

TECHNICAL MANUAL

OPERATORS MANUAL

ARMY MODEL AH-LS (MOD) HELICOPTER

This copy is a reprint which includes
current pages from Changes 1-31.

HEADQUARTERS, DEPARTMENT OF THE ARMY

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OPERATOR'S MANUAL HELICOPTER, ATTACK AH-1S

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistake 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 this manual direct to: Commander, U.S. Army Aviation Systems Command, ATTN: AMSAV-MPSD, 4300 Goodfellow Boulevard, St. Louis, MO 63120 -1798. A reply will be furnished directly to you.

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CHAPTER 1 INTRODUCTION

1-1. General.

These instructions are for use by the operator. They apply to AH-1S helicopter.

1-2. Warnings, Cautions and Notes Definition.

Warnings, cautions and notes are used to emphasize important and critical instructions and are used for the following conditions:

WARNING

An operating procedure, practice, etc., which, if not correctly followed, could result in personal injury or loss of life.

CAUTION

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

NOTE

An operating procedure, practice, etc., which it is essential to highlight.

1-3. Description.

This manual contains the best operating instructions and procedures for AH-1S (MOD) helicopters under most circumstances. The observance of limitations, performance and weight balance data provided is mandatory. The observance of procedure is mandatory except when modification is required because of multiple emergencies, adverse weather, terrain, etc.

Your flying experience is recognized, and therefore, basic flight principles are not included. **THIS MANUAL SHALL BE CARRIED IN THE HELICOPTER AT ALL TIMES.**

1-4. Appendix A, References.

Appendix A is a listing of official publications cited within the manual, applicable to and available for flight crews.

1-5. Index.

The index lists, in alphabetical order, every titled paragraph, figure, and table contained in this manual. Chapter 7, performance data, shall have an additional index within the chapter.

1-6. Army Aviation Safety Program.

Reports necessary to comply with the safety program are prescribed in AR 385-40.

1-7. Destruction of Army Materiel to Prevent Enemy Use.

For information concerning destruction of Army materiel to prevent enemy use, refer to TM 750-244-1-5.

1-8. Deleted.

1-9. Forms and Records.

Army aviators flight record and helicopter maintenance records which are to be used by crew members are prescribed in DA PAM 738-751 and TM 55-1500-342-23.

1-10. Deleted.

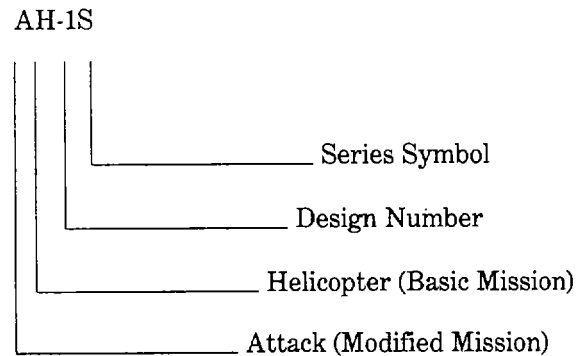
1-11. Explanation of Change Symbols.

Changes, except as noted below, to the text and tables, including new material on added pages, are indicated by a vertical line in the outer margin extending close to the entire area of the material affected; exception: pages with emergency markings, which consist of black diagonal lines around three edges, may have the vertical line or change symbol placed along the inner margins. Symbols show current changes only. A miniature pointing hand symbol is used to denote a change to an illustration. However, a vertical line in the outer margin, rather than miniature pointing hands, is utilized when there have been extensive changes made to an illustration. Change symbols are not utilized to indicate changes in the following:

- a. Introductory material.
- b. Indexes and tabular data where the change cannot be identified.
- c. Blank space resulting from the deletion of text, an illustration, or a table.
- d. Correction of minor inaccuracies, such as spelling, punctuation, relocation of material, etc., unless such correction changes the meaning of instructive information and procedures.

1-12. Helicopter Designation System.

The designation system prescribed by AR 70-50 is used in helicopter designations as follows:

**1-13. Use of Shall, Will, Should, and May.**

Use "shall" whenever it is necessary to express a provision that is binding. Use "should" and "may" whenever it is necessary to express non-mandatory provisions. "Will" may be used to express a declaration of purpose.

CHAPTER 2 HELICOPTER AND SYSTEMS DESCRIPTION AND OPERATION

Section I. HELICOPTER

2-1. General Description.

The AH-1S helicopter is a tandem seat, two- place (pilot and gunner), single engine helicopter. The maximum gross weight for takeoff is 10,000 pounds.

2-2. General Arrangement.

Figure 2-1 depicts the general arrangement of the items which are referred to in the exterior check paragraph of Chapter 8, Section II.

2-3. Principal Dimensions.

Figure 2-2 depicts the principal dimensions of the helicopter to the nearest inch.

2-4. Turning Radius.

Figure 2-3 depicts the minimum turning radius of the helicopter.

2-5. Fuselage.

The fuselage is that forward portion of the airframe which extends from the nose of the helicopter to the forward end of the tailboom. The fuselage is constructed of aluminum alloy skin and aluminum, titanium and fiberglass honeycomb beams. Honeycomb deck panels and a minimum of bulkheads attached to the main beams produce a box-beam structure. The main beams are the main primary structure and supports the engine, transmission, tailboom, landing gear, wings, fuel cells, turret, and telescopic sight unit.

2-6. Tailboom.

The tailboom is that portion of the airframe which is bolted to the fuselage and extends to the aft end of the helicopter. It is tapered semimonocoque structure employing aluminum skins, honeycomb panels, longerons, and stringers. It supports the tail rotor, fin, and synchronized elevators. It, also, houses the tail rotor driveshaft and some electronic equipment. Forced

air ventilation is provided for the electronic equipment cooling.

2-7. Wing.

The fixed cantilever wing provides additional lifting surfaces and supports the wing stores pylons. It is constructed of two main spars, ribs, aluminum and/or aluminum honeycomb skin. It has a span of 10 feet and 9 inches, (including tip), tapered airfoil, and a mean cord of 2 feet and 6 inches. Each wing has two pylons. The inboard pylons are fixed and the outboard pylons are articulated by hydraulic actuators. Both Inboard and Outboard pylons will each support 670 pounds of weight.

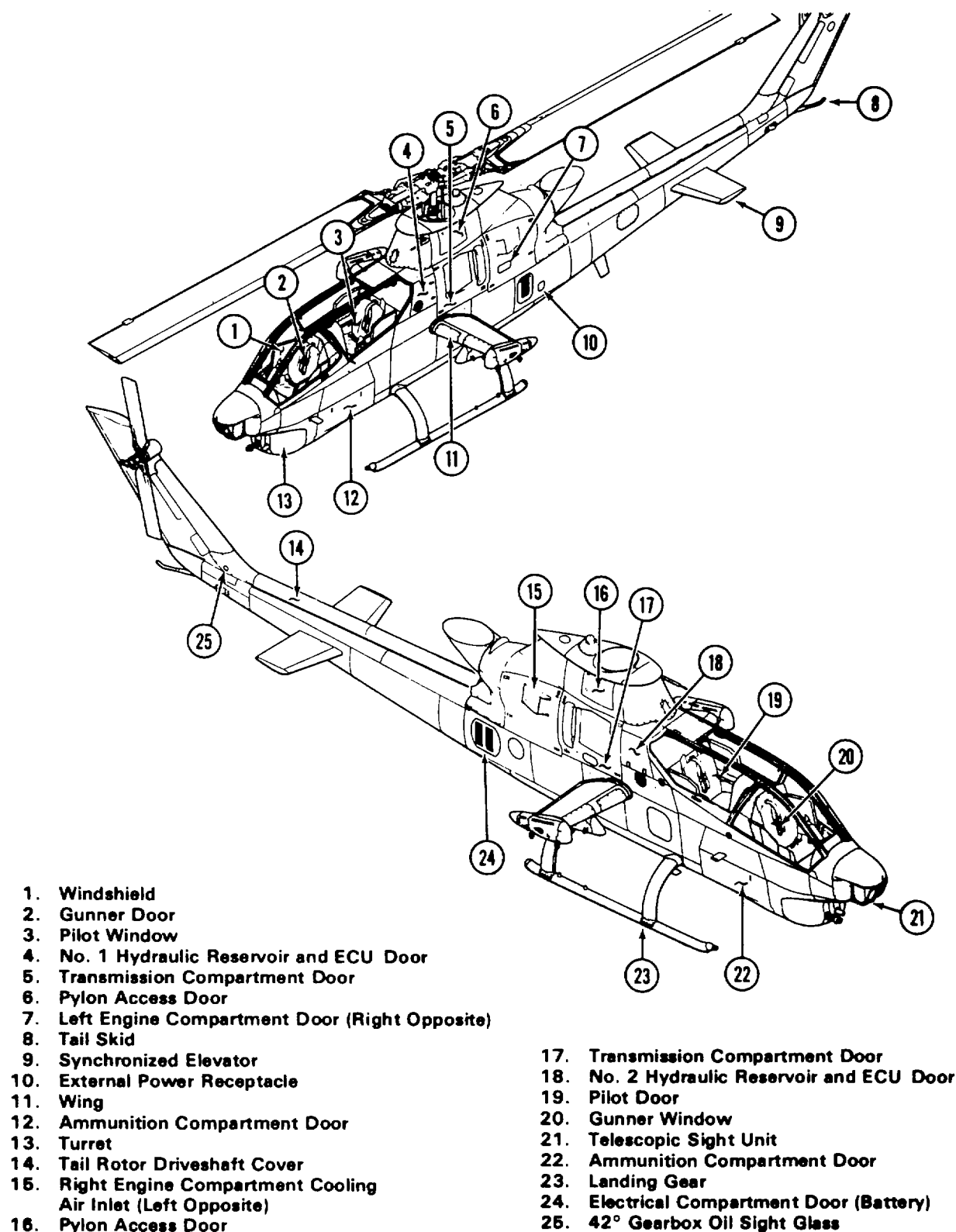
2-8. Landing Gear.

a. Main Landing Gear. The main landing gear consists of two aluminum lateral mounted arched crosstubes and two aluminum longitudinal skid tubes attached to the crosstubes. Each crosstube is enclosed in a fiberglass fairing for aerodynamic purposes. Each slid tube has a steel skid shoe on the bottom to minimize skid wear.

b. Tail Skid. The steel tubular type tail skid is installed on the aft end of the tailboom to protect the tail rotor blades during tail-low landing.

2-9. Canopy.

The canopy is the transparent panels on the upper portion of the fuselage which encloses the crew compartment. The canopy consists of one piece windshield extending from the nose of the helicopter (over the gunner and pilot heads) to the pylon, the gunner door and pilot window on the left side, and the gunner window and pilot door on the right side. The canopy provides maximum field of view for the gunner. The pilot forward field of view is limited, but excellent in all other quadrants. The canopy removal system is used to remove the pilot and gunner windows and doors during emergencies. The system is covered in Chapter 2, Section II.



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Figure 2-1. General arrangement (Sheet 1 of 2)