

TM 55-1520-242-MTF

MAINTENANCE TEST  
FLIGHT MANUAL

ARMY MODEL  
UH-1, EH-1 HELICOPTER

TM 55-1520-242-mtf is published for the use of all concerned.

\*This manual supersedes TM 55-1500-219-MTF, 28 February 1979, including all changes.

HEADQUARTERS  
DEPARTMENT OF THE ARMY

20 December 1985

TABLE OF CONTENTS

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of the applicable Aircraft Operator's Manual (when using the 2028-2 from the operator's manual, insure the publication number and title reflect this MTF) direct to Commander, US Army Aviation Systems Command, ATTN: AMSAV-MPSD, 4300 Goodfellow Blvd., St. Louis, Missouri 63120-1798. A reply will be furnished to you.

SECTION	PAGE
I Introduction . . . . .	1-1
II Maintenance Test Flight Checklist . . . . .	2-1
Prior to Maintenance Test Flight . . . . .	2-1
Before Starting Engine . . . . .	2-2
Starting Engine . . . . .	2-9
Engine Runup . . . . .	2-15
Before Takeoff . . . . .	2-29
Hover Checks . . . . .	2-30
Takeoff and Climb Checks.. . . . .	2-37
Level Off Checks . . . . .	2-38
In-Flight Checks . . . . .	2-39
Before Landing Checks. . . . .	2-47
After Landing and Engine Shutdown Checks . . . . .	2-48

TABLE OF CONTENTS (CONT)

SECTION	PAGE
III	Troubleshooting . . . . . 3-1
	Troubleshooting Guide A -
	Starting . . . . . 3-2
	Troubleshooting Guide B -
	Instruments . . . . . 3-7
	Troubleshooting Guide C -
	Electrical . . . . . 3-16
	Troubleshooting Guide D -
	Caution Panel . . . . . 3-38
	Troubleshooting Guide E -
	PowerPlant . . . . . 3-48
	Troubleshooting Guide F -
	Power Train . . . . . 3-57
	Troubleshooting Guide G -
	Hydraulic . . . . . 3-60
	Troubleshooting Guide H -
	Flight Controls . . . . . 3-63
	Troubleshooting Guide I -
	Nonapplicable . . . . . 3-74
	Troubleshooting Guide J -
	Vibrations . . . . . 3-75
	Troubleshooting Guide K -
	Communications/Navigation
	Equipment . . . . . 3-79
IV	Special Procedures . . . . . 4-1
	a. Radar Altimeter Self-Test . . . . . 4-1
	b. Electronic Altimeter Self-Test . . . . . 4-2
	c. Radar Warning Receiver Self-Test . . . . . 4-3
	d. Tail Rotor Tracking . . . . . 4-5
	e. Main Rotor Tracking . . . . . 4-9
	f. Health Indicator Test(HIT) . . . . . 4-13
	g. Engine Topping . . . . . 4-15
	h. Fuel Control Flight Check . . . . . 4-21
V	Charts and Forms . . . . . 5-1

## SECTION I. - INTRODUCTION

**1. PURPOSE.** The purpose of this manual is to provide complete instructions for performing a maintenance test flight of UH-1, C/M, H/V and EH-1H/X aircraft. For the specific conditions which require a general or limited maintenance test flight refer to TM 55-1500-328-25 and the applicable aviation unit and intermediate maintenance manual.

### **2. DEFINITIONS.**

*a. Maintenance Test Flight.* A functional test flight for which the primary purpose is to determine whether the airframe, power plant, accessories and other equipment are functioning in accordance with predetermined requirements while subjected to the intended environment.

*b. Warnings, Cautions and Notes.* Warnings, Cautions and Notes are used to emphasize important and critical instructions and are used for the following conditions:



**WARNING**

An operation procedure, practice, etc., which, if not correctly followed, will result in personnel injury or loss of life.



**CAUTION**

An operating procedure, practice, etc., which, if not strictly observed, will result in damage to or destruction of equipment.

**NOTE**

An operating procedure, condition, etc., which is essential to highlight.

**3. GENERAL INFORMATION.**

*a.* This manual covers only maintenance test flight of UH-1, C, H, M, V and EH-1H/X aircraft and in no way supersedes any information contained in TM 55-1520-210-10, TM 55-1520-220-10, TM 55-1520-247-10 or -CL, but is to be used in conjunction with the -10 or -CL. This manual covers all the requirements of the appropriate -10 and -CL from "Before Starting Engine" through "Engine Shutdown".

*b.* Crew requirements will be as specified in AR 95-1, TM 55-1500-328-25, TM 55-1520-210-10, TM 55-1520-220-10 and TM 55-1520-247-10.

*c.* The duration of the general or limited test flight will be in accordance with the requirements of TM 55-1500-328-25.

**4. SPECIAL INSTRUCTIONS.**

*a. Cargo and Passengers.* Cargo and passengers are prohibited on maintenance test flights.

*b. Forms and Records.* Forms and records will be checked prior to the maintenance test flight to determine maintenance performed and type of test flight required (i.e., general or limited).

*c. Configuration.* The configuration of the aircraft should be determined prior to the maintenance test flight in order to determine performance parameters. Prior to the actual test flight, the pilot will compute weight and balance as required.

**d. Post Test Flight Inspection.** A thorough visual inspection will be performed to the extent necessary to assure that deficiencies or shortcomings developed as a result of the maintenance test flight are detected.

**e. References.** When a maintenance test flight is required to assure proper operation of a specific system(s), refer to the applicable maintenance manual for the limits of that system.

**f. Asterisked Checks.** An asterisk (\*) prior to a check requires that the Test Flight Check Sheet be annotated with a specific reading, a check ( ✓ ) for satisfactory performance, or an (X) for problem detected will be recorded and a short statement entered in the "remarks" block of the check sheet.

**g. Maintenance Test Flight Check Sheet.** The sample check sheet contained in section V will (refer to figure 5-12) be used for all test flights. When a test flight is performed for the purpose of determining if specific equipment or systems are operating properly, completion of only that portion of the maintenance test flight check sheet applicable to the specific equipment or systems being tested is required. The aircraft test flight check sheets may be locally reproduced. Continuation sheets may be used when necessary. Items that, during maintenance test flights prove to be unsatisfactory and require corrective action, should be listed in the remarks block during flight and transferred to DA Form 2408-13 immediately after termination of the flight. The sheet will be attached to DA Form 2408-13 upon completion. After accrual of two or more sheets, the data should be reviewed to determine if trends are developing.

**h. Crew Briefings.** Prior to accomplishment of the test flight the aircraft crew (co-pilot/technical observer/inspector, etc) will be briefed by the Maintenance Test Pilot on the maneuvers to be performed and any special requirements/inspections requiring assistance by these personnel.