DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

WARRANTY PROGRAM

FOR

HELICOPTER, CARGO TRANSPORT

CH-47D

HEADQUARTERS, DEPARTMENT OF THE ARMY, WASHINGTON, DC

24 March 1988

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

The reporting of errors, omissions, and recommendations for improving this publication is recommended. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded direct to: Commander, U.S. Army Aviation Systems Command, ATTN: AMSAV-MPSD, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished 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 CH-47D Helicopter and applicable associated subsystems.

b. DA-PAM 738-751, Functional Users Manual for the Army Maintenance Management System-Aviation (TAMMS-A), 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. Warranty becomes void if lateral transfer is initiated.

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(s) which is induced/caused primarily by failure of another warranted part(s)/item(s), 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 USAAVSCOM.

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.

l. 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. Helicopter, Cargo Transport.

(1) Line item number H30517.

(2) Model CH-47D.

(3) NSN 1520-01-088-3669.

(4) FSCM 77272.

(5) Serial numbers 85-24322 and subsequent.

(6) Contracts DAAJ09-85-C-A005 and DAAJ09-85-C-A017.

(7) Coverages.

(a) Warranty coverage begins at the Government acceptance date (GAD) and last for 200 flight hours or 24 months, whichever occurs first, for any primary or secondary component originally installed in the Helicopter, or any spare component covered by the warranty.

(b) Refer to Appendix A and B for lists of the CH-47D Helicopter primary and secondary components.

b. Engine, Gas Turbine.

(1) Model T55-L-712.

(2) NSN 2840-01-030-4890.

(3) FSCM 91547, Part No. 2-001-020-23.

(4) Contract DAAJ09-84-C-A291 and DAAJ09-85-C-A485.

(5) Coverage.

(a) Warranty coverage begins at the GAD and lasts for 200 flight hours or 24 months, whichever occurs first, for the primary or secondary components originally installed in the Helicopter or any spare component covered by the warranty.

(b) Refer to Appendix C for a list of the T55-L-712 Engine secondary components.

c. Fuel Control.

(1) NSN 2915-01-169-2562.

(2) FSCM 73030, Part No. 767820-3.

(3) Contract N00383-83-G-3110.

(4) Coverage. Warranty coverage begins at the GAD and lasts for 18 months for the primary components installed on engine or any spare component.

d. Auxiliary Power Unit (APU) and Electronic Sequencing Unit (ESU).

(1) APU-NSN 2835-01-092-2037 FSCM 55820 Part No. 160150-100

(2) ESU-NSN 1680-01-123-7659 FSCM 55820 Part No. 160200-500

(3) ESU-NSN 2835-01-169-5291 FSCM 55820 Part No. 163290-100

(4) Contract DAAJ09-84-C-A939 and DAAJ09-86-C-A275

(5) Coverage.

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

(b) The secondary components are as follows:

Nomenclature	FSCM	Part Number	NSN
Control Assembly	55820	160550-100	2990-01-125-0796
Fuel Pump	55820	104030-1	2910-01-050-7648

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, IAW published service/repair procedures, as necessary to achieve specified "return-to-service" requirements.

b. The item(s) 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 AVSCOM in writing of any failure of any warranted component within ninety (90) days after discovery of a failure. In order to receive warranty coverage, the government must deliver the reported warranty item(s) to the authorized repair site within one hundred and eighty (180) days after the discovery of the failure.

b. AVUM or AVIM maintenance will be performed by government personnel IAW 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 the U.S. Army Aviation Systems Command (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(s).

7. CLAIM PROCEDURES.

a. Identification of warranted items . Warranted primary components delivered on warranted aircraft or end item (e.g. engine, APU, etc.,) or as spares are identified by an affixed decal (Fig. 1), stating that the item is warranted and indicating the expiration date . A DA Form 2408-15, AMSAV-Q overprint 2 (Warranty Identification Card) (WIC) (Fig. 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 secondar y component will void the warranty coverage of that component, and should be avoided if possible, but mission requirements may necessitate lateral transfer.

(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 Representatiave (LAR). Special inquiries can be made in writing to : U.S. Army Aviation Systems Command, ATTN: AMSAV-QR, 4300 Goodfellow Boulevard, St. Louis, MIssouri 63120-1798, or by calling AUTOVON 693-1771 (Commercial 314 263-1771).

b. Reporting Procedures. When a failure of a warranted item that requires depot maintenance occurs, the reporting unit/maintenance activity will verif y that the failed component is a warranted item (ref. para 7a). 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 (Fig. 2), to allow for ease of warranty item identification. The tag will b e overprinted in Red Letters, “Warranty Exhibit”.

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

(a) Prepare DA Form 2407 (Fig. 4), IAW DA PAM 738-751.

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

(c) Copy 2- forward to:

Commander
U.S. Army Aviation Systems Command
ATTN: AMSAV-QR
4300 Goodfellow Boulevard
St. Louis, Missouri 63120-1798

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

(e) Copy 5 - ship with the component.

NOTE

Insure that all copies are legible.

(3) The Warranty Identification Card (WIC) (Fig. 2) will be removed from the logbook and shipped with any primary component returned for warranty repair. When secondary components are removed 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 item(s) covered under warranty . When the warranty period ha s expired, and the conditions specified in DA PAM 738-751, para 2-13 are applicable, a SF 368 (QDR) 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 IAW para 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 (WICs) will be removed from the logbook and forward to:

Commander
U.S. Army Aviation Systems Command
ATTN: AMSAV-QR
4300 Goodfellow Boulevard
St. Louis, Missouri 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 National Inventory Control Point (NICP) will specify the accountability and transportation information necessary.

b. Disposition of Exhibits.

(1) Engine and APU/ESU warranty exhibits shall be returned IAW the Automatic Return Items List (ARIL) as defined by the Army Master Data File (AMDF).

(2) CH-47D (primary and secondary components) and the fuel control warranty exhibits 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 U.S. Army AVSCOM, AUTOVON 693-1771 or Commercial (314) 263-1771. AIMI items in turn will receive immediate disposition instructions from AVSCOM.

(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.

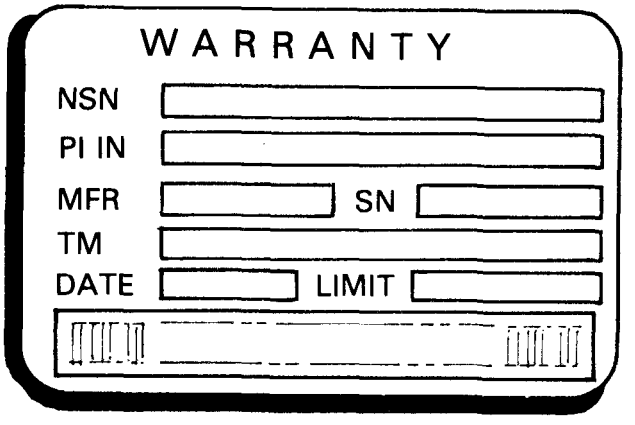


Figure 1. Warranty Decal

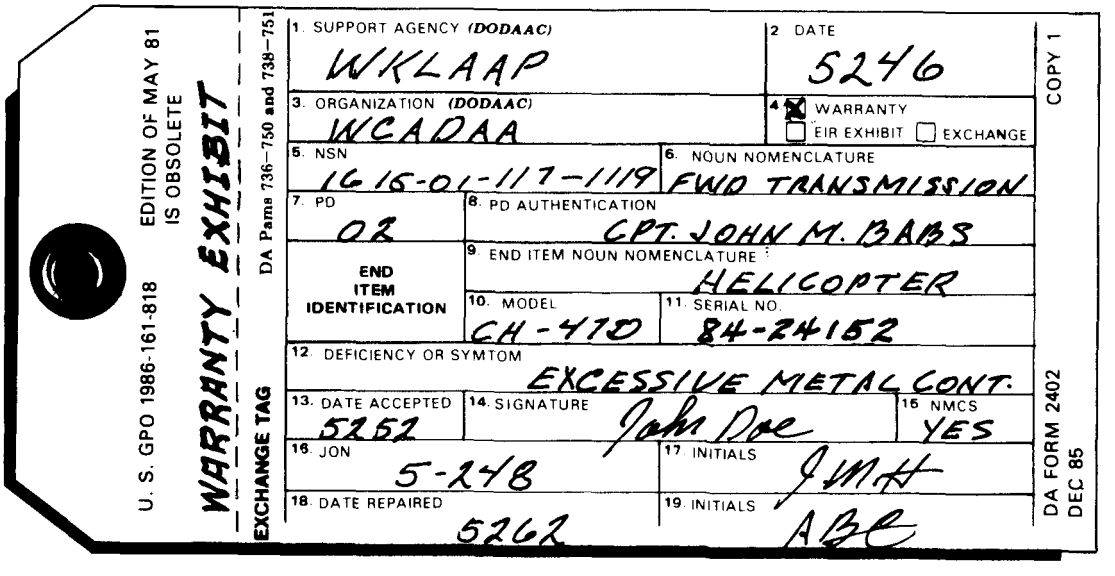
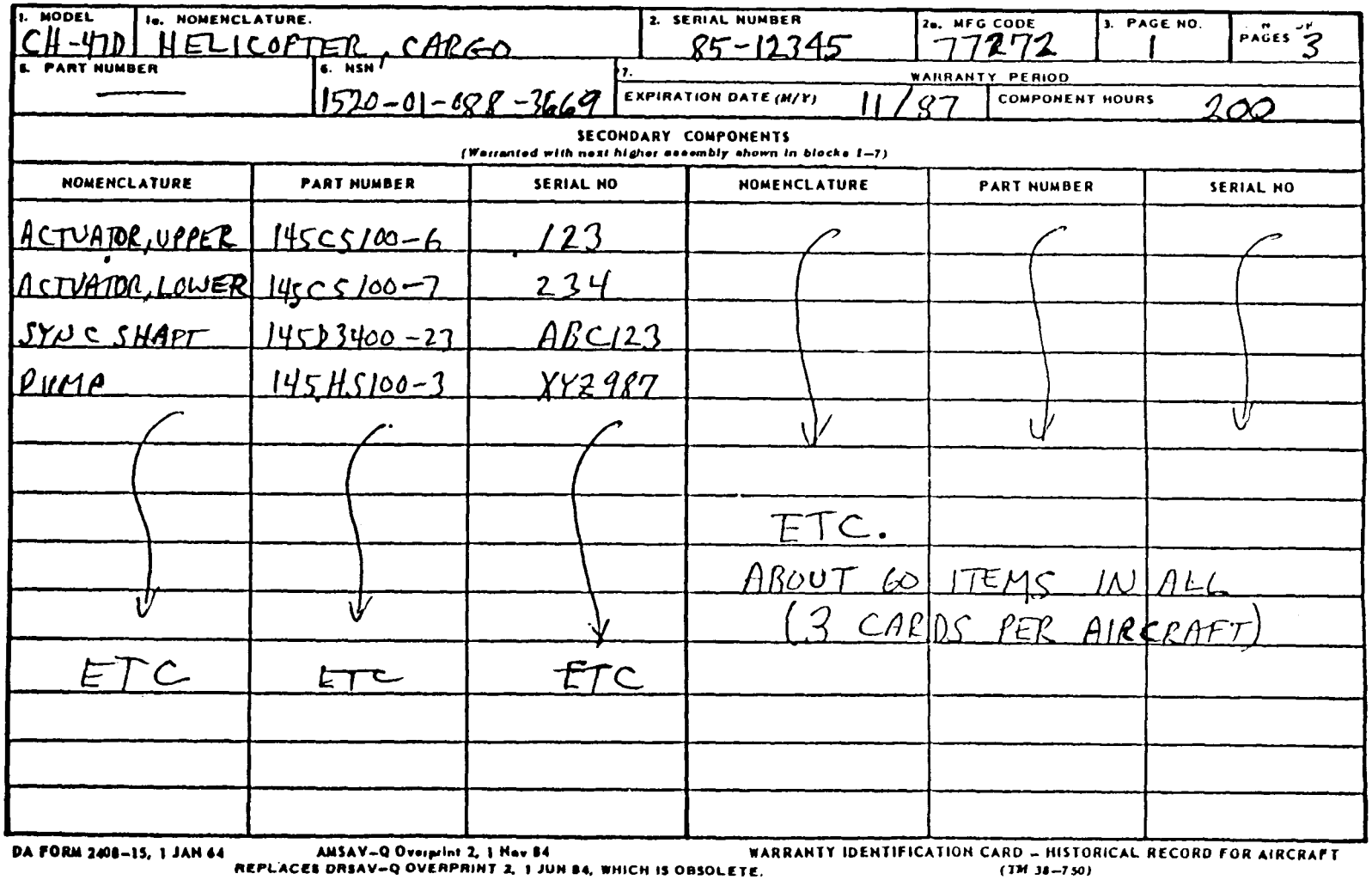


Figure 2. Sample of a Completed DA Form 2402



1. MODEL	1a. NOMENCLATURE.	2. SERIAL NUMBER	2a. MFG CODE	3. PAGE NO.	PAGES
CH-47D	HELICOPTER, CARGO	85-12345	77272	1	3

4. PART NUMBER	6. NSN	7. WARRANTY PERIOD	
—	1520-01-088-3669	EXPIRATION DATE (M/Y) 11/87	COMPONENT HOURS 200

SECONDARY COMPONENTS
(Warranted with next higher assembly shown in blocks 1–7)

NOMENCLATURE	PART NUMBER	SERIAL NO	NOMENCLATURE	PART NUMBER	SERIAL NO
ACTUATOR, UPPER	145C5100-6	123			
ACTUATOR, LOWER	145C5100-7	234			
SYNC SHAFT	145D3400-27	ABC123			
PUMP	145HS100-3	XYZ987			
			ETC.		
			ABOUT 60 ITEMS IN ALL		
			(3 CARDS PER AIRCRAFT)		
ETC	ETC	ETC			

DA FORM 2408-15, 1 JAN 64 AMSAV-Q Overprint 2, 1 Nov 84 WARRANTY IDENTIFICATION CARD – HISTORICAL RECORD FOR AIRCRAFT
REPLACES DRSAV-Q OVERPRINT 2, 1 JUN 84, WHICH IS OBSOLETE. (TM 38-750)

Figure 3. Sample of a Completed Warranty Identification Card

MAINTENANCE REQUEST
For use of this form, see TM 38-750; the proponent agency is DCSLOG.

PAGE NO. 1 | NO. OF PAGES 1 | REQUIREMENT CONTROL SYMBOL CSOLD—1047(R1)

SECTION I – EQUIPMENT DATA

CONTROL NUMBER	WORK ORDER NUMBER	WESDC	ORG PD	PD AUTHENTICATION
472692				

☐ WORK REQUEST ☐ MWO ☒ WARRANTY CLAIM

1a. ORGANIZATION	b. LOCATION	c. UNIT IDENT CODE
117th AVN CO	FT. EASTIS, VA 23604	WAYTAA

2. SERIAL NO.	3. NOUN NOMENCLATURE	4. LINE NO.	5. MODEL	6. NATIONAL STOCK NUMBER
83-15767	HELICOPTER		CH-47D	1520-01-088-3669

7. MAINTENANCE ACTIVITY	a. LEVEL	8. UTILIZATION CODE	9. MCSR ITEM	a. ERC	b. PACING ITEM	10. HOURS	11. MILES	12. ROUNDS	13. STARTS
68th TRANS Co.	F	Ø				80			

14. FAILURE DETECTED DURING (Select one - use ✓ or X)
☐ A Scheduled Maintenance ☐ C Test ☐ E Storage ☐ G Flight
☐ B Handling ☐ D Normal Op ☐ F Inspection ☒ H Other

16. FIRST INDICATION OF TROUBLE (Select one - use ✓ or X)
☒ 088 Inoperative ☐ 298 Overheating ☐ 790 Out of Adjustment
☐ 008 Noisy ☐ 387 Low Performance ☐ Other

16. DESCRIBE DEFICIENCIES OR SYMPTOMS ON THE BASIS OF COMPLETE CHECKOUT AND DIAGNOSTIC PROCEDURE IN EQUIPMENT TM (Do not prescribe repairs)

Hyd Accumulator will not hold charge.

16a. REMARKS

AV 991-1234

SECTION II – WORK ACCOMPLISHED

17a. REPAIR ORGANIZATION/ACTIVITY	c. UNIT IDENT CODE	18. TYPE ORGANIZATION/ACTIVITY ACCOMPLISHING WORK (Select one - use ✓ or X)	19. AMS ACCOUNT CODE
b. LOCATION		☐ 1 TOE ☐ 2 TD ☐ 3 CONTRACTOR	

20a. ACT CODE	b. FAILURE CODE	c. COMPONENT/PART NOUN, SVC, OR MWO NO.	d. CB CODE	e. REF DESIGNATOR	f. MFR CODE	g. MANHOURS (Hrs & tenths)	h. NATIONAL STOCK NUMBER	i. PART SOURCE CODE	j. QTY	k. PARTS COST
	002	Accumulator 12228			97399	.	1560-01-116-2899		1	
						.				
						.				
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						.				
						.				
						.				
						.				
						.				
						.				
						.				

l. TOTAL MANHOURS	m. TOTAL MANHOURS COST	n. TOTAL PARTS COST
	$	$

21. DELAY (Select one) ☐ 1 Parts ☐ 2 Manpower ☐ 3 Facilities ☐ 4 Funds ☐ 5 Tools
22. ☐ DATA TRANSCRIBED

23. SUBMITTED BY	24. RECEIVED BY	25. WORK STARTED BY	26. INSPECTED BY	27. ACCEPTED BY	28. DISPOSITION (Select one)
W. Chance					☐ A To User ☐ C Salvaged ☐ B To Stock ☐ D Evacuated ☐ E Cannibalization
JULIAN DATE 5090	JULIAN DATE	JULIAN DATE	JULIAN DATE	JULIAN DATE	

DA FORM MAY 81 2407 EDITION OF JUL 79 IS OBSOLETE. NMP COPY 2

Figure 4. Sample of a Completed D A Form 2407 for Warranty Claim Actions

APPENDIX A

HELICOPTER PRIMARY COMPONENTS

Nomenclature	FSCM	Part Number	NSN
Forward (Fwd) Rotor Blade	77272	114R1702-37	1615-01-145-7109
Rear/After (Aft) Rotor Blade	77272	114R1702-38	1615-01-145-7110
Fwd Transmission (Xmsn)	77272	145D1300-4	1615-01-117-1119
Aft Xmsn	77272	145D2300-2	1615-01-113-0251
Aft Vertical Shaft	77272	145D3300-3	1615-01-119-3361
Combining Xmsn	77272	145D5300-3	1615-01-146-0850
Engine Xmsn	77272	145D6300-3	1615-01-146-5273
Fwd Pivoting Dual Actuating Cylinder	77272	145H6600-9	1650-01-151-1713
Aft Pivoting Dual Actuating Cylinder	77272	145H6600-10	1650-01-151-5459
Dual Aft Swivel Actuating Cylinder	77272	145H6700-10	1650-01-151-9231
Dual Fwd Swivel Actuating Cylinder	77272	145H6700-11	1650-01-151-9232
Integrated Lower Control Actuator (ILCA)	77272	145H7300-8 (Thrust)	1650-01-117-1263
ILCA	77272	145H7300-13 (Pitch)	
ILCA	77272	145H7300-14 (Roll)	
ILCA	77272	145H7300-15 (Yaw)	
ILCA	77272	145H7300-16 (Spare Only)	1650-01-118-5632
Fwd Swashplate	77272	145R3551-1	1615-01-115-3623
Aft Swashplate	77272	145R3551-2	1615-01-115-3610
Fwd Rotor Head	77272	145R2003-3	1615-01-198-7555
Aft Rotor Head	77272	145R2004-6	1615-01-184-3875
AFCS Control Box/Computer	77272	145VS100-3	6610-01-127-0724

NOTE: Refer to TM 55-1520-240-23P to obtain NSNs for subsequent series dash numbers (later configurations) for the above list of part numbers.

APPENDIX B

HELICOPTER SECONDARY COMPONENTS
(subcomponents to helicopter)

Nomenclature	FSCM	Part Number	NSN
HIR Contr	77272	B65C30	1660-01-115-3636
Fuel Valve	77272	114PS494-1	1680-01-118-7707
Actuator (Upper)	77272	145CS100-6	1680-01-118-5606
Actuator (Lower)	77272	145CS100-7	1680-01-118-5605
Mag Brake (Yaw)	77272	145CS101-3	1680-01-120-7511
Mag Brake (Mech)	77272	145CS101-5	1680-01-118-5556
Actuator	77272	145CS114-1	1680-01-120-7642
Actuator	77272	145CS114-2	1680-01-120-7641
Actuator	77272	145C6100-1	1680-01-117-1332
Actuator	77272	145C6100-3	1680-01-117-1331
Filter Assy	77272	145DS514-3	1615-01-116-4742
Pump (Left)	77272	145DS519-3	4320-01-115-3827
Pump (Right)	77272	145DS519-4	4320-01-115-3826
Sync Shaft	77272	145D3400-23	1615-01-113-0248
Sync Shaft	77272	145D3400-24	1615-01-112-5895
Sync Shaft	77272	145D3400-25	1615-01-113-0292
Sync Shaft	77272	145D3400-26	1615-01-119-3359
Sync Shaft	77272	145D3400-32	1615-01-112-5897
Shaft	77272	145D3500-8	1615-01-113-0293
Indicator	77272	145ES004-1	6680-01-123-7727
Indicator	77272	145ES004-2	6680-01-123-7728
Sig Cond	77272	145ES004-4	6680-01-123-7726
Tach	77272	145ES008-2	6680-01-127-2481
Quadrant	77272	145ES010-3	1680-01-120-7430
Batt Charger	77272	145ES014-1	
Indicator	77272	145ES015-2	1680-01-120-7610
Indicator	77272	145ES025-1	1680-01-120-7434
HSI Mode Select Panel	77272	145E3134-1	
Cargo Hook	77272	145E5505-6	1680-01-121-5193
Pump	77272	145HS100-3	4320-01-115-3948
PTU Motor	77272	145HS140-9	1650-01-114-2160
PTU Motor	77272	145HS140-10	4320-01-118-4428
Sol Valve	77272	145HS143-1	1650-01-115-3820
Sol Valve	77272	145HS143-2	1650-01-119-3840
Sol Valve	77272	145HS143-3	1650-01-115-3816
Fan	77272	145HS202-4	4140-01-115-3696
Fan	77272	145HS202-5	4140-01-115-3697
Res/Cooler	77272	145HS203-1	1650-01-114-2178
Res/Cooler	77272	145HS203-2	1650-01-120-7512
Motor Pump	77272	145HS520-6	1650-01-119-7429
Valve	77272	145HS552-1	1650-01-118-7964
Accumulator	77272	145HS654-7	1650-01-116-2999
Sol Valve	77272	145HS752-1	1650-01-115-9826
Sol Valve	77272	145HS752-2	1650-01-116-2895
Sol Valve	77272	145HS752-3	1650-01-116-2896
Slider Shaft	77272	145R3052-3	1615-01-114-2148
Temp Indicator	77272	165ES1OO-4	6685-01-119-7402

APPENDIX B

HELICOPTER SECONDARY COMPONENTS (continued)

Nomenclature	FSCM	Part Number	NSN
Valve (Hoist Control)	77272	173HS113-2	1650-01-119-3372
Valve (Solenoid)	77272	173HS139-3	4810-01-120-4276
Cylinder	77272	173HS510-1	1680-01-123-2704
Generator	77272	179-60500-11	6115-01-115-9485
Generator	77272	179-60500-5	6110-01-123-0157
Absorber	77272	234N0003-1	1560-01-117-1084
XMTR	77272	234PS459-1	6620-01-128-4462
Link Assy (Aft)	77272	414C3056-3	1615-01-117-1135
Link Assy (Fwd)	77272	414C3056-4	1615-01-117-1136
Sig Proc	77272	414vS806-3	1680-01-123-7643
Ctl Unit, LVL Sensing	77272	472580-011	6680-01-137-5709
(subcomponents of primary components)			
Horizontal Hinge Pin	77272	114R2197-1	1615-00-185-8295
Tension Torsion Strap	77272	114R2155-1	1615-00-740-6480
Vertical Hinge Pin	77272	114R2172-1	1615-00-984-5550
Spherical Ball	77272	114R3104-3	3120-00-868-6999
Main Lube Pump	77272	145DS102-3	4320-01-115-3822
Aux Lube Pump	77272	145DS012-3	4320-01-119-3842
Oil Cooler	77272	145DS105-1	1615-01-113-0217
Oil Cooler Blower	77272	145DS106-9	1615-01-113-0224
Main Lube Pump	77272	145DS211-2	4320-01-115-3823
Aux Lube Pump	77272	145DS012-4	4320-01-115-3821
Oil Cooler	77272	145DS209-1	1615-01-112-5900
Oil Cooler Blower	77272	145DS210-3	1615-01-113-0272
Oil Cooler	77272	145DS517-1	1615-01-112-2978
Oil Cooler	77272	145DS517-4	1615-01-112-2979
Oil Cooler	77272	145DS517-5	1615-01-112-2980
Oil Cooler	77272	145DS518-3	1615-01-116-7092
Fan Drive Shaft	77272	145DS319-3	1615-01-113-0239
Oil Filter and Relief	77272	145DS514-6	1615-01-116-4741
Filter Assembly (L/H)	77272	145DS514-3	1615-01-116-4742
SAS Link	77272	145H7350-10	
SAS Link	77272	145H7350-9	
SAS Link	77272	145H7350-11	
CCA Logic	94580	10071191-102	1680-01-251-2331
CCA-Roll Axis	94580	10071195-102	1680-01-250-7921
CCA-Pitch Axis	94580	10071199-102	1680-01-250-7924
CCA-Yaw Axis	94580	10071203-101	1680-01-120-7684
CCA-BITE No. 1	94580	10071207-101	1680-01-120-7685
CCA-BITE No. 2	94580	10071211-101	1680-01-120-7681
CCA-Synchronizer	94580	10071218-101	1680-01-188-5644
CCA-Collective	94580	10071215-101	1680-01-120-7683
CCA-Power Supply	94580	10071223-101	1680-01-118-5645
CCA-Power Supply	94580	10071227-101	1680-01-120-7678

APPENDIX C

T55-L-712 ENGINE SECONDARY COMPONENTS

Nomenclature	FSCM	Part Number	NSN
1st Disc Assy	91547	2-121-090-33	
1st Nozzle	91547	2-121-300-31	
P.T. Assy	91547	2-141-140-26	
Pump, Rotary	91547	2-300-384-01	4320-00-155-4209
3rd Nozzle	91547	2-141-120-40	2840-01-100-1956
Boost Pump	91547	2-160-790-04	4320-00-903-5580
Filter	91547	2-170-420-01	2915-01-108-3653
Cooler Assy	91547	2-160-750-02	2935-00-974-9848
Starter Drive	91547	2-160-010-17	2840-00-974-0248
Air Diffuser	91547	2-110-070-25	2840-01-098-7713
Retainer Assy	91547	2-101-650-08	2840-00-111-0029
No. 3 Bearing	91547	2-300-034-01	3110-00-018-9654
Gear Assy	91547	2-070-000-10	2840-00-617-6057
Housing & Vane Assy	91547	2-101-550-21	
Combustor Assy	91547	2-131-130-41	
Manifold	91547	2-160-950-29	2915-01-128-6344
Housing, Inlet	91547	2-061-280-06	2840-01-097-8818
2nd Disc Assy	91547	2-121-110-25	
2nd Nozzle	91547	2-121-100-31	2840-01-097-9838
Accy Gearbox	91547	2-080-000-36	2840-01-135-0107
Actuator Assy	91547	2-160-350-15	2995-00-485-0810
4th Nozzle	91547	2-141-430-05	2840-01-107-7979
Filter	91547	2-161-630-02	2915-01-111-0168
Filter	91547	2-300-796-01	2915-01-109-2950
Torque Kit	91547	2-200-070-23	2840-00-118-5707
Housing Assy	91547	2-160-020-14	2840-00-975-0253
Housing	91547	2-101-640-09	2840-00-937-5622
No. 2 Bearing	91547	2-300-035-01	3110-00-116-5534
No. 6 & NO. 7 Bearings	91547	2-300-059-01	3110-01-111-5584
Housing Assy	91547	2-060-250-15	
Case, Compressor	91547	2-101-700-11	2840-01-128-6580
Combustor Housing	91547	2-131-090-38	2840-01-100-3517
Manifold	91547	2-160-950-30	2915-01-128-6345

NOTE: Refer to TM 55-2840-254-23P to obtain NSNs for subsequent series dash numbers (later configurations) for the above list of part numbers.

By Order of the Secretary of the Army:

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

Official:

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

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

DATE SENT

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TB 55-1520-240-3	24 March 88	WARRANTY PROGRAM FOR HELICOPTER, CARGO TRANSPORT CH-47D

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 Cylenders. The engine on my set only has 4 Cylenders. Clange the manual to show 4 Cylenders.

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 2910-00-762-3001. 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
JOHN DOE

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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 decigram = .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

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
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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