

UNCLASSIFIED

MSG DTG 2000Z 2 MAY 2023

FROM COMMANDER, TAPO, JOINT BASE LANGLEY- EUSTIS, VA //AMSAM-SPT/

SUBJECT - SPECIAL OPERATIONS MAINTENANCE MESSAGE - INFORMATION (SOMM-I), AUTOMATIC WIRE TEST SET (AWTS) IMPLEMENTATION, GEN-2023-SOMM-I-001

NOTE

This message is NOT for dissemination to any office or individual outside the US Government or US Government supporting agencies without the approval of the PM.

NOTE

This is a Special Operations Maintenance Message – Information (SOMM-I) issued per ARSOAC Configuration Management Policy 13-08 and has not been transmitted to units subordinate to addressees. Request addressees immediately retransmit this message to all subordinate units, activities or elements affected or concerned.

NOTE

This message supersedes A/MH-6-2022-SOMM-I-002, MH-47-2022-SOMM-I-001, and MH-60-2022-SOMM-I-002. This message is effective until rescinded or superseded.

NOTE

This message is not to be construed as a Safety of Flight Message or Aviation Safety Action Message as defined in AR 95-1.

1. SUMMARY –

1.1. Background – In recent years, the MH-47G, MH-60M, and A/MH-6M fleets have experienced multiple, intermittent issues with the Full Authority Digital Electronic Control (FADEC) System. These were caused by the deterioration of the aircraft interface harnesses which resulted in the unnecessary replacement of multiple parts. Use of the Eclipse Automatic Wire Test Set (AWTS) has reduced the intermittent faults by performing Double-Ended, Single-Ended and Flex Tests on the harnesses.

1.2. Message Purpose – To provide official instructions to incorporate the AWTS test requirements and procedures into Technical Manual (TM) 1-1520-MH-47G-23&P, TM 1-1520-MH-60M-23&P and TM 1-1520-A/MH-6M-23&P.

2. END ITEM / MISSION DESIGN SERIES (MDS) AFFECTED - All MH-47G, MH-47G-B2, MH-60M, and A/MH-6M series aircraft.

3. ASSEMBLIES/COMPONENTS/PARTS – N/A.

4. INITIAL AIRCRAFT TAMMS (THE ARMY MAINTENANCE MANAGEMENT SYSTEM) ENTRY – N/A

5. COMPLIANCE REPORTING REQUIREMENTS – N/A

6. SPECIAL PROVISIONS TO MESSAGE REQUIREMENTS (AIRCRAFT) –N/A

7. TECHNICAL PROCEDURES/INSTRUCTIONS –

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

If failures are detected, all faults will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to post event Single-Ended test. All failures will use WUC 09X01.

NOTE

The Aircraft Logbook will be used for all AWTS testing. The logbooks are integrated with DIME to update test programs and retrieve data for analysis.

NOTE

AWTS set-up instructions are provided in Addendum 1. AWTS testing instructions are imbedded in the Eclipse Software.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW the applicable TMs listed in paragraph 12.1 and Addendums 1 through 19.

7.1. General:

7.1.1. Test Set Alignment: The TCU-500V alignment is required every 180 days. When

a test program is opened and executed, the ELITE Application Software will notify the user that the “*** System is out of alignment***”. Upon this notification, align the TCU-500V with the alignment tool (930-900-10001-01) per the instructions in Addendum 18.

7.1.2. If failures occur during testing and no faults can be identified with the components or wiring. Utilize Addendum 19 to ensure the test set is working properly.

NOTE

MH-47G and MH-47G-B2 will complete the same steps excepted as noted.

7.2. MH-47G - Complete the following:

NOTE

AWTS testing is required prior to engine installation, prior to the HMA installation and prior to primary or reversionary engine harness replacement as directed by Addendums 4 thru 6. If the aircraft is away from home station and AWTS is not available, troubleshoot IAW TM 1-1520-MH-47G-23&P.

NOTE

For unscheduled maintenance events, the AWTS is authorized for troubleshooting purposes. Utilize Addendums 1 thru 6 as required to troubleshoot unscheduled FADEC Faults.

7.2.1. MH-47G 2.3, New Build and Reconfigure Aircraft: Perform the following at 400hr phase inspection:

7.2.1.1. MH-47G Pre-Phase FADEC Single-Ended Test IAW Addendum 1 and Addendum 2.

7.2.1.2. MH-47G FADEC Double-Ended Test: Complete IAW Addendum 1 and Addendum 3.

7.2.1.3. MH-47G Post-Phase FADEC Single-Ended Test: Complete IAW Addendum 1 and Addendum 2 at the end of the PMI and prior to MTF.

7.2.2. MH-47G-B2: Perform the following logbook update:

7.2.2.1. Select 2408-18 assignment in ACN. Add the following inspections:

7.2.2.1.1. AWTS Pre-Phase FADEC Single-Ended Test, A017.

7.2.2.1.2. AWTS FADEC Double-Ended Test A018.

7.2.2.1.3. AWTS Post-Phase FADEC Single-Ended Test A019.

NOTE

Prior to step "Clean and prepare affected areas" in the Required Condition for Work Card No. 1, complete the Pre-Phase Single-Ended Test.

7.2.3. Perform the following at MSG-3 C2 and C4 Check:

7.2.3.1. AWTS Pre-Phase FADEC Single-Ended Test IAW Addendum 1 and Addendum 2.

7.2.3.2. AWTS FADEC Double-Ended Test: Complete IAW Addendum 1 and Addendum 3.

7.2.3.3. AWTS Post-Phase FADEC Single-Ended Test: Complete IAW Addendum 1 and Addendum 2 at the end of the PMI and prior to MTF.

7.3. MH-60M: Complete the following at PMI:

NOTE

AWTS testing is required prior to engine installation, prior to HMU installation and prior to any engine harness replacement as directed by Addendums 9 thru 14. If the aircraft is away from home station and AWTS is not available, troubleshoot IAW TM 1-1520-MH-60M-23&P.

NOTE

For unscheduled maintenance events, the AWTS is authorized for troubleshooting purposes. Utilize Addendums 1 and 7 thru 14 as required to troubleshoot unscheduled FADEC faults.

7.3.1. MH-60M Pre-Phase FADEC Single-Ended Test: Complete IAW Addendum 1 and Addendum 7.

7.3.2. MH-60M FADEC Double-Ended Test: Complete IAW Addendum 1 and Addendum 8.

7.3.3. MH-60M Post-Phase FADEC Single-Ended Test: Complete IAW Addendum 1 and Addendum 7 at the end of the PMI and prior to MTF.

NOTE

AWTS testing is required prior to HMU installation as directed by Addendum 17. If the aircraft is away from home station and AWTS is not available, troubleshoot IAW TM 1-1520-A/MH-6M-23&P.

NOTE

For unscheduled maintenance events, the AWTS is authorized for troubleshooting purposes. Utilize Addendums 1 and 15 thru 17 as required to troubleshoot unscheduled FADEC faults.

7.4. A/MH-6M: Perform the following at 300hr phase inspection:

7.4.1. A/MH-6M Pre-Phase FADEC Single-Ended Test: Complete IAW Addendum 1 and Addendum 15.

7.4.2. A/MH-6M Pre-Phase FADEC Double-Ended Test: Complete IAW Addendum 1 and Addendum 16.

7.4.3. A/MH-6M Post-Phase FADEC Double-Ended Test: Complete IAW Addendum 1 and Addendum 16.

7.4.4. A/MH-6M Post-Phase FADEC Single-Ended Test: Complete IAW Addendum 1 and Addendum 15 at the end of the PMI and prior to MTF.

8. PROCEDURES/INSTRUCTIONS FOR ASSEMBLIES/COMPONENTS/PARTS IN WORK OR IN STOCK (AT ALL LEVELS INCLUDING WAR RESERVES) – N/A

9. SPECIAL TOOLS AND FIXTURES REQUIRED –

9.1. Primary Assemblies/Components/Parts –

<u>Nomenclature:</u>	<u>P/N:</u>
Automatic Wire Test Set (AWTS)	100000-02
AWTS TCU-500V	97P-002-00001-01
AWTS SM-1024 Point	97P-002-00002-01
Logbook w/ Eclipse ELITE Software (Primary)	1041239
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02
Alignment Tool	930-900-10001-01
Verify 2 Tool	930-900-10003-01
Test Program Set (TPS)	
MH-47G ALL:	
MH-47G FADEC Engine Harness Test	991-000-00554
MH-47G Engine Test	991-000-00555
MH-47G HMA Test	991-000-00556
MH-47G Wire Probe	991-000-00564
MH-47G 2.3:	
MH-47G FADEC Single-Ended Wire Test	991-000-00552
MH-47G FADEC Double-Ended Wire Test	991-000-00553
MH47G-B2/NB/Reconfig:	

MH-47G BLOCK II FADEC Single-Ended Test	991-000-00620
MH-47G BLOCK II FADEC Double-Ended Test	991-000-00621
MH-60M:	
MH-60M FADEC Double-Ended Wire Test	991-000-00407
MH-60M FADEC Single-Ended Wire Test	991-000-00413
MH-60M FADEC Engine Test	991-000-00558
MH-60M FMU Test	991-000-00414
MH-60M Wire Probe	991-000-00568
MH-60M Engine Interconnect Harness	991-000-00313
YT-706 Blue Harness	991-000-00312
YT-706 Green Harness	991-000-00310
YT-706 Yellow Harness	991-000-00311
A/MH-6M:	
FADEC Double-Ended Wire Test	991-000-00217
FADEC Single-Ended Wire Test	991-000-00218
FADEC Flex Test	991-000-00218
FADEC HMU Stand-Alone Test	991-000-00221
FADEC Wire Probe	991-000-00560
Test Adapter Cables:	
ALL:	
TAC-Probe	
MH-47G ALL:	
SOA-TAC-006	SOA-TAC-006
SOA-TAC-007	SOA-TAC-007
ENG-TAC-001	ENG-TAC-001
ENG-TAC-002	ENG-TAC-002
ENG-TAC-003	ENG-TAC-003
ENG-TAC-004	ENG-TAC-004
MH-47G 2.3:	
SOA-TAC-001	SOA-TAC-001
SOA-TAC-002	SOA-TAC-002
SOA-TAC-003	SOA-TAC-003
SOA-TAC-004	SOA-TAC-004
SOA-TAC-005	SOA-TAC-005
SOA-TAC-009	SOA-TAC-009
MH-47G-B2/NB/Reconfig:	
R113193-W1	R113193-W1
R113194-W2	R113194-W2
R113195-W3	R113195-W3
R113196-W4	R113196-W4
R113197-W5	R113197-W5
R113198-W6	R113198-W6
R113199-W7	R113199-W7
MH-60M:	
TAC-02030	625-002-00030
TAC-02031	625-002-00031

TAC-02032	625-002-00032
TAC-02033	625-002-00033
TAC-02034	625-002-00034
TAC-02035	625-002-00035
TAC-02077	625-000-00077
TAC-02078	625-000-00078
TAC-02079	625-000-00079
TAC-02080	625-000-00080
TAC-02081	625-000-00081
TAC-02082	625-000-00082
TAC-02083	625-000-00083
TAC-02084	625-000-00084
TAC-02085	625-000-00085
SHUNT	626-002-00001
SHUNT	626-002-00002
A/MH-6M:	
TAC-02005	625-002-00005-01
TAC-02006	625-002-00006-01
TAC-02007	625-002-00007-01
TAC-02008	625-002-00008-01
TAC-02009	625-002-00009-01
SHUNT-02012	626-002-00012-01

10. SUPPLY/PARTS (REQUISITION/DISPOSITION)–

10.1. As required per TM 1-1520-MH-47G-23&P, TM 1-1520-MH-60M-23&P, TM 1-1520-A/MH-6M-23&P.

11. MAINTENANCE APPLICATION –

11.1. Level of Maintenance - Field at an Aviation Maintenance Company (AMC).

11.2. Estimated Time Required – 2.0 man-hours using 1 person.

12. PUBLICATION REQUIREMENTS –

12.1. References:

12.1.1. DA PAM 738-751.

12.1.2. TM 1-1520-MH-47G-23&P.

12.1.3. TM 1-1520-MH-60M-23&P.

12.1.4. TM 1-1520-A/MH-6M-23&P.

12.1.5. NAVAIR 17-15W-1.

12.1.6. TM 1-2840-265-23&P.

12.1.7. GEK 105159.

12.2. Publication Changes – IETP 1-1520-MH-47G-23&P:

12.2.1. Add Addendums 1 thru 6.

12.2.2. Add Addendum 4 to pre-requisite maintenance before engine installation.

12.2.3. Add Addendum 5 and 6 to pre-requisite maintenance before HMA or Engine Harness installation in Preventive Maintenance – Inspection requirements, Conditional inspections.

12.2.4. Add addendums 18 and 19 for test set alignment and troubleshooting.

12.2.5. TDMC will submit Publication Change Request (PCR) for generation of a new AWTS data module to be posted in Aircraft Systems / FG09- Electrical Systems / Electrical Systems / Maintenance section of the TM-1520-MH-47G-23&P.

12.2.6. TDMC will submit PCR to change DM MH47G-A-00-40-0004-00E-310E-A and MH47G-A-00-40-0001-00A-310R-A and MH47G-A-00-40-0005-00E-310E-A to incorporate inspections listed in section 7.

12.2.7. Add conditional inspection for HMA replacement.

12.3. Publication Changes – IETP 1-1520-MH-60M-23&P:

12.3.1. Add Addendums 1 and 7 thru 14.

12.3.2. Add Addendum 13 to pre-requisite maintenance before engine installation.

12.3.3. Add Addendums 9 thru 12 and 14 to pre-requisite maintenance before FMU or Engine Harness installation in Preventive Maintenance – Inspection requirements, Conditional inspections.

12.3.4. Add addendums 18 and 19 for test set alignment and troubleshooting.

12.3.5. TDMC will submit Publication Change Request (PCR) for generation of a new AWTS data module to be posted in Aircraft Systems / FG09- Electrical Systems / Electrical Systems / Maintenance section of the TM-1520-MH-60M-23&P.

12.3.6. TDMC will submit PCR to change DM MH60M-A-00-D0-0007-00B-310F-A and MH60M-A-00-D0-0006-00A-310F-A (VERIFY) to incorporate inspections listed in section 7.

12.4. Publication Changes – IETP 1-1520-A/MH-6M-23&P:

12.4.1. Add Addendums 1 and 15 thru 17.

12.4.2. Add Addendum 17 to pre-requisite maintenance before HMU in Preventive Maintenance – Inspection requirements, Conditional inspections.

12.4.3. Add addendums 18 and 19 for test set alignment and troubleshooting.

12.4.4. TDMC will submit Publication Change Request (PCR) for generation of a new AWTS data module to be posted in Aircraft Systems / FG09- Electrical Systems / Electrical Systems / Maintenance section of the TM-1520-A/MH-6M-23&P.

12.4.5. TDMC will submit PCR to change DM AH6-A-00-D2-0012-00A-310F-A and AH6-A-00-D2-0010-00A-310F-A to incorporate inspections listed in section 7.

12.5. AWTS Software Change Request Form:

12.5.1. TDMC will incorporate a hyperlink as a note before all AWTS DM to addendum 21. Note will read “If any software issue is found during the operation of AWTS using Eclipse ELITE Software, Submit AWTS Change Request form through the Hydra help desk application”.

12.6. Addendums –

12.6.1. Addendum 1 AWTS Setup.

12.6.2. Addendum 2 MH-47G FADEC Single-Ended Test.

12.6.3. Addendum 3 MH-47G FADEC Double-Ended Test.

12.6.4. Addendum 4 MH-47G Engine Test.

12.6.5. Addendum 5 MH-47G HMA Test.

12.6.6. Addendum 6 MH-47G Engine Harness Test.

12.6.7. Addendum 7 MH-60M FADEC Single-Ended Test.

12.6.8. Addendum 8 MH-60M FADEC Double-Ended Test.

12.6.9. Addendum 9 MH-60M Engine Interconnect Harness Test.

12.6.10. Addendum 10 YT-706 Yellow Harness Test.

- 12.6.11. Addendum 11 YT-706 Blue Harness Test.
- 12.6.12. Addendum 12 YT-706 Green Harness Test.
- 12.6.13. Addendum 13 MH-60M FADEC Engine Test.
- 12.6.14. Addendum 14 MH-60M FMU Test.
- 12.6.15. Addendum 15 A/MH-6M FADEC Single-Ended Test.
- 12.6.16. Addendum 16 A/MH-6M FADEC Double-Ended Test.
- 12.6.17. Addendum 17 A/MH-6M HMU Test.
- 12.6.18. Addendum 18 Alignment Procedures.
- 12.6.19. Addendum 19 Verify 2 Procedures.
- 12.6.20. Addendum 20 AWTs Equipment Description and Data.
- 12.6.21. Addendum 21 AWTs Change Request Form.

13. POINTS OF CONTACT –

13.1. AAMD POCs –

13.1.1. Mission Equipment Branch Chief – CW4 Bruce Silva, (270) 412-5910, Email: bruce.silva@socom.mil

13.1.2. PRIMARY – SSG Zachary Warden, (270) 461-4223, Email: zachary.t.warden.mil@socom.mil

13.1.3. ALTERNATE – Mr. Johnny Hamer, (270) 798-5040, Email: johnny.hamer.ctr@socom.mil

13.2. TAPO Publications – Mr. Marty Moreno, (757) 878-6174 Email: martin.j.moreno.civ@socom.mil

13.3. Troubleshooting Analysis Group (TAG) –

13.3.1. SENIOR - Maintenance Engineer – Phillip Mathis, (270) 412-8618, Email: phillip.mathis1.ctr@socom.mil

13.3.2. PRIMARY – Maintenance Engineer – James Brown, (270) 412-8615, Email: jd.brown1.ctr@socom.mil

13.3.3. ALTERNATE – Maintenance Engineer – Rob Mosier, (270) 412-8614, Email: rob.mosier.ctr@socom.mil

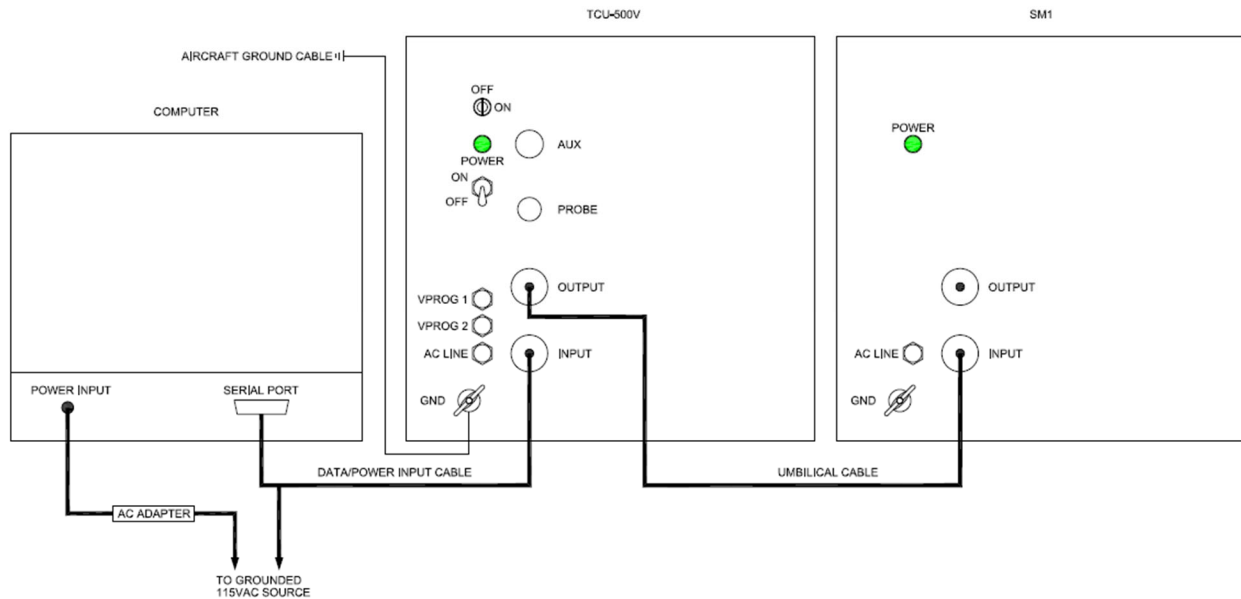
13.3.4. ALTERNATE – Maintenance Engineer – Jake Shelby, (270) 412-8616, Email: jake.d.shelby.ctr@socom.mil

13.3.5. ALTERNATE – Maintenance Engineer – Jerry Drake, (270) 412-8617, Email: jerry.drake2.ctr@socom.mil

13.4. Eclipse Field Service Representative (FSR) – Tony Cole, (636) 723-1653 Ext 408, Email: tcole@eclipse.org

ADDENDUM 1

AWTS Setup



SETUP INSTRUCTIONS

1. Connect the AC Adapter to the computer.
2. Connect the AC Adapter to the wall outlet.
3. Connect Data/Power Input Cable to the serial port of the computer.
4. Connect the TCU Input connection of the Data/Power Input Cable to the Input receptacle of the TCU-500.
5. Connect the 115VAC connection to the wall outlet.
6. Connect the Aircraft Grounding Cable to the grounding point on the TCU-500.
7. Connect the Aircraft Grounding Cable to an aircraft grounding point on the aircraft.
8. Connect the Output connection of the Umbilical Cord to the Output receptacle of the TCU-500.
9. Connect the Input connection of the Umbilical Cord to the Input receptacle of the SM1.
10. Procedure complete.

ADDENDUM 1(Cont.)
LAPTOP (Aircraft Logbook) SETUP INSTRUCTIONS

NOTE

Aircraft Logbooks will automatically update with any new TPS files every 24 hours. If Aircraft Logbook has not been connected to the network for at least 24 hours, TPS files may be out of date.

NOTE

Aircraft Logbooks will automatically sync results logs back to a central repository every 24 hours. If Aircraft Logbook has not been connected to the network for at least 24 hours, result logs may not have been synced with the central repository.

1. Ensure Aircraft Logbook has been connected to the network and powered on for the last 24 hours.
2. Procedure Complete

LAPTOP (STANDALONE) SETUP INSTRUCTIONS

NOTE

Using a CD is preferred to transfer files to Standalone Laptop

NOTE

If Standalone Laptop is used. Follow results upload instructions

1. On a network Laptop open Hydra app
2. Navigate to "AWTS TPS DOWNLOADS" tile
3. Select "DOWNLOAD ALL"
4. Save .zip file to location of your choice (CD preferred)
5. Turn on Standalone Laptop PN: 80P-002-00001-02
6. Navigate to C:\ELITE Files\Test Files
7. Delete any existing TPS files on Standalone Laptop
8. Insert loaded CD into Standalone Laptop
9. Unzip and copy files to C:\ELITE Files\Test Files
10. Procedure Complete

ADDENDUM 1(Cont.)
LAPTOP (STANDALONE) RESULTS UPLOAD INSTRUCTIONS

NOTE

Using a CD is preferred to transfer files from Standalone Laptop

1. Turn on Standalone Laptop PN: 80P-002-00001-02
2. Navigate to C:\ELITE Files\Result Logs
3. Copy all result files to CD
4. Delete old results logs from C:\ELITE Files\Result Logs
5. Insert CD into network connected laptop
6. Navigate to I:\Shared\AAMD\Avionics\AWTS Results
7. Create new folder "xBN_DDMMYY"
8. Transfer files from CD to new folder
9. Email AAMD Avionics NCO after transfer
10. Procedure Complete

ADDENDUM 2
MH-47G FADEC Single-Ended Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
2	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
MH-47G FADEC Single-Ended Wire Test	991-000-00552	2.3	1
MH-47G BLOCK II FADEC Single-Ended Test	991-000-00620	BKII	1
Test Adapter Cable (Single-Ended)	SOA-TAC-001	2.3	1
Test Adapter Cable (Single-Ended)	SOA-TAC-002	2.3	1
Test Adapter Cable (Single-Ended)	R113193-W1	BKII	1
Test Adapter Cable (Single-Ended)	R113194-W2	BKII	1
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

ADDENDUM 2(Cont.)
MH-47G FADEC Single-Ended Test Procedures

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform MH-47G FADEC Single-Ended Test prior to depopulation of component and MTF in preparation for Phase Maintenance Inspection (PMI) (Pre-PMI), MH-47G-B2 C2 or C4 Checks, or after repopulation of FADEC components in aircraft and prior to MTF. (Post-PMI).

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

If performing MH-47G FADEC Single-Ended Test due to an unscheduled maintenance event, all engine and FADEC related components must be installed to evaluate the aircraft side associated to the 13-1 fault entry.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-47G folder in the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI/MSG-3, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

ADDENDUM 2(Cont.)
MH-47G FADEC Single-Ended Test Procedures

3. Double click on the “MH-47G FADEC Single-Ended Test.te” file for Aircraft 2.3 Configuration or double click on the “MH-47G BLOCK II FADEC Single-Ended Test.te” for Aircraft Block II Configuration.
4. Perform all operator instructions until the test is complete.

NOTE

Carefully review the “possible failures” annotated in the AWTS fault report. If an open or short circuit is detected, the failure may exist within the wire harness. If the fault is outside the expected limit, the most likely cause is the component under test. Use of the Multi-Meter is encouraged to verify all component failures.

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled “Tail Number AWTS Results”. Example: 777_AWTS Results”. The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Single-Ended_06-06-2022_Run 1.

5. Did the Single-Ended test pass?

-If YES, go to step 6.

-If NO, troubleshoot/repair IAW TM 1-1520-MH-47G-23&P or TM 1-1500-323-24-1 and then go to step 3.

6. Procedure complete.

ADDENDUM 3
MH-47G FADEC Double-Ended Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
2	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
MH-47G FADEC Double-Ended Wire Test	991-000-00553		1
MH-47G BLOCK II FADEC Double-Ended Test	991-000-00621		1
MH-47G Wire Probe	991-000-00564	2.3/BKII	1
Test Adapter Cable (Double-Ended)	SOA-TAC-001	2.3	1
Test Adapter Cable (Double-Ended)	SOA-TAC-002	2.3	1
Test Adapter Cable (Double-Ended)	SOA-TAC-003	2.3	1
Test Adapter Cable (Double-Ended)	SOA-TAC-004	2.3	1
Test Adapter Cable (Double-Ended)	SOA-TAC-005	2.3	1
Test Adapter Cable (Double-Ended)	SOA-TAC-009	2.3	1
Test Adapter Cable (Double-Ended)	R113193-W1	BKII	1
Test Adapter Cable (Double-Ended)	R113194-W2	BKII	1
Test Adapter Cable (Double-Ended)	R113195-W3	BKII	1
Test Adapter Cable (Double-Ended)	R113196-W4	BKII	1
Test Adapter Cable (Double-Ended)	R113197-W5	BKII	1
Test Adapter Cable (Double-Ended)	R113198-W6	BKII	1
Test Adapter Cable (Double-Ended)	R113199-W7	BKII	1
Test Adapter Cable (Double-Ended)	TAC-Probe	2.3/BKII	1
Toolkit, Electrical Repairer's			1

Addendum 3(Cont.)
MH-47G FADEC Double-Ended Test Procedures

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform MH-47G FADEC Double-Ended Test after depopulation of components during Phase Maintenance Inspection (PMI) or MH-47G-B2 C2 and C4 Checks.

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

If performing the MH-47G FADEC Double-Ended Test due to an unscheduled maintenance event, evaluate the aircraft side associated to the 13-1 fault entry.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-47G folder on the Test Select dropdown menu.

Addendum 3(Cont.)
MH-47G FADEC Double-Ended Test Procedures

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI/MSG-3, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

3. Double click on the "MH-47G FADEC Double-Ended Test.te" file for Aircraft 2.3 Configuration or double click on the "MH-47G BLOCK II FADEC Double-Ended Test.te" for Aircraft Block II Configuration.
4. Perform all operator instructions until test is complete.

NOTE

Carefully review the "possible failures" annotated in the AWTS fault report. If failures occur during PMI, all faults will be placed individually on 13-1 entry with a status of RED X. Failures during an unscheduled event will be placed individually on a 13-1 with a status of Diagonal "/".

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled "Tail Number AWTS Results". Example: 777_AWTS Results". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Double-Ended_06-06-2022_Run 1.

5. Did the double-ended Test pass?
 - If YES, go to step 8.
 - If NO, go to step 6.
6. Double click on the "MH-47G FADEC Wire Probe Test.te" file.
7. Perform all instructions in the test to identify the failure. Repair IAW TM 1-1520-MH-47G-23&P or TM 1-1500-323-24-1 and then go to step 3.
8. Procedure Complete.

Addendum 4
MH-47G FADEC Engine Test Procedures

Required Conditions

None	
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Required Personnel

Quantity	Category
1	Aircraft Electrician or Aircraft Powerplant Repairer

Required Technical Information

Publication	Category
TM 1-2840-265-23&P	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
MH-47G Engine Test	991-000-00555		1
Test Adapter Cable	SOA-TAC-007		1
Toolkit, Electrical Repairer's Toolkit, Powerplant Repairer's			1

WARNING

Do not touch any engine interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any engine electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 4(Cont.)
MH-47G FADEC Engine Test Procedures

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-47G folder in the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

3. Double click on the "MH-47G FADEC Engine Test.te" file.
4. Perform all operator instructions until the test is complete.

NOTE

Carefully review the "possible failures" annotated in the AWTS fault report. If an open or short circuit is detected, the failure may exist within the engine harnesses. If the fault is outside the expected limit, the most likely cause is the component under test. Use of the Multi-Meter is encouraged to verify all component failures.

NOTE

The user will be asked in the Test Program to save the result log. Create a Desk Top folder labeled "Tail Number AWTS Results". Example: Engine Test AWTS Results". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 04PGA0000_ Engine Test_06-06-2022_Run 1

5. Did the Engine Test pass?

-If YES, go to step 6.

-If NO, troubleshoot/repair IAW TM 1-1520-MH-47G-23&P or TM 1-2840-265-23&P and then go to step 3.

6. Procedure Complete.

Addendum 5
MH-47G FADEC HMA Test Procedures

Required Conditions

None	
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Required Personnel

Quantity	Category
1	Aircraft Electrician or Engine Mechanic

Required Technical Information

Publication	Category
TM 1-2840-265-23&P	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
MH-47G HMA Test	991-000-00556		1
Test Adapter Cable	SOA-TAC-006		1
Toolkit, Electrical Repairer's Toolkit, Powerplant Repairer's			1

WARNING

Do not touch HMA Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 5(Cont.)
MH-47G FADEC HMA Test Procedures

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

AWTS testing is not required for new HMA if DA Form 2410 states TSO: 0hrs.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-47G folder in the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

3. Double click on the "MH-47G FADEC HMA.te" file.
4. Perform all operator instructions until the test is complete.

NOTE

The user will be asked in the Test Program to save the result log. Create a Desk Top folder labeled "HMA Serial Number_AWTS Test_Date_Run #". Example: 012345_HMA Test_06-06-2022_Run 1". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 012345_HMA Test_06-06-2022_Run 1.

NOTE

If a HMA fails test, print the HMA test report and attach it to the HMA DD Form 1577 or DD Form 1577-1, Unserviceable (green) tag.

5. Did the HMA Test pass?
 - If YES, go to step 6.
 - If NO, replace HMA IAW TM 1-2840-265-23&P and then go to step 3.
6. Procedure Complete.

Addendum 6
MH-47G FADEC Engine Harness Test Procedures

Required Conditions

None	
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Required Personnel

Quantity	Category
1	Aircraft Electrician or Engine Mechanic

Required Technical Information

Publication	Category
TM 1-2840-265-23&P	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
MH-47G FADEC Engine Harness Test	991-000-00554		1
Test Adapter Cable (Engine Harness)	ENG-TAC-001		1
Test Adapter Cable (Engine Harness)	ENG-TAC-002		1
Test Adapter Cable (Engine Harness)	ENG-TAC-003		1
Test Adapter Cable (Engine Harness)	ENG-TAC-004		1
Toolkit, Electrical Repairer's Toolkit, Powerplant Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

Addendum 6(Cont.)
MH-47G FADEC Engine Harness Test Procedures

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-47G folder in the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

3. Double click on the "MH-47G Engine Harness Test.te" file.
4. Perform all operator instructions until the test is complete.

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled "Tail Number AWTS Results". Example: 777_AWTS Results". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Side1_Primary_Harness_06-06-2022_Run 1.

5. Did the Engine Harness test pass?
 - If YES, go to step 6.
 - If NO, replace IAW TM 1-2840-265-23&P and then go to step 3.
6. Procedure Complete.

Addendum 7
MH-60M FADEC Single-Ended Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
2	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
MH-60M FADEC Single-Ended Wire Test	991-000-00413		1
Test Adapter Cable (Single-Ended)	625-000-00084		1
Test Adapter Cable (Single-Ended)	625-000-00085		1
Test Adapter Cable (Single-Ended)	625-002-00030		1
Test Adapter Cable (Single-Ended)	625-002-00031		1
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

Addendum 7(Cont.)
MH-60M FADEC Single-Ended Test Procedures

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform MH-60M FADEC Single-Ended prior to depopulation of component and MTF in preparation for Phase Maintenance Inspection (PMI) (Pre-PMI), or after repopulation of FADEC components in aircraft and prior to MTF. (Post-PMI).

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

If performing MH-60M FADEC Single-Ended Test due to an unscheduled maintenance event, all engine and FADEC related components must be installed to evaluate the aircraft side associated to the 13-1 fault entry.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder in the Test Select dropdown menu.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

3. Double click on the "MH-60M FADEC Single-Ended Test.te" file.
4. Perform all operator instructions until the test is complete.

NOTE

Carefully review the "possible failures" annotated in the AWTS fault report. If an open or short circuit is detected, the failure may exist within the wire harness. If the fault is outside the expected limit, the most likely cause is the component under test. Use of the Multi-Meter is encouraged to verify all component failures.

Addendum 7(Cont.)
MH-60M FADEC Single-Ended Test Procedures

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled "Tail Number AWTS Results". Example: 777_AWTS Results". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Single-Ended_06-06-2022_Run 1.

5. Did the Single-Ended test pass?

- If YES, go to step 6.

- If NO, troubleshoot/repair IAW TM 1-1520-MH-60M-23&P or TM 1-1500-323-24-1 and then go to step 3.

6. Procedure Complete.

Addendum 8
MH-60M FADEC Double-Ended Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
2	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
MH-60M FADEC Double-Ended Wire Test	991-000-00407		1
MH-60M FADEC Wire Probe Test	991-000-00568		1
Test Adapter Cable (Double-Ended)	625-002-00030		1
Test Adapter Cable (Double-Ended)	625-002-00031		1
Test Adapter Cable (Double-Ended)	625-002-00032		1
Test Adapter Cable (Double-Ended)	625-002-00033		1
Test Adapter Cable (Double-Ended)	625-002-00034		1
Test Adapter Cable (Double-Ended)	TAC-Probe		1
Shunt	626-002-00001		
Shunt	626-002-00002		
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

Addendum 8(Cont.)
MH-60M FADEC Double-Ended Test Procedures

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform MH-60MFADEC Double-Ended Test after depopulation of components during Phase Maintenance Inspection (PMI).

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

If performing the MH-60M FADEC Double-Ended Test due to an unscheduled maintenance event, evaluate the aircraft side associated to the 13-1 fault entry.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder on the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

Addendum 8(Cont.)
MH-60M FADEC Double-Ended Test Procedures

3. Double click on the “MH-60M FADEC Double-Ended Wire Test.te” file.
4. Perform all operator instructions until test is complete.

NOTE

Carefully review the “possible failures” annotated in the AWTS fault report. If failures occur during PMI, all faults will be placed individually on 13-1 entry with a status of RED X. Failures during an unscheduled event will be placed individually on a 13-1 with a status of Diagonal “/”.

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled “Tail Number AWTS Results”. Example: 777_AWTS Results”. The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Double-Ended_06-06-2022_Run 1.

5. Did the double-ended Test pass?
 - If YES, go to step 8.
 - If NO, go to step 6.
6. Double click on the “MH-60M FADEC Wire Probe Test.te” file.
7. Perform all instructions in the test to identify the failure. Repair IAW TM 1-1520-MH-60M-23&P or TM 1-1500-323-24-1 and then go to step 3.
8. Procedure Complete.

Addendum 9

MH-60M Engine Interconnect Harness Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
1	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
MH-60M Engine Interconnect Harness	991-000-00313		1
Test Adapter Cable (Double-Ended)	625-000-00083		1
Test Adapter Cable (Double-Ended)	625-000-00084		1
Test Adapter Cable (Double-Ended)	625-000-00085		1
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

Addendum 9(Cont.)
MH-60M Engine Interconnect Harness Test Procedures

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform MH-60M Engine Interconnect Harness Test after depopulation of components during Phase Maintenance Inspection (PMI).

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

If performing the MH-60M Engine Interconnect Harness Test due to an unscheduled maintenance event, evaluate the aircraft side associated to the 13-1 fault entry.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder on the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

3. Double click on the "MH-60M Engine Interconnect Harness.te" file.
4. Perform all operator instructions until test is complete.

Addendum 9(Cont.)
MH-60M Engine Interconnect Harness Test Procedures

NOTE

Carefully review the “possible failures” annotated in the AWTS fault report. If failures occur during PMI, all faults will be placed individually on 13-1 entry with a status of RED X. Failures during an unscheduled event will be placed individually on a 13-1 with a status of Diagonal “/”.

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled “Tail Number AWTS Results”. Example: 777_AWTS Results”. The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Double-Ended_06-06-2022_Run 1.

5. Did the MH-60M Engine Interconnect Harness Test pass?

-If YES, go to step 6.

-If NO, replace IAW TM 1-1520-MH-60M-23&P and then go to step 3.

6. Procedure Complete.

Addendum 10
YT-706 Yellow Harness Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
1	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclypse ELITE Software (Primary)	1041239		1
Laptop w/ Eclypse ELITE Software (Backup)	80P-002-00001-02		1
YT706 Yellow Harness	991-000-00311		1
Test Adapter Cable (Double-Ended)	625-000-00078		1
Test Adapter Cable (Double-Ended)	625-000-00079		1
Test Adapter Cable (Double-Ended)	625-000-00080		1
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 10(Cont.)
YT-706 Yellow Harness Test Procedures

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform YT-706 Yellow Harness Test after depopulation of components during Phase Maintenance Inspection (PMI).

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

If performing the YT-706 Yellow Harness Test due to an unscheduled maintenance event, evaluate the aircraft side associated to the 13-1 fault entry.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder on the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

3. Double click on the "YT706 Yellow Harness.te" file.
4. Perform all operator instructions until test is complete.

NOTE

Carefully review the "possible failures" annotated in the AWTS fault report. If failures occur during PMI, all faults will be placed individually on 13-1 entry with a status of RED X. Failures during an unscheduled event will be placed individually on a 13-1 with a status of Diagonal "/".

Addendum 10(Cont.)
YT-706 Yellow Harness Test Procedures

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled "Tail Number AWTS Results". Example: 777_AWTS Results". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Double-Ended_06-06-2022_Run 1.

5. Did the YT706 Yellow Harness Test pass?

-If YES, go to step 6.

-If NO, replace IAW TM 1-1520-MH-60M-23&P and then go to step 3.

6. Procedure Complete.

Addendum 11
YT-706 Blue Harness Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
1	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
YT706 Blue Harness	991-000-00312		1
Test Adapter Cable (Double-Ended)	625-000-00080		1
Test Adapter Cable (Double-Ended)	625-000-00081		1
Test Adapter Cable (Double-Ended)	625-000-00082		
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 11(Cont.)
YT-706 Blue Harness Test Procedures

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform YT-706 Blue Harness Test after depopulation of components during Phase Maintenance Inspection (PMI).

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

If performing the YT-706 Blue Harness Test due to an unscheduled maintenance event, evaluate the aircraft side associated to the 13-1 fault entry.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder on the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

3. Double click on the "YT706 Blue Harness.te" file.
4. Perform all operator instructions until test is complete.

NOTE

Carefully review the "possible failures" annotated in the AWTS fault report. If failures occur during PMI, all faults will be placed individually on 13-1 entry with a status of RED X. Failures during an unscheduled event will be placed individually on a 13-1 with a status of Diagonal "/".

Addendum 11(Cont.)
YT-706 Blue Harness Test Procedures

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled "Tail Number AWTS Results". Example: 777_AWTS Results". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Double-Ended_06-06-2022_Run 1.

5. Did the YT706 Blue Harness Test pass?

-If YES, go to step 6.

-If NO, replace IAW TM 1-1520-MH-60M-23&P and then go to step 3.

6. Procedure Complete.

Addendum 12

YT-706 Green Harness Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
1	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
YT706 Green Harness	991-000-00310		1
Test Adapter Cable (Double-Ended)	625-000-00077		1
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 12(Cont.)
YT-706 Green Harness Test Procedures

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform YT-706 Green Harness Test after depopulation of components during Phase Maintenance Inspection (PMI).

NOTE

If performing the YT-706 Green Harness Test due to an unscheduled maintenance event, evaluate the aircraft side associated to the 13-1 fault entry.

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder on the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

3. Double click on the "YT706 Green Harness.te" file.
4. Perform all operator instructions until test is complete.

NOTE

Carefully review the "possible failures" annotated in the AWTS fault report. If failures occur during PMI, all faults will be placed individually on 13-1 entry with a status of RED X. Failures during an unscheduled event will be placed individually on a 13-1 with a status of Diagonal "/".

Addendum 12(Cont.)
YT-706 Green Harness Test Procedures

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled "Tail Number AWTS Results". Example: 777_AWTS Results". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Double-Ended_06-06-2022_Run 1.

5. Did the YT706 Green Harness Test pass?

-If YES, go to step 6.

-If NO, replace IAW TM 1-1520-MH-60M-23&P and then go to step 3.

6. Procedure Complete.

Addendum 13
MH-60M FADEC Engine Test Procedures

Required Conditions

None	
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Required Personnel

Quantity	Category
1	Aircraft Electrician or Aircraft Powerplant Repairer

Required Technical Information

Publication	Category
GEK 105159	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclypse ELITE Software (Primary)	1041239		1
Laptop w/ Eclypse ELITE Software (Backup)	80P-002-00001-02		1
MH-60M FADEC Engine Test	991-000-00558		1
Test Adapter Cable	625-000-00077		1
Test Adapter Cable	625-000-00078		
Test Adapter Cable	625-000-00081		
Toolkit, Electrical Repairer's Toolkit, Powerplant Repairer's			1

WARNING

Do not touch any Engine interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any Engine electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 13(Cont.)
MH-60M FADEC Engine Test Procedures

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder in the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

3. Double click on the "MH-60M FADEC Engine Test.te" file.
4. Perform all operator instructions until the test is complete.

NOTE

Carefully review the "possible failures" annotated in the AWTS fault report. If an open or short circuit is detected, the failure may exist within the engine harnesses. If the fault is outside the expected limit, the most likely cause is the component under test. Use of the Multi-Meter is encouraged to verify all component failures.

NOTE

The user will be asked in the Test Program to save the result log. Create a Desk Top folder labeled "Tail Number AWTS Results". Example: Engine Test AWTS Results". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 04PGA0000_ Engine Test_06-06-2022_Run 1.

5. Did the Engine Test pass?

-If YES, go to step 6.

-If NO, troubleshoot/repair IAW TM 1-1520-MH-60M-23&P or GEK 105159 and then go to step 3.

6. Procedure Complete.

Addendum 14
MH-60M FMU Test Procedures

Required Conditions

None	

Required Personnel

Quantity	Category
1	Aircraft Electrician or Engine Mechanic

Required Technical Information

Publication	Category
GEK 105159	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclypse ELITE Software (Primary)	1041239		1
Laptop w/ Eclypse ELITE Software (Backup)	80P-002-00001-02		1
MH-60M FMU Test	991-000-00414		1
Test Adapter Cable	625-002-00035		1
Toolkit, Electrical Repairer's Toolkit, Powerplant Repairer's			1

WARNING

Do not touch HMA Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 14(Cont.)
MH-60M FMU Test Procedures

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder in the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

3. Double click on the "MH-60M FMU Test.te" file.
4. Perform all operator instructions until the test is complete.

NOTE

The user will be asked in the Test Program to save the result log. Create a Desk Top folder labeled "FMU Serial Number_AWTS Test_Date_Run #". Example: 012345_FMU Test_06-06-2022_Run 1". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 012345_FMU Test_06-06-2022_Run 1.

NOTE

If a FMU fails test, print the FMU test report and attach it to the FMU DD Form 1577 or DD Form 1577-1, Unserviceable (green) tag.

5. Did the MH-60M FMU Test pass?
 - If YES, go to step 6.
 - If NO, replace FMU IAW GEK 105159 and then go to step 3.
6. Procedure Complete.

Addendum 15
A/MH-6M FADEC Single-Ended Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
2	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
FADEC Single-Ended Test	991-000-00218		1
FADEC Flex Test	991-000-00218		1
Test Adapter Cable (Single-Ended)	625-002-00005-01		1
Test Adapter Cable (Single-Ended)	625-002-00006-01		1
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 15(Cont.)
A/MH-6M FADEC Single-Ended Test Procedures

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform MH-6M FADEC Single-Ended Test prior to depopulation of FADEC components and MTF in preparation for Phase Maintenance Inspection (Pre-PMI), or after repopulation of FADEC components in aircraft and prior to MTF. (Post-PMI).

NOTE

If performing MH-6M FADEC Single-Ended Test due to an unscheduled maintenance event, all engine and FADEC related components must be installed to evaluate the aircraft side associated to the 13-1 fault entry.

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-6M folder in the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

3. Double click on the "MH-6M FADEC Single-Ended Test.te" file.
4. Perform all operator instructions until the test is complete.

Addendum 15(Cont.)
A/MH-6M FADEC Single-Ended Test Procedures

NOTE

Carefully review the “possible failures” annotated in the AWTS fault report. If an open or short circuit is detected, the failure may exist within the wire harness. If the fault is outside the expected limit, the most likely cause is the component under test. Use of the Multi-Meter is encouraged to verify all component failures.

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled “Tail Number AWTS Results”. Example: 777_AWTS Results”. The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Single-Ended_06-06-2022_Run 1.

5. Did the Single-Ended test pass?

-If YES, go to step 7.

-If NO, return to step 3 and choose “Flex”. Perform all operator instructions until the test is complete. Go to step 6.

6. Did the Single-Ended test pass?

-If YES, go to step 7.

-If NO, troubleshoot/repair IAW TM 1-1520-A/MH-6M-23&P or TM 1-1500-323-24-1 and then go to step 3.

7. Procedure complete.

Addendum 16
A/MH-6M FADEC Double-Ended Test Procedures

Required Conditions

Electrical Power Removed	
Battery Disconnected	

Required Personnel

Quantity	Category
2	Aircraft Electrician

Required Technical Information

Publication	Category
TM 1-1500-323-24-1	External Publication

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclipse ELITE Software (Primary)	1041239		1
Laptop w/ Eclipse ELITE Software (Backup)	80P-002-00001-02		1
FADEC Double-Ended Wire Test	991-000-00217		1
FADEC Wire Probe Test	991-000-00560		1
Test Adapter Cable (Double-Ended)	625-002-00005-01		1
Test Adapter Cable (Double-Ended)	625-002-00006-01		1
Test Adapter Cable (Double-Ended)	625-002-00007-01		1
Test Adapter Cable (Double-Ended)	625-002-00008-01		1
Test Adapter Cable (Double-Ended)	TAC-Probe		1
Shunt	626-002-00012-01		
Toolkit, Electrical Repairer's			1

WARNING

Do not touch any FADEC interface harnesses or Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

Addendum 16(Cont.)
A/MH-6M FADEC Double-Ended Test Procedures

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

NOTE

Do not conduct the AWTS testing if the aircraft has been subjected to heavy rain or an aircraft wash within the last seven calendar days. Failure to comply can result in erroneous test readings and wire failures.

NOTE

Perform MH-6M FADEC Double-Ended Test after depopulation of FADEC components, after Single Ended test in Phase Maintenance Inspection (Pre-PMI). Perform MH-6M FADEC Double-Ended Test at the end of phase, prior to repopulation of FADEC components and Post Phase Single Ended Phase Maintenance Inspection (Post-PMI).

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

NOTE

If performing the MH-6M FADEC Double-Ended Test due to an unscheduled maintenance event, evaluate the aircraft side associated to the 13-1 fault entry.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-60M folder on the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

NOTE

If testing is performed during PMI, both sides must be completed.

NOTE

If the test is conducted for unscheduled maintenance, test the side associated to the 13-1 fault entry.

3. Double click on the "MH-6M FADEC Double-Ended Wire Test.te" file.

Addendum 16(Cont.)
A/MH-6M FADEC Double-Ended Test Procedures

4. Perform all operator instructions until test is complete.

NOTE

Carefully review the “possible failures” annotated in the AWTS fault report. If failures occur during PMI, all faults will be placed individually on 13-1 entry with a status of RED X. Failures during an unscheduled event will be placed individually on a 13-1 with a status of Diagonal “/”.

NOTE

The user will be asked in the Test Program to save the result log. Create a desktop folder labeled “Tail Number AWTS Results”. Example: 777_AWTS Results”. The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 777_Double-Ended_06-06-2022_Run 1.

5. Did the double-ended Test pass?

-If YES, go to step 8.

-If NO, go to step 6.

6. Double click on the “MH-6M FADEC Wire Probe Test.te” file.
7. Perform all instructions in the test to identify the failure. Repair IAW TM 1-1520-A/MH-6M-23&P or TM 1-1500-323-24-1 and then go to step 3.
8. Procedure Complete.

Addendum 17
A/MH-6M HMU Test Procedures

Required Conditions

None	
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Required Personnel

Quantity	Category
1	Aircraft Electrician or Engine Mechanic

Required Technical Information

Publication	Category
None	

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
AWTS SM-1024 Point	97P-002-00002-01		1
Logbook w/ Eclypse ELITE Software (Primary)	1041239		1
Laptop w/ Eclypse ELITE Software (Backup)	80P-002-00001-02		1
FADEC HMU Stand-Alone Test	991-000-00221		1
Test Adapter Cable	625-002-00009-01		1
Toolkit, Electrical Repairer's Toolkit, Powerplant Repairer's			1

WARNING

Do not touch HMA Test Adapter Cables (TACs) during testing unless directed by applicable step in the Test Program. High Voltage is applied during testing and poses an electrical shock hazard.

WARNING

Do not conduct the AWTS testing if the aircraft fuel cells are open and have not been purged.

NOTE

Unless otherwise stated, all maintenance tasks will be performed IAW applicable Technical Manuals (TMs), and Instructions displayed on the laptop while operating the selected Test program.

NOTE

Do not disturb any FADEC electrical interface until specifically directed by the applicable step in the Test Program. Failure to do so can result in erroneous test failures.

Addendum 17(Cont.)
A/MH-6M HMU Test Procedures

NOTE

All faults found during scheduled maintenance will be placed individually on 13-1 entries with a status of "RED X" and corrected prior to MTF. Failures during any unscheduled AWTS test will be placed individually on 13-1 entries with WUC 09X01 and the appropriate status symbol as prescribed in DA PAM 738-751.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclipse ELITE for Operator program and select the MH-6M folder in the Test Select dropdown menu.

NOTE

TAC Verification shall be executed on the first test of the day.

3. Double click on the "MH-6M FADEC HMU Stand-Alone.te" file.
4. Perform all operator instructions until the test is complete.

NOTE

The user will be asked in the Test Program to save the result log. Create a Desk Top folder labeled "HMU Serial Number_AWTS Test_Date_Run #". Example: 012345_HMU Test_06-06-2022_Run 1". The naming convention of the test result file should include Tail Number, Aircraft Side, Date, Test Type, and Run Number. Example: 012345_HMU Test_06-06-2022_Run 1.

NOTE

If a HMU fails test, print the HMU test report and attach it to the HMU DD Form 1577 or DD Form 1577-1, Unserviceable (green) tag.

5. Did the MH-6M HMU Test pass?
 - If YES, go to step 6.
 - If NO, replace HMU IAW TM 1-1520-A/MH-6M-23&P and then go to step 3.
6. Procedure Complete.

Addendum 18

Alignment Procedures

Required Conditions

None	
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Required Personnel

Quantity	Category
1	Aircraft Electrician

Required Technical Information

Publication	Category
None	

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
Logbook w/ Eclypse ELITE Software (Primary)	1041239		1
Laptop w/ Eclypse ELITE Software (Backup)	80P-002-00001-02		1
Alignment Tool, Electrical	930-900-10001-01		1
Multimeter	FLUKE-287 or equivalent		1

NOTE

Ensure the Alignment Tool is within the calibrated date listed on the calibration tag.

NOTE

If the technician is not utilizing the recommended multimeter, ensure the used multimeter is able to display 4 digits to the right of the decimal.

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclypse ELITE for Operator program and select the Alignment option in the Tools dropdown menu.
3. Perform all operator instructions until the test is complete.
4. Did the Alignment test pass?
 - If YES, go to step 5.
 - If NO, contact Eclypse FSR.
5. Procedure Complete.

Addendum 19
Verify 2 Procedures

Required Conditions

None	
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Required Personnel

Quantity	Category
1	Aircraft Electrician

Required Technical Information

Publication	Category
None	

Required Support Equipment

Name	P/N	References	Quantity
AWTS TCU-500V	97P-002-00001-01		1
Logbook w/ Eclypse ELITE Software (Primary)	1041239		1
Laptop w/ Eclypse ELITE Software (Backup)	80P-002-00001-02		1
Verify 2 Tool	930-900-10003-01		1

1. Perform the test set hook-up instruction IAW Addendum 1.
2. On the logbook/laptop, open the Eclypse ELITE for Operator program and select the Self-Test option in the Tools dropdown menu.
3. Perform all operator instructions until the test is complete.
4. Did the Self-Test pass?
 - If YES, go to step 5.
 - If NO, contact Eclypse FSR.
5. Procedure Complete.

Addendum 20

AWTS Equipment Description and Data

System Description

The Automatic Wire Test Set (AWTS) is an automated test equipment that aids wiring diagnostics of electrical and electronic devices. The Test Control Unit (TCU) uses resistance measurements, capacitance measurements, DC voltage measurements, continuity, and isolation tests. The AWTS Laptop CPU, hereafter referred to as CPU, controls the AWTS. Most of the hardware for a test is contained in the TCU. The 128-pin connector on the TCU front panel provides 128 energizable test points. Switch Modules (SM) can be connected in sequence or daisy chained to the TCU to provide an additional test point.

Test Control Unit (TCU)

The 500V AWTS TCU (Figure 1) is connected to the CPU and communicates with it through the AWTS Data/Power Input Cable Assembly. The TCU connects to a SM through the Umbilical Cable Assembly. The TCU takes measurements using the Measurement Circuit Card Assembly (CCA) and 500V Stimulus CCA. A key switch on the Rear Panel Assembly limits the TCU measurement voltage to 28 VDC when using current stimulus or 10 VDC when using voltage stimulus. The TCU comes with a VPROG/Steering Module Assembly that is used to energize the buses on the two Dual Bus SMT RAX Matrix CCAs from 0 V to 40VDC. A SMT Switch Matrix CCA and two Dual Bus SMT RAX Matrix CCAs in the TCU are used to energize and/or test the 128 points on the J1 connector. The CCAs in the TCU are connected to a backplane located on the inside rear of the unit. The TCU is enclosed in a case with two covers that are located in the front and the rear. An Electrical Alignment Tool, Verify 2 Tool, an Extraction Tool to remove CCAs, and an Electrical Probe are included with the TCU.



Figure 1

Addendum 20 AWTS Equipment Description and Data (Cont)

Switch Module (SM)

The AWTS 1024 Point SM (Figure 2) is connected to a TCU and/or another SM through an Umbilical Cable. The SM has 128 points that can be both energized and used for measurements. It also has an additional 896 test points used solely for measurements. Each 1024 Point SM has eight SMT Switch Matrix CCAs and two Dual Bus SMT RAX CCAs. The SM I/O CCA receives information through the Umbilical Cable. A backplane connects the RAX and Switch CCAs to the I/O CCA. A total of 4 SM's can be connected together if the system/UUT requires additional test points.



Figure 2

Test Adapter Cables (TACs)

TACs (Figure 3) are specifically designed for each system or Unit Under Test (UUT). TACs are used as an interface between the TCU or SM, and the System/UUT.



Figure 3

Addendum 20

AWTS Equipment Description and Data (Cont)

Alignment Tool

The Alignment Tool (Figure 4) provides a calibrated reference during the alignment process to ensure accuracy of the internal measurement device and power supplies. It requires annual calibration which can be done through local TMDE.



Figure 4

Verify 2 Tool

The Verify 2 Tool (Figure 5) is used as a maintenance/ diagnostic device for the TCU and the SM. This tool provides an electrical loop back to validate the internal interface assembly wiring and is also used as a physical handle during removal/ replacement procedure of the same interface assemblies.



Figure 5

Addendum 20 AWTS Equipment Description and Data (Cont)

Eclipse Language Integrated Test Environment

The Eclipse Language Integrated Test Environment (ELITE) is an application software that controls the TCU. It interprets the Test Program Instructions (TPI) and commands the TCU to perform the operation. Through the TPI, user developed test protocols can be created and managed. Within the 160th, a Certification Test Protocol has been developed and is being used for all test programs.

Once the ELITE application has been launched, the user interface window will open (Figure 6).

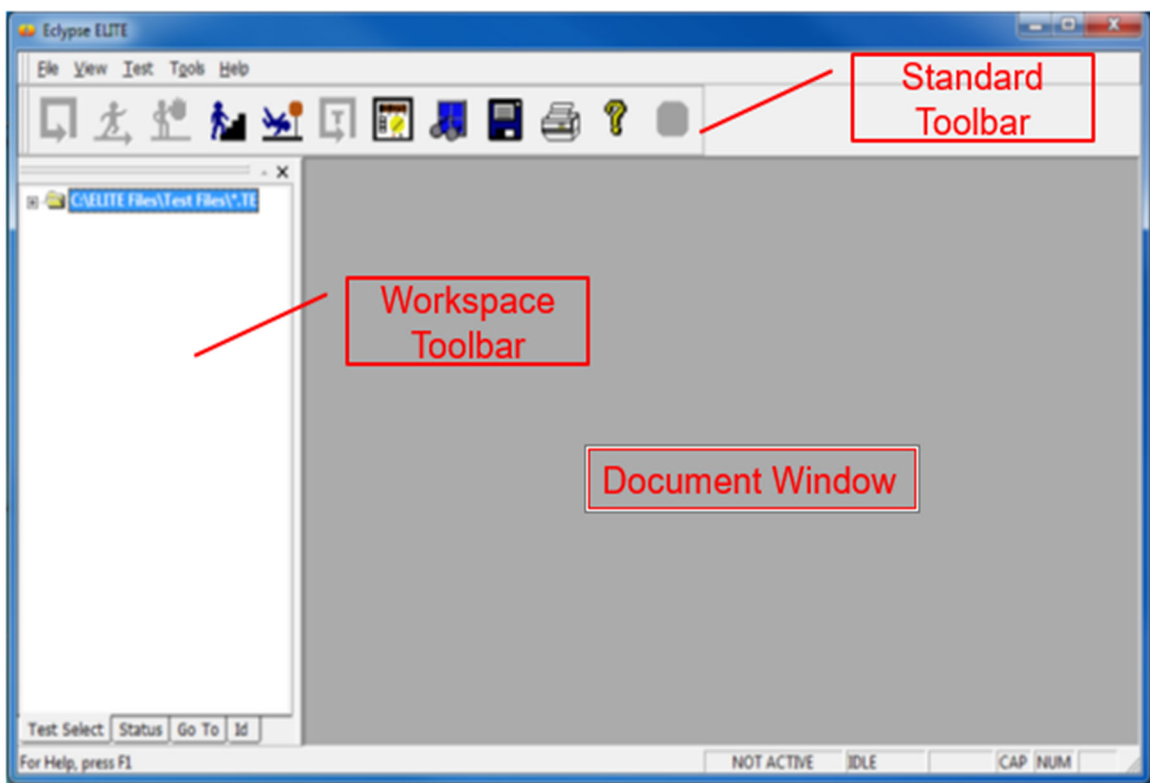


Figure 6

There are four sections in the user interface:

- Main Menu Bar.
- Standard Toolbar.
- Workspace Toolbar.
- Document Window.

The File Tab in the Main Menu allows the operator to Open RTF Results File, Open or Close a Test program, and Print or Save a Results File.

Addendum 20 AWTS Equipment Description and Data (Cont)

The View tab allows the operator to reconfigure the workspace, open a Watch Window, or Update the Test Select tab in the Workspace Toolbar. The Test tab allows the operator to start a Test Program, Pause the test, stop on first failure, or Rerun Last Test Program. The Tools Tab allows the operator to control Manual Mode, display a Multimeter, perform an Alignment, or execute a Self-Test. The Help tab provides information regarding the ELITE application. Once a Test Program has been executed and has been completed, a fault report will display in the Document Window. An example is provided in Figure 7.

```
;Start 2022-11-30T08:06:11
***No Hardware Detected!! Running in Demo mode.***
***System is out of alignment.***
Synthetic Instrument SI006 CTP LowOhm Version 1.00.009 Eclipse International
*****
*                                     *
*          1604h SOAR                 *
*                                     *
*          MH-47G FADEC SINGLE-ENDED TEST PROGRAM
*                                     *
*                                     *
*          TPS Part Number: 991-000-00552
*          Test Version: 3.01.003
*          TCU Temp: 24C (DEMO)
*          PID: JB123456
*          Aircraft ID: 123
*          Purpose of Test: Post-Phase
*          Type of Test: RunAllTests
*          Engine Tested: No. 1
*          Comment: None
*                                     *
*                                     *
*          ----- REQUIRED TESTS -----
*                                     *
*          SQA-TAC-001
*          - Required Tests.....PASSED
*          - Continuity/Diode/Isolation.....UNTESTED
*                                     *
*          SQA-TAC-002
*          - Required Tests.....PASSED
*          - Continuity/Isolation.....UNTESTED
*                                     *
*          ----- UUT TESTS -----
*                                     *
*          PRIMARY HARNESS SENSOR TEST IN PROGRESS
*          - NR% R2 Potentiometer Test PASSED
*          Metering Valve Position Sensor detected as Non-Contact type.
*          PRIMARY HARNESS SENSOR TEST PASSED!
*          REVERSIONARY HARNESS SENSOR TEST IN PROGRESS
*          PLA Position Sensor detected as Non-Contact type.
*          Performing PLA SCAN. Please Wait...
*          PLA Scan (Max-Min) = 1.64 deg
*          View PLA Scan Plot.
*          PLAScan Testing PASSED!
*          REVERSIONARY HARNESS SENSOR TEST PASSED!
*          *****
*          MH-47G 123 FADEC SINGLE-ENDED TEST FINISHED
*          --- Demo Passed ---
*          NO FAILURES DETECTED
*          *****
```

Figure 7

Addendum 20 AWTS Equipment Description and Data (Cont)

Only the TCU and SM1 are currently used with all official programs. If the SM2 is used instead of the SM1 (Figure 11), the program will fail all tests.



Figure 11

Each failure note will display relevant information to aide in correcting the failure. Relevant data include:

- The From and To pathway.
- The type of Test.
- The Expected value (maximum limit).
- The Measured value.

Continuity failures (Figure 12) are high series resistance in the wire paths that can be caused by contamination or debris in the pin/socket mating connection or oxidation in the wire.

Addendum 20 AWTS Equipment Description and Data (Cont)

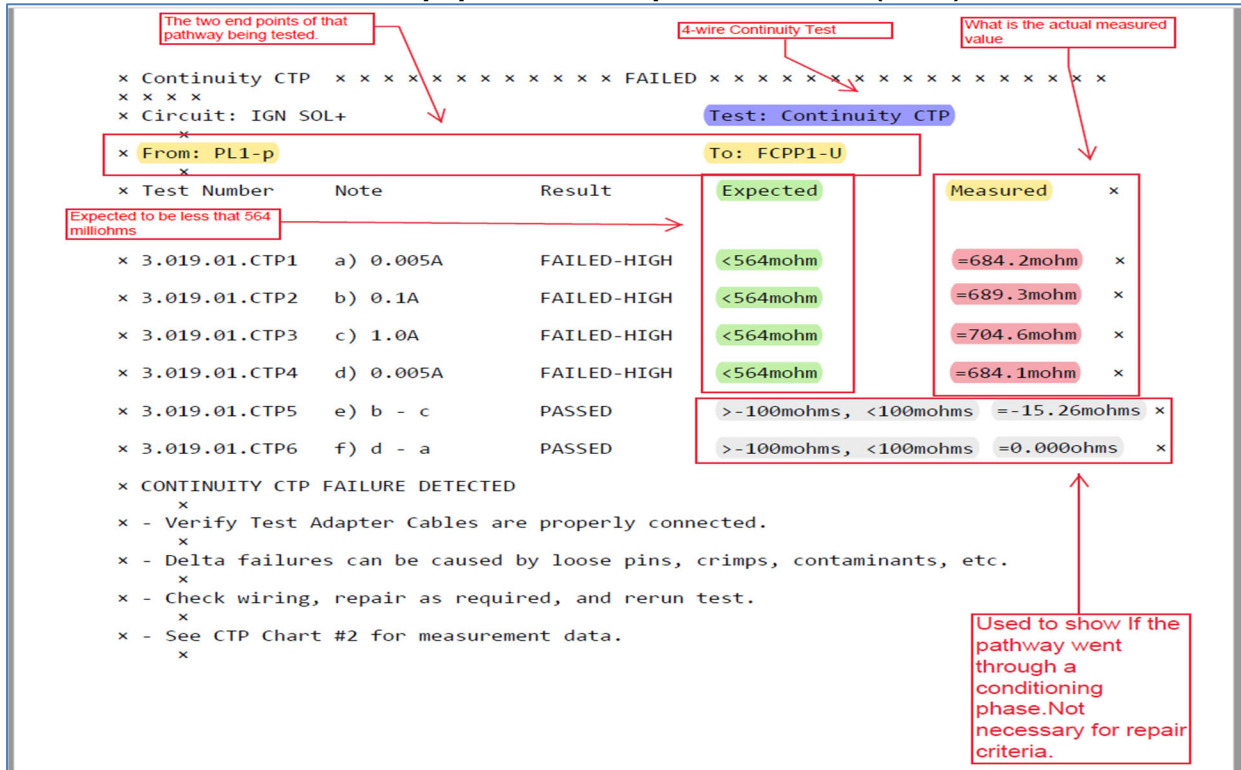


Figure 12

Isolation failures (Figure 13) are short circuits between the wire under test and all other wires. The TCU will internally tie all wire paths together, except for the wire path under test, and measure the leakage current. The term used for shorting all circuits together is called “Bulked”. Based upon Ohm’s Law, the test set will calculate an isolation resistance. The required isolation resistance for all circuits tested is greater than 32 Mega-Ohms.

Addendum 21
AWTS Change Request Form

Name		
Organization		
Test Program		
Reason for Request		
Requested Change		