

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

WARRANTY PROGRAM

FOR

HELICOPTER, ATTACK

AH-1S/P/E/F

HEADQUARTERS, DEPARTMENT OF THE ARMY, WASHINGTON, D.C.

17 JULY 1988

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 or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Aviation Systems Command, ATTN: AMSAV-MMD, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

1. General.

a. This warranty technical bulletin (WTB) is for use by warranty control officers and user activities to provide guidance for management and application of the warranty program for the AH-1S/P/E/F helicopter and applicable associated subsystems.

b. DA PAM 738-751, The Army Maintenance Management System (TAMMS) is used to track hours of operation/flight.

c. The warranty on all secondary components is limited to a one time failure.

d. Check all warranty identification cards for positive item identification.

2. Explanation of Terms. The following explanation of terms peculiar to warranty and contract terminology are used within this WTB.

a . Government Acceptance Date (GAD) . The date an item of equipment is accepted into Army inventory by the execution of the acceptance block and signing of a DD Form 250 or approved acceptance document, by an authorized representative of the government.

b. Aircraft Secondary Component. Any field replaceable, depot repairable, serialized component of an aircraft which is warranted only as a part of a warranted aircraft, in which it is originally installed.

c. Fail/Failure. A malfunction or breakage of a warranted item (not due to ordinary usage or wear and tear) or damage to a warranted item which renders it unserviceable by reason of a condition which causes a warranted item to fail to meet any conformance/performance requirement.

d. Primary Component. Any selected field replaceable, depot repairable, serialized, major component which is warranted for the full period specified regardless of where or when installed.

e. Repair. To restore an item to serviceable condition without affecting its warranty (includes replacement, where replacement is necessary to achieve conformance or performance requirements.)

f. Resultant Failure/Damage. Failure suffered directly by a warranted part which is induced/caused primarily by failure of another warranted part/item, both/all provided by and warranted by the manufacturer/contractor .

g. Secondary Component. Any field replaceable, depot repairable, serialized subcomponent of a primary component which is warranted only as a subassembly or part of a warranted aircraft or primary component in which it is originally installed.

h. Spare. A primary component purchased separately as a spare part and/or repair part not installed in an end item (aircraft) .

i. WARCO (Warranty Control Office/Officer) . Established at the intermediate general support level or equivalent and serves as the intermediary between the troops owning the equipment, and USAVSCOM.

j. Warranty. A promise or statement of fact from a seller to a purchaser on the nature, usefulness, or condition of the supplies or performance of services to be furnished. The main

purpose of a warranty in a government contract is to outline the rights and obligations of the contractor and the government for defective items and/or services.

k. Warranty Claim. Action initiated by the equipment user for authorized warranty repair, replacement or reimbursement from the manufacturer/contractor .

1. Warranty Period. Time interval during which the warranty is in effect. Normally, measured as the maximum number of years, months or flight operating hours.

3. Coverages.

a. Transmission.

(1) Part No. 209-961-400-3 NSN 1615-01-010-0952.

(2) Part No. 212-040-001-39 NSN 1615-01-014-6006.

(3) FSCM 97499.

(4) Contract DAAJ09-84-C-B262.

(5) Warranty coverage begins at the GAD and lasts for 200 flight hours or 24 months, whichever occurs first.

b. Main Rotor Blade.

(1) Part No. K747-003-303 NSN 1615-01-177-5862.

(2) FSCM 84955.

(3) Contract DAAJ09-84-C-B198.

(4) Warranty coverage begins at the GAD and lasts for 200 flight hours or 24 months, whichever occurs first.

c. Fuel Control.

(1) Part No. 100770-A4 NSN 2915-01-005-9197.

(2) FSCM 11599.

(3) Contract DAAJ09-84-C-B056.

(4) Warranty coverage begins at the GAD and lasts for 200 flight hours or 24 months, whichever occurs first.

d. Engine, Gas Turbine.

- (1) Model T53-L-703.
- (2) Part No. 1-000-060-23 NSN 2840-00-621-1860.
- (3) FSCM 91547.
- (4) Contract DAAJ09-84-C-B056.
- (5) Coverage.

(a) Warranty coverage begins at the GAD and lasts for 200 flight hours or 24 months, whichever occurs first.

(b) The secondary components are listed in Appendix A and are a one time warranty repair.

4. Contractor Responsibility.

a. The contractor, upon preliminary determination of warranty coverage, shall provide all materials, labor, facilities, tools, etc., needed to effect repair and commence to repair/replace such parts, in accordance with published service/repair procedures, as necessary to achieve specified "return-to-service" requirements.

b. The item determined to be defective, due to defective material or workmanship, shall be repaired or replaced at the option of the contractor at no cost to the government.

c. The contractor's responsibility for coverage of resultant failure/damage shall be limited to repair of the failed warranted "primary and/or secondary components." The contractor shall not be liable for damage done through misuse or abuse by the government or for damage to or induced in other non-warranted parts.

5. Government Responsibilities.

a. The contractor must be notified by the government in writing of any failure of any warranted component within 90 days after discovery of a failure. In order to receive warranty coverage, the government must deliver the reported warranty item to the authorized repair site within 180 days after the discovery of the failure.

b. AVUM and AVIM will be performed by government personnel in accordance with published maintenance procedures (TMs, TBs, etc.). Such maintenance does not void any coverage under

warranty and is at government expense. including parts and labor .

c. Alterations and/or modifications shall not be made unless expressly authorized or directed by USAAVSCOM.

d. For all components covered under warranty, the government shall bear all transportation costs and liability for shipments to the designated repair facility.

6. Nullification. The provisions of the warranties covered by this publication, shall not apply to any warranted item if failure has been caused by:

a. Improper installation or maintenance.

b. Operation contrary to the TMs (or other written instructions provided to and approved by the government) in such a way as to induce a failure.

c. Repair or alteration by the government in such a way as to induce a failure.

d. Misuse, neglect, or accident.

e. Combat damage.

f. Foreign object damage.

g. Test program damage.

h. Failure caused by Acts of God, the public enemy, subversion, riots, vandalism, sabotage, flood, or similar causes, fire or explosion induced by or originating from sources external to the warranted item.

7. Claim Procedures.

a. Identification of Warranted Items. Warranted primary components delivered as end items (e.g. engine, transmission, etc.) or as spares are identified by an affixed decal (figure 1), stating that the item is warranted and indicating the expiration date. A DA Form 2408-15, AMSAV-Q overprint 2, Warranted Identification Card (WIC) , (figure 3) accompanies each primary component and is retained in the aircraft historical record logbook for installed components. Lateral transfer cannibalization of a warranted primary component to another

aircraft is acceptable provided the DA Form 2408-15 (WIC) accompanies the component. However, secondary components are warranted only as a subassembly or part of a warranted primary component in which they were originally installed.

(1) Lateral transfer (cannibalization) of a serviceable secondary component will void the warranty coverage of that component, and should be avoided.

(2) If there is doubt concerning warranty coverage, questions, or if other assistance concerning the warranty program is required, please contact your local logistic assistance representative (LAR). Special inquiries can be made in writing to USAAVSCOM, ATTN: AMSAV-QR, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798, or by calling AUTOVON 693-1771 or Commercial 314-263-1771.

b. Reporting Procedures. When a failure occurs, of a warranted item that requires depot maintenance, the reporting unit/maintenance activity will verify that the failed component is a warranted item (paragraph a above) . The maintenance level which determines unserviceability of a warranted item will initiate the warranty claim action.

(1) Tag all warranty claim exhibits with a DA Form 2402, exchange tag (figure 2) to allow for ease of warranty item identification. The tag will be overprinted in red letters "Warranty Exhibit."

(2) The maintenance activity initiating the warranty claim will:

(a) Prepare DA Form 2407 (figure 4) in accordance with DA PAM 738-751.

(b) Copy 1 - not used, remove and destroy.

(c) Copy 2 - forward to Commander, USAAVSCOM, ATTN: AMSAV-QR, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798.

(d) Copy 3 and 4 - retain for local use or until receipt of shipping/disposition instructions from national inventory control point (NICP) .

(e) copy 5 - ship with component.

NOTE

Ensure that all copies are legible.

(3) The WIC (figure 3) will be removed from the logbook and shipped with any primary component returned for warranty repair. When secondary components are removed and returned for warranty claim, the component entry will be lined out on the WIC where it is listed and the card returned to the aircraft logbook.

(4) A category II SF 368, Quality Deficiency Report (QDR) shall not be utilized for items covered under warranty. When the warranty period has expired, and the conditions specified in DA PAM 738-751, paragraph 2-13 are applicable, a SF 368 will be submitted.

(5) When a defective item meets the criteria for a category I report as prescribed in DA PAM 738-751, a deficiency report will be submitted in accordance with paragraph 2-14. A category I report for a warranted item should be followed up with the submission of the DA Form 2407 warranty claim.

(6) When the warranty period on any aircraft or primary component has expired, the DA Form 2408-15, AMSAV-Q overprint 2 (WIC) will be removed from the logbook and forwarded to: Commander, USAAVSCOM, ATTN: AMSAV-QR, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798.

8. Storage/Shipment/Handling .

a. Warranty claim exhibits will be cleaned, preserved, tagged and packaged to prevent damage during handling, storage and shipment. Disposition/shipping instructions from the NICP will specify the accountability and transportation information necessary.

b. Disposition of Exhibits.

(1) Engine warranty exhibits shall be returned in accordance with the automatic return items list (ARIL) as defined by the Army master data file (AMDF).

(2) Transmission and rotor blades will be retained within the AVUM/AVIM unit until receipt of disposition/shipping instructions from the NICP.

NOTE

All warranted aviation intensively managed items (AIMI) that fail should be reported telephonically to USAAVSCOM, AUTOVON 693-1771 or commercial 314-263-1771. AIMI, in turn will receive immediate disposition instructions from AVSCOM.

TB 55-1520-244-23

(3) The reporting unit/maintenance activity is authorized to return any warranty exhibit through normal supply turn-in or through ARIL if the shipping/disposition instructions have not been received from the NICP within 45 days from the original date of the warranty claim.

WARRANTY	
NSN	<input style="width: 100%;" type="text"/>
PI IN	<input style="width: 100%;" type="text"/>
MFR	<input style="width: 45%;" type="text"/> SN <input style="width: 45%;" type="text"/>
TM	<input style="width: 100%;" type="text"/>
DATE	<input style="width: 45%;" type="text"/> LIMIT <input style="width: 45%;" type="text"/>
<input style="width: 100%; height: 20px;" type="text"/>	

Figure 1. Warranty Decal

U. S. GPO 1986-161-818 EDITION OF MAY 81 IS OBSOLETE WARRANTY EXHIBIT EXCHANGE TAG DA Form 736-750 and 736-761	1. SUPPORT AGENCY (DODAAC) WKLAAP	2. DATE 5246	COPY 1 DA FORM 2402 DEC 85	
	3. ORGANIZATION (DODAAC) WGADAA	4. <input checked="" type="checkbox"/> WARRANTY <input type="checkbox"/> AIR EXHIBIT <input type="checkbox"/> EXCHANGE		
	5. NSN 1615-01-117-119	6. NOUN NOMENCLATURE FWD TRANSMISSION		
	7. PD 02	8. PD AUTHENTICATION CPT JOHN M. BABS		
	9. END ITEM IDENTIFICATION HELICOPTER	10. MODEL CH-47D		
		11. SERIAL NO 84-24152		
	12. DEFICIENCY OR SYMPTOM EXCESSIVE METAL CONT.			
	13. DATE ACCEPTED 5252	14. SIGNATURE John Doe		15. NMCS YES
	16. JON 5-248	17. INITIALS JMH		
	18. DATE REPAIRED 5262	19. INITIALS ABC		

Figure 2. Sample of a Completed D A Form 2402

APPENDIX A

SECONDARY T53-L-703 ENGINE COMPONENTS

National Stock Number	Part Number	Description
2925-00-868-1795	1-300-242-02	Wiring Harness
2915-01-005-9197	1-170-240-60	Fuel Regulator
2915-01-005-9196	1-160-850-16	Governor
2840-00-957-2864	1-030-350-08	Carrier and Gear Assy
2840-00-727-4663	1-080-250-16	Gear Box Assy
4320-01-182-9057	1-300-212-04	Pump, Rotary
2840-01-008-5730	1-101-370-03	Case, Centrifugal
2995-01-008-7763	1-170-050-12	Actuator Assy
2840-01-010-1450	1-101-100-08	Rotor Turbine
2840-01-008-5983	1-101-360-04	Rotor Turbine
2840-01-010-1453	1-120-050-03	Nozzle Turbine
2840-00-960-0174	1-130-730-02	Manifold Assy
2840-01-009-3722	1-190-050-06	Nozzle, Turbine
2840-01-010-5949	1-190-010-03	Turbine Rotor
2840-00-943-2382	1-140-470-05	Nozzle Turbine
2840-01-406-3532	1-140-530-14	Rotor and Housing
2840-01-008-5982	1-140-550-07	Turbine Rotor
2840-01-011-5045	1-140-590-07	Housing, Anti-Friction
2840-01-010-5841	1-130-780-03	Chamber Combustion Liner
2840-01-008-5731	1-130-610-12	Case, Combustion
2840-00-893-3787	1-160-500-04	Drive Assy, Governor

By Order of the Secretary of the Army:

Official:

CARL E. VUONO
General, United States Army
Chief of Staff

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-31, AVUM and AVIM Maintenance requirements for AH-1S, F and P/E Helicopter, Attack.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN... JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

PFC JOHN DOE
COA, 3d ENGINEER BN
FT. LEONARD WOOD, MO 63108

DATE SENT

PUBLICATION NUMBER
TB 55-1520-244-23

PUBLICATION DATE
17 July 1988

PUBLICATION TITLE TB 55-1520-244-23,
Warranty Program for Helicopter,
Attack AH-1S/P/E/F

BE EXACT... PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO	TABLE NO
6	2-1 a		
B1		4-3	
125	line 20		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

In line 6 of paragraph 2-1a the manual states the engine has 6 Cylinders. The engine on my set only has 4 Cylinders. Change the manual to show 4 Cylinders.

Callout 16 on figure 4-3 is pointing at a bolt. In key to figure 4-3, item 16 is called a shim - Please correct one or the other.

I ordered a gasket, item 19 on figure B-16 by NSN 2 910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered, so the NSN is wrong. Please give me a good NSN

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

JOHN DOE, PFC (268) 317-7111

SIGN HERE

JOHN DOE

DA FORM 2028-2
1 JUL 79

PREVIOUS EDITIONS ARE OBSOLETE.
DRSTS-M Overprint 1, 1 Nov 80

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

TEAR ALONG PERFORATED LINE

FILL IN YOUR
UNIT'S ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD 314



COMMANDER
U S ARMY AVIATION SYSTEMS COMMAND
ATTN: AMSAV-MMD
4300 GOODFELLOW BOULEVARD
ST. LOUIS, MO 63120-1798

TEAR ALONG PERFORATED LINE

FILL IN YOUR
UNIT'S ADDRESS



FOLD BACK

DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD 314



TEAR ALONG PERFORATED LINE

COMMANDER
U S ARMY AVIATION SYSTEMS COMMAND
ATTN: AMSAV-MMD
4300 GOODFELLOW BOULEVARD
ST. LOUIS, MO 63120-1798

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 dekagram = 10 grams = .35 ounce
 1 hectogram = 10 dekagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 **liters** = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 **sq.** centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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