-11. Granizational-Level Fault UNSCHEDULED Golation Field-Level Fault Joolation (See Fig. A 1284) Field-Level Fault Joolation (See Fig. A 1284)	were Supply Group     Organisational-Level Checkout     Verification: T. O. 21-SM60A-2-11, Grganisational-Level Fault       Organisational-Level Fault     UNSCHEDULED       Field-Level Fault     UNSCHEDULED       Field-Level Fault loolation     (See Fig. A 1284)       Field-Level Fault loolation     (See Fig. A 1284)	•		PP-3027 Supply	UNSCHEDULED				•		
Organizational-Level Checkout Granisational-Level Fault Cranisational-Level Fault Granisational-Level Fault Golation Field-Level Fault Isolation Field-Level Fault Isolation (See Fig. A 1284) Field-Level Fault Isolation	weer Suepoiry Groups Organizational-Level Checkout Grant Verification: T. O. 21-SM60A-2-11, Granisational-Level Fault UNSCHEDULED Field-Level Fault UNSCHEDULED Field-Level Fault Isolation (See Fig. A 1284) Field-Level Fault Isolation (See Fig. A 1284)		•								
UNSCHEDULED (See Fig. A 1284) (See Fig. A 1284)	Organisational-Level Fault Geolation Field-Level Checkout Field-Level Fault Isolation (See Fig. A 1284)	1289 Power Supply Group (LCF)	Organizational	-Level Checkout	Verification: T.O. 21-5M60A-2-11, fig. 1-10C			•	• •	•	
Lout (See Fig. A 1284) (See Fig. A 1284)	Field-Level Checkout (See Fig. A 1284) Field-Level Fault Isolation (See Fig. A 1284)		Or ganisational leolation	-Level Fault	UNSCHEDULED				: ;		
Jaclation (See Fig. A 1284)	Field-Level Fault Isolation (See Fig. A 1284)		Field-Level C)	eckout	(See Fig. A 1284)			•	•		
			Field-Level Fa	ult Isolation	(See Fig. A 1284)			•			
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						COMPLETION	ON RECORD		
FIGURE A					REVIOUS		•	CURRENT	
ROUMMENT ITEM	MAINTENAN	NCE OPERATION	DEMONSTRATION EVENT	DATE		REPORT	<b>DATE</b>		REPORT
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1296 Restricted Area Ami-Instrusion Alarm	Organizational- Level Checkout	VRSA Input	Vertification; T.O. 21-SM80A-2-4, par. 2-4A thru fig. 1-9						`
art Creat	•	inner Security	Verification; T.O. 21-5M80A-2-4, par. 2-4A thru fig. 1-9				ا میں رو	-	ھر.
		Outer Security	Ve rification; T. O. 21-SM80A-2-4, par. 2-4A thru fig. 1-9		•				
	Organizational-	VRSA laput	UNSCHEDULED						
	Level Fault Leolation	Inner Security	UNSCHEDULED		•	_	•		
		Outer Security	UNSCHEDULED			•		•	
	Organisational- Level Adjuntment	Receiver- Transmitter	UNSCHEDULED		•			•	
		Converter- Monitor	UNSCHEDULED						
	Field-Level Checkout	Receiver Transmitter	Verification; T.O. 31X3-2-12-2, par. 7-19 thru fig. 10-2				•		
		Converter - Monitor	Verification; T.O. 31X3-2-12-2, par. 8-8 thru fig. 8-2						
	•	Power Suppl.	Verification: T.O. 31X3-2-12-2, par. 9-6 thru fig. 9-4				•	-	
	Field-Level Fault	Receiver- Transmitter	UNSCHEDULED			•	مہ 		•
	Isolation	Converter - Monitor	UNSCHEDULED						
		Power Supply	UNSCHEDULED						
	Field-Level Adjuetment	Receiver - Tranemitter	UNSCHEDULED						
		Converter-	UNSCHEDULED				-	1	•

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PIGUNE A				REVIOUS			CURRENT	
EQUIPMENT ITEM	MAINTENANCE OPERATION	DEMONSTRATION EVENT	DATE		IX	DATE	9	THORE
			COMPLETED	°Dz	I M	COMPLETED		Š
1337 Distribution Box (L.F.)	Organizational-Level Checkout	Vertification: T. O. 21-5M80A-2-11, Par. 2-30 thru 2-32						••
	Organicational-Level Fault Jeolation	UNSCHEDULED						•
	Organisational-Level Shutdown	UNSCHEDULED						•
	Inspection	UNSCHEDULED :			:	2-22-63	FO-1337-1	2-25-63
1338 Communication Control Console	Organisational-Level Checkout	<b>UNSCHEDULED</b>						
	Organisational-Level Fault Isolation	UNSCHEDULED					_	
	Field-Level Checkout (Arm & Satus Pasel)	Verificatioe: T. O. 31X3-3-9-2-1				, , ,		
• * •	Field-Level Fault feolation	UNSCHEDULED			•			
1367 Motor -Generator (LCF)	Organisational-Level Checkout	t Verification: T. O. ZI-SM80A-Z-II. fig. 1-10A	1-2-63	E0-1367-1	-2-63		•	
-	Crganisational-Level Fault Isolation	UNSCHEDULED						
•	Organisational-Level Servicing	UNSCHEDULED						
	Organisational-Level Alignment	Validation; T.O. 21-SM80A-2-11, par. 1-31						
	-							•
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PICURE A BOURNENT ITEM	MAINTENANCE								
	MAINTENANO				REVIOUS			CURRENT	Ę
		E OPERATION	DEMONSTRATION EVENT	DATE	1970	REPORT	DATE	REPORT	
			••	COMPLETED	° Ž	DATE	COMPLETED	v	
1412 Voice Reporting Or	gast sations  - I	Organisations1-Level Checkout	UNSCHEDULED						
L C	Organisational - Le Isolation	evel Fault	UNSCHEDULED						
	Field-Lavel Checkout	End-to-End	Verification; T. Q. 3181-2CSW4-1, per. 2-25A, 2-25B, fig. 2-6, 2-5A	•					
		Audie Reprodu- cer A	Verification; T.O. 3151-205W4-1. par. 2-25A, 2-26B, fig. 2-6, 2-5B						
•,		Audio Reprodu- cer B	Verification: T.O. 3151-265W4-1, par. 2-25A, 2.25B, fig. 2-6, 2-5C						
		Bout Signal Converter No. 1	Verification; T.O. 3151-2G5W4-1, par. 2-25A, 2-25B, fig. 2-6, 2-5D	<u>.</u>	•				•
		Imput Signal Converter No. 2	Verification: T. O. 3151-205W4-1, par. 2-25A, 2-25B, fig. 2-6, 2-5E	<u>.                                    </u>			•		
		Imput Signal Converter No. 3	Verification; T.O. 3151-2CSW4-L par. 2-25A, 2-25B, fig. 2-6, 2-5F	<u></u> ,	•			•	<u> </u>
,		Imput Signal Converter No. 4	Verification; T. O. 3131-265W4-1, par. 2-25A, 2-25B, fig. 2-6, 2-56			•			
		-Sequence Step- down Control	Varification; 7.0. 3151-2GSW4-1, par. 2-23A, 2-25B, fig. 2-6, 2-5H			-			-
		Interrogation Control	Verification; T. O. 3151-265W4-1, par. 2-25A, 2-25B, fig. 2-6, 2-5J			•			
		Audio Amplifier	Varification: T.O. 3151-2CSW4-1, par. 2-25A, 2-25B, fig. 2-6, 2-5K		•		<u></u>		
71	Field-Level Fault	it leplation	UNSCHEDULED		-		<u> </u>		
	eld-Level Con at	Field-Level Component Re place- ment	UNSCHEDULED.	1-4-63	E0-1412-1	1-4-63		÷	
ee	laspection		UNSCHEDULED	1-10-63	E0-1412-2	1-22-63	-		

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DEMONSTRATION REQUIREMENTS STATUS SUMMARY

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						COMPLETION RECORD		
PIGURE A				MEVIOUS			CURRENT	
Comment state	MAINTENANCE OPERATION	DEMONSTIMTION EVENT	<b>DATE</b>	REPORT	DRT	DATE	REPORT	
	-		COMPLETED	°ç	DATE	COMPLETED	ġ	DATE
3013 Communication - Lamch Centrol Cehoolee	Organisational-Level (1243) Utilisation	Techuical Approval Demonstration 1-20, Vandenberg AFB	1-29-63	E0-3013-1	1-30-63	,		
ž		Technical Approval Demonstration 1-18, Vandenberg AFB	1-29-63	EO-3013-1	1-30-63			
•		Technical Approval Demonstration, 1-22, Ellaworth AFB			•			-
•	. (ecci)	UNSCHEDULED			•			
ł	Field-Lavel Checkout	Verification; T. O. 33D9-17-26-1		•				
•• . ,	Field-Level Fault Jeolation	UNSCHEDULED		,		•		١
•	Voltmeter Calibration	UNSCHEDULED	•					
•								
3092 Programmer Group Teat Set	Organisational- Partial Level Utilization	Verification: T.O. 21-5M80A-2-3, par. 2-28 thru fig. 2-34						
	(1401) Complete	Technical Approvel Demonstration 1-18, Maimetrom AFB	11-7-62	EO-3092-1	1-18-63			•
v	•	Technical Approval Demonstration 1-15, Vandenberg AFB		•				•
. <b></b>					-			•
	Field-Level Checkout	Verification; T. O.' 33D9-111-3-1, par. 5-26						
	•	Unscheduled Functional Test	•	•		2-19-63	EO-3092-2 2-19-63	2-19-63
	Field-Level Fault Joolation	UNSCHEDULED						
•,						· <u></u>		
				-		DOF	DETNET NO. DZ-14934-3	D2-1493

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•			•			COMPLETK	COMPLETION RECORD		
PIGURE A			£		<b>REVIOUS</b>			CURRENT	
BOUMMENT ITEM	MAINTENAN	MAINTENANCE OPERATION	DEMONSTIATION EVENT	DATE		DAT	DATE	REP	REPORT
			· · · ·	COMPLETED	° V	DATE	COMPLETED	V	MK
(2 <b>6</b> 86)	Field-Level Adjustment	Self Test Generator	Verification: T. Ó. 33D9-111-3-1, par. 8-6 thru fig. 8-3						7
		Clack	Verification; T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-3						
		Evaluator A	Verlication: T. O. 33D9-111-3-1, par. 8-6 thru 8-13		•••				<u> </u>
	•	Evaluator B	Verification; T. O. 33D9-111-3-1, <sup>,</sup> par. 8-6 thre 8-14			v			
• •		Evaluator C Phase I	Verification; T. O. 33D9-III-3-1; par. 8-6 thru 8-15 2			• •			
		Evaluator C	Verlfication; T. O. 33D9-111-3-1, par. 8-6 thru 8-16		•				
•••		Evaluator D	Verification: T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-3		•			•	
••••		Evaluator E	Verification: T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-3		•				
	-	Reset and Generator	Vertfication: T.O. 33D9-111-3-1, par. 8-6 thru 8-19			-			•
<b></b>		Pulse Gener - ator Reset	Verification: T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-3		•				
•	••••••	Latching Re- lay Bias	Verthcation: T.O. 33D9-111-3-1, 11-5		•	-			-
•	Voltmeter Calibi	Calibration	UNSCHEDULED		•	•			• -

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NO. D2-14914-1 PAGE 42

**DVIJO** 

2-5,260-6-31

. ٠ DATE To Be Written REPORT CURRENT NO. COMPLETED COMPLETION RECORD 2-22-63 **PAIE** DATE DATE REPORT -COMPLETED NO. DATE 10-15-62 E0-3109-1 10-15-62 E0-3109-2 1-17-63 REPORT REVIOUS DEMONSTRATION REQUIREMENTS STATUS SUMMARY · 1-17-63 . . Attempted Verufication; T. O. 24-SM80A Verification; T. O. 33D9-135-2-1, fig. 8-3 Verification: T. O. 21-SM80A-2-4, par. 2-4A thru fig. 1-9 Verification: T. O. 21-SM80A<sub>r</sub>-2-4, per. 2-4A thru fig. 1-9 Verification; T. O. 21-5M80A-2-4, par. 2-4A thru fig. 1-9 Verification; T. O. 33D9-137-2-1, per. 5-16 thru 5-22 Verification: T. O. 33D9-137-2-1, par. 5-9 thru fig. 5-8A Verification: T. O. 33D9-137-2-1, fig. 8-1 Verification; T. Ö. 31X3-2-1Z-2, par. 7-18 thru fig. 10-2 THAN NOIL WISNOWED UNSCHEDULED •# Antenna Simulator Antenna Test Set **Inner Security Outer Security** MAINTENANCE OPERATION Fault Locator Fault Locator Field-Level Utilization (1296) VRSA Input Organizational- Incomplete Level Utilization (1296) • ţ . Field-Level Checkout Field-Level Adjustment • . Inspection . 3109 Alarm Set Test Set . **BOURNENT ITEM** FIGURE A •

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3-5260-6-31

*ROTING* NO. <u>D2-14934-1</u> NGC 43

			•		MEVIOUS			CURRENT	
SQUEMENT ITEM	MAINTENANCE OF	ICE OFERATION	DEMONSTIMITION EVENT	OATE	REP	REPORT	OATE		REPORT
				COMPLETED	v	DATE	COMPLETED	óz	DA TE
4012 Data Asalysis Central Test Set	Organizational-Level Utilization	-Level (1228, 1251)	Technical Approval Demonstration 1-20, Malmstrom AFB	11-7-62	E0-4012-1 11-29-62	11-29-62			
	· <b>h</b>		Technical Approval Demonstration 1-17, Vaudenberg ATB						
	Piek-Level Checkon	Continuity	, ', ', Verification; T.O. 33D9-133-3-1, par. 4-10 thru 4-12		-	•			
		Self-Verification	Verif (cation; T. O. 33D9-133-3-1, fig. 4-1A, 4-2A		•				
•	•	Meter Relay	Verification; T.O. 33D9-133-3-1, fig. 7-1, 7-2						
		Oscillator	Verification; T. O. 33D9-133-3-1, fig. 7-1, 7-2						
		Test Signal	Varification; T. O. 33D9-139-3-1, fig. 7-1, 7-2						
•	Field-Level Fault feolation	nult feolation			•			•	
.•	Inspection	• • • •	UNSCHEDULED		•		2-5-63	E0-4012-2	2-6-63
, 4018 Test Adapter Group	Field-Level Utilizatio <del>g</del>	(1021)	Technical Approval Demonatration  - 4, Malmatrom AFB			•			•
			Technical Approval Demonstration 1-1 Vandenberg AFB						
		(1228, 1251)	Verification; T. O. JIX2-32 <sup>-3</sup> -2						
•.		(1021)	Verification: T.O. 31X3-12-8-2		•	_			·
• '		(3092)	Verification; T. O. 33D9-111-3 <sup>2</sup> 1, par. 5-26		•				
		(4252)	Verification: T.O. 31X2-62-4-1, par. 5-9						

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	US' SUMMARY	
	UREMENTS STATUS	
•	N REQUIREN	
	DEMONSTRATION REQUIREMENTS STATUS' SUMMARY	

		-	*			COMPLETIC	COMPLETION RECORD			
PIGURE A					REVIOUS		•	CURRENT		
CURMENT ITEM	MAINTENA	MAINTENANCE OFERATION	N EVENT	DATE	REPORT	XI	DATE		REPORT	<del>.</del>
				COMPLETED	, V	DATE	COMPLETED	v	10VIE	-
· (1144)	Field-Level Checkout	Self Test	Verification;T.O. 33D7-50-3-1, par. 5-7 thru fig. 5-4				2-25-63	EO-4018-3 2-27-63	2-27-63	
á		Module At	Verification; T. O. 33D7-50-3-1, par. 5-7 thru fig. 5-4				•			
•		Module A5	Verification; T. O. 33D7-50-3-1, par. 5-7, thru fig. 5-4						•	
		Module A5 (Model A)	Verification; T.O. 33D7-50-3-1, par. 5-7 thru fig. 5-4							
	•	-Generator A6	Verification: T. O. 33D7-50-3-1, par. 5-7 thru fig. 5-4	-						
		Converter A7	Verification: T.O. 3307-50-3-1.par.			-				
• •		Simulator A8	Verification: T.O. 33D7-50-3-Y, par. 5-7 thru fig. 5-4						-	
	Field-Level Adjustment	MX-3618 Stimuli Eval. Circuit	UNSCHEDULED		-	•	•			
		Voltage Reg. Circuit	UNSCHEDULED		-				,	
		Buffer Amp. Circuit	UNSCHEDULED		•	•				
	•	Eval. & Univib. Cirçuit	UNSCHEDULED			•				
		False Eval. Circuit	UNSCHEDULED .							
		Self Test Circuit	UNSCHEDULED			• •••	-			
		Response Time Evaluator	UNSCHEDULED	•	•	-	•			
. •		Ref. Voltage	UNSCHEDULED							
					•					
							DOF	POFING NO. D2-1494-3	D2-14934-	1
1. C. 2. C.									1	

2-5-5-6-5-5

DEMONSTRATION REQUIREMENTS STATUS SUMMARY •

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FIGURE A         MANTERVANCE OFENTION         DEMONSTRATION FORM           COUNNENT TEM         APPLICATION         UNSCREDULED           Application         Application         UNSCREDULED           Application         Exercisi         UNSCREDULED           Application         Exercisi         UNSCREDULED           Application         Exercisi         UNSCREDULED           Application         UNSCREDULED         UNSCREDULED           Exercisi         Exercisi         UNSCREDULED           Exercisi         UNSCREDULED	CONTEINON RECORD	
Control         MANTEMANCE OFEN/ION         DEMONSTRATION         DEMONSTRATION         EVENT           Reference         Reference         INC.4314         UNSCRIEDULED         INC.4314           Reference         Remail Case         UNSCRIEDULED         INSCRIEDULED           Remail Case         UNSCRIEDULED	MEVIOUS	CURRENT
Relationed Clock Test Clock Test Clock Test Clock Test (35-33) 60)     MK - 43 4 Clock Test (35-33) 60)     UNSCHEDULED       Banali Can.     UNSCHEDULED       Banali Can.     UNSCHEDULED       Clock Pales (25-33) 13)     UNSCHEDULED       Clock Pales (25-33) 13)     UNSCHEDULED       Clock Pales (25-33) 13)     UNSCHEDULED       Clock Pales (25-33) 13)     UNSCHEDULED       Pares Supply (25-33) 13)     UNSCHEDULED       Pares Supply     UNSCHEDULED	REPORT	DATE REPORT
CFARA-Land     MK-4314     UNSCHEDULED       Renail Cast     UNSCHEDULED       Renail Ren     UNSCHEDULED       Rene Renail     UNSCHEDULED       Rene	ED NO. DATE	COMPLETED NO. DATE
Bitmul Can     UNSCREDULED       (35-33140)     UNSCREDULED       (35-3314)     UNSCREDULED       (32-3314)     UNSCREDULED       (32-3311)     UNSCREDULED       (111)     UNSCREDULED	3	
Remail Gen.     UNSCHEDULED       (23-33)14)     UNSCHEDULED       (24-13)17     UNSCHEDULED       (114)1     UNSCHEDULED       (115)1     UNSCHEDULED       (115)1     UNSCHEDULED       (115)1     UNSCHEDULED       (12-33)11     UNSCHEDULED       (115)1     UNSCHEDULED       (12-33)11     UNSCHEDULED       (13-33)12     UNSCHEDULED		
PF-3377 University Creative Creative Samulator (35-33111) Check Pulae (35-33112) Check Pulae (35-33112) Check Pulae (35-33112) Check Pulae (35-33112) Check Pulae (35-33112) Power Supply (35-33123) Power Supply (35-33123) Power Supply (35-33124) Power Supply (35-33124) Power Supply (35-33124) Power Supply (35-33124)		
Check Pulse     ONSCHEDULED       Samulator     (33-33111)       Check Pulse     UNSCHEDULED       Kamulator     (33-33112)       Check Pulse     UNSCHEDULED       Supply     UNSCHEDULED       Supply     UNSCHEDULED       Supply     UNSCHEDULED       Power Supply     UNSCHEDULED       Power Supply     UNSCHEDULED       Power Supply     UNSCHEDULED       Power Supply     UNSCHEDULED       (33-33123)     UNSCHEDULED		
Check Phales (15-33)115) Check Phales (25-33)112) Check Phales Supply (25-33)12) Check Phales Supply (25-33)12) Phener Supply (25-33)12) Phener		•
Check Pulae Supply (13-33112) (13-33112) (13-33112) Ceck Pulae UNSCHEDULED (13-33113) Power Supply (13-33125) (13-33125) (13-33125) (13-33125) (13-33125)		
Check Fulae Guephy Guephy (23-331(1)) Power Supply (23-33122) Power Supply (23-33122) Power Supply UNSCHEDULED (33-33126) UNSCHEDULED (33-33126)		
Fower Supply UNSCHEDULED [25-33122] Power Supply UNSCHEDULED [25-33126] UNSCHEDULED [25-33126]		
Power Supply UNSCHEDULED (25-33125) Power Supply UNSCHEDULED (25-33126)		
Power Supply UNSCHEDULED (25-33126)	•	
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DEMONSTRATION REQUIREMENTS STATUS SUMMARY

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		-			COMPLETK	COMPLETION RECORD		
FIGURE A		-		REVIOUS			CURRENT	
	MAINTENANCE OFERATION	DEMONSTRATION EVENT	DATE	REPORT	Ж.	DATE		REPORT
			COMPLETED	Ŷ	DATE	COMPLETED	Vo	DATE
(401)	(Field-Level PP-3376 Adjustment) (25-33132)	UNSCHEDULED		-	ji			
	Power Supply (25-33135)	UNSCHEDULED						
•	Power Supply (25-33136)	UNSCHEDULED		•	•			
	PP-1376 Power Supply (25-13106)	UNSCHEDULED					-	
· • •	Power Supply (25-33123)	UNSCHEDULED						
• ••	<b>in spe</b> ction	UNSCHEDULED	•	,	-	2-5-63 2-11-63	EO-4018-1 EO-4018-2	2-8-63 2-14-63
4043 Passenger and Equip - ment Elevator-Workcage	Organisation-Level Utilisation	UNSCHEDULED	12-18-62	; 12-18-62 E0-4043-1 12-18-62	12-18-62			•
ø	Field-Level Checkout	Verification; T. O. 35A4-2-31-1		,	•			
•	Field-Level Faylt Isolation	UNSCHEDULED			•			
	Field-Level Servicing	UNSCHEDULED						
•	Field-Lovel Repair	UNSCHEDULED	1-25-63	E0-4043-2 1-25-63	1-25-63		-	
•								•
		•	-					
				].			-Mort-20 ON DNIDD	191-20

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FOLK A.         MANTENANCE OFENICAL         DEMONSITIATION FORT         MENDION         MENDION <th< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th>COMPLETH</th><th>COMPLETION RECORD</th><th></th><th></th></th<>							COMPLETH	COMPLETION RECORD		
MultiPublyCE         OFIGATION         DeMONSTANTION FVENT         Date	A Shoute A					MEVIOUS			CURRENT	
Main F Maility- manies T setting- tuitistation         T. O.         1X3-12-0-2.         Data (12.17 threa 11.2.3)         1X3-12-0.2.         Data (12.17 threa 11.2.3)           Reason Mo500	CUMMENT ITEM	MAINTENAL	NCE OFERATION		DATE COMPLETED	NO.	DATE	DATE COMPLETED	° N	REPORT DATE
[1201] Drawer Ab.       Verification: T. O. 31X3-12-0-2, par.         Nart No50)       [1-17 thru 11-23         [1201] Drawer Al.       Verification: T. O. 31X3-12-0-2, par.         [1201] Drawer Al.       Verification: T. O. 31X3-13-9-2, har.         [1201] Drawer Al.       Verification: T. O. 31X3-13-9-2, har.         [1201] Drawer Al.       Verification: T. O. 31X3-13-9-2, har.         [1201] Drawer Basel)       Verification: T. O. 31X3-13-2, -1         [1202] Tass Pasel)       Verification: T. O. 31X3-13-2,-1         [1203]       Verification: T. O. 31X3-13-2,-1         [1304] Arm A       Verification: T. O. 31X3-14,-2,-1         [1313] Arm A       Verification: T. O. 31X3-14,-2,-1         [131] Arm A       Verification: T. O. 31X3-14,-2,-1         [131] Arm A       Verification: T. O. 31X3-14,-2,-1         [132] Cacu, )       Verification: T. O. 31X3-14,-2,-1         [103]       Verification: T. O. 31X3-14,-1,-1         [103]       Verification: T. O. 3139-111-34, par.         [103]       Verification: T. O. 3139-111-34, par.         [103]       Verification: T. O. 3139,-111-34, par.         [	Electronic Facility- Maintennace Test	Field-Level Utilization	(1201 Drawer A6. Part No40)	31X3-12-8-2.				2-18-63	E0-4152-1	2-21-63
(1201 Drawer A7) Filarr) Filarr) (1243 Telephone Xmir. Control) (1318 Arm 4 Status Panel) (1309 Saif Test Gan.) (3092 Saif Test Gan.) (3092 Evaluator A) (3092 Evaluator B) (3092 Evaluator Cd1) (3092 Evaluator B)	,		(1201 Drawer A6. Part No50)	Verification: T. O. 31X3-12-8-2, par. 11-17 thru 11-23						
			(1201 Drawer A7)	Verification ; T.O. 31X3-12-8-2, par. 12-15 thru 12-19						-
			(1243 DC Power Filter)	Verification, T O. 31X3-3-9-2-1, par.		•	•	-	•	•
	•		(1243 Telephone Xmtr. Control)	Verification ; T. O. 31X3-3-9-2-1	•		-			
			(1338 Arm & Status Panel)	Verification; T. O. · 31X3-3-9-2-1			•	•		
			(1013)	Verification ; T. 0. 3309-17-26-1	,					
		· .	(3092 Self Test Gen.)	Verification: T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-3	,	. *				•
		. •	(3092 Clock)	Verification, T. O., 33D9-111-3-1, par. 8-6 thru fig. 8-3						
			(3092Evaluator A)	Verification; T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-13		••				
			(3092 Evaluator B)	Vertification; T. O. 33D9-111-3-1. par. 8-6 thru fig. 8-14			•			
			(3092 Evaluator CØ1)							
			(3092 Evaluator CA2)	Verification; T. O. 33D9-111-3-1, par. 8-6 thru 8-16					`	
	• •		(3092 Evaluator D)	Verification; T. O. 33D9-111-3-1, fpar. 8-6 thru fig. 8-3						•
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DEMONSTRATION REQUIREMENTS STATUS SUMMARY

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FIGURE A					MEVIOUS			CURRENT	
	MAINTENAL	MAINTENANCE OPERATION	DEMONSTRATION EVENT	DATE	REPORT	AT.	DATE	REP	REPORT
				COMPLETED	o'	DATE	COMPLETED	vo	DATE
(4152)	(Field Level Utilisation)	(3092 Evaluator E)	Vertfication; T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-3						
		(3092 Reset & Gen)	Verification: T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-19						*
• .•		(3092 Pulse Gen. Reset)	Verification: T. O. 33D9-111-3-1, par. 8-6 thru fig. 8-3)		<u>.</u>		1		•.
. •		(3109 Astensa Simelator)	Verification: T. O. 3309-137-2-1, par. 5-16 thru 5-22	•					
-		(3109 Fasit Locator)	Verification: T. O. 33D9-137-2-1, par. 5-9 thru fig.' 5-8A						,
. ·			Varification; T.O. 33D9-137-2-1, fig. 0-1						
•	•	(4252 Pwr. Supply Control)	Verification; T. O. 31X2-62-4-1						•
,		(4252 Reg. Power Supply)	Verification: T.O. 31X2-62-4-1						
		(4252 Verifier Indicator)	Varification; T.O. 31X2-62-4-1		-		*	-	
		(4252 CSD Verifier Unit)	Verification; T.O. 31X2-624-1					-	
		(4490 Sumulator Set)	Verification: T. O. 33D9-14-26-1, par. 5-10, fig. 5-1			-			
ş.		(1412)	Verification; T. O. 31S1-2GSW4-1						
		. (1645)	Verification; D2-10825-44	-	<u>-</u>		•	-	· •
•		(1284, 1289)	Verification; T.O. 35C2-2-63-1			•		,	
		(12% Receiver - Xmtr.)	Varification; T, O. 31X3-2-12-2, par. 7-19 thru fig. 10-2					•	
	<del></del>								;

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**FOFING** NO, DZ-14934-3 PAGE 50 DATE REPORT CURRENT • o z COMPLETED COMPLETION RECORD DATE DATE REPORT MEVIOUS ov V DATE COMPLETED Verification; T O. 33D9-6-21-1, par. 4-62, fig. 9-14 Converter-Monitdr Verification: T. O. 3309-6-21-1, par. Test Bet T5-1825 4-64, fig. 4-27, 4-28, 9-15 Vertication: T O. 31X3-2-12-2, par, 6-8 thru fig. 8-2 Verification: T. O. 31X3-2-12-2, par. 9-6 thru fig. 9-4 Verification: T.O. 33D9-6-21-1, par. 4-46, fig. 4-25 Verification; T. O. 33D9-6-21-1, par. 4-50, fig. 4-26, 9-6 Verification; T. O 33D9-6-21-1, par. 4-60, fig 9-13 Verification; T. O. 33D9-6-21-1, par. 4-56, Fig. 9-9 Verification; T. O. 33D9-6-21-1, par. 4-52, Fig. 9-7 Verification, 7. O. 33D9-6-21-1, par. 4-48, Fig. 9-3, 9-4, 9-5 Verification; T. O. 33D9-6-21-1, par. 4-54, Fig. 9-8 Verification; T.O. 33D9-6-21-1, par , 4-58, Fig. 9-10, 9-11, 9-12 DEMONSTRATION EVENT Telephone Rptr. Test Sets TS-1819, 1821, 1822 Revr-Xmtr Ahrm Set T.S. TS-1826 Dummy Decoder Test Set TS-1796 Adapter-Connec-tor MX-4283 Adapter-Connec-tor MX-4284 (1296 Converter-Monitor) Elec. Dummy Loads DA-304, 305, 306 Test Set Power Supply TS-1795 MAINTENANCE OPERATION Test Adapter MX-4453 Maintenance Table (1296 Power .Supply) (Field-Level Utilization) Field-Level Checkout . BOUNNENT ITEM FIGURE A (4152) ,

DEMONSTRATION REQUIREMENTS STATUS SUMMARY

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	SUMMARY
	STATUS
	REQUIREMENTS
	DEMONSTRATION

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Rectors         Improved:         Constrained         Constrained <thconstrained< th=""> <thc< th=""><th>•</th><th></th><th></th><th></th><th></th><th></th><th>COMPLETE</th><th>COMPLETION RECORD</th><th></th><th></th></thc<></thconstrained<>	•						COMPLETE	COMPLETION RECORD		
Methods         Description         Description <thdescrin< th=""> <thdescrin< th="">         Descrin</thdescrin<></thdescrin<>	PIGURE A	•				REVIOUS			CURRENT	
Prindsk-Laved         Prindsk-	CUMMENT ITEM	MAINTENAP			DATE		ORT	DATE COMMITTED		ORT
Tota San Voltage Magniture 75-179         Vertification: T. O. 3109-6-21-1, par- trans, T. S-178         Vertification: T. O. 3109-6-21-1, par- trans, T. S-178           Canner TS-163         Vertification: T. O. 3109-6-21-1, par- trans, T. S-178         Vertification: T. O. 3109-6-21-1, par- trans, T. S-178         Vertification: T. O. 3109-6-21-1, par- trans, T. S-178           Yada TS-163         Vertification: T. O. 3109-6-21-1, par- trans, T. S-178         Vertification: T. O. 3109-6-21-1, par- trans, T. S-178         Vertification: T. O. 3109-6-21-1, par- trans, T. S-178           Yada TS-163         Vertification: T. O. 3109-6-21-1, par- trans, M. 403         Vertification: T. O. 3109-6-21-1, par- trans, L. S-25         Vertification: T. O. 3109-6-21-1, par- trans, L. S-25           Date: Dommit Drive Weil, 463         Vertification: T. O. 3109-6-21-1, par- trans, L. S-25         Vertification: T. O. 3109-6-21-1, par- trans, L. S-25           Date: Dommit Drive Weil, 463         Vertification: T. O. 3109-6-21-1, par- trans, L. S-25         Vertification: T. O. 3109-6-21-1, par- trans, L. S-25           Paret Scientification: T. O. 3109-6-21-1, par- trans, Reset TS-148         Vertification: T. O. 3109-6-21-1, par- trans, Reset TS-148         Vertification: T. O. 3109-6-21-1, par- trans, Reset TS-148           Prover Scientification: T. O. 3109-6-21-1, par- trans, Reset TS-148         Vertification: T. O. 3109-6-21-1, par- trans, Reset TS-148         Vertification: T. O. 3109-6-21-1, par- trans, Reset TS-148           Prover Scientification: T. O. 3109-6-21-1, par- trans, Reset TS-148         Vertifica	(4152)	(Pield-Level	Power Supply Test Set TS-1820	0						
Comme Tran Bai Franker, T.S. (185)         Verifications, T. O. 3109-6-21-1, par.           Yaska, Tra. (185)         Yreifications, T. O. 3109-6-21-1, par.           Yaska, Tra. (26)         Yreifications, T. O. 3109-6-21-1, par.           Land, Dh. 312         Yreifications, T. O. 3109-6-21-1, par.           Land, Dh. 462         Yreifications, T. O. 3109-6-21-1, par.           Land, Dh. 462         Yreifications, T. O. 3109-6-21-1, par.           Land, Dh. 462         Yreifications, T. O. 3109-6-21-1, par.           Land, Marter         Yreifications, T. O. 3109-6-21-1, par.           Land, Marter         Yreifications, T. O. 3109-6-21-1, par.           Land, Marter         Yreifications, T. O. 3109-6-21-1, par.           Dever Stephy         Yreifications, T. O. 3109-6-21-1, par.           Tast St TS-1401         Yreifications, T. O. 3109-6-21-1, par.           Parer Stephy         Yreifications, T. O. 3109-6-21-1, par.           Tast St TS-1401         Yreifications, T. O. 3109-6-21-1, par.           Parer Stephy         Yreifications, T. O. 3109-6-21-1, par.           Tast St TS-1401         Yreifications, T. O. 3109-6-21-1, par.	•		Test Set Voltage Regulator TS-179	0 <u>5</u>	).		•			
Wash Fast Set Faster 75: 1623         Variations: T. O. 3109-4-21-1, par. Taster 75: 1623         Variations: T. O. 3109-4-21-1, par. Variations: T. O. 3109-4-21-1, par. East. Dammy           Ram. Par. Set Magners 107: 312         Variations: T. O. 3109-4-21-1, par. Land DA. 312         Variations: T. O. 3109-4-21-1, par. Variations: T. O. 3109-4-21-1, par. Land DA. 312           Ram. Par. Set Magners 107: 313         Variations: T. O. 3109-4-21-1, par. Land DA. 312         Variations: T. O. 3109-4-21-1, par. Land DA. 312           Ram. Par. Set Magners 107: 465, fig. 9-25         Variations: T. O. 3109-4-21-1, par. Land Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140           Pare Samply Total Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140           Pare Samply Total Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140           Pare Samply Total Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140           Pares Samply Total Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140           Pares Samply Total Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140         Variations: T. O. 3109-4-21-1, par. Land Set 75-140           Pares Samply Total Set 75-160         Variatiot 8-21/1, par. Par. 20, par. 20         Variatiot 8-21/1	• ,		Comm. Test Set Tester TS-1789	Verification; T.O. 33D9-6-21-1, par. 4-70, fig. 9-18					,	
Yaga Tora Ear Jacobie Markes         Verification: T. O. 3309-4-21-1, per. Load DA-312         Verification: T. O. 3109-4-21-1, per. Load DA-312           Ere, Dammy Land DA-312         Verification: T. O. 3109-4-21-1, per. Canasetor-Adap- tors MX:eddy Minuch Drive         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-25.         9-21, per. 4-60, fig. 9-25.           Annumh Drive Star MX:eddy Minuch Drive         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-25.         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-25.           Prover Supply Tot Adapter         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-25.         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-25.           Prover Supply Tot Adapter         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-25.         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-27.           Prover Supply Tot Adapter         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-27.         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-27.           Prover Supply Tot Set T5-160         Verification: T. O. 3109-4-21-1, per. Tot Set T5-160         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-27.           Prover Supply Tot Set T5-160         Verification: T. O. 3109-4-21-1, per. Tot Set T5-160         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-27.           Prover Supply Tot Set T5-160         Verification: T. O. 3109-4-21-1, per. Tot Set T5-160         Verification: T. O. 3109-4-21-1, per. 4-60, fig. 9-21.           Prover Supply Tot Set T5-160         Verification: T. O. 3109-4-21-1, per. 4-60, fig	•		VRSA Test Set Tester TS-1023	Verification: T. O. 33D9-6-21-1, par. 4-72, fig. 9-19		•				•.
Ther. Dummy Lead DA. 312         Verification: T. O. 3109-6-21-1, par.           Lead DA. 312         Canaction - Adap           Action - Adap        76, fig. 9-22           Name Mittore - Adap         Verification: T. O. 3109-6-21-1, par.           Manneh Drive         Verification: T. O. 3109-6-21-1, par.           Action - Adap        76, fig. 9-25           Action - Adap        76, fig. 9-25           Action - Adap        76, fig. 9-25           Action - Adape        76, fig. 9-26           Action - Adape        70, fig. 9-26           Action - Adape        76, fig. 9-26           Action - Adape        76, fig. 9-26           Action - 70, 3109-6-21-1, par.           Prover Supply         Verification: T. O. 3109-6-21-1, par.           Prover Supply        76, fig. 9-23           Prover Supply        76, fig. 9-23           Prover Supply        76, fig43, 9-3           Prover Supply        70, fig43, 9-3	•		VRSA Teat Set Adapters MK-685	Verification: T. D. 4-74, fig. 9-20	•					•
Connector-Addp- bars MX-4650.         Verification: T. O. 3109-4-21-1, par.           4451. 4652.         Animuth Drive Controller:         Verification: T. O. 3109-4-21-1, par.           Animuth Drive Controller:         Verification: T. O. 3109-4-21-1, par.           Teat Sai TS-1481         Verification: T. O. 3109-4-21-1, par.           Fast Sai TS-1481         Verification: T. O. 3109-4-21-1, par.           Prever Supply         Verification: T. O. 3109-4-21-1, par.           Previ Sup. Verification: T. O. 3109-4-21-1, par.	•	• •	Elec. Dummy Lond DA-312	Verification: T.O. 33D9-6-21-1, par. 4-78, fig. 9-22						
Animuch Drive Verification: T. O. 3109-6-21-1, par. Controller: Test Sci TS-1849 Test Sci TS-1849 Test Sci TS-1849 Verification: T. O. 3109-6-21-1, par. Newer Supply Power Supply Test Sci TS-1840 Power Supply Power Supply Test Sci TS-1840 Test Sci TS-1	•1		Connector-Adap- bars MX-4650, 4651, 4652	Verification; T. O. 33D9-6-21-1,/ par. 4-00, fig. 9:23, 9-24, 9-25						
Test Addres         Verification: T/O. 3109-6-21-1, par.           MX-4651         4-46, fig. 9-27;           Purver Supply         Verification: T.O. 3109-6-21-1, par.           Test Set 175-1661         Verification: T.O. 3109-6-21-1, par.           Purver Supply         Verification: T.O. 3109-6-21-1, par.           Test Set 175-1661         Verification: T.O. 3109-6-21-1, par.           Purver Supply         Verification: T.O. 3109-6-21-1, par.           Purver Supply         Verification: T.O. 3109-6-21-1, par.           Test Set 175-1661         Verification: T.O. 3109-6-21-1, par.           Purver Supply         Verification: T.O. 3109-6-21-1, par.           Test Set 175-1662         Verification: T.O. 3109-6-21-1, par.           Test Set 175-1663         Verification: T.O. 3109-6-21-1, par.           Letc. Durnony         Verification: T.O. 3109-6-21-1, par.           Letc. Durnony         Verification: T.O. 3109-6-21-1, par.			Azimuth Drive Controller Test Set TS-1849	Verification; T. O. 33D9-6-21-1, par. 4-82, fig. 9-26		-			-	
Power Supply         Varification: T. O. 3309-6-21-1, par.           Test Set TS-1661         4-66, fig. 9-24           Power Supply         Varification: T. O. 3309-6-21-1, par.           Test Set TS-1660         Varification: T. O. 3309-6-21-1, par.           Test Set TS-1662         Varification: T. O. 3309-6-21-1, par.           Test Set TS-1662         Varification: T. O. 3309-6-21-1, par.           Lead DA. 321         Varification: T. O. 3309-6-21-1, par.           Last Set TS-1962         4-30, 9-30           Test Set TS-1962         4-30, 10-21-1, par.		•	Test Adapter MX-4451	Verification: T.O. 33D9-6-21-1, par. 4-84, fig. 9-27%				-		· .
Power Supply         Verification: T. O. 33D9-4-21-L         par           Test Set TS-1640         -46. fg. 4-29. 9-29         -29. 9-29           Power Supply         Verification: T. O. 33D9-6-2171, par.         -30. 59. 6-2171, par.           Test Set TS-1642         -90. fg. 4-30. 9-30         -40. 59. 6-2171, par.           Test Set TS-1642         -90. fg. 4-30. 9-30         -40. 59. 6-2171, par.           Last DA-3211         Verification: T. O. 33D9-6-2171, par.         -47. 6-31	·		Power Supply Test Set TS-1961	Verification: T. O. 33D9-6-21-1, par. 4-86, fig. 9-28					•	•
Power Supply Test Set TS-1662 Verification: T. O. 3109-6-21:1, par. Elec. Dummy Verification: T. O. 3109-6-21-1, par. Land DA-321 4-32, fig. 4-31, 9-31	, ,		Power Supply Test Set TS-1960	Verification: T. O. 33D9-6-21-1, par 4-86, fig. 4-29, 9-29			-			
Elec. Dummny Verification: T. O. 3109-6-21-1, pur. Land DA-321 4-32, fig. 4-31, 9-31			Power Supply Test Set TS-1962	Verification; T. O. 33D9-6-2141, par. 4-90, fig. 4-30, 9-30			• •			1
			Elec. Dummy Land DA-321	Verification: T. O. 33D9-6-21-1, par. 4-92, fig. 4-31, 9-31	•				••	•
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	2-5 <b>X6</b> -(-3)				]				ON DA	D2-14934-

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Frame         Frame         Constraint	•			···		2			1	
Detect         MANTERANCE         Demonstration is an first if and in the first if an	-		DEMON	x c c c x c w c x c y			OMPLETIO	N RECORD		
Material Trial         Material Control         Description Not         Contribution         Contribution <thcontr< th=""><th>RGUNE A</th><th></th><th></th><th></th><th></th><th></th><th>Γ</th><th></th><th>CURRENT</th><th></th></thcontr<>	RGUNE A						Γ		CURRENT	
Proble Level     Admon Text     Verifications, T.O. 1309-6-21-1, per.       Concentration     Benufactoria     Verifications, T.O. 1309-6-21-1, per.       Family Text     Verifications, T.O. 1309-6-21-1, per.       Concentration     Server Text       Participation     Verifications, T.O. 1309-6-21-1, per.       Concentration     Verifications, T.O. 1309-6-21-1, per.       Concentration     Verifications, T.O. 1309-6-21-1, per.       Parter Text     Verifications, T.O. 1309-6-21-1, per.       Admon Set T.S.     Verifications, T.O. 1309-6-21-1, per.       Admon Set Admon     Verifications, T.O. 1307-6-21-1, per.       Admon Set Admon     Verifications, T.O. 1307-6-21-1, per.       Admon Set Admon     Verifications, T.O. 1307-6-21-1, per.       Concentre-Verificet     Tabbe-Le	INNENT ITEM	MAINTENA	NCE OPERATION	DEMONSTRATION EVENT	DATE COMPLETED	REPOR	ATE	DATE COMPLETED		RT DATE
Remainser T. G. 13D9 4-21-1, pur.       Remainser T. G.     Verification: T. O. 13D9 4-21-1, pur.       Remainser T. Gauss: T. G.     Verification: T. O. 13D9 4-21-1, pur.       Remainser T. Gauss: Ser. T. S. Gauss: Ser. Ser. Ser. Ser. Ser. Ser. Ser. Ser.		D'ieM-Lavel	Adapter Test Bet T5-1841							5
Frader Teal         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1960         Attent Re. 75, 1960         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1960         Attent Re. 75, 1960         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1960         Cooling Air         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1960         Cooling Air         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1980         Cooling Air         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1981         Cooling Air         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1981         Cooling Air         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1981         Cooling Air         Versification: T. O. 1309-6-21-1, per.           Attent Re. 75, 1981         Cooling Air         Versification: T. O. 1302-6-21-1, per.           Attent Re. 75, 1981         Cooling Air         Versification: T. O. 1382-64-4-1           Coole Autication         President Air Air         Versification: T. O. 1382-64-4-1           Coole Autication         Versification: T. O. 1382-64-4-1         President Air			Simulator Test Set TS-1879	Verification; T. O. 33D9-6-21-1, par. 4-96, fig. 9-33					. <u>,</u> ,	
Atom Set T.S.     Verification: T.O. 3109-4-21-1, per- Factor 75-1.07     Verification: T.O. 3109-4-21-1, per- Factor 75-1.07       Fight-Level     Cooling Air Alpheneas     Verification: T.O. 3109-4-21-1, per- Conversion     Verification: T.O. 3109-4-21-1, per- tion       Fight-Level     Cooling Air Alpheneas     Verification: T.O. 3109-4-21-1, per- conversion     Verification: T.O. 3109-4-21-1, per- tion       Reserve Air Alpheneas     Fistere Roution     Verification: T.O. 3109-4-21-1, per- tion     Verification: T.O. 3109-4-21-1, per- tion       Reserve Air Alpheneas     Fistere Roution     Verification: T.O. 312-42-4-1, per- Pacetion     Verification: T.O. 312-42-4-1, per- Code Induces       Reserve Air Alpheneas     Verification: T.O. 312-42-4-1, per- Code Induces     Verification: T.O. 312-42-4-1       Reserve Air Alpheneas     Verification: T.O. 312-42-4-1     Verification: T.O. 312-42-4-1	. <b>•</b> •		Ceoler Test Set TS-1980	Verification; T.O. 33D9-6-21-1, par. 4-98, fig. 9-34			• ·			
Field-Level     Cooling Air Priveres Robation     Verification: T.O. 3109-6-21-1, per- Priver Robation       Applements     Constrate Action     Verification: T.O. 3109-6-21-1, per- Convertes Action       Monteness     Constrate Action     UNSCHEDULED       Convertes Action     UNSCHEDULED       Monteness     Fladd-Level       Monteness     Privilication       Monteness     Yerification       Monteness     Verification	•.		Alarm Set T. S. Tester TS-1878	Verification; T. O33D9-6-2[-1, par. 4-100, fig. 4-32, 4-33, 4-34,4-35,9-3					<u> </u>	
Stakt-Lavel     Cooling Arr Applements     Varification: T. O. 3309-6-21-1, par.       Applements     Private Rotation     UNSCHEDULED       Constrained     UNSCHEDULED     UNSCHEDULED       Manuel     Failet-Lavel     UNSCHEDULED       Reverte     Failet-Lavel     UNSCHEDULED       Privat-Lavel     Y. U. Readers in Preschading     Preschical Approval Demonstration       Privat-Lavel     Y. U. Readers in Preschading     Preschical Approval       Preschading     Preschical Approval     Preschical Approval       Preschading     Preschical Approval     Preschical Approval       Preschading     Preschical Approval     Preschical Approval <td>•</td> <td>•</td> <td></td> <td>•</td> <td></td> <td>•</td> <td></td> <td></td> <td>•••</td> <td>•</td>	•	•		•		•			•••	•
Converter-Moni- Laurch Stat Laurch Stat Laurch Stat Laurch Stat Laurch Stat Laurch Stat Laurch Stat Laurch Juhllastion Fald-Level Utillastion Fald-Level Utillastion	•	Field-Level Adjustment	Cooling Air Fixture Rotation	Varification; T.O. 33D9-6-21-1, par. 4-5						•
Launch Simu- Launch Taat See Luor Unilaasioa Technical V.U. Bendera k Presiden Sel. Assa Presiden Sel. As			Converter-Moni- tor Test Set	UNSCHEDULED						
Prever - Vertiter Flah-Level Utilization Flah-Level Utilization Flah-Level Utilization Flah-Level Utilization Flah-Level Utilization Frake-Level Utilization Flah-Level	·		Launch Simu-	UNSCHEDULED						
Meerter-Verifieer Field-Lavel Unitention Field-Lavel Unitention Field-Lavel Unitention Field-Lavel V.U. Readers & Verification; T.O. 31X2-62-4-1, per- Caechout Town Sci. Asso 3-9 Caechout Verification; T.O. 31X2-62-4-1 Cede indicator Cedes Unit Code Verification; T.O. 31X2-62-4-1 Sector Unit Code Verification; T.O. 31X2-62-4-1 Sector Unit Code		. <b>.</b>				•				
Bearter-Vertifier     Field-Level     V.U. Readere bit     Technical Approval Demonstration       Field-Level     V.U. Readere bit     Vortification: T.O. 31X2-62-4-1, par.       Detection:     Francisco State     Vortification: T.O. 31X2-62-4-1       Period     Vortification:     T.O. 31X2-62-4-1       Period     Vortification:     T.O. 31X2-62-4-1       Period     Vortification:     T.O. 31X2-62-4-1       Period     Vortification:     T.O. 31X2-62-4-1       Period     Vortification:     T.O. 31X2-62-4-1       Period     Vortification:     T.O. 31X2-62-4-1       Period     Vortification:     T.O. 31X2-62-4-1		. •								
Field-Lavel     Y.U. Readers II     Vortications; T.O. 31X2-62-4-1; part.       Prescribed     Prescribed:     T.O. 31X2-62-4-1       Prescribed:     Prescribed:     T.O. 31X2-62-4-1       Prescription:     T.O. 31X2-62-4-1       Control     Varification:     T.O. 31X2-62-4-1       Pacck     Unit Code     Varification:     T.O. 31X2-62-4-1	J.		Utilization	Technical Approval Demonstration 1-23, Ellaworth AFB						•
Prever Sapply Verification: T. O. 31X2-62-6-1 Control Control Control Control Control Control Control Control Control Verification: T. O. 31X2-62-6-1 Verification: T. O. 31X2-62-6-1 Pack Verification: T. O. 31X2-62-6-1	· •	Field-Lavel Checkout	V. U. Readers & Function Sel. Assy	Verification: T.O. 31X2-62-4-1, par. 5-9						
Cede ladicesor Cede ladicesor Verification: T. O. 31X2-62-4-1 Pack Unit Code Verification: T. O. 31X2-62-4-1			Power Supply Control	Verification; T.O. 31X2-62-4-1				,	. <b> </b>	
Coder Unit Code Vertification: T. O. 31X2-66-4-1	•		Cede ladicator	; Varification; T. O. 31X2-62-4-1						•.
	. –	•	Ceder Unit Code	Verification: T. O. 31X2-62-4-1	•					•
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DEMONSTRATION REQUIREMENTS STATUS SUMMARY

MOLYNG NO. D2-14934-3 MGE 53 • DATE . Ņ **#**-REPORT NO. CURBNI DATE COMPLETED COMPLETION RECORD REPORT P DATE REVIOUS . v DATE COMPLETED . Unised lower Verification; T. O. 31X2-62-4-1 Supply Command Signals Verification; T. O. 31X2-62-4-1 Decoder Ver. Unit Regulated Power Verification; T.O. 31X2-62-4-1 Daply Verification; T. O. 31X2-62-4-1 Verification: T. O. 31X2-62-4-4 Verification; T. O. 31X2-62-4-1 DEMONSTIMITION EVENT ċ UNSCHEDULED UNSCHEDULED **UNSCHEDULED** UNSCHEDULED UNSCHEDULED UNSCHEDULED UNSCHDULED •• Field-Level Y.U. Readers & Fault Isolation Function Sel. Ass Regulated Power Supply Coder Unit Code Pack Launch Control Coder Unit Launch Control Pasel Ver. Unit Launch Control Coder Unit Verifier Unit Indicator Assy. **Code Indicator** Power Supply Control MAINTENANCE OPERATION End-to-End (Field-Level Cjeckout) **EQUINABILITEN** Picuté A • (4252)

10-3-032-2-2

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Montraction         Description         Description         Autority of the contraction         Autority of the contof the contraction		DEMON	DEMONSTRATION REQUIREMENTS STATU	STATUS SUMMARY		COMPLETION RECORD	ļ.•
Dumment (Tak         Dumment (Tak         Dumment (Tak)         Dument (Tak)         Dument (Tak		PERATION			MEVIOUS		CURREN
Privatu Larveil     Unscritter Unit       Prant Leadation     Prant Stophy       Prant Leadation     Prant Stophy       Prant Leadation     UNSCREDULED       Prant Leadation     UNSCREDULED       Prant Leadation     UNSCREDULED       Prant Leadation     UNSCREDULED       Prant Ver. Unit     UNSCREDULED       Adjactness     UNSCREDULED       Prant Ver. Unit     UNSCREDULED       Prant Ver. Unit     UNSCREDULED       Adjactness     Dower Supply       Verification: T. O. JIX2-42-4-1       Rag. Power     Verification: T. O. JIX2-42-4-1       Supply     Verification: T. O. JIX2-42-4-1       Supply     Verification: T. O. JIX2-42-4-1       Dispection     Verification: T. O. JIX2-42-4-1       Dispection     Verification: T. O. JIX2-42-4-1       Order Unit     Verification: T. O. JIX2-42-4-1       Dispection     Verification: T. O. JIX2-42-4-1				COMPLETED		COMPLETED	N
Vertiles Unit Materior Aisy.         UNSCHEDULED Immediation Constant of Stantia Deceder Ver. Unit Paral Ver. Unit Paral Ver. Unit         UNSCHEDULED Prover Supply         UNSCHEDULED Varification; T. O. 31X2-62-4-1           Fielde-Lavel Paral Ver. Unit         Power Supply         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Fielde-Lavel Paral Ver. Unit         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Reg. Power         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Reg. Power         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Reg. Power         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Init         Unit         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Adjustion         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Init         Unscrite         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Init         Unscrite         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Init         Unscrite         Varification; T. O. 31X2-62-4-1         Varification; T. O. 31X2-62-4-1           Init<	• •	gulated er Supply	UNSCHEDULED				
Command Signals     UNSCHEDULED       Decoder Ver. Unit     UNSCHEDULED       Panel Ver. Unit     UNSCHEDULED       Panel Ver. Unit     UNSCHEDULED       Panel Ver. Unit     Verification; T. O. 31X2-62-4-1       Adjustments     Control       Nager Power     Verification; T. O. 31X2-62-4-1       Adjustments     Code Indicator       Verification; T. O. 31X2-62-4-1       Adjustments     Verification; T. O. 31X2-62-4-1       Adjustments     Verification; T. O. 31X2-62-4-1       Majour     UNSCHEDULED       Brando     Verification; T. O	. Vari	fier Unit ator Arey.	UNSCHEDULED		 -		
Launch Control     UNSCHEDULED       Field-Level     Power Supply       Adjuntment     Control       Adjuntment     Control       Control     Verification; T. O. 31X2-62-4-1       Adjuntment     Control       Control     Verification; T. O. 31X2-62-4-1       Reg. Power     Verification; T. O. 31X2-62-4-1       Reg. Power     Verification; T. O. 31X2-62-4-1       Reg. Power     Verification; T. O. 31X2-62-4-1       Indicator     Verification; T. O. 31X2-62-4-1       Dispection     Verification; T. O. 31X2-62-4-1       Indicator     Verification; T. O. 21-SM80A-2-3       Intervia     Intervia       Intervia     Verification; T. O. 21-SM80A-2-3	Deco	mand Signale	UNSCHEDULED				
Field-Level       Power Supply       Verification; T. O. 31X2-62-4-1         Adjustiment       Code Indicator       Verification; T. O. 31X2-62-4-1         Code Indicator       Verification; T. O. 31X2-62-4-1       Verification; T. O. 31X2-62-4-1         Reg. Power       Verification; T. O. 31X2-62-4-1       Verification; T. O. 31X2-62-4-1         Verification       Verification; T. O. 31X2-62-4-1       Verification; T. O. 31X2-62-4-1         Indicator       Verification; T. O. 31X2-62-4-1       Verification; T. O. 31X2-62-4-1         Indicator       Verification; T. O. 31X2-62-4-1       Verification; T. O. 31X2-62-4-1         Indicator       Verification; T. O. 31X2-62-4-1       Verification; T. O. 31X2-62-4-1         Indicator       Verification; T. O. 31X2-62-4-1       Verification; T. O. 31X2-62-4-1         Inspection       Verification; T. O. 31X2-62-4-1       Verification; T. O. 31X2-62-4-1         Inspection       UnscheDullED       UnscheDulLED       Verification; T. O. 21-5M80A-2-3, pr.         Complete       Verification; T. O. 21-5M80A-2-3, pr.       Verification; T. O. 21-5M80A-2-3, pr.         Complete       UnscheDulLED       Verification; T. O. 21-5M80A-2-3, pr.       Verification; T. O. 21-5M80A-2-3, pr.	Pana	ich Control il Ver. Unit	UNSCHEDULED				
Code Indicator     Varification; T. O. 31X2-62-4-1       Rag. Power     Varification; T. O. 31X2-62-4-1       Supply     Varification; T. O. 31X2-62-4-1       Majestor     Varification; T. O. 31X2-62-4-1       Varification;     Varification; T. O. 31X2-62-4-1       Majestor     Varification; T. O. 31X2-62-4-1       Majeston     UnscheDutLED       Brushes     UNSCHEDULED       Complete     UNSCHEDULED       Multitation     UNSCHEDULED		rr Supply	Verification; T. O. 31X2-62-4-1				
Reg. Power     Varification: T. O. 31X2-62-4-f       Supply     Varifier Unit       Varifier Unit     Varification: T. O. 31X2-62-4-1       Malicator     Varifier Unit       Coder Unit     Varification, T. O. 31X2-62-4-1       Unit     Varifier       Unit     Varifiertion, T. O. 31X2-62-4-1       Inapection     Varification, T. O. 31X2-62-4-1       Coder Unit     UNSCHEDULED       Inapection     Varification: T. O. 21-SMEDA-2-1, par.       Crean     UNSCHEDULED       Utilisation     UNSCHEDULED       Unschedul     UNSCHEDULED	Code	Indicator	Verification; T.O. 31X2-62-4-1				
Varifier Unit Indicator     Varifier Unit CSD Varifier     Varification, T. O. 31X2-62-4:1       Unit     CSD Varifier     Varification, T. O. 31X2-62-4:1       Unit     Unit     Varification, T. O. 31X2-62-4:1       Coder Unit     Varification, T. O. 31X2-62-4:1       Inapaction     UNSCHEDULED       Brunkes     UNSCHEDULED       Codention     Varification: T. O. 21-SMBOA-2-3, par.       Complete     UNSCHEDULED       Complete     UNSCHEDULED	Reg.	Power			 - 		
CSD Verifier Verification, T. O. 31X2-62-4 <sup>-1</sup> Unit Coder Unit Bruehes Inspection Drahes UNSCHEDULED Cogenizational- Partial UNSCHEDULED Verification; T. O. 21-SMB0A-2-3, part Level Utilisation Complete UNSCHEDULED		fier Unit ator	Varification; T.O. 31X2-62-4-1	•	•		. <u></u>
Coder Unit     UNSCHEDULED       Brushes     Brushes       Inspection     II-7-62       Cogenizational- Partial     UNSCHEDULED       Cegenizational- Partial     Vertication; T.O. 21-SMB0A-2-3, part       Utilisation     2-67C thru 2-67F       UnscheDuLED     UNSCHEDULED	- 1 <sub>2-0</sub> -0-1-0-1	Verifier	Verification, T. O. 31X2-62-421				
Inspection (II-7-62 EO-4232-1 I Organizational- Partial 2-67C thru 2-67F Utilization Complete UNSCHEDULED Complete	Brue	r Unit hes	UNSCHEDULED				
Organisational - Partial Ventication: T. O. Level Utilitation Complete UNSCHEDULED			UNSCHE DULLE D				
Complete		1	Verticetion: T. O. 21-SM80A-2-3, par. 2-67C thru 2-67F				
			UNSCHEDU LED				
	-						

RDEINE NO. 02-14934-3 MGE 55 . E0-4490-1 2-11-63 E0-4490-2 2-25-63 DATE REPORT CURRENT o ž .• DATE COMPLETED 2-11-63 COMPLETION RECORD • • AIS ALFORT T DATE . . MEVIOUS o v -. . DATE. COMPLETED , Verification; T.O. 33D9-14-26-1, par. 5-10, fig. 5-1 Verification; T.O. 33D9-14-26-1, par. 5-12 Verification: T. O. 21-SM80A-2-3, pay. 2-67C thru 2-67F Verification; T. O 21-5M804-2-3, par. 2-67C thru 2-67F DEMONSTIMITION EVENT. -: • Verification; D2-10825-43 UNSCHEDULED UNSCHEDULED UNSCHEDULED UNSCHEDULED UNSCHEDULED 4 . • . . MAINTENANCE OPERATION Simulator Set Field-Level Fault Isolation Field-Level Fault Isolation Complete Complete Recorder Organizational- Partial Level Utilization Organisational- Partial Level Utilization Field-Lavel Checkout . : Field-Level Checkout Inspection • 4490 Missile and Launch Electrical Functions Simulator Set 4489 Message Generator ROUMENT ITEM . ., FIGURE A . • 1 , 2-5260-6-31

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DEMONSTRATION REQUIREMENTS STATUS SUMMARY

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FIGHE A         MANTBUNCE OFENTON         DEMONSTATION         DEMONSTATION<		, DEMOI	DEMONSTRATION REGULARENTS STAT	STATUS SUMMARY			
MANTEMMCE OFBATION         DEMONSTANTION         DEM	FIGURE A			MEV		ON RECORD	CURRENT
Commenter     Commenter     No.     Date     Commenter     No.       Diffusion     Complete     Vertification: T. O. 21-5M00A.2-3,     Vertification: T. O. 21-5M00A.2-3,     Part     Ecounter       Diffusion     Complete     Vertification: T. O. 21-5M00A.2-3,     1-25-63     Part     Ecounter       Part Level Text     Vertification: D. 1083-44     Vertification: D. 2015-44     Ecounter     Ecounter       Part Level Text     Vertification: D. 1083-44     Vertification: D. 2015-54     1-25-63     Ecounter       Part Level Text     Vertification: D. 1083-44     Vertification: D. 2015-54     Ecounter     Ecounter       Part Level Text     Vertification: D. 1083-44     Vertification: D. 2015-54     Ecounter     Ecounter       Prover     Control     Vertification: D. 2015-54     Vertification: D. 2015-54     Ecounter       Prover     Control     Vertification: D. 2015-54     Vertification: D. 2015-54     Ecounter       Prover     Control     Vertification: D. 2015-54     Vertification: D. 2015-54     Ecounter       Prover     Alguerment     Vertification: D. 2015-54     Los 649-2       Alguerment     Vertification: D. 2015-54     Ecounter     Ecounter       Alguerment     Vertification: D. 2015-54     Ecounter     Ecounter	ROHMMENT TIFM	MAINTENANCE OFERATION	DEMONSTRATION EVENT		PORT	DATE	REPOR
Organisational.     Partice     Verticestors. T. O. 21-SMOA.2-1. Utabulica     Verticestors. T. O. 21-SMOA.2-1. Level     Verticestors. 2-105 - 44     Location       Paida - Level Faul logistica     Verticestors. Description     UNSCHEDULED     L-1-35-63     L-25-63       Paida - Level Faul logistica     UNSCHEDULED     Verticestors. Description     UNSCHEDULED     L-25-63       Paida - Level Faul logistica     UNSCHEDULED     UNSCHEDULED     L-25-63     L-0-69-1-1       Paida - Level Faul logistica     UNSCHEDULED     L-25-63     L-0-69-1-1       Paida - Level Faul logistica     UNSCHEDULED     L-25-63     L-0-69-1-1       Paida - Level Faul logistica     UNSCHEDULED     L-25-63     L-0-69-1-2       Paida - Level Paida     UNSCHEDULED     L-25-63     L-0-69-1-2       Paida - Level Paida     L-26-63     L-0-69-1-2     L-27-63	MUTITING INCOM			I F	DATE	COMPLETED	o z
Outletion     Complete     Verification: T. O. 21-5M0A-2-1     1-35-63     Eco-4691-4       Flaid - Level Faul Icelation     Verification: D2-1025-44     Verification: D2-1025-44     Eco-4691-4       Flaid - Level Faul Icelation     UNSCHEDULED     Verification: D2-1025-44     Eco-4691-4       Flaid - Level Faul Icelation     UNSCHEDULED     Verification: D2-1025-44     Eco-4691-4       Flaid - Level Faul Icelation     UNSCHEDULED     UNSCHEDULED     Eco-4691-4       Adjustment     Cree Start Ausy     UNSCHEDULED     Eco-4691-4       Adjustment     Eco-4691-4     Eco-4691-4     Eco-4691-4       Inspection     UNSCHEDULED     Eco-4691-3     Eco-4691-3	Launch Facility -Up Unit	Organisational - Partial	Verification: T. O. 21-SM80A-2-3, par. 2-67C thru 2-67F				
Field-Level Chectors.     Varification:     D2:1085-44       Field-Level Fault Jointion     UNSCHEDULED       Field-Level Fault Jointion     UNSCHEDULED       Field-Level Fault Jointion     UNSCHEDULED       Prover Start Ausy- Alpainment     UNSCHEDULED       Prover Start Ausy- Ausy- henerction     UNSCHEDULED       Immediation     UNSCHEDULED       Immediation     2:37-63		unnastron Complete	Verification; T. O. 21-SM80A-2-3, par. 2-66 thru fig. 2-37	1-25-63			E0-4491-1 2-6-63
Field-Level Fael Level Fael Level Fael Level EduteD Field-Level Gyre Bart Assy Adjuatment Fromer Supply Noner Supply Lower	•	Field-Level Checkout	Verification; D2-10825-44			•	
Field-Level     Groe Bast Assy.     UNSCHEDULED       Adjuatment     Freest     Groe Bast Assy.       Preser Supply     UNSCHEDULED       Assy.     UNSCHEDULED       Assy.     UNSCHEDULED       Assy.     UNSCHEDULED       Assy.     UNSCHEDULED		Field - Lovel Faul lealation			<u></u>		<u> </u>
Power Supply UNSCHEDULED Any. Any. Any. Any. Any. Any. Any. Any.			UNSCHEDULED			•	
UNSCHEDULED	•		UNSCHEDULED				
		<b>Inspe</b> ction	UNSCHEDULED			2-15-63 2-27-63	E0-4491-2 2-18-63 E0-4491-3 2-27-63
		•					
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	•		•				

# 6.4 CURRENT EVALUATION/OBSERVATION (E/O) REPORTS

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The following pages contain the twelve E/O Reports completed during the period covered by this document. The reports are arranged in numerical order, by report number.

Each E/O Report consists of a M Checklist and a supplementary rating analysis. The checklist contains numerical ratings for all major Maintainability features observed and evaluated during the indicated demonstration event. The supplementary rating analysis accompanying the checklist both substantiates the numerical ratings and provides constructive recommendations. The recommendations propose specific improvements to be made in order to attain "Good" Maintainability.

<sup>NO.</sup> D2-149<u>3</u>4-**3** 

PAGE

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## MAINTAINABILITY EVALUATION/OFSERVATION REPORT

Repor	t NoDeDe	.te	2-2	7-63Page1of2	
Proje	red by A. H. Smith			N/S 6207-1 phone 866-3761	]
	A No. 4491 Nomen Start Up Unit,				
Dwg.	No. 25-33549-1		_Ser:	Lal No3	
Obser	ved Event_Evaluation_Location_V	afb		Date 2-27-63	
Title	or Description Static Evaluation	L			هاني منحري
<b>T.O</b> . 1	Protedures			• 	
	· · · · ·		•	алан алан алан алан алан алан алан алан	
	MADRAINA	BILIT	r Chi	icklist —	
1	Pault Isolation	N/0	14	Lines and Cables	4
2	Standardization	4	15	Fasteners	3
3	Interchangeability	4	16	Covers, Cases, Shields	3
4	Packaging, Mounting	3	17	Disposable Modules	N/0
5	Accessibility	4	18	Test Equipment	N/A
6	Work Space	N/A	19	Servicing, Handling, Equip.	N/A
7	Testing, Servicing	N/E	20	Tools	4
8	Displays	4	21	Platforms, Stands, Shelters	N/A
9	Handles	4	22	Technical Order	N/E
10	Labels, Marking	3	23	Figure A	N/E
11	Controls	4	24	Form B/C	R/E
12	Work Aids	N/E	25	Specifications	N/E
13	Connectors, Connections	4	26	Personnel Requirements	R/E

## CHECKLIST RATINGS

Good Maintainability

(

N/A Not Applicable

Satisfactory Maintainability Unsatisfactory Maintainability

Poor Maintainability

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- No Observation Possible
- **N**/0 N/S Not Evaluated

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Rating analyses are provided on susceeding pages, for all checklist items rated 3 or lower. . 5. j. j. ·, • . •

D2-14934-3 Page 58.

#### Report No. Mani411-3

Page 2 of 2

Item 4. a. The sable stowage cable-retaining lid is flinsy and bows outwards; thin causes the three fasteners to disengage, making it impossible to Masten the lid down.

1 1

Recommendation.

The lid should be ribbed or flanged to stiffen it, and the fasteners should be mounted one sixteenth of an inch closer to the edge of the 114.

b. The cable retaining lid does not hold itself open but must be held up with one hand while working amongst the cables.

Recommendation.

A small section of the lid should be removed from each corner on the hinged side. This would prevent the lid from stopping against the - surved corner of the case and would allow the lid to fall back far enough to remain open.

Item 10. Three spare fuses mounted in the cable storage box are not labelled. It is necessary to remove and inspect each one to find the correct rating.

Recommendation.

A label identifying fuse ratings should be affixed adjacent to each spare fuse holder.

Item 15. The over-center fasteners holding the bottom of the start-up unit case fall shut if an attempt is made to remove the unit in the upright position.

Recommendation.

The bottom lid fasteners should be turned around so that they fall open when disengaged, or alternatively they should be of a sprung variety that would hold itself open.

Itom 16. One connector has a loose plastic dust cap, while all others have captive caps.

Recommendation.

A captive dust cap should be provided for J 4 of the start-up assembly.

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# MAINTAINABILITY EVALUATION/COSCEMENTS REPORT

sport NoEO-3;92-2Date_Februa	ry 19, 1963 Page 1 of 8
Prepared by Alexinder Henschel	M/8_50-66 phone_JU_6-6263
Figure A No. 3092 Nomen Test Set, Programmer	Group, AN/GSM-57
Dwg. No. 25-26825, 25-29147, 25-31488, Seri	al No0004
Observed Event Qualification Location EDL	Date_February 15, 1963
Testing Title or DescriptionFunctional Test	
7.0. Protedures 37/4	

KAINTAINABILITY CHECKLIST							
1	Fault Isolation	3	24	Lines and Cables	4		
2	Standardisation	4	15	Fasteners	4		
3	Interchangeability	4	16	Covers, Cases, Shields	4		
-	Packaging, Mounting	3	17	Disposable Modules	4		
5	Accessibility	3	18	Test Equipment	3		
6	Work Space	4	19	Servicing, Handling, Equip.	4		
. 7	Testing, Servicing	3	20	Tools	4		
8	Displays	4	21	Platforms, Stands, Shelters	N/A		
9	Handles	4	22	Technical Order	3		
10	Labels, Marking	3	23	Figure A	3		
n	Controls	4	24	Form B/C Form C only	3		
12	Work Aids	3	25	Specifications	3		
13	Connectors, Connections	3	26	Personnel Requirements	3		

# CHECKLIST RATINGS

- 3
- Good Maintainability Satisfactory Maintainability

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. .

- 2 Unsatisfactory Maintainability Poor Maintainability 1
- X/X Not Applicable **N/**0
  - No Observation Possible
  - N/E Not Evaluated
- Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.
  - D2-14934-3 Page 60

1.

# Rating Analyses for Test Set, Programmer Group, AN/GSM-57

## **Rem I - Fault Isolation**

Fault isolation to a replaceable component is an unduly complicated task. The self-test provision of AN/GSM-57 provides a GO-NO-GO indication. If a NO-GO is indicated the Test Set must be checked by use of the AN/GJM-15 Test Center and AN/GSM-61 Test Adapter Group. This does not in sure the fault will be located since it may be in the power circuitry necessitating use of the AN/GSM-82(V) Test Equipment. After the fault has been corrected, a self-test will be run to determine whether or not a GO condition now exists. Therefore it is conceivable that four or more tests will run before the Test Set is returned to an operational status.

## **Recommendation:**

Investigate the possibility of using a break-out box in conjunction with Standard Test Equipment, self-test provision of the AN/GSM-57, and the AN/GSM-82(V) Test Equipment. This type of test setup would shorten trouble-shooting and checkout by eliminating the need for converting from one test situation to another.

## Item 4 - Packaging, Mounting

A. The suitcases and their feet will not withstand normal organizational usage.

#### **Recommendation:**

Zero Modular Packaging per catalog E59 or equivalent would provide the rugged test equipment suitcase needed for organizational usage.

**B.** The upper chassis of the Fault Locator, 25-29127-5, is mounted on the lower chassis. Mounting alignment is such that the corner hex head screws are too close to the case (four places).

#### **Recommendation:**

Initiate an ADCN to correct the out of tolerance condition.

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## **Item 5 - Accessibility**

c Accessibility is limited for the connection of the AN/GSM-57 to the Programmer Group at the Launch Facility. Nine cables have to be connected at the top rear of the Programmer Group which necessitates use of a stepladder.

### **Recommendation:**

Investigate packaging the Programmer Group in the type of equipment rack which is used at the Launch Control Facility. This type of rack would allow more work space and would facilitate faster test setup.

#### **Item 7 - Testing**, Servicing

The test program for the AN/GSM-57 consists of punched program cards. There is no instruction on or near the card reader stating which way the Programmer card should be inserted. Instructions are in T.O. 21-SM80A-2-3.

#### **Recommendation:**

**Provide an instruction placard or the outline of a program card on the card reader to eliminate any doubt as to which way the card should be placed.** 

## Stem 10 - Labels, Marking

• A. The cable carrying case weighs 128 pounds with all cables. The eighteen cable compartments are unmarked as to which cable it is for, allowing the technician to place each cable where he wants to.

#### **Recommendation:**

Mark the weight of the carrying case, ref. MIL-STD-803 section 10.4.3.1 Mark each cable compartment for a particular cable. This will insure all cables are accounted for when the maintenance crew leaves the LF and will maintain the weight distribution of the cables in the proper manner. See Attachment A.

**B.** Test setups could be made quicker if a placard were provided in the top cover of the Fault Locator (cable hook-up placard for Programmer Group checkout) and the Distribution Box (cable hook-up placard for self-test).

#### **Recommendation:**

**Provide a cable**-hook-up placard in the Fault Locator and the Distribution **Box suitcases.** See attachment B.

D2-14934-3

Item 12 - Work Aids

See discussion presented in items 7 and 10.

**Item 13 - Connectors, Connections** 

The multitude of connections for self-test and fault isolation is discussed in item 1. Item 5 covers the accessibility aspect of making the test connections.

Item 18 - Test Equipment

The AN/GJM-15 Test Center and AN/GSM-61 Test Adapter Group are used to troubleshoot the AN/GSM-57 Test Set.

## **Recommendation:**

Investigate the possibility of using Standard Test Equipment and the AN/GSM-82(V) Test Equipment only. Use Standard Test Equipment for troubleshooting and maintenance whenever possible. See MIL-M-26512B (USAF).

**Item 22** - Technical Order

See Attachment C.

item 23 - Figure A

Figure A Technical Requirements section should have a maintainability and operability paragraph.

**Recommendation:** 

Conform with instructions in AFBSD Exhibit 61-56.

**Item 24** - Form B/C

Form C analysis needs revision as to personnel requirements particularly in the callout of clock hours to complete certain tasks.

#### **Recommendation:**

**Revise Form C's as more accurate time lines become available.** Areas to be improved are test setup, test accomplishment, and return to prior configuration times.

Rem 25 - Specifications

Model Specification, Test Set, Programmer Group (S-133-121-3-1-10), Boeing Document D2-9140, has no reference to maintainability.

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Page 5

Rem 25 - (Continued)

Recommendation:

Conform to MIL-M-26512B (USAF) section 3.2.6.

Rem 26 - Personnel Requirements

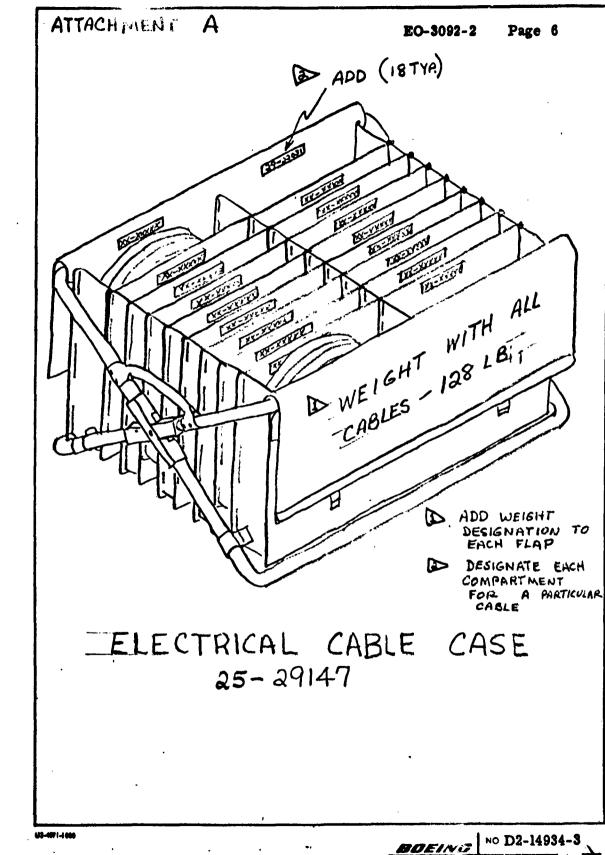
See Item 24.

0;

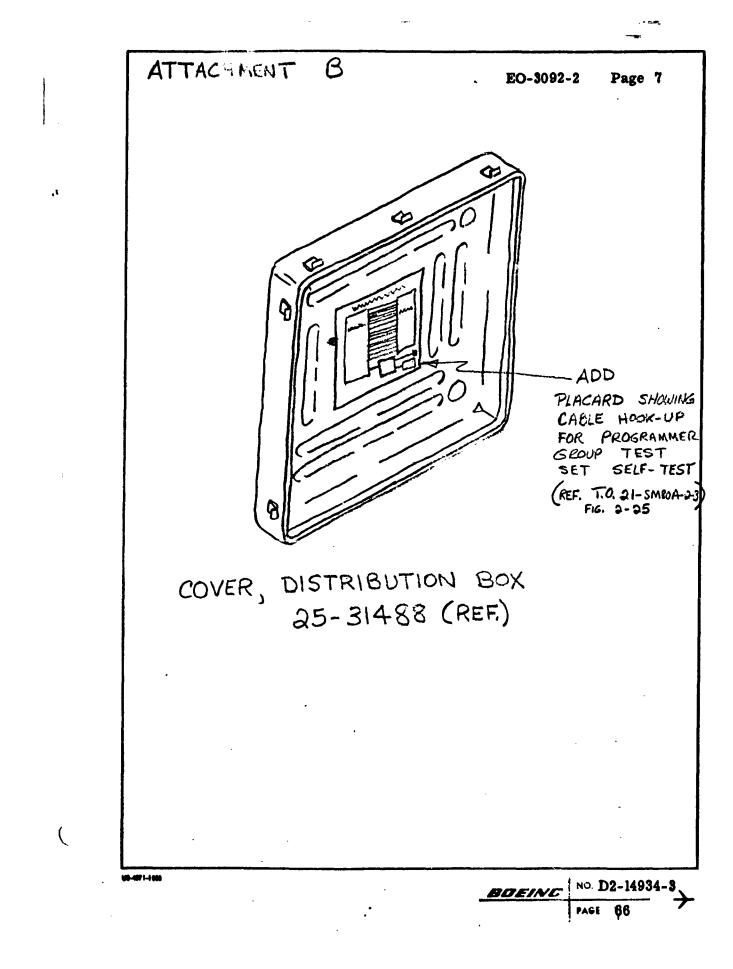
**, (** 

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PAGE 65



<b>AT</b> ACHMENT	¢ ::	Page 8			
	COORDINATION SHEET	EO 3092-2			
το	J. E. Fitzharris 2-5252 39-90	NO. MEG-3-34			
	<b>B. R. Johnson</b> 2-5252 39-90	155555555 File 410.04			
GROUP INDEX	Minuteman Maintainability Engineering Grou	P DATE FEB 1 4 1963			
SUBJECT	T.O.'s: 21-SM80A-2-3, 21-SM80A-8-1, and 33D9-111-3-1	MODEL WS-133A			
Reference:	Coordination Sheet No. MEG-3-11, dated 1/22	/63.			
	· · · · · · · · · · · · · · · · · · ·	<i>.</i> *			
Programmer Gr in conjunction w Test Set can be 1. At pres	<ul> <li>A Maintainability study is presently in progress on Figure A number 3092, Programmer Group Test Set, AN/GSM-57, 57A. The subject T.O.'s are being used in conjunction with this study. Maintenance information on the Programmer Group Test Set can be improved by incorporation of the following recommendations:         <ol> <li>At present T.O. 33D9-111-3-1 has no detailed instructions for performance of Self-Test. Section 5-25 is listed as not available.</li> </ol> </li> </ul>				

## **Recommendation:**

Insure that section 5-25 of T.O. 33D9-111-3-1 is consistent with sections : 2-54 thru 2-56 of T.O. 21-SM80A-2-3. The only difference should be the fact that T.O. 33D9-111-3-1 will be for the SMSA and T.O. 21-SM80A-2-3 will be for the LF. Incorporate the suggestions contained in Coordination Sheet MEG-3-11 in the Self-Test procedure.

2. The Index of Punched Program Cards contained in each of the subject T.O.'s is not consistent. Figure 2-2, page 2-7, of T.O. 21-SM80A-8-1 differs from Figure 2-34A, page 2-74Å, of T.O. 21-SM80A-2-3 which differs from section 1-12, page 1-4, of T.O. 33D9-111-3-1. Each of these figures should list the same items and information.

#### **Recommendation:**

Use the same Index of Punch Program Cards for the AN/GSM-57, 57A in all three T.O.'s. Insure that the punched card information is accurate.

Prepared by:

AH:clj 2/13/63

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Henschel

A. Henschel

Approved by:

J. S. McEacheran Minuteman M Engineering Group

D2-14934-3 Page 67

# MAINTAINABILITY EVALUATION/DEBEREES REPORT

leport No. No. 10-1012-2	Date5	_63 Page 1 of 3
Prepared by A.H.	2mith	M/S_6207-1 phone_866-3261
Figure A No. 4012 N	omon_ <u>DAC Test-Set (ACO equip</u>	- ent)
Dwg. No	Ser	1al No
Observed Event None	LocationVAFB	Dato2-5-63
Title or Description	Static Evaluation	
1.0. Procedures	21-SM80A-2-3 Para. 2-33	

MAINTAINABILITY CHECKLIST									
1	Fault Isolation	1	14	Lines and Cables	4				
2	Standardization	4	15	Fasteners					
3	Interchangeability	4	16	Covers, Cases, Shields	3				
4	Packaging, Mounting	2	17	Disposable Modules	4				
5	Accessibility	4	18	Test Equipment	N/				
6	Work Space	4	19	Servicing, Handling, Equip.	N				
7	Testing, Servicing	4	20	Tools					
8	Displays	4	21	Platforms, Stands, Shelters	N				
9	Handles	4	22	Technical Order					
10	Labels, Marking	3	23	Figure A	N/				
n	Controls	4	24	Form B/C	N				
12	Work Aids	N/A	25	Specifications	N/				
13	Connectors, Connections	. 4	26	Personnel Requirements					

#### CHECKLIST RATINGS

4 Good Maintainability

ι,

- 3 Satisfactory Maintainability
- 2 Unsatisfactory Maintainability
- 1 Poor Maintainability

- N/A Not Applicable N/O No Observation Possible
- N/E Not Evaluated
- Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.

Item 1. In general, this test-set is of somewhat superior detailed design from a Maintainability viewpoint, however, according to the using group at VAFB, it has never been made to function. Whether this is due to generally poor reliability or to some undiscovered incompatibility is not clear as yet. It is quite certain that, in its present form, it represents a serious Maintainability problem since it would obviously lead to difficulties due to its inability to perform its test function.

> More specific information will be available when an opportunity occurs to witness dynamic use of the item.

Item 4. Cases 3 and 4 of the test-set are similar to each other, containing a program-board compartment in the bottom of the case, with a cablestowage space above.

> It was observed that an effort has been made to provide adequate cablestowage capabilities, but the result is not quite successful. The usual suit-case tester problem exists, namely getting the cables into their allotted space and getting the lid closed on them in a reasonable time.

> One cable in case 3 showed a number of small but deep cuts in its insulation, and inspection of the lid revealed a possible explanation; the pressure-venting device protrudes inwards and may have caused the damage during lid-closure.

The cables are stored in a special tray which is secured to the top of the program-board compartment by 15 slotted quick-release fasteners. The ends of some of the cables are placed in a recess at one end of the case, down beside the program board compartment. If it is required to gain access to the program-boards, it is necessary to unwind and remove all the cables, undo the 15 fasteners, and remove the cable-tray.

The connector arrestors in the center of the tray are so designed that each cable must be stored in its proper location and in a complicated sequence which is printed on a label on one of the arrestor lids. The arrestor lids are hinged flaps with a quick-release fastener at the open end; the hinges are flimsy and it seems likely that they will fail in use.

Recommendation:

- a. The cable tray should be redesigned so that it may be removed without disturbing the cables.
- b. The 15 fasteners should be replaced by a small number of fasteners which are accessible without the need to remove the cables.
- c. The connector-arrestor flaps should be provided with more robust hinges.
- Item 10. a. No weight labels were found on the cases of the test-set. The cases are all too heavy for one man lift, but the two handles on the ends of the case might invite an attempt to lift the case resulting in probable damage to the individual or the equipment.

Recommendation:

Weight labels specifying two-man lift should be affixed to the cases.

#### Report No. E0-4012-2

b. "he equipment identification label for case 3 was mounted inside the wall of the cable-tray.

#### Recommendation:

The label should be moved to the outside of the cable-tray where it is not obscured by the cables.

c. The test cables are identified only by drawing number.

#### · Recommendation:

The cables should bear identification labels of the type which are common in other test-sets. These labels show the cable designation, the receptacles with which the connectors mate, as well as the drawing number.

Item 15. On case number 1, the quick-release fasteners holding the equipment chassis into the case were difficult to release. The difficulty was due to an outward bowing of the case along the longer sides; this bow caused the studs to bear against the outside of the chassis holes, thereby causing the chassis to catch against the shoulders of the studs.

> In order to release the chassis two men were required; one to compress the sides of the case, the other to lift the chassis clear.

#### Recommendation:

The shoulders of the stud should be narrower than the diameter of the stud shaft.

Item 16. The program-board holding fixture on the Signal Monitor. (Case 2) is provided with a plywood protective cover which is installed when no board is being used. When removed from the test set this board could easily by mistaken for a piece of scrap wood, and could be lost or destroyed.

#### Recommendation:

The cover should be painted and identified.

Item 22. T.O. 21-SM80A-2-3 paragraph 2-34a contains a note describing how to change the keying of the adjustable plug on cable 714.

> This note does not describe the process fully enough, and should be expanded to indicate the need for disengaging the castellations on the keying shell.

#### Recommendation:

The note should be expanded as indicated in item 22a of **DO 1243-1/3013-1.** 

Item 26. All units of the test-set employ soldered connections internally. This precludes repair at Field-level due to the restriction on soldering at Field-level.

#### MAINTAINABILITY EVALUATION/CONTENTION REPORT

.epor	t NoD	to Fe	bru	ary 8, 1963 Page 1 of	4					
Preja	Prepared by Alexander Henschel M/S 50-66 phone 6-6263									
Figure & No. 4018 Nomen Adapter Group, Test, AN/GSM-61										
Dwg. No. 25-33559 Serial No. 0001										
Observed Event N/A Location EDL Date February 4 & 5, 1963										
Title or Description <u>Maintainability Evaluation of Figure A</u> 4018										
7.0. Procedures										
					]					
	MADITAINA	BILIT	Y СН	ECKLIST	·					
1	Fault Isolation	4	14	Lines and Cables	4					
2	Standardization	N/E	15	Fasteners	3					
3	Interchangeability	N/E	16	Covers, Cases, Shields	N/A					
4	Packaging, Mounting	3	17	Disposable Modules	2					
5	Accessibility	3	18	Test Equipment	N/A					
6	Work Space	4	19	Servicing, Handling, Equip.	N/A					
7	Testing, Servicing	3	20	Tools	N/A					
8	Displays	3	21	Platforms, Stands, Shelters	N/A					
9	Handles	4	22	Technical Order	N/E					
10	Labels, Marking	3	23	Figure A	N/E					
11	Controls	4	24	Form B/C Form C only	3					
12	Work Aids	N/E	25	Specifications	N/E					
13	Connectors, Connections	2	26	Personnel Requirements	N/E					

#### CHECKLIST RATINGS

Good Maintainability

3 2

1

÷.,

.

2

Satisfactory Maintainability

Unsatisfactory Maintainability

- Poor Maintainability
- Not Applicable N/A No Observation Possible N/O N/E Not Evaluated

..

Rating analyses are provided on succeeding pages, for all checklist itsus rated 3 or lower. **U**. · · . . . .

# Rating Analysis, Figure A Number 4018

A.) A total of eight fuses are mounted within assemblies 25-31604-1, and 25-31603-1. Four are mounted on th heat sink assembly which is part of the 25-31605-1 a are mounted on the 25-33020-1 heat sink assembly w the 25-31603-1 assembly. The remaining two are loc 31604-1 assembly, one is a spare. Six fuses, three a spare, are mounted on the front panel of 25-31604-1.

# **Recommendation:**

Place all fuses and spares (one spare per active fus panel of their respective chassis. Provide indicatin, and positive recognition of equipment malfunction. § Section 3.1.1.

B.) Three sub-contractor manufactured assemblies have assemblies (PCA's) which are electrically terminate connections. The wire route is wire harness to terr terminal board to PCA. Examination of the Referen Chassis 119307 1-502, Waveform Converter Chassis 1 Electrical Impedance Simulator Chassis 1193073-502 following observations:

- **a.)** The wire between the terminal board and PCA sufficient slack for at least three reterminatio This condition is not met.
- b.) Form C maintenance analysis calls for unwrap each PCA pin, replace the faulty PCA, and wrap the PCA. This method decreases the reliabili connection because of the wire having had an  $\epsilon$
- c.) Maintenance technicians may forget the PCA's and pull without first removing the wiring. Th require replacement of PCA, terminal board,

EO-4018-1

Page

When the AN/GSM-61 and AN/GJM-15 are being used to check assemblies for faults, unnecessary down't me will result if the fault is traced to a wire wrapped PCA. This will be the repair and checkout time difference between a fault traced to an assembly containing wire wrapped PCA's and one to an assembly containing modules which are plug-in.

# **Recommendation:**

#### Alternative L

Investigate feasibility of re-design to eliminate the use of wire wrap terminations. Provide etched circuit boards and modules with the plug connector in accordance with Boeing Standard C45BN-3A or equivalent, and the receptacle in accordance with Boeing Standard C45BN-1 or equivalent. See STL Document 6120-6882-DU-RDL

#### Alternative IL

Ъ.)

Revise Form C analysis to call out the following remove and replace techniques for wire wrapped PCA's:

**Remove:** 1.) Cut each wire as close as possible to the PCA pin. Tag as necessary for identification.

2.) Remove PCA mounting hardware.

3.) Remove PCA.

Strip each wire in preparation for wrapping to new PCA. If sufficient length is not available replace wire between terminal board and PCA.

Install: 1.) In

4.)

Install new PCA.

2.) Install PCA mounting hardware.

3.) Use a wire wrapping tool to connect wiring to PCA.

Route repaired assembly through test center.

**Provide a warning placard within assemblies containing wire** wrapped PCA's stating the PCA's are not plug-in type.

EO-4018

# . Access panels at the rear of the cabinet are faster

#### Recommendation:

Provide hinged access panels. See MIL-STD-803 Due Itera 1.A also.

- 7. See items 4 and 5.
- 8. See item 4.

10. Certain removable assemblies weighing over 45 per with their unit weight. An example is the Program 28170-1.

#### **Recommendation:**

Identify unit weight for assemblies weighing over 4 STD-803 section 10.4.3.1

13. Solder connections are used through out the unit.

# **Recommendation:**

Use plug-in assemblies, crimp-on connectors, or on "pig-tail" lead wires to a plug-in or mechanica Document 6120-7822-DU-RDI, Maintainability Crit

- 15. See item 5.
- 17. See item 4.B
- 24. See item 4.B

# MAINTA: NABILITY EVALUATION/COUNTREED, REPORT

.eport No	E0-4018-2	Date	2-14-63	Page	10f3	
Prepared by_	A. I. Smith		x/s_6	207-1 pho	e	
Figure A No.	4018 Nomen Te	st Adapter Group (P	rogrammer)			والمراجع
Dwg. No	25-28170-1		Serial No	0000002		
Observed Ever	t Evaluation	Location VAFB		Date	2-11-63	
Title or Desc	ription Engined	ering evaluation of	stepping switc	hes.		
7.0. Procedur	<b>19</b> 3					

MADITAINABILITY CHECKLIST										
1	Fault Isolation	N/0	24	Lines and Cables	N/E					
2	Standardization	4	15	Fasteners	N/E					
3	Interchangeability	4	16	Covers, Cases, Shields	4					
4	Packaging, Kounting	2	17	Disposable Modules	4					
5	Accessibility	3	18	Test Equipment	N/0					
6	Work Space	N/A	19	Servicing, Handling, Equip.	3					
7	Testing, Servicing	N/0	20	Tools	N/0					
8	Displays	N/A	21	Platforms, Stands, Shelters	N/A					
9	Handles	4	22	Technical Order	N/E					
10	Labels, Marking	3	23	Figure A	N/E					
11	Controls	4	24	Form B/C	N/E					
12	Work Aids	N/E	25	Specifications	N/E					
13	Connectors, Connections	. 3	26	Personnel Requirements	2					

# CHECKLIST RATINGS

- Good Maintainability 4
- 32 Satisfactory Maintainability
- Unsatisfactory Maintainability 1
  - Poor Maintainability

- N/A N/O
- Not Applicable No Observation Possible
- N/E Not Evaluated

# Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.

D2-14934-3

Dore 75

#### Report No. D. 507.8-2

Iten 4.

The evaluation observed was concerned primarily with the stepping switches in the Programmer drawer. Other areas were not accessible for evaluation; this report will therefore be more concerned with the programmer than any other component of the Fig A 4018.

a. In general, the Programmer is a very solidly constructed item and gives a strong impression of over-engineering. Its weight (in excess of 200 pounds) appears to derive very largely from a chassis constructed of  $\succ$  inch alloy, and from thick bundles of wires which are broken frequently by terminal boards.

#### Recommendation

A review of the packaging of the programmer is highly desirable, to determine the feasibility of reducing the weight of the unit and the complexity of the wiring. Special attention should be given to the possibility of dividing this unit into two or more units of more conventional size.

b. A row of three stepping-switches is mounted across the middle of the upper chassis. The switches are sealed units, approximately 6 inches by 4 inches on the base, and they are mounted by means of hex-headed studs over holes in the chassis so that the connectors protrude through. There are seven quick-release Bendix connectors on the base of each switch. One of the studs is used to mount a diode-board, the components being placed on the "inside", that is, over the head of the bolt. This arrangement causes great difficulty in removing the stepping switch, since space is very cramped underneath the chassis. The problem is aggravated by the presence of two stacks of terminal strips on the side of the unit which impede free access to the stepping-switch bases. The basically simple task of removing two components took two hours to accomplish.

#### Recommendation

1. The mounting studs of the stepping-switches should be accessible from above the chassis, i.e., the switches should be screwed down onto the plate instead of being secured from below.

2. An alternative mounting point should be provided for the diodeboards, and again this should be removable from above.

3. The leads to the stepping-switch should be more readily removed than at present (see item 13). This might include providing longer leads to allow the switch to be partly withdrawn allowing access to the the connectors on the underside.

Item 5.

**T** 

In order to remove the middle one of the three topmost steppingswitches, it would apparently be necessary to remove all the connectors from the base of one of the outer switches. The task bristles with difficulties due to the extremely poor accessibility of the seven Bendix plugs on the base of each switch. These plugs are so closely packed that it is only possible to grip them with the fingers and "nudge" them around, a process which is painful, tiring, and timeconsuming.

Page 2 of 3

#### Report No. DO-4018-2

This difficully would remain even if the recommendations of item 4 were adopted to improve the ease of removal.

Recommendation

The method of making electrical connections to the steppingswitches should be changed. Ideally these components should be plug-in units.

Item 10 The Programmer weighs in excess of 200 pounds which requires the use of a fork-lift for handling. The unit is not labeled to this effect.

Recommendation

A weight label calling for the use of a mechanical hoist should be affixed.

Item 13 The problem of crowding of connectors on the stepping-switches would be disposed of by the recommendation of item 5.

> It was noted that there is an enthusiastic employment of terminal strips throughout the unit. These strips impede access and increase cost and complexity, without apparently serving any other function. A bundle of wires will be broken by a terminal strip, with the great majority of the wires going straight on through to be regrouped into a bundle again.

Recommendation

The existing system of wiring should be replaced by a "harness" system to avoid redundant break-points. This process would undoubtedly be eased by repackaging the unit into two drawers.

Item 19 It was necessary to employ a hydraulic "LO-LIFT" to handle the programmer in the Vandenberg SMSB, and the process entailed the use of six men. If the weight of the unit cannot be reduced, or if the unit cannot be divided into two chassis, then a suitable handling fixture will be required.

Recommendation

It must be verified that a suitable mechanical hoist will be available for handling this item.

Item 26 The arparently simple task of removing two stepping-switches from the Programmer required the expenditure of 12 man hours. Part of the effort required the presence of six men to aid in handling.

With proper redesign of this unit it is estimated that the time could be reduced to one man hour or less.

# MAINTAINABILITY <u>EVALUATION</u> OBSERVATION REPORT

.eport No.	<u>10-4018-3</u>	Date	2-27-63	Page1_	0f
Prepared by	A. H. Smith		x/s	6207-1 phone	866-3761
Figure A No4018	Nomen Test	Adapter Group		·····	•
Dwg. No	25-26876-1		Serial No	5	
Observed Event	T.O. V&V Lo	cation VA	<b>F</b> B	Date 2-	25-63
Title or Descripti	.onOperation	al Checkout			
7.0, Procedures	3307-50-3	-1 Para. 5-5	thru 5-11		en e

MAINTAINABILITY CHECKLIST									
1	Fault Isolation	4	14	Lines and Cables	4				
2	Standardisation	4	15	Fasteners	3				
3	Interchangeability	4	16	Covers, Cases, Shields	3				
4	Packaging, Mounting	3	17	Disposable Modules	N/I				
5	Accessibility	. 4	18	Test Equipment	N/C				
6	Work Space	4	19	Servicing, Handling, Equip.	N/1				
7	Testing, Servicing	. 4	20	Tools	N/I				
8	Displays	4	21	Platforms, Stands, Shelters	N/I				
9	Handles	4	22	Technical Order	3				
10	Labels, Marking	2	23	Figure A	N/I				
n	Controls	4	24	Form B/C	N/E				
12	Work Aids	N/E	25	Specifications	N/E				
13	Connectors, Connections	4	26	Personnel Requirements	N/I				

#### CHECKLIST RATINGS

Good Maintainability

1

- Satisfactory Maintainability 3 2
  - Unsatisfactory Maintainability -

Poor Maintainability

.....

1

Not Applicable N/A

N/O No Observation Possible

X/E Not Evaluated

.

# Rating analyses are provided on succeeding pages, for all checklist itoms rated 3 or lower.

D2-14934-4 Dage 78

4

# Report No. 20-4018-3

1

Iton 4.

Circuit Control Boards have a pair of hooked projections on the mating surface which engage a retaining device when the Release Handle is raised.

It has been observed at VAFB that it is very easy for an inexperienced operator to damage the unit during board-insertion; if the bottom of the board is not firmly pressed inwards until it clicks, the retaining pin fouls the ends of the hooks and the great mechanical advantage of the release handles enables the operator to snap the hooks off without feeling any resistance.

Recommendation.

a. The retaining hooks should be bevelled to reduce the flat end-area, and to allow the retaining pin less chance of fouling.

b. The books should be strengthened.

- e. A cautionary note should be included in all T.O.'s dealing with Circuit Control Board removal and replacement, especially 33D7-50-3-1. See item 22.
- d. A cautionary label should be affixed to the cover of each board stressing the need to press the board home firmly before raising the handles.
- Item 10.

The Fig. A 4018 nameplate is mounted on the left hand end of the unit, and is invisible when the unit is used adjacent to other equipment.

Recommendation.

The nameplate should be mounted on a forward-facing surface.

Item 15.

No protective cover is provided for the front of the Programmer Drawer when a Circuit Control Board is not installed. At VAFB it is the practice to tape a piece of cardboard in place.

Recommendation.

Item 22. a. Paragraph 5-71 is somewhat confusing. During Operational Checkout four test sequences are run, each one with a separate circuit control board. This paragraph implies that it is not necessary to turn power off before changing control boards.

> During the V&V observed the Test Operator directed the Air Force technician to put the A624 into MODE 1 at the end of step 1; this procedure removes power from the 4018 and makes it safe to change beards.

Recommendation.

2.0. 3307-50-3-1 paragraph 5-7 step 1 should be revised to show

#### Rating Analysis, Figure A Number 4018

A.) A total of eight fuses are mounted within assemblies 25-31605-1, 25-31604-1, and 25-31603-1. Four are mounted on the 25-32950-4 heat sink assembly which is part of the 25-31605-1 assembly. Two are mounted on the 25-33020-1 heat sink assembly which is part of the 25-31603-1 assembly. The remaining two are located in the 25-31604-1 assembly, one is a spare. Six fuses, three active and three spare, are mounted on the front panel of 25-31604-1.

#### **Recommendation:**

**c.**)

Place all fuses and spares (one spare per active fuse) on the front panel of their respective chassis. Provide indicating fuses for rapid and positive recognition of equipment malfunction. See MIL-M-26512B Section 3.1.1.

B.) Three sub-contractor manufactured assemblies have printed circuit assemblies (PCA's) which are electrically terminated by wire wrapped connections. The wire route is wire harness to terminal board, then terminal board to PCA. Examination of the Reference Signal Generator Chassis 1193071-502, Waveform Converter Chassis 1193072-502, and Electrical Impedance Simulator Chassis 1193073-502 results in the following observations:

a.) The wire between the terminal board and PCA should have sufficient slack for at least three reterminations at the PCA end. This condition is not met.

b.) Form C maintenance analysis calls for unwrapping the wire at each PCA pin, replace the faulty PCA, and wrap each wire to the PCA. This method decreases the reliability of the electrical connection because of the wire having had an extra wrap cycle.

Maintenance technicians may forget the PCA's are wire wrapped, and pull without first removing the wiring. The results will require replacement of PCA, terminal board, and wiring.

Page

When the AN/GSM-61 and AN/GJM-15 are being used to check assemblies for faults, unnecessary down't me will result if the fault is traced to a wire wrapped PCA. This will be the repair and checkout time difference between a fault traced to an assembly containing wire wrapped PCA's and one to an assembly containing modules which are plug-in.

#### **Recommendation:**

#### Alternative I.

Investigate feasibility of re-design to eliminate the use of wire wrap terminations. Provide etched circuit boards and modules with the plug connector in accordance with Boeing Standard C45BN-3A or equivalent, and the receptacle in accordance with Boeing Standard C45BN-1 or equivalent. See STL Document 6120-6882-DU-RDI.

#### Alternative IL.

**b.**)

Revise Form C analysis to call out the following remove and replace techniques for wire wrapped PCA's:

Remove: 1.) Cut each wire as close as possible to the PCA pin. Tag as necessary for identification.

2.) Remove PCA mounting hardware.

3.) Remove PCA.

Strip each wire in preparation for wrapping to new PCA. If sufficient length is not available replace wire between terminal board and PCA.

Install: 1.) Install new PCA.

4.)

3.)

2.) Install PCA mounting hardware.

Use a wire wrapping tool to connect wiring to PCA.

4.) Route repaired assembly through test center.

**Provide a warning placard within assemblies containing wire** wrapped PCA's stating the PCA's are not plug-in type. 5. Access panels at the rear of the cabinet are fastened by Phillips screws.

#### **Recommendation:**

Provide hinged access panels. See MIL-STD-803 section 10.4.3.5.5.

- 7. See items 4 and 5.
- 8. See item 4.
- 10. Certain removable assemblies weighing over 45 pounds are not marked with their unit weight. An example is the Programmer Assembly 25-28170-1.

#### **Recommendation:**

Identify unit weight for assemblies weighing over 45 pounds. See MIL-STD-803 section 10.4.3.1

13. Solder connections are used through out the unit.

# Recommendation:

Use plug-in assemblies, crimp-on connectors, or components with solderedon "pig-tail" lead wires to a plug-in or mechanical connectors. See STL Document 6120-7822-DU-RDI, Maintainability Criteria, dated 16 March 1962.

- 15. See item 5.
- 17. See item 4.B
- 24. See item 4.B

D2-14934-3 Page 74

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# MAINTA: NABILITY EVALUATION/COUNTREEDORT

( .eport No	<u>F0-4018-2</u>	De	2-14-6	3	Page	<u>1</u> of	3
Prepared by_	A. I. Smith		****	<b>x/s</b> _6207-1	pho	ne	761
Figure A No.	4018 Nomen T	lest Adonter Gr	roup (Programmer	•)		<u></u>	
Dwg. No	25-28170-1		Serial No	•	2000002		
Observed Ever	t_Evaluation	Location	VAFB		Date	2-11-63	
Title or Desc	ription Engine	ering evaluati	ion of stepping	switches.			
7.0. Procedur	63						

MAINTAINABILITY CHECKLIST										
1	Pault Isolation	N/0	24	Lines and Cables	N/I					
2	Standardization	4	15	Fasteners	N/E					
3	Interchangeability	4	16	Covers, Cases, Shields	4					
4	Packaging, Kounting	2	17	Disposable Modules	4					
5	Accessibility	3	18	Test Equipment	N/0					
6	Work Space	N/A	19	Servicing, Handling, Equip.	3					
7	Testing, Servicing	N/0	20	Tools	N/0					
8	Displays	N/A	21	Platforms, Stands, Shelters	N/A					
9	Handles	4	22	Technical Order	N/I					
10	Labels, Marking	3	23	Figure A	N/I					
11	Controls	4	24	Form B/C	N/I					
12	Work Alds	N/E	25	Specifications	N/I					
ນ	Connectors, Connections	. 3	26	Personnel Requirements	2					

# CHECKLIST RATINGS

Good Maintainability 4

1

- Satisfactory Maintainability 3
- 2 Unsatisfactory Maintainability
- N/A Not Applicable
- No Observation Possible N/O
- Poor Maintainability
- N/E Not Evaluated

Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.

D2-14934-3

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Item 4. The evaluation observed was concerned primarily with the stepping switches in the Programmer drawer. Other areas were not accessible for evaluation; this report will therefore be more concerned with the programmer than any other component of the Fig A 4018.

> a. In general, the Programmer is a very solidly constructed item and gives a strong impression of over-engineering. Its weight (in excess of 200 pounds) appears to derive very largely from a chassis constructed of  $\succ$  inch alloy, and from thick bundles of wires which are broken frequently by terminal boards.

#### Recommendation

A review of the packaging of the programmer is highly desirable, to determine the feasibility of reducing the weight of the unit and the complexity of the wiring. Special attention should be given to the possibility of dividing this unit into two or more units of more conventional size.

b. A row of three stepping-switches is mounted across the middle of the upper chassis. The switches are sealed units, approximately 6 inches by 4 inches on the base, and they are mounted by means of hex-headed studs over holes in the chassis so that the connectors protrude through. There are seven quick-release Bendix connectors on the base of each switch. One of the studs is used to mount a diode-board, the components being placed on the "inside", that is, over the head of the bolt. This arrangement causes great difficulty in removing the stepping switch, since space is very cramped underneath the chassis. The problem is aggravated by the presence of two stacks of terminal strips on the side of the unit which impede free access to the stepping-switch bases. The basically simple task of removing two components took two hours to accomplish.

Recommendation

1. The mounting studs of the stepping-switches should be accessible from above the chassis, i.e., the switches should be screwed down onto the plate instead of being secured from below.

2. An alternative mounting point should be provided for the diodeboards, and again this should be removable from above.

3. The leads to the stepping-switch should be more readily removed than at present (see item 13). This might include providing longer leads to allow the switch to be partly withdrawn allowing access to <sup>t</sup>. the connectors on the underside.

Item 5.

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In order to remove the middle one of the three topmost steppingawitches, it would apparently be necessary to remove all the connectors from the base of one of the outer switches. The task bristles with difficulties due to the extremely poor accessibility of the seven Bendix plugs on the base of each switch. These plugs are so closely packed that it is only possible to grip them with the fingers and "nudge" them around, a process which is painful, tiring, and timeconsuming.

#### Report No. DO-4018-2

This difficully would remain even if the recommendations of item 4 were adopted to improve the ease of removal.

Recommendation

The method of making electrical connections to the steppingswitches should be changed. Ideally these components should be plug-in units.

Item 10 The Programmer weighs in excess of 200 pounds which requires the use of a fork-lift for handling. The unit is not labeled to this effect.

Recommendation

A weight label calling for the use of a mechanical hoist should be affixed.

Item 13 The problem of crowding of connectors on the stepping-switches would be disposed of by the recommendation of item 5.

> It was noted that there is an enthusiastic employment of terminal strips throughout the unit. These strips impede access and increase cost and complexity, without apparently serving any other function. A bundle of wires will be broken by a terminal strip, with the great majority of the wires going straight on through to be regrouped into a bundle again.

Recommendation

The existing system of wiring should be replaced by a "harness" system to avoid redundant break-points. This process would undoubtedly be eased by repackaging the unit into two drawers.

Item 19 It was necessary to employ a hydraulic "LO-LIFT" to handle the programmer in the Vandenberg SMSB, and the process entailed the use of six men. If the weight of the unit cannot be reduced, or if the unit cannot be divided into two chassis, then a suitable handling fixture will be required.

Recommendation

It must be verified that a suitable mechanical hoist will be available for handling this item.

Item 26 The apparently simple task of removing two stepping-switches from the Programmer required the expenditure of 12 man hours. Part of the effort required the presence of six men to aid in handling.

> With proper redesign of this unit it is estimated that the time could be reduced to one man hour or less.

# MAINTAINABILITY <u>-EVALUATION</u> OBSERVATION REPORT

.eport No	<u>10-4018-3</u>	Date	2-27-63	Page1_	of
Prepared by	A. H. Smith		<u>n/s</u>	6207-1 phone	866-3761
Figure A No. 4018	Nomen_Test A	dapter Group			•
Dwg. No	25-26876-1		_Serial No	<u>5</u>	
Observed Event	T.O. V&V Loc	ationVAI	7B	Date2-	25-63
Title or Descripti	onOperational	1 Checkout			
1.0. Procedures	3307-50-3-	1 Para. 5-5	thru 5-11		

	NADITAINABILITY CHECKLIST								
1	Fault Isolation	4	ц	Lines and Cables					
2	Standardisation	4	15	Fasteners	3				
3	Interchangeability	4	16	Covers, Cases, Shields	3				
4	Packaging, Mounting	3	17	Disposable Modules	N/I				
5	Accessibility	. 4	18	Test Equipment	N/0				
6	Work Space	4	19	Servicing, Handling, Equip.	N/				
7	Testing, Servicing	• 4	20	Tools	N/I				
8	Displays	4	21	Platforms, Stands, Shelters	N/I				
9	Handles	4	22	Technical Order	3				
10	Labels, Marking	2	23	Figure A	N/I				
п	Controls	4	24	Form B/C	N/1				
12	Work Aids	N/E	25	Specifications	N/1				
13	Connectors, Connections	• . 4	26	Personnel Requirements	N/1				

# CHECKLIST RATINGS

Good Maintainability

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1

- Satisfactory Maintainability 3 2
  - Unsatisfactory Maintainability -
  - Poor Maintainability

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1

N/A Not Applicable N/O No Observation Possible

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N/E Not Evaluated

Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.

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#### Report No. 20-4018-3

Itom 4.

Circuit Control Boards have a pair of hooked projections on the mating surface which engage a retaining device when the Release Handle is raised.

It has been observed at VAFB that it is very easy for an inexperienced operator to damage the unit during board-insertion; if the bottom of the board is not firmly pressed inwards until it clicks, the retaining pin fouls the ends of the hooks and the great mechanical advantage of the release handles enables the operator to anap the hooks off without feeling any resistance.

Recommendation.

a. The retaining hooks should be bevelled to reduce the flat end-area, and to allow the retaining pin less chance of fouling.

b. The hooks should be strengthened.

- e. A cautionary note should be included in all T.O.'s dealing with Circuit Control Board removal and replacement, especially 33D7-50-3-1. See item 22.
- d. A cautionary label should be affixed to the cover of each board stressing the need to press the board home firmly before raising the handles.
- Item 10.

The Fig. A 4018 nameplate is mounted on the left hand end of the unit, and is invisible when the unit is used adjacent to other equipment.

Recommendation.

The nameplate should be mounted on a forward-facing surface.

Item 15.

No protective cover is provided for the front of the Programmer Draver when a Circuit Control Board is not installed. At VAFB it is the practice to tape a piece of cardboard in place.

Recommendation.

A simple plastic dust-cover should be provided for the front of  $c_{\rm exp}$  : the Programmer Drawer.

Item 22. a. Paragraph 5-7i is somewhat confusing. During Operational Checkout four test sequences are run, each one with a separate circuit control board. This paragraph implies that it is not necessary to turn power off before changing control boards.

> During the V&V observed the Test Operator directed the Air Force technician to put the A624 into MODE 1 at the end of step 1; this procedure removes power from the 4018 and makes it safe to change beards.

Recommendation,

7.0. 3307-50-3-1 paragraph 5-7 step 1 should be revised to show

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D2-14934-3 Page 80

the necessity for removing power from the Fig. A 4018 before changing Circuit Control Boards.

b. T.O. 33D7-50-3-1 paragraph 5-4 describes the process of installing and removing Circuit Control Boards. The procedure does not stress the importance of snapping the bottom of the board firmly home before raising the handles. See item 4.

#### Recommendation.

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A cautionary note should be added to paragraph 5-4, or step d should be rewritten to stress the importance of proper location of the board.

# MAINTAINABILITY EFALANTEEN/OBSERVATION REPORT

port No	<u>10-4152-1</u>		Date	2-21-63		•	of	4
Prepared by	A. H. Smith			<u>x</u> /s	6207-1	_phone_	866-3761	
Figure A No. 41	52NomenE	lectrical T	est and	Maintenance	Table FN-	136/gsm	-82 (v)	
Dwg. No25	-34145-1			Serial No	0000001			
Observed Event	V&V	_Location_	VAFB		Dat	•	2-18-63	
Title or Descrip	tionT.O.	V&V					**************************************	•
T.O. Procedures_	<u>31x3-12-8</u>	-2 Paragra	ph 11.					مالي من من من من من

MADITA	INABILIT	Y CH	ECKLIST .	
Fault Isolation	N/0	14	Lines and Cables	4
Standardization	4	15	Fasteners	3
Interchangeability	4	16	Covers, Cases, Shields	. 4
Packaging, Mounting	1	17	Disposable Modules	N/0
Accessibility	4	18	Test Equipment	4
Work Space	4	19	Servicing, Handling, Equip.	3
Testing, Servicing	3	20	Tools	4.
Displays	3	21	Platforms, Stands, Shelters	N/A
Handles	4	22	Technical Order	3
Labels, Marking	3	23	Figure &	N/E
Controls	4	24	Form B/C	N/E
Work Aids	4	25	Specifications	N/E
Connectors, Connections	3	26	Personnel Requirements	4
	Fault Isolation         Standardization         Interchangeability         Packaging, Mounting         Accessibility         Work Space         Testing, Servicing         Displays         Handles         Labels, Marking         Controls         Work Aids	Fault IsolationN/OStandardization4Interchangeability4Packaging, Mounting1Accessibility4Work Space4Testing, Servicing3Displays3Handles4Labels, Marking3Controls4	Fault IsolationN/O14Standardization415Interchangeability416Packaging, Mounting117Accessibility418Work Space419Testing, Servicing320Displays321Handles422Labels, Marking323Controls424Work Aids425	Fault IsolationN/O14Lines and CablesStandardization415FastenersInterchangeability416Covers, Cases, ShieldsPackaging, Mounting117Disposable ModulesAccessibility418Test EquipmentNork Space419Servicing, Handling, Equip.Testing, Servicing320ToolsDisplays321Platforms, Stands, SheltersHandles422Technical OrderLabels, Marking323Figure AWork Aids424Form B/CWork Aids425Specifications

#### CHECKLIST RATINGS

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Good Maintainability Satisfactory Maintainability 3

- Unsatisfactory Maintainability 2
  - Poor Maintainability

1

N/A N/O X/E Not Applicable No Observation Possible Not Evaluated

Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.

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#### Report 20-4150-1

Item 4.

- a. To date one Adapter Connector and 3 Dummy Loads have been found to have connectors transposed. They are: MX-4284 Adapter Connector Dummy Decoder;Dummy Loads, Electrical DA-304, DA-305, DA-306. This is not strictly a maintainability problem, but the situation must obviously be rectified if these items are to be used.
  - b. The Fixture, Cooling Air, Part No. 25-35685-1 is designed to permit rotation of the drawer under test to gain access to the underside. The cooling air is supplied through a rotating joint, no doubt quite a costly feature, presumably to allow rotation while power is applied. The design of the trolley however is such as to prevent rotation of the drawer when it has an adapter and cables attached. It is necessary to remove all cables, and the adapter in order to rotate the drawer.

#### Recommendation.

The "table-top" structure of the trolley should be eliminated, since it is quite useless in its present form. It is too narrow to serve as a work surface. The rotating joint of the drawer fixture should be supported by simple vertical posts rising directly from the base structure. This would permit free access to the fixture and would permit rotation without dismantling of the test set-up. The cost of the fixture would also be considerably reduced by elimination of the decorative plastic and wood elements of the present fixture, together with elimination of the remarkably complex and expensive swivelled stainless steel handle.

Item 5.

When a drawer is mounted in the Fixture, Cooling Air, it is not possible to remove the dust covers from the drawers without distorting them, because the openings top and bottom are a fraction of an inch too small.

Recommendation.

The size of the access holes should be increased to allow installation and removal of dust covers while a drawer is in the fixture.

Item 7.

AVTRON T242B LOAD-BANK ELECTRICAL is adjusted by using a Multimeter and test leads (see paragraph 11-19d of T.O. 31X3-12-8-2) but the terminals of the load bank have no provision for inserting test leads. This requires the operator to press the leads against the terminals manually while adjusting the load bank with his third hand. This procedure could also result in error due to poor electrical contact.

Recommendation.

- a. Holes should be drilled in ends of the terminals to accomodate banana jacks.
- b. Provision should be made for measuring the resistance at a proper jack on the panel of the Test-Set, Voltage Regulators, Programmer Group TS-1794/GSM(v).

Report No. 10-5752-1

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Item 8. Paragraph 11-21g calls for the use of the OHMS X1\_scale to measure 30 ohm resistance of the load bank.

Recommendation.

The OHMS X10 scale will give a more accurate reading in this case. The T.O. should be changed to this effect.

Item 10. a. During Voltage Regulator checkout, W-18 is connected to the Load Bank Electrical. The terminating lugs of W-18 are indistinctly marked as El and E2 by means of a molded impression. T.O. 31X3-12-8-2, Figure 11-1, refers to these terminations as P2 and P3.

Recommendation.

A yellow adhesive label identifying the terminals as El and E2 should be affixed, and the T.O. Figure 11-1 should be changed to agree with the hardware.

b. The AVTRON T-242B Load Bank has no weight label although it weighs around 70 pounds.

Recommendation.

A weight label should be affixed.

Item 13. a. W-16 is connected to the Airflow Interlock connector on the Fixture, Cooling Air during drawer testing.

> The cable terminates in a connector which is approximately 7 inches in length while being only  $\%^{n}$  in diameter at the point of entry into the socket. Almost any accidental blow will break this . connector or the socket.

This problem is fairly common throughout much of the equipment employing Pyle National connectors, but is especially hazardous in the thinner ones. It seems amazing that a seven inch "layback" is required to connect three conductors.

Recommendation.

An attempt should be made to provide a more practical connector in this application. Preferably an investigation of wider scope should be initiated to determine whether Pyle National connectors should be used at all on test equipment, on account of their excessive bulk and use of multiple-turn connections.

In some applications, the use of strap wrenches and torque-wrench kits is being advocated for these connectors, which seems absurd when it is recalled that these applications are for static groundbased test equipment.

It seems almost certain that a better connector should be available at or below the price of these items, which would incorporate the desirable features of quick connect/disconnect, and ruggedness.

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Item 13. b. W-18 of the test set-up is terminated by flat circular terminal lugs. In order to connect these terminals it is necessary to remove the retaining knobs on the T242B Load Bank; it is then discovered that it is not possible to screw the terminals down tightly because the lugs are not long enough to clear the shoulders of the knobs.

#### Recommendation.

The terminal lugs on W-18 should be longer and more robust and should be of the open-sided variety.

Item 15. The fasteners used to lock an Adapter on the back of a drawer tend to swing out when the drawer (minus adapter) is rotated and catch on the "Wible-top" surface of the Cooling Air Fixture. In one case the fastener broke off.

#### Recommendation.

If the recommendation of item 4b is not accepted, these fasteners should be replaced by a spring variety that will remain close to the side of the drawer fixture when disengaged.

- Item 19. Deficiencies in the Fixture, Cooling Air have been dealt with under item 4.
- Item 22. a. T.O. 31X3-12-8-2, Figure 11-1, refers to the terminals of W-18 as P2 and P3. (See item 10.)

#### Recommendation.

The T.O. should be revised, identifying the terminals as El and E2 to agree with the hardware. Flagnote 1 should be similarly revised.

b. See item 8.

# MAINTAINABILITY EVALUATION/OBGENVATION-REPORT

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leport No	E0-4490-1	Det	•2-11	-63	Page1	o <u>f3</u>	
Prepared by	A. H. Smith			X/8	6207-1_phone_	866-3761	
Figure A No	4490 Nomen	Simulator Bet. ]	Electrical	Functions	Missile-Laund	h AN/GSM-62	<del></del>
Dwg. No25	-33940-1		Serial	L No	Set #2		السک نار ان
Observed Ever	ntNone	Location	VAFB		Date	2-11-63	
Title or Desc	pription	Static evaluation	n				
T.N. Procedur		9-14-26-1 (Operat	tion and Ma	intenance	a)	•	•

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	MAINTAINABILITY CHECKLIST					
1	Fault Isolation	N/0	14	Lines and Cables	4	
2	Standardization	4	15	Fasteners	3	
3	Interchangeability	4	16	Covers, Cases, Shields	3	
4	Packaging, Mounting	3	17	Disposable Modules	N/0	
5	Accessibility	4	18	Test Equipment	N/0	
6	Work Space	4	19	Servicing, Handling, Equip.	N/	
7	Testing, Servicing	N/0	20	Tools	N/0	
8	Displays	3	21	Platforms, Stands, Shelters	N/.	
9	Handles	4	22	Technical Order	N/	
10	Labels, Marking	3	23	Figure A	N/	
11	Controls	4	24	Form B/C	N/	
12	Work Alds	N/0	25	Specifications	N/	
13	Connectors, Connections	. 4	26	Personnel Requirements	N/	

# CHECKLIST RATINGS

Good Maintainability

- Satisfactory Maintainability 3
- Unsatisfactory Maintainability 2
- 1 Poor Maintainability

- N/A Not Applicable
- N/0 No Observation Possible N/E
  - Not Evaluated

# Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.

Report No. DO-490-1

Item 4

The two small junction-boxes stored in the Distribution Box are held in place by a plate which is secured by eight slotted quick-release fasteners. It is necessary to remove the dust-caps from two of the sockets in order to remove the retaining plate, because the hole in the plate is too small to pass the skirt umbilical dust cover, and the dust cap on the small connector is attached to the plate by a chain.

Recommendation.

1. The retaining cover should be hinged along one side and fastened down with no more than two butterfly type quick-release fasteners.

2. The holes should be enlarged to allow the retaining plate to be removed without removing dust caps.

Item 8

The Signal Data Recorder has an indicator lamp adjacent to the ON-OFF switch. The word POWER is printed beside this indicator, implying that it will be illuminated when the recorder is switched on. During the evaluation the recorder was hooked up but not switched on, but it was observed that the lamp was glowing dimly. This situation was somewhat confusing because if the lamp is supposed to indicate that power is available, then it should be identified accordingly as POWER AVAILABLE, and the lamp should be bright enough to be easily discernible. If the lamp indicates that the recorder is switched on, then it should not glow at all when the unit is switched off. There is no circuit diagram in the Operation and Maintenance T.O., nor is there any descriptive material that indicates the proper mode of operation of this indicator.

Recommendation.

The function of the indicator should be clarified by an unambiguous label, and the T.O. should describe the Signal Data Recorder more fully.

Item 10

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10 a. It was observed that temporary adhesive labels had been affixed to each box of the test-set showing "Fig A 4490" and "CASE 1 of 6" etc.

This practice of identifying items by temporary Fig A number labels has been adopted extensively at Vandenberg due to the confusion arising out of the use of several different identification systems. For example one item may be known by ACO number, drawing number, Federal Stock Number, BGS number or Figure A number.

Recommendation.

All Figure A items should be prominently labeled to aid in recognition.

b. The individual cases of the Fig A 4490 observed were all identified as being serial number 2, but the over-all Test-Set number as shown on the label of the Simulator was serial number 4.

It is quite possible that this situation is the result of an error, but it does indicate the desirability of listing component parts and serial numbers on a master label.

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D2-14934-3 Page 87

#### Recommendation.

A label should be added to the test-set listing serial numbers and drawing dash numbers to aid in determination that a complete and proper set has been acquired.

c. Some of the cables bear as many as eight assorted labels of the adhesive rubber and wrap-around yellow plastic types. It therefore becomes more difficult to identify a cable when it is tangled with others.

#### Recommendation,

One label at either end of a cable should be sufficient, and the label should bear the identification that is used in T.O. procedures.

If it is considered necessary to label cables with jack number, "mating with" plug number, drawing number, serial number, function, wire number etc., then one of the labels should be of an outstandingly different color to simplify the task of identification.

Item 15 a. The simulator chassis is secured to the case by 32 screws, and the small access panel is secured by 22 screws. The top and bottom lids are secured by 12 over-center latches each. All the other cases are secured by 12 latches each.

Recommendation.

Each case in the test-set should be re-evaluated to see if it is not possible to reduce the number of screws securing panels, and catches securing lids.

Item 16 All quick-release connector dust caps have a keyed center-piece. It becomes an irritating task to locate the dust cap because there is nothing with which to rotate the center-piece.

. Recommendation.

The dust cap center-piece should not be keyed.

# HAINTAINABILITY EVALUATION/CODENVACION REPORT

Repor	t NoD	te_]	Febr	uary 25, 1963 Page 1 of	7
Proje	red by Alexander Henschel			M/S 50-66 phone JU6-6263	]
Figur	• A No. 4490 Nomen Simulator Set	Ele	ctric	al Functions, Missile-Launch, AN/G	<u>SM-62</u>
Dwg.	No. <u>25-33940, 25-33733</u>		_Ser	ial No0002*	
Obser	Static vod Event <u>Evaluation</u> Location	EI	)L	Date_February 22, 19	63
Title	or Description <u>Maintainability Eva</u>	luati	on o	f AN/GSM-62	
<b>T.</b> 0.	Proceduros_ <u>33D9-14-26-1</u> (Operatio	n and	l Ma	intenance)	
(Refer	rence) *SM-245 Ser #000002 RO-186 Ser #000001 CY-3634 Ser #000002	CY- CY- J-1	368 368 291	Ser #000002 Ser #000002 Ser #000001	
	MAINTAINA	BILIT	т сн	ECKLIST	·
• 1	Fault Isolation	4	14	Lines and Cables	4
2	Standardization	3	15	Fasteners	3
3	Interchangeability	3	16	Covers, Cases, Shields	3
4	Packaging, Mounting	3	17	Disposable Modules	4
5	Accessibility	3	18	Test Equipment	4
6	Work Space	4	19	Servicing, Handling, Equip.	4
7	Testing, Servicing	4	20	Tools	4
8	Displays	3	21	Platforms, Stands, Shelters	N/A
9	Handles	3	22	Technical Order	3
10	Labels, Marking	3	23	Figure A	3
11	Controls	.4	24	Form B/C FormC only	4
12	Work Aids	4	25	Specifications	4
13	Connectors, Connections	3	26	Personnel Requirements	4
	<b>.</b>	<u>.</u>	<u> </u>	1	

#### CHECKLIST RATINGS

Good Maintainability

Satisfactory Maintainability Unsatisfactory Maintainability

2 Poor Maintainability 1

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N/A Not Applicable No Observation Possible N/O

N/E Not Evaluated

Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.

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# Rating Analyses for AN/GSM-62

#### Item 2, Standardization

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Simulator Set Cable Assembly Cases CY-3680 and CY-3681 and Simulator Set Case - Test Adapter CY-3634 have feet which are strong and well designed. The suitcases for Simulator SM-245, Recorder RO-186, and Distribution Box J-1291 have riveted feet, Zero P/N 7-701, which are easily broken.

#### **Recommendation:**

Use the more rugged feet of CY-3634, CY-3680, and CY-3681 for all MGE and ACO equipment suitcases.

# Item 3, Interchangeability

The top covers for suitcases CY-3634, CY-3680, and CY-3681 are interchangeable; they should not be. Each cover can be placed on its suitcase in four different positions; only one will allow fastening the latches. The top cover for Distribution Box J-1291 can fit two ways; only one is correct. Simulator SM-245 has a top and bottom cover for its suitcase; each cover can be placed two ways; only one will allow fastening.

#### **Recommendation:**

Provide an alignment marker on the suitcase and cover to make the proper position of the cover obvious. This alignment marker could be a different color for each of the like cases in question. See MIL-STD-803 sec. 10.4.3.5.1.

#### Item 4, Packaging, Mounting

 a) The Simulator Assembly 25-33733-1, Recorder 25-35862-1, and Distribution Box 25-33734-1 can be placed in their carrying cases 180° from the proper position. When the Recorder is returned to its case the maintenance technician must align the RFI gasket with a dowel pin or other means before fastening the Recorder to the case.

# **Recommendation:**

**Provide alignment pins on the case so the Simulator Assembly, Recorder, and Distribution Box fit into their carrying case properly. Alignment pins will improve maintenance time and eliminate many** 

# Item 4, (Continued)

of the stripped fasteners which result from improper chassis and case alignment. See MIL-STD-803 section 10.4.3.7.5.

 b) Components on assembly 301294-901 (TB-3) of Recorder Assembly 301292-901 are high failure rate items (diodes). Work on or removal of TB-3 requires other assemblies to be removed first.

**Recommendation:** 

Provide greater accessibility per MIL-STD-803 section 10.4.3.10.1.

c) The Recorder suitcase top cover, part of 10-21340-1, is hinged at one side. When the case is opened the cover can be removed from or left on the case during organizational use. If the cover is left on, the weight of the cover is sufficient to cause the hinges to tear away from the suitcase. Removing the cover will alleviate the above problem, however when it is replaced the hinge pins will be knocked out if perfect alignment of the cover hinge is not made with the case hinge pin.

**Recommendation:** 

Provide a removable arm which will prevent the top cover from placing undue loading on the hinges when the Recorder suitcase is open.

d) Dust covers for the Skirt Umbilical Junction Box and G&C Umbilical Junction Box receptacles have to be removed before panel 29-26830-1 of Distribution Box 25-33734-1 can be raised. This panel has to be raised in order to remove the junction boxes for use. During the removal of these dust covers the maintenance technician's fingers rub against the rough nylon material lining the circumference of the holes in the panel where the junction box connectors protrude. Enough skin is removed from the technician's fingers during this operation to sufficiently decrease his electrical resistance thereby making him more susceptible to electrical shock.

#### **Recommendation:**

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**Provide a hinged panel with larger holes so that the dust covers need not be removed.** Fasten the panel to the Distribution Box with a minimum of captive quick-release fasteners and have the dust covers captive to their respective junction box rather than to the panel. Use MIL-STD-803 sections 10.4.3.5.5, 10.4.3.5.8, and 10.4.3.8.1.1 as a design guide.

#### Item 5, Accessibility

a) Spare fuses and a spare lamp for the Recorder are located behind the hinged partition of the top cover. Enough room is available on the front panel of the Recorder so the spares could be mounted adjacent to their active counterpart.

# Recommendation:

Mount spare fuses and lamps as close as possible to their active counterpart.

b) Cable harness is mounted directly over the twist lamp and switch wiring terminations in Simulator 25-33733-1.

#### **Recommendation:**

Route wire harness so that access to switches is improved. See MIL-STD-803 section 10.4.2.3.3.

#### Item 8, Displays

Non-indicating fuses are used on the Simulator and Recorder.

#### **Recommendation:**

Use indicating type fuses per section 6.1.2.3.1, item 25.1.1.1.3, Boeing Document D2-4747-1, Maintainability Design Criteria for Minuteman Electronics Equipment.

#### Item 9, Handles

One handle on Simulator 25-33733-1 is mounted directly over four of the Phillips screws holding down panel 25-34464-1. The handles on the Recorder are much smaller than the standard handle used on the other chassis of AN/GSM-62.

#### **Recommendation:**

Use the standard handle BACH10G5 on the Recorder. Ensure that handle mounting does not interfere with removal of other items.

Rem 10, Labels, Marking

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a) Cases CY-3634, CY-3680, and CY-3681 all have the same weight marking of 100LB, however each case with cables does not weigh the same.

# Item 10, (Continued)

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#### **Recommendation:**

Mark the proper weight on each carrying case per MIL-STD-803 section 10.4:3.1.

- b) The following items and blueprints have the incorrect marking for pounds.
  - 1) Recorder RO-186
  - 2) Blueprints 25-33735 and 25-35862

#### **Recommendation:**

MIL-STD-12B and Boeing Document 13228, Manual of Writing Style, Section II-2 give the abbreviation LB as correct for pounds. Use the above reference as guides for abbreviations.

Item 13, Connectors, Connections

a) Recepticles J6 and J6A of Recorder 25-35862 have plastic dust covers which are easily lost.

#### **Recommendation:**

Provide captive dust covers as are provided for the remaining receptacles of AN/GSM-62.

b) The routing of the wiring harness to the printed circuit cards in the Recorder allows the wiring to become damaged when the Recorder is lifted in and out of its carrying case.

# **Recommendation:**

**Reroute** the wiring harness or use a larger case for the Recorder. See MIL-STD-803 section 10.4.3.5.3.

#### Item 15, Fasteners

The Simulator is fastened to its carrying case by 32 Phillips screws and self-locking nuts. Recorder RO-186 is fastened to its case by 16 Phillips screws. Panel 25-34464-1 is fastened to the Simulator by 22 Phillips screws. The Distribution Box 25-33734 has 22 Phillips screws to fasten it to the case. Washers are used under each of the Phillips screws.

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#### **Recommendation:**

Recorder RO-186 has an RFI gasket and therefore needs the number of fasteners used. The remaining applications however need only one half the number of screws used. See MIL-STD-803 section 10.4.3.8.12. The washers need not be used because the maintenance technician in the field will either lose or throw them away. Use captive nut plates instead of lock nuts as a means of fastening the chassis to its case. Slotted hex-head screws are recommended in lieu of Phillips screws because of their better adaptability to field maintenance situations.

Item 16, Covers, Cases, Shields

See items 2,3, and 15

Item 22, Technical Order - T.O. 33D9-14-26-1.

a) Section VI, Maintenance Instructions, Section VII, Troubleshooting, Section VIII, Calibration, and Section IX, Repair Instructions are listed as information to be supplied at a later date.

**Recommendation:** 

Apply these instructions as they become available to a working situation before including them in the T.O. This will ensure that the techniques and operations called out are valid.

b) Section I figure 1-2, Leading Particulars is in error with regard to equipment part numbers.

**Recommendation:** 

Correct the Technical Order for the part numbers for these and equipments:

(1) SM-245/GSM-62	Should be 25-33733-1
(2) J-1291/GSM-62	Should be 25-33734-1
(3) CY-3634/GSM-62	Should be 25-34046-1

c) Section 5-12. Recorder operational checkout procedure does not have a step for turning on power.

**Recommendation:** 

Add a step between a. and b. stating "Place power ON/OFF switch to the ON position; white pilot lamp shall illuminate."

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# Item 23, Figure A

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The Technical Requirements section does not contain a paragraph on Operability and Maintainability.

Recommendation:

Conform with AFBSD Exhibit 61-56 by supplying a paragraph on Operability and Maintainability in the Technical Requirements section of the Figure A.

# MAINTAINABILITY EVALUATION /OBSERVATION REPORT

port No. <u>FO.4491-1</u>	Date_February 6, 1963 Page_1of_3
Prepared by Ralph L. Stearns	<b>H/S_50-66</b> phone_6-6263
Figure A No. 4491 Nomen Start-Up Un	it, Launch Facility, OA/GSM-62
Dwg. No25-33549	Serial No. 7
Observed Event_T.O Verification	Malmstrom AFB-F6 Date 1-25-63
Ntle or DescriptionOVerification	
7.0 Procedures	aragraph 2-67

	MAI	MTAINABILIT	Y CH	ECKLIST	
, <b>1</b>	Fault Isolation	N/A	14	Lines and Cables	4
2	Standardization	3	15	Fasteners	4
3	Interchangeability	4	16	Covers, Cases, Shields	3
4	Packaging, Mounting	N/A	17	Disposable Modules	N/.
5	Accessibility	4	18	Test Equipment	N/.
6	Work Space	4	19	Servicing, Handling, Equip.	N/.
7	Testing, Servicing	N/A	20	Tools	N/
8	Displays	4	21	Platforms, Stands, Shelters	N/
9	Handles	4	22	Technical Order	3
10	Labels, Marking	3	23	Figure A	N/
11	Controls	3	24	Form B/C	N/
12	Work Alds	3	25	Specifications	N/
13	Connectors, Connections	3	26	Personnel Requirements	N/

# CHECKLIST RATINGS

Good Maintainability L

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- Satisfactory Maintainability
- 32 Unsatisfactory Maintainability
- 1 Poor Maintainability

- N/A
- Not Applicable No Observation Possible N/O
- N/E Not Evaluated

Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower. D2-14934-3

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Item 2. The power cable from the power pack, used with the Start-Up Unit, has a connector with a fine thread nut and plug.

# **Recommendation:**

The connector and plug should be of the coarse thread, quick release type used on other Minuteman cabinets.

Item 10. The cable storage suitcase does not have a cable inventory and cable location placard.

#### **Recommendation:**

To minimize the loss and damage of cables a cable inventory and cable location placard should be fastened to the cover of the cable storage suitcase.

Item 11. The "ON-OFF" control for the start-up power to the G&C gyrosopes consists of connecting and disconnecting the power pack cable.

## **Recommendation:**

An "ON-OFF" power control switch should be 'nstalled on the power pack.

Item 12. A head set must be used and VRSA must be interrogated three times during start-up.

**Recommendation:** 

With a fault code placard attached to VRSA the same results could be accomplished by use of the selector switches and indicator lights. This would eliminate the need for a head set and the interrogation of VRSA.

Item 13. See Item 2.

Item 16. The cover to the test set suitcase can be installed only one way but due to symmetry, has no readily identifiable method of indicating the correct way.

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# Recommendation:

The cover and the case should be marked so maintenance personnel can readily discern the correct installation position.

Item 22. A.The Technical Order does not note that for a certain period of time the missile alignment light beam must not be broken.

#### **Recommendation:**

A caution note should be included in the T.O.

B. An interim solution to Item 12 could be attained by a minor T.O. revision.

# Recommendation:

The T.O. could be changed so maintenance personnel were instructed to use the VRSA selector switches and the VRSA code table included in the T.O. This would eliminate the need for a head set and the interrogation of VRSA, thus increasing the useful life of VRSA.

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NAINTAINABILITY	EVALUAT ION/	<b>WUTAVATEON</b>	REPORT
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Jepor	* NoEO-4491-2	Date_	Febru	ary 18, 1963	Page1	
Proje	red by Ralph L. Steam	rns		<u></u> M/8_50-66	phone6-6	263
Tigur	A No. 4491 Nomen	Start-Up Unit, J	Launch	Facility, OA/GS	SM-62	•
Dwg.	No. <u>25-33549</u>		Ser	ial No1		
Obser	ved Event Evaluation	Location EDL	Labora	atory I	Date February	15, 1963
Title	or Description					
T.O.	Procedures					
				- · ·		
		MAINTAINABIL	JITY CH	ECKLIST		
1	Fault Isolation	4	14	Lines and Cable	<b>; ;</b>	4
2	Standardization	4	15	Fasteners		3
.3	Interchangeability	4	26	Covers, Cases,	Shields	3
4	Packaging, Mounting	3	17	Disposable Modu	ules	N/A
5	Accessibility	3	18	Test Equipment	•	N/A
6	Work Space	4	19	Servicing, Hand	iling, Equip.	N/A
7	Testing, Servicing	4	20	Tools		4
8	Displays	4	21	Platforms, Star	nds, Shelters	N/A
. 9	Handles	. 3	22.	Technical Order	•	N/A
10	Labels, Marking	3	23	Figure A		3
11	Controls	4	24	Form B/C		3
12	Work Aids	4	25	Specifications		N/A
13	Connectors, Connecti	ions 4	26	Personnel Requi	rements	N/A

#### CHECKLIST RATINGS

Good Maintainability

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18: 3

Not Applicable X/A N/O N/E No Observation Possible Not Evaluated

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Satisfactory Maintainability Unsatisfactory Maintainability

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Poor Maintainability

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are provided on succeeding pages, for all checklist items rated 3 or lower. Ratine Analyses 4 • . . ...

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A. The two suitcases, used to house the figure A equipment, are fragile and may not be capable of withstanding the rough field handling.

# Recommendation:

The suitcases should be changed to the Zero Modular Packaging System type per catalog E59 or similar.

B. When the top chassis is removed for service it is fastened to the lower module by a wire bundle. This makes the units very hard to handle and no. doubt will result in damage to both the chassis and the wire bundle.

# **Recommendation:**

The top chassis could be fastened to the lower unit by a hinge. If this is not practical the wire bundle should be made in two sections which would plug together. when assembled.

To remove the lower chassis from the suitcase the top unit must be held by one man, a second man must hold the suitcase in place, and a third man must lift the lower chassis out of the suitcase.

# **Recommendation:**

Per MIL-STD-803 paragraph 10.4.3.5.2 "Where possible, cases shall be designed to lift off units rather than units lifted out of cases."

**D.** To assemble the two chassis and the suitcase, drift pins must be used to align the three units.

**Recommendation:** 

Per MIL-STD-803 paragraph 10.4.3.7.5 "Guide pins or their equivalent shall be provided on units for alignment during mounting."

**E.** There is no easy way to discern the orientation of the two chassis and the suitcase.

# **Recommendation:**

**Per MIL-STD-803 paragraph 10.4.3.5.1** "The proper orientation of a unit within its case shall be made obvious, either through design of the case or by means of appropriate labels.

The spare fuses for the modules in the test set suitcase are mounted in the cable storage suitcase.

#### **Recommendation:**

The spare fuses should be mounted in the same suitcase, readily accessible, and adjacent to the working fuses.

To use either the self-test set or the break-out-box the maintenance man must remove them from the suitcase.

**Recommendation:** 

By mounting the connector receptacle on the tops of these modules this requirement would be eliminated.

**Item 5, Accessibility:** 

Wire bundles located directly over terminal boards TB1, TB3, TB4, TB5, TB6, TB7, and TB8 make the terminals inaccessible.

**Recommendation:** 

Relocate the wire bundles so the terminals are accessible.

Item 9, Handles:

During removal the lower chassis tends to twist because the handles are not located over the center of gravity.

**Recommendation:** 

Per MIL-STD-803 paragraph 10.4.3.2.2 "Whenever possible, handles or grasp areas shall be located over the center of gravity of the unit so that when the unit is lifted it does not swing or tilt.

Item 10, Labels, Marking:

The label for transformer "T 1" is obscured by mounting board "A 1".

Recommendation:

Change the location of the transformer label.

# It is difficult to locate the right positioning guide for the plug-in circuit boards.

**Recommendation:** 

EO-4491-2

Label the correct positioning guides.

It is difficult to determine which plug-in circuit board goes into which receptacle.

**Recommendation:** 

Label the circuit boards and the receptacles with reference designations.

D. The abbreviation of "pounds" on the suitcases is "lbs."

**Recommendation:** 

The abbreviation "Ib'" should be used per MIL-STD-12B, paragraph I.3.4.

The name plates, on the test adapter and break-out-box chassis, are not visible when the modules are in their correct mountings.

**Recommendation:** 

Locate the name plates so they are visible.

Item 15, Fasteners:

The circuit card retaining cover is held in place by phillips screws with flat washers under the heads.

Recommendation:

As the washers are not required and will be discarded by field personnel money can be saved by not using them.

**B.** Phillips head screws and bolts are used through out the test set. This type of head is susceptible to ruin while being removed.

**Recommendation:** 

Use hex-head screws and bolts in place of phillips head.

The inountings for capacitors C2 and C3 are held in place by bolts and nuts. This requires the use of a holding tool and a turning tool to remove a part.

## **Recommendation:**

When a nut is required use a captive type nut.

Item 16, Covers, Cases, Shields:

The cover to the test set suitcase can be installed only one way but due to symmetry has no readily identifiable method of indicating the correct way.

## **Recommendation:**

The cover and the case should be marked so maintenance personnel can readily discern the correct installation position.

# Rem 23, Figure A:

The Figure A does not contain any Maintainability Design Requirements. In accordance with AFBSD exhibit 61-56 Maintainability Design Requirements must be included in the Figure A's for all OGE and MGE Minuteman equipment for which Boeing is responsible.

#### **Recommendation:**

When the Figure A is revised Maintainability Design Requirements should be added.

# Item 24, Form B/C:

Line 4C of the Form C reads "blowers." There is only one blower.

#### **Recommendation:**

On the next revision of the Form C change line 4C to read "blower."

B. Line 4a of the Form C instructs the maintenance personnel to remove the test set case. The Form C does not instruct the maintenance personnel to put the test set back in the case.

# **Recommendation:**

On the next revision of the Form C correct this condition.

# MAINTAINABILITY EVALUATION/ODSERVATION REPORT

.sport No	Date February	25, 1	963 Pa	s•1		3
Papered by Ralph L. Stearns	8	_x/s	50-66		6-6262	
Figure A No. 1337 Nomen I	Distribution Box J-1269/G	<u>SW-4</u>				
Dwg. No25-23468	Serial N	o7				
Observed Event Evaluation	Location EDL Laborator	Y	Dat	to <u>2-22</u>	- 63	
Title or Description		ب المقاربة والسالية				
7.0. Procedures						

	* ***	TAINABILIT	т сн	ECKLIST	
1	Fault Isolation	4	14	Lines and Cables	4
2	Standardization	4	15	Fasteners	3
3	Interchangeability	N/A	16	Covers, Cases, Shields	3
4	Packaging, Mounting	3	17	Disposable Modules	N/A
5	Accessibility	3	18	Test Equipment	· N/E
6	Work Space	4	19	Servicing, Handling, Equip.	N/E
7	Testing, Servicing	4	20	Tools	4
8	Displays	4	21	Platforms, Stands, Shelters	N/A
9	Handles	4	22	Technical Order	4
10	Labels, Marking	3	23	Figure A	3
n	Controls	4	24	Form B/C	4
12	Work Aids	. N/A	25	Specifications	3
13	Connectors, Connections	. 3	26	Personnel Requirements	N/E

# CHECKLIST RATINGS

Good Maintainability 4

- Satisfactory Maintainability 3 2
  - Unsatisfactory Maintainability
- N/A Not Applicable • N/O No Observation Possible
- N/E Not Evaluated

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1 Poor Maintainability

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Rating analyses are provided on succeeding pages, for all checklist items rated 3 or lower.

D2-14934-3

# Item 4, Packaging, Mounting

A. The two large access panels must be supported and aligned by the technician while he is trying to install the retaining bolts.

**Recommendation:** 

**Per MIL-STD-803** paragraph 10.4.3.7.5 "Guide pins or their equivalent shall be provided on units for alignment during mounting."

B. To remove relay K3 the wiring to relay K2 must be removed.

**Recommendation:** 

Per MIL-STD-803 paragraph 10.4.2.3.3 "All throwaway assemblies or parts are accessible without removal of other components."

C. Due to the location of cable connector receptacles J30, J32, J33 and J34 it is almost impossible to remove the cables without first removing other cables.

**Recommendation:** 

Per MIL-STD-803 paragraph 10.5.2.1.2 "Connectors shall be located far enough apart that they can be grasped firmly for connections and disconnections. Space required will depend upon the size and shape of the plug."

#### Item 5, Accessibility

See Item 4 paragraph "B" and "C".

Rem 10, Labels, Marking

Part of the label for circuit breaker No. 6, VRSA Emergency Power, is hidden by a mounting screw.

**Recommendation:** 

**Per MIL-STD-803 paragraph 5.2.4.** "Labels should not be hidden by units and parts. For example, labels on the chassis should not be placed under the parts which they identify. Also 'see MIL-STD-130B. Paragraph 4.2."

Rem 13, Connectors, Connections;

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See Rem 4 paragraph "C."

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# hem 15, Fasteners

There are eighty-six hex-head bolts holding the two access panels to the distribution box.

**Recommendation:** 

Per MIL-STD-803 paragraph 10.4.3.7.1 "A minimum number of screws or bolts shall be used for unit installation."

Item 23, Figure A:

The Figure A does not contain any Maintainability Design Requirements. In accordance with AFBSD Exhibit 61-56 Maintainability Design Requirements must be included in the Figure A's for all OGE and MGE Minuteman equipment for which Boeing is responsible.

**Recommendation:** 

When the Figure A is revised Maintainability Design Requirements should be added.

Item 24, Specifications

Model Specification, Distribution Box, (S-133-111-1-28), Boeing Document D2-6600, has no reference to maintainability.

**Recommendation:** 

Conform to MIL-M-26512B (USAF) section 3.2.6.

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