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Report No. 131500-610

(2) 13p.

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MAINTAINABILITY TEST REPORT

FOR THE

AN/TRN-41 TACAN NAVIGATIONAL SET.

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Prepared for:
Department of the Air Force
Headquarters Electronic Systems Division (AFSC)
Hanscom Air Force Base
Massachusetts 01731

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IN NO.

Prepared by: E-Systems, Inc., Montek Division 2268 South 3270 West Salt Lake City, Utah 84119

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O. ABSTRACT (Continue on reverse side if necessary and identify by block number)

AN/TRN-1+1 TACAN Navigational Set

This report describes the maintainability demonstrations conducted on Navigational Set, TACAN, AN/TRN-41 as described in the Maintainability Demonstration Plan.

MAINTAINABILITY DEMONSTRATION REPORT for the NAVIGATIONAL SET, TACAN AN/TRN-41

This report describes the maintainability demonstrations conducted on Navigational Set, TACAN, AN/TRN-41 as described in the Maintainability Demonstration Plan.

- 1. Test Identification. The maintainability demonstration is used to show that the AN/TRN-41 meets the maintainability requirements of Specification No. 404L-701-5017A. Part i of two parts dated 20 August 1976.
- 2. Functional Purpose. This demonstration forms a part of the AN/TRN-41 qualification tests.
- 3. Test Objectives. The maintainability demonstration is used to show that the Mean Corrective Maintenance Times (Mct) for organizational and intermediate levels of maintenance and the Maximum Corrective Maintenance Time (Mmax_{ct}) for intermediate level meet the requirements of paragraph 3.2.4 of Specification No. 404L-701-5017A, Part I of two parts.
- 4. Description of Test Article. The AN/TRN-41 system was used during the maintainability demonstration.
- 5. Summary of Test Results. Attachment 1 lists all tasks and total repair times for the organizational and intermediate levels of maintenance. All calculations for determining Mct and Mmaxct are shown. Following is a list of these times and the specification requirements. All times are within specification.

	Demonstrated Mct	Specification Mct	Demonstrated Mmax _{ct}	Specification Mmax _{ct}
Organizational Maintenance	2.96 min.	20 min.		
Intermediate Maintenance	17.41 min.	30 min.	35.04 min.	90 min.

6. Description of Test Facility and Procedures. The test facilities and test procedures are described in the Maintainability Demonstration Plan.

- 7. Test Set Up Diagrams. The test setup diagrams are provided in the Maintainability Demonstration Plan.
- 8. List of Test Equipment. The following is a list of test equipment used, with manufacturer and model numbe, and calibration data if applicable.

Name	Туре	Calibration Due Date
Multimeter, Digital		
Oscilloscope	Tektronix 465	7/6/77
Power Meter	HP 432	1/78
Counter, Electronic	Fluke 1953A	8/12/77
Peak Power Calibrator	HP 8900B	9/19/77
Power Supply	Delton Series SP	12/4/77
Thermistor Mount	HP 478A	N/A
Directional Coupler 20 dB	Narda 3042B	N/A

The monitor/test set called out in the Maintainability Demonstration Plan was not available for the demonstration. The test equipment shown in Figure 1 replaced the test set.

- 9. Recorded Test Data. Attachment 2 contains the Maintainability Demonstration Analysis sheets for all the tasks accomplished during the maintainability demonstration of organizational and intermediate levels of maintenance. On tasks for the RT during intermediate level a standard time was determined during the first two tasks for removing and installing the RT case and then this standard time was used for all subsequent tasks that required removal of the case and the case was left off. This was done to reduce total demonstration time.
- 10. Ambient Conditions. The maintainability demonstration was performed in laboratory ambient conditions.
- 11. Test Results Analysis. The results shown in Attachments 1 and 2 show that the AN/TRN-41 meets the maintainability requirements of Specification No. 404L-701-5017A, Part I of two parts.

CODES

12. Certification. Each Maintainability Demonstration Analysis sheet has been signed by Montek Engineering and Quality Assurance representatives and by a DCAS representative, certifying that the test results are authentic, accurate, current and in accordance with the related test plans.

ATTACHMENT 1
SUMMARY OF MAINTAINABILITY DEMONSTRATION
TASKS AND CALCULATIONS

ORGANIZATIONAL LEVEL TASK DATA MAINTAINABILITY DEMONSTRATION

NOTE: THE TASK DATA WILL BE SHOWN IN THE SEQUENCE THAT THE TASK WAS PERFORMED.

TASK NO.	TOTAL TIME TO REPAIR
16	1.8 Minutes
12	2.1 Minutes
44	2.8 Minutes
47	2.0 Minutes
45	3.9 Minutes
19	1.9 Minutes
30	3.7 Minutes
11	3.7 Minutes
37	2.1 Minutes
2	5.1 Minutes
8	3.1 Minutes
26	3.3 Minutes

₹ = 35.5

Tavg = 2.96 minutes

None of 12 tasks exceeded 20 minutes; therefore, the requirement to demonstrate $\overline{\text{Mct}} < 20$ minutes is satisfied.

INTERMEDIATE LEVEL TASK DATA MAINTAINABILITY DEMONSTRATION ANALYSIS

NOTE: THE TASK DATA WILL BE SHOWN IN THE SEQUENCE THAT THE TASK WAS PERFORMED.

TASK NO.	TOTAL TIME TO REPAIR
9	6.7 Minutes
48	7.7 Minutes
44	54.2 Minutes
89	16.7 Minutes
11	7.2 Minutes
104	13.1 Minutes
179	6.0 Minutes
51	7.8 Minutes
182	10.0 Minutes
125	17.7 Minutes
67	10.8 Minutes
154	23.1 Minutes
78	13.0 Minutes
62	13.9 Minutes
87 .	13.2 Minutes
24	12.6 Minutes
68	15.6 Minutes
20	17.6 Minutes
166	23.1 Minutes
172	1.6 Minutes
2	6.3 Minutes
47	7.9 Minutes
69	11.3 Minutes
26	11.5 Minutes
155	19.9 Minutes
120	15.5 Minutes
18	10.7 Minutes
12	8.1 Minutes

INTERMEDIATE LEVEL TASK DATA MAINTAINABILITY DEMONSTRATION ANALYSIS

TASK NO.	TOTAL TIME TO REPAIR
61	11.4 Minutes
141	21.1 Minutes
57	9.2 Minutes
110	18.6 Minutes
98	10.0 Minutes
36	13.5 Minutes
127	13.0 Minutes
134	13.0 Minutes
74	8.9 Minutes
4	7.6 Minutes
83	7.2 Minutes
30	11.7 Minutes
109	18.6 Minutes
183	27.0 Minutes
149	39.5 Minutes
178	12.0 Minutes
168	24.6 Minutes
52	8.7 Minutes
143	23.0 Minutes
167	44.7 Minutes
147	35.5 Minutes
175	17.2 Minutes
	≦ = 778.8
	$\Gamma_{avg} = 15.576$

Mct = 15.566 minutes

$$M_{ct} + \theta$$
 (6 Mct) = 15.576 + 1.28 - 10.128 = 17.41 Minutes

Since 17.41 minutes is less than 30 minutes, the requirement to demonstrate MTTR less than 30 minutes is satisfied.

$$M'_{max ct} = Antilog \left[Log Mct' = 1.645 6 Log Mct \right] = Antilog (1.11794 + 1.645 x 0.25935)$$

$$M_{\text{max}_{\text{ct}}} = Antilog (1.11794 + 0.42663) = Antilog 1.54457 = 35.04 Minutes$$

Since Mmax_{ct} (35.04 minutes) is less than 90 minutes, the requirement to demonstrate Mmax_{ct} les than 90 minutes is satisfied.

ATTACHMENT 2

MAINTAINABILITY DEMONSTRATION ANALYSIS SHEETS

MA	INTAINABILITY DEMON	NSTRATION ANALYSIS	□ Organizational ☑ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/1/77	9	
MALFUNCTION SYMPTOMS RT Olaum as so	na pove turn	d on	
MAINTENANCE STEPS PERFORI			-
organies in 111			
		V	
REMARKS		TIME RECORD	9 7
		permon your char	2,2
,		Troubleshoot time	
		Troubleshoot time	2.5
		Repair Time	2.5 2. 6
		Troubleshoot time	
		Repair Time Bussendle Alignment & Calibrati	
	pr.	Repair Time Bussendle Alignment & Calibrati	on,
ENGINEERING	Q A ENGINEERING	Troubleshoot time Repair Time Repair Time Alignment & Calibrati Time TOTAL TI	ME 6.7

		INSTRATION ANALYSIS	□ Organizational Æ(Intermediate
YSTEINI AN/TRN-41	DATE 6/1/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS			
IAINTENANCE STEPS PERFORME Replaced A3	ED.		-
EMARKS		TIME RECORD Troubleshoot time Repair Time	Z.7
		Alignment & Calibrat Time	ion, 3. <i>0</i>
		TOTAL T	
NGINEERING	Q A ENGINEERING	I AID FOR	CE BEPBESENTATIVE

	MAINTAINABILITY DEMONS	TRATION ANALYSIS	口 Organizational 【中 Intermediate
SYSTEM: AN/TKN-41	6/1/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS RT Clarm			
MAINTENANCE STEPS PERF Checked Monitor Reply bloy alon Replaced AY Ryclaced AZ Ryclaced AS Extended AS Checked AS EC Replaced A3	r Low		
REMARKS Reeds to trouble shooting co	included in haits in T.O.	TIME RECURD Standard Tame Troubleshoot time Repair Time	5.0 49.2
REMARKS! Poorblem needs to trouble shooting es	included in haits in T.O.	Troubleshoot time	49. Z

	MAINTAINABILITY DEMO	MOT HAT TON ANALTOIS	□ Organizational ☑ Intermediate
SYSTEM	DATE	TASK NO.	BY:
ANTRN-41	6/1/77	89	
MALFUNCTION SYMPTOMS			
RT alarm			
MAINTENANCE STEPS PERFO			
Checked mout	or test points		
Reply delon delo	alam		
ale le roccirer o	natoral to AT could		
Reply deloy delo Check receiver of Check receiver of Checked ontipul of Reland A7	AT.		
Peland A7	0		
princia III			
		TIME DECORD	
REMARKS		TIME RECORD	⊙ . ک
REMARKS		TIME RECORD Troubleshoot time	5.0
REMARKS		Troubleshoot time	,
REMARKS			5.0
REMARKS		Troubleshoot time	11.7
REMARKS		Troubleshoot time Repair Time	11.7
REMARKS		Troubleshoot time Repair Time Alignment & Calibra	11.7
REMARKS		Troubleshoot time Repair Time Alignment & Calibra	tion
REMARKS		Troubleshoot time Repair Time Alignment & Calibra	11.7tion
REMARKS	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibra Time	11.7tion
	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibra Time	11.7 tion
	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibra Time	11.7 tion

MAINTA	AINABILITY DEMONS	TRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/1/77	//	
MALFUNCTION SYMPTOMS			1
Starp in standby			
MAINTENANCE STEPS PERFORMED			
Replaced A1			
			-
REMARKS		TIME RECORD	
		Troub'eshoot time	5. <i>O</i>
		Repair Time	2.2
		Alignment & Calibration	on,
		Time	
		TOTAL 70	7.2
ENGINEERING	Q A ENGINEERING	TOTAL TII	CE REPRESENTATIVE
Man	().	AIN FUNC	Of I me II
Mogen	m.B. junt	Gal	of M Geor

WA	INTAINABILITY DEMON	STRATION ANALYSIS	✓ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/2/77	104	
MALFUNCTION SYMPTOMS RT Claim			
MAINTENANCE STEPS PERFORM Checked Power sip Checked assembling Replaced A7	Ply voltages for shuts		
BEMARKS !		TIME RECORD Troubleshoot time	5.0
IEMARKS			5. 0 8.1
REMARKS		Troubleshoot time	8.1
REMARKS		Troubleshoot time Repair Time Alignment & Calibration	8.1

	MAINTAINABILITY DEM	ONSTRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TUN-41	6/2/77	179	
MALFUNCTION SYMPTON			
Antienna	did not current le	mit and did not	lock with speed.
MAINTENANCE STEPS PEI	RFORMED		· · · · · · · · · · · · · · · · · · ·
- OBSERVED I	BUTERNA NOT LOCK!	NL IN TO SPEED	AND ANTENNA
- Removes	BAT. PEDESTAL.	AND REPLACED	2AI CCA.
- Repeaced	ANT PEDESTAL -		
- TESTEU			
REMARKS		TIME RECORD	
		Troubleshoot time	1 min
		Repair Time	4 MIN
		Alignment & Calibrat	ion l m,v
		Time	1011
		Trine	
		TOTAL T	IME 6 MIN
ENGINEERING	Q A ENGINEERING		GE REPRESENTATIVE
ENGINEERING BD Oat	a A ENGINEERING		

MAI	NTAINABILITY DEMO	NSTRATION ANALYSIS	□ Organizational ☑ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/2/77	.51	
MALFUNCTION SYMPTOMS Plo lighto			
MAINTENANCE STEPS PERFORM	ED much nothers		
Checked power a. Replaced shorted	93		-
•			
REMARKS		TIME RECORD	5.0
		Troubleshoot time	
		Repair Time	2.8
		Alignment & Calibra Time	tion,
		TOTAL 1	TIME
ENGINEERING MRogers	Q A ENGINEERING	AIR FOR	CE REPRESENTATIVE

ANTRN-41		ISTRATION ANALYSIS	□ Organizational ☑Intermediate
AN/TRN-41	DATE	TASK NO.	BY:
	6/2/77	182	
MALFUNCTION SYMPTOMS	4.1		
antenna dorant not	lati		
MAINTENANCE STEPS PERFORMED	D.		
liplaced antenna spec	el (mt.) still	lalel	
Replaced mitor drive	Colony Colony	Para	-
eyplaces minn and			
FAMA DIVO		TIME DECORD	i
IEMARKS		TIME RECORD	
IEMARKS		TIME RECORD Troubleshoot time	
EMARKS			10.0
EMARKS		Troubleshoot time	
EMARKS		Troubleshoot time	
IEMARKS		Troubleshoot time Repair Time Alignment & Caliba	
BEMARKS		Troubleshoot time Repair Time Alignment & Caliba	ation
IEMARKS		Troubleshoot time Repair Time Alignment & Caliba	ation
NGINEERING	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibo Time	ation

MAINTA	INABILITY DEMON	NSTRATION ANALYSIS	□ Organizational ▼ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/2/77	/25	
RTalaim			
MAINTENANCE STEPS PERFORMED lyclaced Synthearin	A9		
REMARKS		TIME RECORD Troubleshoot time	5.0 7.5
		Repair Time	5.2
		Alignment & Calibrati Time	on,
		TOTAL TI	ME <u>/7.</u> 7
ENGINEERING	Q A ENGINEERING		CE REPRESENTATIVE
().	y ¹)	6/2/77 John.	1. Februse
(Magler)	m.B. Tunt	12/77	6.2.77

· · · MA	INTAINABILITY DEMON	NSTRATION ANALYSIS	□ Organizational Intermediate
SYSTEM: ANTRW-YI	6/2/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS RTalam			
MAINTENANCE STEPS PERFORM Checked voltages Checked signals Replaced A4-still Ryclaced A5	MED:		
REMARKS		TIME RECORD Troubleshoot time Repair Time	5,8
		Alignment & Calibrat	
		TOTAL T	IME <u>/0.8</u>
ENGINEERING	Q A ENGINEERING	AIR FOR	CE REPRESENTATIVE
Mozen	m. B. Juni	* 6/2/77 John 1	Johnson 6-2-77

	MAINTAINABILITY DEMO	NSTRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM: ANTRN-41	6/2/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS RT alaum			
MAINTENANCE STEPS PERF Checked power a Cyplaced Power a			•
REMARKS		TIME RECORD Troubleshoot time	5.0 5.0
REMARKS			<u>5.</u> 3 13.1
REMARKS		Troubleshoot time Repair Time Alignment & Calibration	<u>5.8</u> /3.1

	MAINTAINABILITY DEMO	NSTRATION ANALYSIS	□ Organizational ✓Untermediate
SYSTEM: AN/TRN-41	6/2/77	TASK NO.	BY:
NALFUNCTION SYMPTOM	S		
AINTENANCE STEPS PER heek voltages. Aplaced A5 - leek signals to Eplaced A6	and alarm list soin	J.,	
:MARKS		TIME RECORD Troubleshoot time	5.0
EMARKS			7. 0
EMARKS!		Troubleshoot time	7. 0

· MA	INTAINABILITY DEMO	NSTRATION ANALYSIS	□ Organizational ✓Intermediate
SYSTEM : AN/TRN-41	DATE 6/2/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS RT alarm			
MAINTENANCE STEPS PERFORM Checked squitter coun Replaced A5 Adjusted squitter Tested using into and adjusted A5	A - Pendjusted to	chek	
BEMARKS		TIME RECORD	5 .0
		Repair Time Alignment & Calibrat Time	
ENGINEERING COMMENT	Q A ENGINEERING	TOTAL	CE REPRESENTATIVE

MAINTA	AINABILITY DEMONSTR	RATION ANALYSIS	□ Organizational ✓Intermediate
SYSTEM! ANTRN-41	6/2/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS RT alam.			
MAINTENANCE STEPS PERFORMED Checked signals replaced A7 aligned A7			-
REMARKS		TIME RECORD	5.0
			7 -
		Troubleshoot time Repair Time Alignment & Calibration Time	7. Z

MAINTA	AINABILITY DEMONS	FRATION ANALYSIS	□ Organizational ☑ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/2/17	24	
MALFUNCTION SYMPTOMS RT alam			
Replaced A4 Explaced A2 adjustment 1A2			
REMARKS		TIME RECORD	5.0 5.2
		Repair Time Alignment & Calibrati Time TOTAL TI	10 /
ENGINEERING	Q A ENGINEERING		CE REPRESENTATIVE
MRigus	~	6/2/77 John	Imar

	MAINTAINABILITY DEMON	STRATION ANALYSIS	□ Organizational ✓ Intermediate
GYSTEM GN/TKN-Y/	DATE: 6/2/77	TASK NO.	BY:
IAL FUNCTION SYMPTOM	S'		
AINTENANCE STEPS PER Lecked ditul extended A.5 Lecked signals eplaced A5 dyestments	ed RF - no south		
EMARKS		TIME RECORD	.5.0
		Troubleshoot time Repair Time	7.4 1.0
		Alignment & Calibrati	on, 2.2
		TOTAL TI	ME /5.6

MAINTAINABILITY DEMONSTRATION ANALYSIS Companizational Companization Companizatio			
SYSTEM: AN/TRN-41	DATE 6/2/77	TASK NO. 20	BY:
MALFUNCTION SYMPTOMS		· · · · · · · · · · · · · · · · · · ·	.
RT alarm			
MAINTENANCE STEPS PERFORMI RCVR oquithe alas Replaced AZ	ED m		· · · · · ·
Replaced 112			
REMARKS		TIME RECORD Troubleshoot time	5.0 9.5
		Repair Time	.5
		Alignment & Calibrati Time	on, <u>2.6</u>
		TOTAL TI	ME _/7.6
ENGINEERING	12. B. Jun		E REPRESENTATIVE

	MAINTAINABILITY DEMO	ONSTRATION ANALYSIS	□ Organizational ✓Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/2/77	166	1
MALFUNCTION SYMPTOMS			
Known bad condi	tion in artisma m	ot detailed by RT.	
MAINTENANCE STEPS PERF	ORMED		
Disconnected &	?Frakle - no Vs	iw Ralam	
Replaced AZ.	- Stil failed		•
Extended AZ			
REMARKS		TIME RECORD	5.0
REMARKS		TIME RECORD Troubleshoot time	5.0 7.9
REMARKS			5.0 7.9 10. 2
REMARKS		Troubleshoot time	7.9
REMARKS		Troubleshoot time Repair Time	7.9
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	7.9
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	7.9 20.2
ENGINEERING	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI AIR FOR	7.9 20.2

MAINTAI	NABILITY DEMONS	STRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM: ANITRN-41	DATE: 6/2/77	TASK NO. / 72-	BY:
MALFUNCTION SYMPTOMS Mo ON AIR lamp	·		
Perplaced lamp			-
• • •		TIME RECORD	
		Troubleshoot time Repair Time Alignment & Calibration Time	1.6
ENGLINEERING O	A ENGINEERING	TOTAL TIM AIR FORCE Form 1	

	MAINTAINABILITY DEMC	INSTRATION ANALYSIS	□ Organizational ☐ Intermediate
SYSTEM: ANTKN-41	DATE 6/2/77	TASK NO.	BY:
Stanby lamp do	s not illuminate		
IAINTENANCE STEPS PERFO Check lamps. uplace standly uplace A)	DRMED - still far	,	-
EMARKS		TIME RECORD Troubleshoot time	5.0
		Repair Time Alignment & Calibration Time	/, 3
		TOTAL TIM	E 6.3
ENGINE ERING	m.B. and	AIR FORCE	REPRESENTATIVE

	MAINTAINABILITY DEWION	ISTRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/2/77	47	
MALFUNCTION SYMPTOMS: Continuous IDENT	Lamp		
MAINTENANCE STEPS PERFO	IRMED	100.000	•
Replaced A3			
,			
REMARKS		TIME RECORD	
REMARKS			5.0
REMARKS		TIME RECORD Troubleshoot time	
REMARKS			5.0
REMARKS		Troubleshoot time	2.9
BEMARKS		Troubleshoot time Repair Time Alignment & Calibration	2.9
REMARKS		Troubleshoot time	2.9
REMARKS		Troubleshoot time Repair Time Alignment & Calibration	2.9
REMARKS		Troubleshoot time Repair Time Alignment & Calibration Time	2.9 The state of the state of t
REMARKS		Troubleshoot time Repair Time Alignment & Calibration Time	2.9 In 3 AE 7.9
REMARKS	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibration Time	2.9 The state of the state of t
		Troubleshoot time Repair Time Alignment & Calibration Time	2.9 In 3 AE 7.9
	O A ENGINEERING m. B. Junt	Troubleshoot time Repair Time Alignment & Calibration Time	2.9 In 3 AE 7.9

	MAINTAINABILITY DEM		□ Organizational ✓Intermediate
SYSTEM! AN ITRN- YI	6/2/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS			J
RT alarm			
AAINTENANCE STEDS DEDE	ot points - Pula		
Lalain to	et points - Pula	se nati alarm	
of the second	or pour contract of		-
uplaced AS			
			,
EMARKS		TIME RECORD	5.0
IEMARKS		TIME RECORD	5.0 3.8
BEMARKS			
EMARKS		Troubleshoot time Repair Time	3.8
EMARKS		Troubleshoot time	3.8
BEMARKS		Troubleshoot time Repair Time Alignment & Calibrati	3.8
BEMARKS		Troubleshoot time Repair Time Alignment & Calibrati Time	3.8 .5 on 2.0
NGINEERING	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time	3.8 .5 on 2.0
	a a engineering	Troubleshoot time Repair Time Alignment & Calibrati Time	3.8 .5 on 2.0

MAINTA	ATION ANALYSIS	□ Organizational ☑ Intermediate	
SYST EM	DATE	TASK NO.	BY:
ANTRN-41	6/2/77	26	
MALFUNCTION SYMPTOMS RT Alaum			
MAINTENANCE STEPS PERFORMED Ryplaced A 4 Ryplaced A 2			
Sydness 112			
REMARKS		TIME RECORD	5.0
		Troubleshoot time	2.7
		Repair Time	.5
		Alignment & Calibratio	3.3
		TOTAL TIN	11.5
Mogus	m. B. funt	6/s/ John	REPRESENTATIVE

N	IAINTAINABILITY CEMON	TAINABILITY DEMONSTRATION ANALYSIS		
SYSTEM: AN/TRN-41	6/2/77	TASK NO. 155	BY:	
RT alarm				
SAINTENANCE STEPS PERFO The ked voltages unplugged aren't ca inplugged on trul of	do - still missing power supply + 150,	misainy	-	
Replaced power sin	reply.			
BEMARKS		TIME RECORD	5.0	
REMARKS		TIME RECORD Troubleshoot time Repair Time	5.0 5.4 9.5	
REMARKS		Troubleshoot time	<u>5,4</u> 9.5	
REMARKS		Troubleshoot time Repair Time Alignment & Calibratio Time	<u>5,4</u> 9.5	

	AINTAINABILITY DEMON	STRATION ANALYSIS	□ Organizational ✓Intermediate
YSTEM	DATE		BY:
AN/TRN-41	6/3/77	/20	
ALFUNCTION SYMPTOMS			
RT alarm			
•			
AINTENANCE STEPS PERFOR	MED:		-
ch by altour			
cheeped alorm to	at points		
replicated voltage	s on syptithisizer		
checked alorm to nechecked voltage Replaced systhm	ouis A9		
- princes - y.	8		
EMARKS		TIME RECORD	
EMARKS			5.0 5.3
EMARKS		Troubleshoot time	<u>5.3</u>
EMARKS	2.		
EMA RKS	3.	Troubleshoot time	5.3 5.2
EMARKS	3.	Troubleshoot time	5.3 5.2
EMARKS	•	Troubleshoot time Repair Time Alignment & Calibratio	5.3 5.2
EMARKS	7.	Troubleshoot time Repair Time Alignment & Calibratio	5.3 5.2
EMARKS	7.	Troubleshoot time Repair Time Alignment & Calibratio	5.3 5.2
GHNEERING.	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibratio Time TOTAL TIM	5.3 5.2

· M	AINTAINABILITY DEMO	DNSTRATION ANALYSIS	□ Organizational
YSTEM: AN/TRN-41	DATE 6/3/77	TASK NO.	BY:
RT alaum			
AINTENANCE STEPS PERFOR Lecked voltages Lucked alarm to Explaced AZ Lucked alarm	RMED at points		· · · · · · · · · · · · · · · · · · ·
EMARKS		T!ME RECORD	5.0 5.7
		Repair Time Alignment & Calibratio	on,
		TOTAL TIM	
MR ogen	m. B. Aum	AIR FORCE	E REPRESENTATIVE

		ISTRATION ANALYSIS	Intermediate
SYSTEM	6/3/77	TASK NO.	BY:
AN/TRN-41	6/3///	12	
MALFUNCTION SYMPTOMS Plo lights			
MAINTENANCE STEPS PERFORI Checked voltages replaced A1	MED		
, o percus			
REMARKS		TIME RECORD	5.0 2.0
REMARKS		Troubleshoot time	5.0 2.0 1.1
REMARKS		Troubleshoot time Repair Time	<u>2.0</u>
REMARKS		Troubleshoot time	<u>2.0</u>
REMARKS		Troubleshoot time Repair Time Alignment & Calibra	2.0 1.1 ation

BY: ANTRA-41 ANTRA-41 C/3/77 ANTRA-41 MAINTENANCE STEPS PERFORMED: CHECKED VOLTAGES CHARACT CHARACT CHARACT Amored and syclacid A5 aligned 4 calchard A5 aligned 4 calchard A5 aligned 5.0 Troubleshoot time 3.5 Repair Time .5 Alignment & Calibration .2.4 Time TOTAL TIME .1.4 W. B. J.	· •	MAINTAINABILITY DEMON	ISTRATION ANALYSIS	□ Organizational ✓ Intermediate
MAINTENANCE STEPS PERFORMED: CHECKED VOLTAGES CHICKED COUNT ON AS COUL Removed and explained AS aligned + calchalist AS TIME RECORD Troubleshoot time 3.5 Repair Time J.4 Time TOTAL TIME 11.4		6/3/77		BY:
EMARKS TIME RECORD 5.0 Troubleshoot time 3.5 Repair Time Alignment & Calibration Time TOTAL TIME 11.4 NGINEERING O A ENGINEERING AIR FORCE REPRESENTATIVE AIR FORCE REPRESENTATIVE AIR FORCE REPRESENTATIVE				
TIME RECORD 5.0 Troubleshoot time 3.5 Repair Time .5 Alignment & Calibration Z.4 Time TOTAL TIME	CHECKED VOLTAGE	1.5		<u>.</u>
Troubleshoot time 3.5 Repair Time5 Alignment & Calibration Time TOTAL TIME	aligned + cathlate) H >		
Troubleshoot time 3.5 Repair Time				
Troubleshoot time 3.5 Repair Time				
Troubleshoot time 3.5 Repair Time5 Alignment & Calibration Time TOTAL TIME				
Troubleshoot time 3.5 Repair Time5 Alignment & Calibration Time TOTAL TIME				
Alignment & Calibration 2.4 Time TOTAL TIME 11.4 NGINEERING AIR FORCE REPRESENTATIVE	REMARKS			3,5
TOTAL TIME				7 4
NGINEERING Q A ENGINEERING AIR FORCE REPRESENTATIV				ı, <u></u>
			TOTAL TIM	E
	ENGINEERING :		V	REPRESENTATIVE

M	AINTAINABILITY DEMO	NSTRATION ANALYSIS	□ Organizational Intermediate
SYSTEM: ANITRN-YI	6/3/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS RT Alaum			
MAINTENANCE STEPS PERFOR Phecked alarm a Ryslaced AZ - Ja Ryslaced power on Checked peak p	ist points - Peak	power alarm	-
cheeked peak			
IEMARKS		TIME RECORD	5.6
		Troubleshoot time	5. 6 5.3 9.6
		Repair Time Alignment & Calibra Time	
			211
ENGINEERING	Q A ENGINEERING	TOTAL T	TIME 21. TIME 21.
JAN Rogen	N. B. Paris	1/3/77 John	1 Johnson

MA	NTAINABILITY DEMONS	TRATION ANALYSIS	□ Organizational Intermediata
SYSTEM	DATE	TASK NO.	BY:
AN/TEN- HI	6/3/77	57	
MALFUNCTION SYMPTOMS			
RT ALARM			
MAINTENANCE STEPS PERFORM	IEO:		
CHECKED VOLTAGE			
REPLACED AS PO			
CHECKED ALARM	CIRCUITS.		
=			
REMARKS		TIME RECORD	5.0
REMARKS		TIME RECORD	5.0 i+.2
REMARKS		Troubleshoot time	
REMARKS			
REMARKS		Troubleshoot time	<u>+.2</u>
REMARKS		Troubleshoot time	<u>+.2</u>
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	<u>+.2</u>
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati Time	<u>⊶.2</u>
		Troubleshoot time Repair Time Alignment & Calibrati Time	<u>⊶.2</u>
REMARKS REMARKS RIGINEERING Frankl	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI AIR FOR	ME 9.7

MAII	NTAINABILITY DEMON	STRATION ANALYSIS	□ Organizational ☑ Intermediate
YSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/3/77	110	
MALFUNCTION SYMPTOMS			
Replaced A2 Book Changed to Orig Replaced Receive	on AZ and anal AZ Boa er AB		
REMARKS		TIME RECORD	5.0 4.0
		Repair Time Alignment & Calibrat Time TOTAL T	18 /
NGINEERING	Q A ENGINEERING		CE REPRESENTATIVE
~ Clomell	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	- 6/3/77 John	1 Johnson

	INTAINABILITY DEMONS	TRATION AN	ALYSIS	□ Organizational ☑ Intermediate
SYSTEM AN/TRN-41	DATE 6 / 3 / 77	TASK NO.	98	BY:
MALFUNCTION SYMPTOMS				
MAINTENANCE STEPS PERFORI CHECKED VOLTAGES PEPLACED AT P. MADE ALIGNMENT CHECKED ALARMS	C.ZA BSAGE.			
REMARKS		TIME REC	oot time'	5.0 2.0
REMARKS		Troublesh Repair Tin	oot time'	2.0
REMARKS	Q A ENGINEERING	Troublesh Repair Tin Alignment	oot time ' ne & Calibration TOTAL TIM	2.5

Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time			IONSTRATION ANALYSIS	□ Organizational Intermediate
ALFUNCTION SYMPTOMS RT ALARM MAINTENANCE STEPS PERFORMED Check Alarm Test foints Check Signal Path for Replies Replace A7 Align & Check Operation of A7 MIMERECORD 5.0 Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.55 Time TOTAL TIME 13.5 NGINEERING Q A ENGINEERING AIR FORCE REPRESENTATIVE TOTAL TIME 13.5			TASK NO.	BY:
ALARM MAINTENANCE STEPS PERFORMED Check Alarm Test Points Check Signal Path for Replies Replace A7 Align & Check Operation of A7 Time RECORD Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING O A ENGINEERING AIR FORCE REPRESENTATIVE The Air Jahn Alaman	AN/TEN-41	1 3 Jun	77 86	
IMINTENANCE STEPS PERFORMED Check Alarm Test Points Check Signal Path for Replies Replace A7 Align & Check Operation of A7 Time RECORD Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING O A ENGINEERING AIR FORCE REPRESENTATIVE				
TIME RECORD Signal Path for Replies Replace A7 Align & Check Operation of A7 Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING OA ENGINEERING AIR FORCE REPRESENTATIVE	RT ALAK	2M		
TIME RECORD Signal Path for Replies Replace A7 Align & Check Operation of A7 Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING OA ENGINEERING AIR FORCE REPRESENTATIVE				
TIME RECORD Signal Path for Replies Replace A7 Align & Check Operation of A7 Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING OA ENGINEERING AIR FORCE REPRESENTATIVE				
Check Signal Path for Replies Replace A7 Align & Check Operation of A7 TIME RECORD 5.0 Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Align & Check Operation of A 7 TIME RECORD 5.0 Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE			plies	
Align & Check Operation of A 7 TIME RECORD 5.0 Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE	Replace AT			
TIME RECORD 5.0 Troubleshoot time 4.5 Repair Time 0.5 Alignment & Calibration 7.5 Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE		K Opp ton at	47	
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE	Migh & Chee	in operation of	. /	
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Troubleshoot time 4.5 Repair Time Alignment & Calibration Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE				
Alignment & Calibration 3.5 Time TOTAL TIME 13.5 NGINEERING AIR FORCE REPRESENTATIVE	REMARKS!		TIME RECORD	, 5.0
Time Total time /3.5 NGINEERING Q A ENGINEERING AIR FORCE REPRESENTATIVE	REMARKS			
Time Total time 13.5 NGINEERING O A ENGINEERING AIR FORCE REPRESENTATIVE	REMARKS		Troubleshoot time	4.5
NGINEERING Q A ENGINEERING AIR FORCE REPRESENTATIVE	REMARKS		Troubleshoot time Repair Time	4.5 0.5
NGINEERING Q A ENGINEERING AIR FORCE REPRESENTATIVE	REMARKS		Troubleshoot time Repair Time Alignment & Calibratio	4.5 0.5
2 for 18 2 9 2 6/3/ John 7 Johnson	REMARKS		Troubleshoot time Repair Time Alignment & Calibratio	4.5 0.5 3.5
Tomell In R Lant 1/3/2 John 1 Johnson	REMARKS		Troubleshoot time Repair Time Alignment & Calibratio Time	4.5 0.5 3.5
	REMARKS		Troubleshoot time Repair Time Alignment & Calibratio Time TOTAL TIM	4.5 0.5 3.5

MA	INTAINABILITY DEMONS	TRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/3/77	127	_
MALFUNCTION SYMPTOMS			
RT ALAR	M		
MAINTENANCE STEPS PERFORI	MED:		
Checked DET.	RF		
Checked squit	ter		
Checked Sunt	h Alarm Test p	≯	
Found No + 15	V on Sunti	ζ,	
Replaced Syn; Checked Opera	th Aq		
Checked poers	Lon		
open			
REMARKS		TIME RECORD	5.0
REMARKS		TIME RECORD	5, 0 2,3
BEMARKS			
BEMARKS		Troubleshoot time	2,3 5.Z
EMARKS		Troubleshoot time Repair Time Alignment & Calibrati	2,3 5.Z
REMARKS		Troubleshoot time	2,3 5.Z
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	2,3 5.Z .5
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	2,3 5.Z
REMARKS	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI	2,3 5.Z

	MAINTAINABILITY DE	EMONSTRATION ANALYSIS	□ Organizational ⊠ Intermediate
YSTEM	DATE	TASK NO.	BY:
ALFUNCTION SYMPT	OMS		L
RTA	ALARM		
A INTEN A NOT OTTOO	OF OF ONLY D		
AINTENANCE STEPS F	upply Voltages		
No Det	RE		-
Sienth he	M MA - 5 3 W		
Rodon	s No -5,2 v. Synthesizer A9 peration		
Clark S	as the		
Check U	perally-		
- MARKS!		TIME RECORD	.5.0
EMARKS			ح. ه
EMARKS	3 1	Troubleshoot time	۵,3
EMARKS		Troubleshoot time	ع, ع ح, ک
MARKS		Troubleshoot time Repair Time Alignment & Calibrati	ع, ع ح, ک
EMARKS		Troubleshoot time	ع, ع ح, ک
EMARKS		Troubleshoot time Repair Time Alignment & Calibrati Time	5, 2 on 5
		Troubleshoot time Repair Time Alignment & Calibrati Time	5.2 on .5
IGINEERING	Q A ENGINEERIN	Troubleshoot time Repair Time Alignment & Calibrati Time	5, 2 on 5

MAI	NTAINABILITY DEMONS	TRATION ANALYSIS	□ Organizational Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TEN-41	6/3/77	74	
ANTENNA NO LAMPS	ROTATION		
MAINTENANCE STEPS PERFORM			
Checked lang			
Checked +5V.			•
Removed all P			
Reinserted Board	1s A1-A5		
Replace AS	-		
REMARKS		TIME RECORD	5.0
		Troubleshoot time	1.0
		Dana:- T!	. 5
		Repair Time	5
		Repair Time Alignment & Calibration	.5 on 2.4
			.5 on 2.4
		Alignment & Calibration	.5 on 2.4
		Alignment & Calibration	ð 0
NGINEERING	Q A ENGINEERING	Alignment & Calibration Time TOTAL TI	

,	MAINTAINABILITY DEM	ONSTRATION ANALYSIS	□ Organizational ☑ Intermediate
YSTEM AN/TEN-4	DATE Oun 3,	TASK NO. 4	BY:
NO IND	ICATION OF A	NTENNA FALLU	Œ
AINTENANCE STEPS PERF Checked A Replaced A	ORMED NT ALARM LY,	1mp	-
EMARKS!		TIME RECORD	5.0
		Troubleshoot time	1.25
		Repair Time Alignment & Calibra Time	ation,
		TOTAL	TIME 7.35
NGINEERING	Q A ENGINEERING	\mathcal{O}_{1}	RCE REPRESENTATIVE
		mt 1	

MAINTA	INABILITY DEMONS	TRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/HEN-41	3 JUN 77	83	
MALFUNCTION SYMPTOMS			
ANTENNA RO	tubes		
NO LAMPS ON			
MAINTENANCE STEPS PERFORMED	* +		
Checked Lamp			
Removed PC boa			
Remserted one a	Ta time		
Replaced A6			
REMARKS		TIME RECORD	5.0
		Troubleshoot time	1.5
		Repair Time	1.7
		Alignment & Calibrati	on
		Time	
			~ ~
		TOTAL TI	
ENGINEERING 6	1 A ENGINEERING	AIR FOR	E REPRESENTATIVE
Shamel 35un 77	m. B Jum		

OVOTELL !	NTAINABILITY DEMONS	TRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM	DATE	TASK NO.	BY:
ANTEN- 4	ムノ3/77	30	
MALFUNCTION SYMPTOMS			
RT Alarm	1		
MAINTENANCE STEPS PERFORM	ED		
Checked	DETECTED RA	-	
Checked Sig	and path for t	Replies	-
Checked Ala	erm test poi	1/5	
Replaced A			
·			
Align AZ b	poard		
		TIME DECORD	
REMARKS		TIME RECORD	5.0 3.7
REMARKS		TIME RECORD Troubleshoot time	3.7
IEMARKS			
REMARKS		Troubleshoot time	3.7
REMARKS		Troubleshoot time Repair Time	3.7
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	3.7
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	3.7 .5 2.5
NGINEERING	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI AIR FOR	3.7 .5 2.5
		Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI AIR FOR	3.7 .5 a.5 ME 11.7

Figure 1.

WAU	ITAINABILITY DEMONST	RATION ANALYSIS	□ Organizational ☑Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	3 TUN77	109	
MALFUNCTION SYMPTOMS			
RT ALAR	M		
MAINTENANCE STEPS PERFORME		***************************************	
Checked Volta	eges		
Checked Ala	rms		•
Roplaced AZ			
Replaced AZ Returned Origi	nal A2		
Replaced Ad			
·			
Align & Calibrat	۷.		
EMARKS	,	TIME RECORD	5.0
EMARKS	,	TIME RECORD	5.0 4.0
IEMARKS	,	Troubleshoot time	4.0
EMARKS	,	Troubleshoot time	7.4
EMARKS		Troubleshoot time Repair Time Alignment & Calibration	7.4
REMARKS		Troubleshoot time	7.4
REMARKS	·	Troubleshoot time Repair Time Alignment & Calibration	7.4
IEMARKS		Troubleshoot time Repair Time Alignment & Calibration	4,0 7.4 2.2
NGINEERING	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibration Time TOTAL TIM	4,0 7.4 2.2

MAII	NTAINABILITY DEMONS	TRATION ANALYSIS	□ Organizational ☑Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	3 JUN 77	183	
MALFUNCTION SYMPTOMS			
ANTENNA	Al APM		
No Antenna			
	7007477020		
MAINTENANCE STEPS PERFORM			•
send No Antenna A	Rota ton		
Opened Antenna	Al Assembly		
Replaced IAI A		, ,	
Replaced Ant Mo	to- Drive 14850m	bly	
Replace Motor Bro	ustes		
		ve Asso 11	
		The second of the	
cherked 1+	5000/		
Install original 1 Checked Ant	Speed		
checked Ant	Speed		
checked Ant	Speed		
checked Ant	Speed		
checked Ant	Speed		
checked Ant	Speed		
checked Ant	Speed		
checked Ant	Speed		
checked Ant	Speed		
	Speed	TIME RECORD	5.0
	Speed		
	Speed	TIME RECORD Troubleshoot time	5.0 7.2
	Speed	TIME RECORD Troubleshoot time Repair Time	5.0 7.2 14.0
	Speed	TIME RECORD Troubleshoot time Repair Time Alignment & Calibratio	5.0 7.2 14.0
	Speed	TIME RECORD Troubleshoot time Repair Time	5.0 7.2 14.0
	Speed	TIME RECORD Troubleshoot time Repair Time Alignment & Calibratio	5.0 7.2 14.0
	Speed	TIME RECORD Troubleshoot time Repair Time Alignment & Calibratio Time	5.0 7.2 14.0
REMARKS	Q A ENGINEERING 7 'M.B. June	TIME RECORD Troubleshoot time Repair Time Alignment & Calibratio Time	5.0 7.2 14.0

MAINT	AINABILITY DEMONST	RATION ANALYSIS	□ Organizational ✓Intermediate
SYSTEM /TRN-41	3 Jun 77	TASK NO. 149	BY:
MALFUNCTION SYMPTOMS			
RT ALARM			
MANUTENIANOE OTERO DE DE ODMED			
MAINTENANCE STEPS PERFORMED	11105		
Checked for D			
Checked + 50 VD			·
Checked Detected			
Measured +24VD	c at Gated	Ampl. tier	
Replace gates a	mplifier		
	•		
•			
		TIME DECORD	<u> </u>
REMARKS		TIME RECORD	5, 0 5, 0
		Troubleshoot time	
		Repair Time	28,0
		Alignment & Calibrati	nn 1.5
		Time	VII,
		Time	
			_
		TOTAL TI	ME 39,5
NGINEERING	Q A ENGINEERING		E REPRESENTATIVE
OX Lawell Jun 77	m. B. Jung	7 6/3/77 John	M. Johnson

	AINTAINABILITY DEMO	INSTRATION ANALYSIS	□ Organizational ✓ Intermediate
YSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/3/77	178	
MALFUNCTION SYMPTOMS ANTENNE	ALARM		
CHECKED .	D RT TO G ANTENNA TO ANT SPEED	DUMMY LOAD RIGGERS' ALARM TEST ;	POINT
REMARKS		TIME RECORD	
IEMARKS!		TIME RECORD Troubleshoot time	5.5
IEMARKS!		Troubleshoot time	
IEMARKS		Troubleshoot time Repair Time	5.5 5.0
EMARKS!		Troubleshoot time Repair Time Alignment & Calibrat	5.5 5.0
IEMARKS!		Troubleshoot time Repair Time	5.5 5.0
REMARKS		Troubleshoot time Repair Time Alignment & Calibrat	5.5 5.0 1.5
ENGINEERING Showell 3 Jun 7	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI	5.5 5.0 1.5 IME 12.0 CE REPRESENTATIVE

•	MAINTAINABILITY DEMO	INSTRATION ANAL	YSIS □ Organizational Mintermediate
SYSTEM! AN/TRN-41	DATE	TASK NO.	BY:
MALFUNCTION SYMPTOMS	3 3 4 2 7	7	68
	NO DME RE.	SPONSF	
Checked Vol APPLIED RF RECE	toges on Reco INTERROGATIONER INPUT	eiver	
APPLY INTRG	- AT ISOLATOR	ATY /NPUI	
OANY TAITR			
HPPCY IN	6 AT YIG IN	,	
REPLACE Y	11G	,,	
REPLACE Y	6 A) 913 110		
REPLACE	6 A) 913 110	TIME RECOI	RD 5.0
REPLACE	11G		/ ^
REPLACE	11G	TIME RECO	/ ^
REPLACE	11G	TIME RECOI	time <u>6.0</u>
REPLACE	11G	TIME RECOR Troubleshoot Repair Time Alignment & Time	time 6.0 12.0 Calibration 1.6
REPLACE	116	TIME RECONT Troubleshoot Repair Time Alignment & Time	12.0 Calibration 1.6 OTAL TIME 24.6
REPLACE	Q A ENGINEERING	TIME RECONT Troubleshoot Repair Time Alignment & Time	time 6.0 12.0 Calibration 1.6

	MAINTAINABILITY DEM	ONSTRATION ANALTSIS	□ Organizational ≰Intermediate
SYSTEM AN / TRN - 4 MALFUNCTION SYMPTOM		TASK NO.	BY:
RT ALAR	M		
MAINTENANCE STEPS PEI CHECK PO CHECK A	CARM TEST POIN	VOLTAGES TS	· · ·
REMARKS		TIME RECORD	5.0
REMARKS		Troubleshoot time	3.7
REMARKS		Troubleshoot time Repair Time	
REMARKS		Troubleshoot time	
REMARKS		Troubleshoot time Repair Time Alignment & Calibratio	3.7 .5 .5
REMARKS	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibratio Time TOTAL TIM	

-	AINTAINABILITY DEMONST	RATION ANALYSIS	□ Organizational Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-14	6 Jun 77	143	
MALFUNCTION SYMPTOMS			
NO LAMPS			
MAINTENANCE STEPS PERFOI			·
Checked Pa	ower supply volta	ges	
Un-seated 7	PC cards		-
Reseated 7			
			1-1
onconed ou	tput of power s	apply with	road disconnai
Kemoved Sy	nthes. zer Load	from power so	applies
check Crown	bar for short		
Checked YIG	Filter for Short		
Disconnected	Power Amplit.	for load.	
Keplace Pon	ver Amplifier 11	AR/	
,			
REMARKS		TIME RECORD	<u> </u>
REMARKS		TIME RECORD	5.0
REMARKS!		TIME RECORD Troubleshoot time	11.3
REMARKS!			
REMARKS		Troubleshoot time Repair Time	11.3 5.7
REMARKS		Troubleshoot time	11.3 5.7
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	11.3 5.7
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati Time	11.3 5.7 1.0
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati Time	11.3 5.7
	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI AIR FOR	11.3 5.7 1.0
ENGINEERING Somella Jun 77	a A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI AIR FOR	11.3 5.7 1.0

	TAINABILITY DEMONSTI	RATION ANALYSIS	□ Organizational ▼Intermediate
SYSTEM: AN/TRN-26	DATE JUNE 1977	TASK NO /67	BY:
MALFUNCTION SYMPTOMS FINT ALA	lm		
CHECK DETECTE Replaced A2 B	SNAL PATH TECTED RF RM TEST POIN D RF AT CRI ourd TY I TO Isolate t Creulator	HIGH VSWR [ETECTOR
REMARKS		TIME RECORD Troubleshoot time Repair Time Alignment & Calibrat Time	5.0 26,7 /3.0

Figure 1

MAI	NTAINABILITY DEMONS	TRATION ANALYSIS	□ Organizational ✓ Intermediate
SYSTEM AN/TRN-41	GJUN 77	TASK NO.	BY:
NALFUNCTION SYMPTOMS RT ALARM			
MAINTENANCE STEPS PERFORM Checked Power Checked Power Disconnected & Disconnect +15 Replace AR 2	supply with supply with		ed
REMARKS		TIME RECORD Troubleshoot time Repair Time Alignment & Calibra Time	5.0 <u>5.75</u> 24.5
THO INCEDING	O A CNOINEEDING	TOTAL	
Stamell 6 Jun 77	Q A ENGINEERING	4/1/77 AIR FO	RCE REPRESENTATIVE

	MAINTAINABILITY DEMONSTRATION ANALYSIS		
YSTEM: AN/TRN-41	DATE G-JUN 77	TASK NO.	BY:
	(5.JUTO / 1	(75	
ALFUNCTION SYMPTOMS AUT ALA	CM		
ANI NEA			
AINTENANCE STEPS PERF			
· · · · ·	SIGNAL PATH		
· ·	ALARM TEST P		-
	SIGNAL AT CR	/	
	ABLE TO CRI		
CONNECTED	RF LOAD TO HY	I PORT 4	
Replace Ci	reulator HYI	·	
	•		
IEMARKS		TIME RECORD	5,0
REMARKS		TIME RECORD Troubleshoot time	5,0 6,9
EMARKS			
IEMARKS		Troubleshoot time Repair Time	<i>6.9 5,3</i>
EMARKS !		Troubleshoot time Repair Time Alignment & Calibrati	<i>6.9 5,3</i>
IEMARKS !		Troubleshoot time Repair Time	<i>6.9 5,3</i>
BEMARKS		Troubleshoot time Repair Time Alignment & Calibrati	<i>6.9 5,3</i>
REMARKS		Troubleshoot time Repair Time Alignment & Calibrati	6.9 5,3
NGINEERING	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI	6.9 5,3
NGINEERING S Romell 6 Jul	Q A ENGINEERING	Troubleshoot time Repair Time Alignment & Calibrati Time TOTAL TI	6.9 5,3 on 17.2

MAINTA	NINABILITY DEMONST	RATION ANALYSIS	⊠ Organizational □¹ Intermediate
SYSTEM: AN/TEN-41	DATE 6/1/77	TASK NO.	BY:
SYSTEM AN/TEN-4/ MALFUNCTION SYMPTOMS IDENT CODE LAPP	failur		
MAINTENANCE STEPS PERFORMED Explose RT			-
±			
EMARKS		TIME RECORD Troubleshoot time Repair Time Alignment & Calibrati Time	
NGINEERING Ano	a A ENGINEERING	TOTAL TI	ME

MAINTA	AINABILITY DEMONS	TRATION ANALYSIS	⊠ Organizational □' Intermediate
SYSTEM	DATE	TASK NO.	BY:
ANITRN-41	6/1/77	12	
MALFUNCTION SYMPTOMS RT alaım			
MAINTENANCE STEPS PERFORMED Replaced R7			*
EMARKS!		TIME RECORD	100
		Troubleshoot time Repair Time	2.1
·		Alignment & Calibratio	n
		TOTAL TIM	IE
MRogly	m. B. Lund		REPRESENTATIVE 6-1-77

MAINT	AINABILITY DEMON	ISTRATION ANALYSIS	☑ Organizational ☐ Intermediate
SYSTEM: AN/TRN-41	6/1/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS	1. /		1
no indicator lamps	light		
MAINTENANCE STEPS PERFORMED			
Discounted antima	Contral cable to	Imps Oc	
Discounted antima Replaced antima			
•			
DEMARKS		TIME RECORD	
REMARKS		Troubleshoot time	
			2.8
		Repair Time	
		Alignment & Calibratio	on,
		Time	
		TOTAL TI	•
ENGINEERING	Q A ENGINEERING	AIR FORC	E REPRESENTATIVE
GIKogen	m. B. Sunt	1/17 John	6-1-77
The second secon	Figure 3.		-18

MAINTA	AINABILITY DEMON	ISTRATION ANALYSIS	⊠ Organizational □' Intermediate
SYSTEM: AN/TRN-4/	DATE 6/1/77	TASK NO. 47	BY:
MALFUNCTION SYMPTOMS Compass failur			
			ν,
MAINTENANCE STEPS PERFORMED			-
EMARKS .		TIME RECORD	
REMARKS		TIME RECORD Troubleshoot time Repair Time	7 . 0
REMARKS		Troubleshoot time	
		Troubleshoot time Repair Time Alignment & Calibration Time	
	Q A ENGINEERING M. β.	Troubleshoot time Repair Time Alignment & Calibration Time	on _.

MALFUNCTION SYMPTOMS Mo antenna Ratation - MAINTENANCE STEPS PERFORMED Replace antenna	DATE 6/1/77 Centenna Clan	TASK NO. 45	BY:
MALFUNCTION SYMPTOMS Mo antenna Ratation - MAINTENANCE STEPS PERFORMED	antennaalam		-
			-
			-
EMARKS		TIME RECORD	
		Troubleshoot time	-
		Repair Time	3,9
		Alignment & Calibratio	n
		TOTAL TIN	IE <u>3.9</u>
NGINEERING Q	A ENGINEERING	AIR FORC	REPRESENTATIVE

Figure 3

MAIN	TAINABILITY DEMON	ISTRATION ANALYSIS	☑ Organizational □' Intermediate
SYSTEM: ANTRN-41	DATE 6/1/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS			I
failed ON AIR f	ang		
NAINTENANCE STEPS PERFORMED Ryplaced RT)		····································
			•
,			
IEMARKS		TIME RECORD	
IEMANNO		Troubleshoot time	
		Repair Time	1.9
		Alignment & Calibration Time	on,
		TOTAL TI	ME
Manus	m . B. Jun	Air Ford	REPRESENTATIVE

N	MAINTAINABILITY DEMO	MOT DATION ANALTOIS	□¹Intermediate
SYSTEM	DATE	TASK NO.	BY:
ANITRN-41	6/1/77	30	
MALFUNCTION SYMPTOMS			
aipauft uport	o mo OME		
MAINTENANCE STEPS PERFO	RMED		
Replace RT			
i pase iii			-
		TIME RECORD	
REMARKS			
REMARKS		Troubleshoot time	•
REMARKS		Troubleshoot time	3, 7
REMARKS			3, 7
REMARKS		Troubleshoot time Repair Time Alignment & Calibra	
REMARKS		Troubleshoot time	
REMARKS		Troubleshoot time Repair Time Alignment & Calibra	
REMARKS		Troubleshaot time Repair Time Alignment & Calibra Time	tion
	O A ENGINESCINO	Troubleshaot time Repair Time Alignment & Calibra Time	rime <u>3.7</u>
ENGINEERING Mogus	Q A ENGINEERING	Troubleshaot time Repair Time Alignment & Calibra Time	tion

MAINTA	INABILITY DEMON	STRATION ANALYSIS	⊠ Organizational □' Intermediate
SYSTEM: AN/TRN-41	DATE 6/1/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS RT Alarm			
MAINTENANCE STEPS PERFORMED Replaced RT			
EMARKS	•	TIME RECORD Troubleshoot time	2 7
		Repair Time Alignment & Calibrati Time TOTAL TI	
NGINEERING .	Q A ENGINEERING		E REPRESENTATIVE

MAI	NTAINABILITY DEMON	ISTRATION ANALYSIS	⊘ O rganizational □' Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN/TRN-41	6/1/77	37	
MALFUNCTION SYMPTOMS	······································		<u> </u>
Down not go into stan	Ally in DEMAND	oxly mode	
MAINTENANCE STEPS PERFORM	ED		•
Replaced RT			
- pina			-
		•	
•			
REMARKS		TIME RECORD	
		Troubleshoot time	
		110mpleshoot time	
		Repair Time	2.1
		Alignment & Calibration	nn
		Time	
		1.1110	
		TOTAL TI	ME 2.1 MIN.
ENGINEERING	Q A ENGINEERING	AIR FORC	E REPRESENTATIVE
1. 1	4	1 6/1/77 John)	Johnson .
/ Phw/	m. B priv	1/17/	1-1.7

MA	INTAINABILITY DEMON	ISTRATION ANALYSIS	☑ Organizational ☐ Intermediate
SYSTEM	DATE	TASK NO.	BY:
AN (TRN-41	6/1/77	2	
antenna alaun	~		
MAINTENANCE STEPS PERFORM Replaced antenna Replaced RT	failur still ex	isted	
REMARKS		TIME RECORD Troubleshoot time	
		Repair Time Alignment & Calibrati Time	<u>5.1</u>
ENGINEERING	Q A ENGINEERING	TOTAL TII	ME <u>5//</u> Ce representative
Magur-		t 6/1/17 In	

MAINTAINABILITY DEMONSTRATION ANALYSIS			☑ Organizational ☐ Intermediate
SYSTEM: ANTRW-41	DATE 6/1/77	TASK NO.	BY:
RT alam			
Replaced RT			
EMARKS		TIME RECORD Troubleshoot time	
		Repair Time Alignment & Calibration Time TOTAL TII	on,
NGINEERING	Q A ENGINEERING	1 1	E REPRESENTATIVE
Magus	m. B. mut "	1./17 John 1	Amis

MAINTA	INABILITY DEMONS	TRATION ANALYSIS	☑ Organizational □' Intermediate
SYSTEM: AN/TRN-41	DATE 6/1/77	TASK NO.	BY:
MALFUNCTION SYMPTOMS CB Tupes Lupert power ox		,	
MAINTENANCE STEPS PERFORMED Replaced RT.			
•			
	15		
REMARKS		TIME RECORD Troubleshoot time Repair Time	3. 3
		Alignment & Calibrati	on,
ENGINEERING	Q A ENGINEERING	TOTAL TI AIR FOR	CE REPRESENTATIVE

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