

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

ANNOUNCEMENT OF APPROVAL AND RELEASE OF
NONDESTRUCTIVE TEST EQUIPMENT
INSPECTION PROCEDURE MANUAL
TM 1-1520-253-23, TECHNICAL MANUAL AVIATION UNIT MAINTENANCE
(AVUM) AND AVIATION INTERMEDIATE MAINTENANCE (AVIM) MANUAL
NONDESTRUCTIVE INSPECTION PROCEDURES FOR
CH/MH-47 HELICOPTER SERIES

Headquarters, Department of the Army, Washington, D. C.
1 MAY 1997

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL REFERENCES TO TM 1-1520-253-23, TECHNICAL MANUAL AVIATION UNIT MAINTENANCE (AVUM) AND AVIATION INTERMEDIATE MAINTENANCE (AVIM) MANUAL NONDESTRUCTIVE INSPECTION PROCEDURES FOR CH/MH-47 HELICOPTER SERIES, HAVE BEEN INCORPORATED INTO THE TM 55-1520-240-23 (SERIES), AVIATION UNIT AND AVIATION INTERMEDIATE MAINTENANCE MANUAL FOR CH/MH-47 HELICOPTERS.

1. Priority Classification. Routine

2. Purpose. The purpose of this technical bulletin (TB) is to announce the approval and release of the nondestructive test equipment inspection procedure manual, TM 1-1520-253-23, Technical Manual Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual Nondestructive Inspection Procedures for CH/MH-47 Helicopter Series. This manual shall be referred to when performing inspections on the CH/MH-47 aircraft.

3. Description. Approved nondestructive test inspection procedures are referenced in Table 1. Refer to TM 1-1520-253-23, Technical Manual Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual Nondestructive Inspection Procedures for CH/MH-47 Helicopter Series, for safety information, part locations, inspection method descriptions, and complete procedures. Do not attempt to perform any nondestructive test inspection without first referring to TM 1-1520-253-23 as this TB does not provide adequate information to properly perform the inspections.

4. How to Use. The columns in Table 1. Approved Nondestructive Test Inspection Components/Assemblies, are defined as follows:

(1) Procedure Number: references the procedure number in TM 1-1520-253-23, Technical Manual Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual Nondestructive Inspection Procedures for CH/MH-47 Helicopter Series.

(2) Component/Assembly: provides the list of parts approved for nondestructive test inspections on the CH/MH-47 aircraft. Parts not listed have not been approved for nondestructive test inspection and shall be inspected as referenced in TM 55-1520-240-23 (Series), Aviation Unit and Aviation Intermediate Maintenance Manual for CH/MH-47 Helicopters.

(3) Inspect For: provides the approved manner of inspection. All other types of inspection shall be performed as referenced in TM 55-1520-240-23 (Series), Aviation Unit and Aviation Intermediate Maintenance Manual for CH/MH-47 Helicopters.

(4) Maintenance Category: details the approved maintenance level for each nondestructive test inspection.

(5) Inspection Equipment Requirements: provides the approved nondestructive inspection method/equipment to perform the inspection. Refer to Notes for the legend.

(6) Remarks: provides the approved backup method/equipment to perform the inspection. Refer to Notes for the legend.

NOTE

Legend for the nondestructive inspection methods/equipment referenced in columns (5) and (6):

- | | | | |
|-----|------------------------------|-----|---------------------|
| 001 | Fluorescent Penetrant Method | 004 | Ultrasonic Method |
| 002 | Magnetic Particle Method | 005 | Bond Testing Method |
| 003 | Eddy Current Method | 006 | Radiographic Method |

Table 1. Approved Nondestructive Test Inspection Components/Assemblies.

(1) PROCEDURE NUMBER	(2) COMPONENT/ASSEMBLY	(3) INSPECT FOR	(4) MAINTENANCE CATEGORY			(5) INSPECTION EQUIPMENT REQUIREMENT	(6) REMARKS
			AVUM	AVIM	DEPOT		
2.2	Rotary-Wing Head	Cracks		v		002	
2.3	Hub Oil Tank	Cracks		v		003	Backup 001
2.4	Pitch Varying Shaft	Cracks		v		002	Backup 001
2.5	Rotor Hub	Cracks		v		002	Backup 001
2.6	Vertical Hinge Pin Flanges	Cracks		v		002	
2.7	Pitch Varying Shaft Bore Liner	Cracks		v		002	Backup 001
2.8	Horizontal Hinge Pin	Cracks		v		002	Backup 001
2.9	Centrifugal Droop Stop Lugs	Cracks		v		003	
2.10	Centrifugal Droop Stop Bolts	Cracks		v		002	
2.11	Rotary-Wing Blade	Voids		v		005	
2.12	Pitch Link	Cracks		v		002	Backup 001
2.13	Ball Spherical Bearing	Cracks		v		003	Backup 001
2.14	Weather Protective Cover	Voids		v		005	

Table 1. Approved Nondestructive Test Inspection Components/Assembles.

(1) PROCEDURE NUMBER	(2) COMPONENT/ASSEMBLY	(3) INSPECT FOR	(4) MAINTENANCE CATEGORY			(5) INSPECTION EQUIPMENT REQUIREMENT	(6) REMARKS
			AVUM	AVIM	DEPOT		
3.2	Driveshaft Adapters (Aluminum)	Cracks		v		003	Backup 001
3.3	Driveshaft Adapters (Steel)	Cracks		v		002	
3.4	Forward Driveshafting Tubes	Cracks		v		003	Backup 001
3.5	Aft Driveshafting Tubes	Cracks		v		003	Backup 001
3.6	Engine Driveshaft (Two Piece)	Cracks		v		003	Backup 001
3.7	Engine Driveshaft (One Piece)	Cracks		v		003	Backup 001
3.8	Driveshaft Adapter Plate	Cracks		v			001
3.9	Engine Transmission Adapter	Cracks		v		002	Backup 001
3.10	Combining Transmission	Cracks		v		002	Backup
3.11	Forward Transmission Slider Shaft	Cracks		v		002	Backup 001
3.12	Outside Surface Outside Surface	Cracks		v		003	Backup 001
3.13	Aft Slider Shaft	Cracks		v		002	Backup 001
3.14	Aft Rotor Shaft	Cracks		v			002
3.15	Aft Rotor Shaft Support	Cracks		v		003	Backup 001
3.16	Combining Transmission Outside Surface	Cracks		v		003	Backup 001
3.17	Aft Transmission Out- side Surface	Cracks		v		003	
3.18	Engine Transmission Quill Shaft	Cracks		v		002	
3.19	Engine Transmission Outside Surface	Cracks		v		003	Backup 001
3.20	Transmission Oil Cooler Assemblies	Cracks		v		001	

Table 1. Approved Nondestructive Test Inspection Components/Assemblies.

(1) PROCEDURE NUMBER	(2) COMPONENT/ASSEMBLY	(3) INSPECT FOR	(4) MAINTENANCE CATEGORY			(5) INSPECTION EQUIPMENT REQUIREMENT	(6) REMARKS
			AVUM	AVIM	DEPOT		
4.2	Honeycomb Cores and Panels	Voids		v		005	
4.3	Airframe Structures	Cracks		v		003	
4.4	Forward Transmission Support Structures	Cracks		v		003	
4.5	Dynamic Absorber Support Structure	Cracks		v		003	
4.6	Cabin Equipment Support Structure	Cracks		v		003	
4.7	Pods	Voids		v		005	
4.8	Pods	Voids		v		006	
4.9	Rescue Hatch Lower Door Gearbox Assembly	Cracks		v		002	
4.10	Rescue Hatch Lower Door Gearbox Housing and Cover	Cracks		v		003	
4.11	Cargo Ramp	Voids		v		005	
4.12	Combining Transmission Support Fittings and Longitudinal Beams	Cracks		v		003	Backup 001
4.13	Composite Pylon Hinged Fairings (Work Platform)	Voids		v		005	
4.14	Forward Landing Gear Support Structure	Cracks		v		003	
4.15	Landing Gear Wheel	Cracks		v		003	
4.16	Landing Gear Axle	Cracks		v		002	
4.17	Forward Landing Gear Strut Piston Tube	Cracks		v		002	
4.18	Aft Landing Gear Structure	Cracks		v		003	
4.19	Forward Landing Gear Torque Arm	Cracks		v		003	
4.20	Lower Drag Link Assembly Hardware	Cracks		v		002	
4.21	Lower Drag Link	Cracks		v		003	
4.22	Center Cargo Hook	Cracks		v		002	

Table 1. Approved Nondestructive Test Inspection Components/Assemblies.

(1) PROCEDURE NUMBER	(2) COMPONENT/ASSEMBLY	(3) INSPECT FOR	(4) MAINTENANCE CATEGORY			(5) INSPECTION EQUIPMENT REQUIREMENT	(6) REMARKS
			AVUM	AVIM	DEPOT		
4.23	Aft Pylon Equipment Support Structure	Cracks		v		003	Backup 001
5.2	Engine Oil Pump, Fuel Control, and Accessory Gearbox Flanges	Cracks		v		003	
5.3	Engine Mount Caps	Cracks		v		003	Backup 001
5.4	Engine Mount Adapter	Cracks		v		003	
5.5	Forward Engine Mount Structure	Cracks		v		003	Backup 001
5.6	Aft Engine Mount Link	Cracks		v		002	
5.7	Connecting Link	Cracks		v		003	
5.8	Aft Engine Mount Adapter	Cracks		v		003	
5.9	Exhaust Cone and Stiffener	Cracks		v		001	
5.10	Fuel Drain Valve	Cracks		v		001	
5.11	Combustion Chamber	Cracks		v			
5.11	HoCracks using					001	
5.12	Firesheild Section	Cracks		v		001	
6.2	Aluminum Flight Control System Connecting Links	Cracks		v		003	
6.3	Steel Flight Control System Connecting Links Stainless Steel Flight	Cracks		v		002	
6.4	Control System Connecting Links	Cracks		v		001	
6.5	Thrust Control Bellcrank and Support	Cracks		v		003	Backup 001
6.6	First Stage Control Bellcranks and Supports	Cracks		v		003	Backup 001
6.7	Second Stage Control Bellcranks and Supports	Cracks		v		003	Backup 001
6.8	Intermediate Connecting Links	Cracks		v		003	Backup 001

Table 1. Approved Nondestructive Test Inspection Components/Assemblies.

(1) PROCEDURE NUMBER	(2) COMPONENT/ASSEMBLY	(3) INSPECT FOR	(4) MAINTENANCE CATEGORY			(5) INSPECTION EQUIPMENT REQUIREMENT	(6) REMARKS
			AVUM	AVIM	DEPOT		
6.9	Bellcranks and Supports, Yokes, and Connecting Links	Cracks		v		003	
6.10	Flight Control Reservoirs/Coolers and Related Equipment	Cracks		v		001	

5. Points of Contact.

a. Technical point of contact for this TB is Mr. Wayne Suchman, AGSE-PM, AMSAT-D-WAG, DSN 693-1924 or commercial (314)263-1924, e-mail: wsuchman@emh4.wsmc.stl.army.mil.

b. Nondestructive Test Inspection technical point of contact for this TB is Mr. Scott Huddleston, DSN 693-1923 or commercial (314)263-1923, e-mail: shuddles@emh4.wsmc.stl.army.mil.

6. Reporting of Errors and Recommending Improvements. You can help improve this TB. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you. You may also submit your recommended changes by E-mail directly to <mpmt/oavma28@st-louis-emh7.army.mil>. A reply will be furnished directly to you. Instructions for sending an electronic 2028 may be found at the back of this manual.

By Order of the Secretary of the Army.

Official:

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6	2-1 a			In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has <u>4</u> cylinders. Change the manual to show 4 cylinders.
B1		4-3		Callout 16 in figure 4-3 is pointed to a <u>bolt</u> . In key to figure 4-3, item 16 is called a <u>shim</u> . Please correct one or the other

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