Note

An alternate method is to wrap support cables around the center of the lift link beam structure similar to sketch below and remove transmission cowl and stow in cabin.

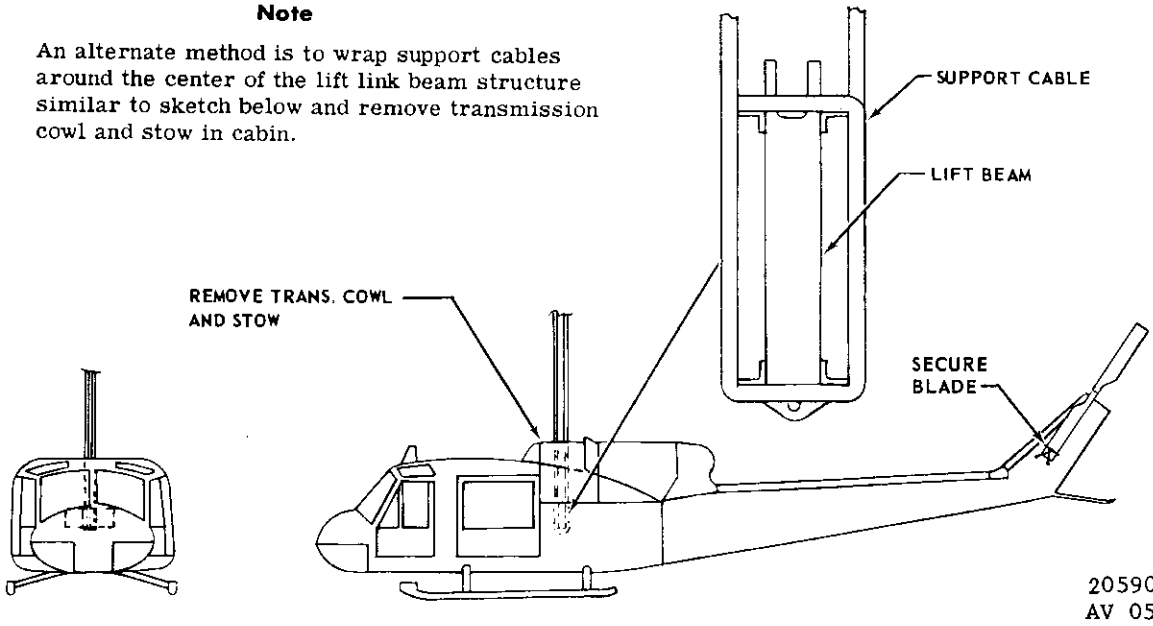


Figure 1-14. UH-1 retrieval with airframe damaged (tail boom and fuselage) with rotor and mast destroyed - alternate method

Note

This configuration shows the forward fuselage only. It is advisable to attach a cable support fitting to the lift link beam. To prevent pitching, attach a support cable through the skid tube towing ring and around the skid tube, both sides, as shown. Remove and stow transmission cowl.

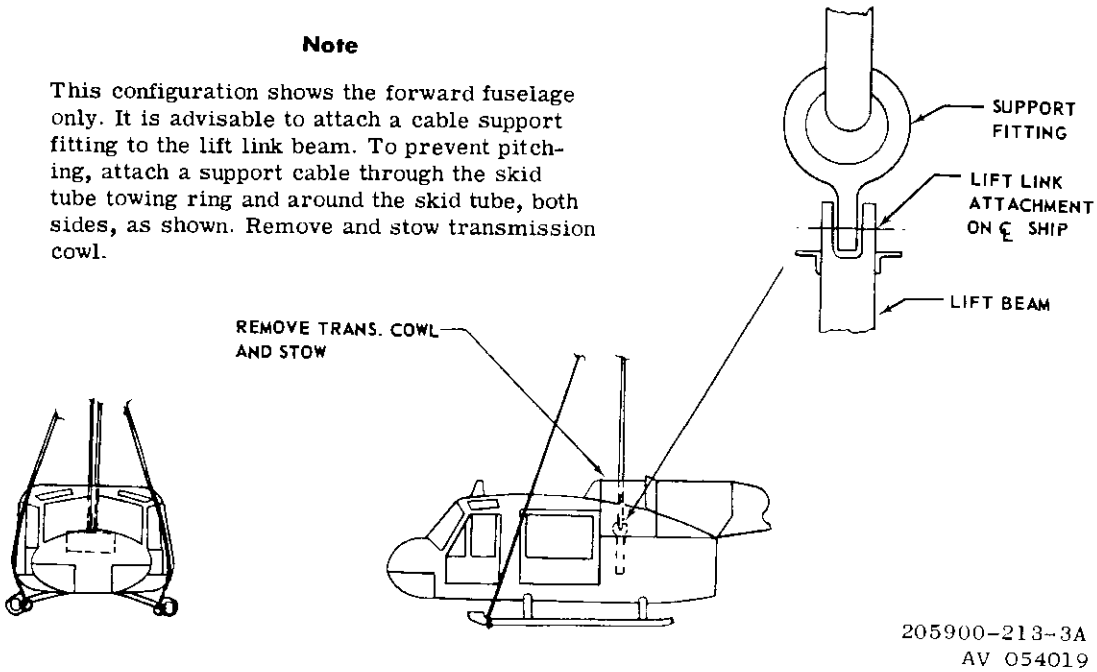


Figure 1-15. UH-1 retrieval with only forward fuselage intact (rotor mast and tail boom destroyed) - preferred method

Note

Same as 1-15 except support cables may be sling wrapped around the lift link beam in lieu of the attach fitting (see sketch). Remove and stow transmission cowl.

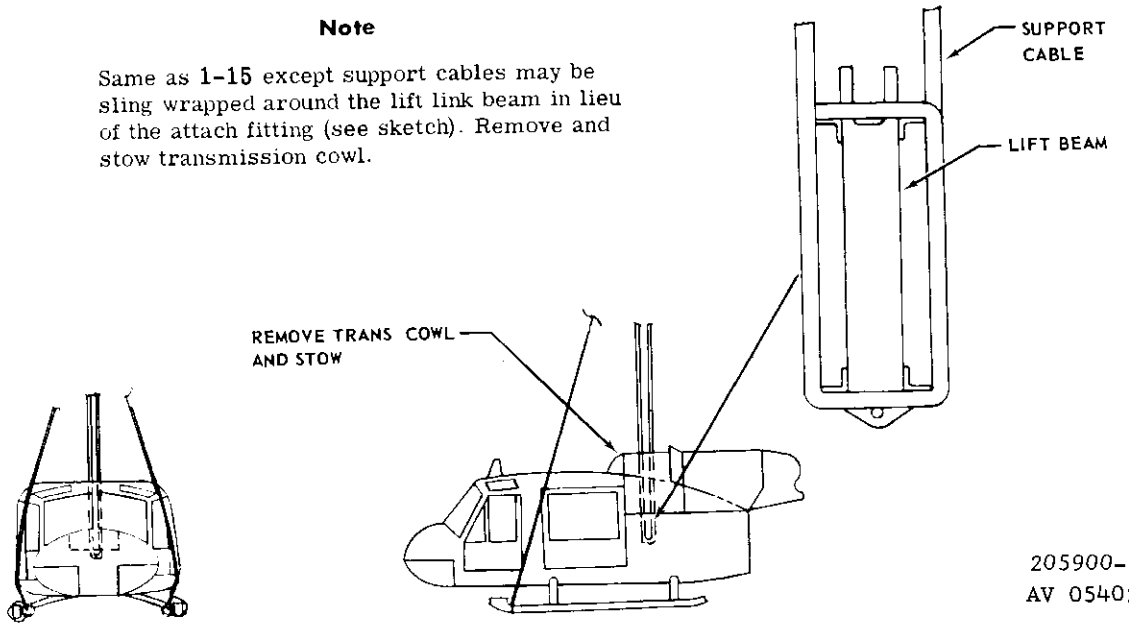


Figure 1-16. UH-1 retrieval with only forward fuselage intact (rotor mast and tail boom destroyed) - alternate method

Note

In retrieving the forward fuselage with mast intact and tailboom removed, it is advisable to use a suitable clevis to pick up the mast nut and support cables be tied to the tow hook at the front of the cross tubes, typical both sides, to prevent forward pitching.

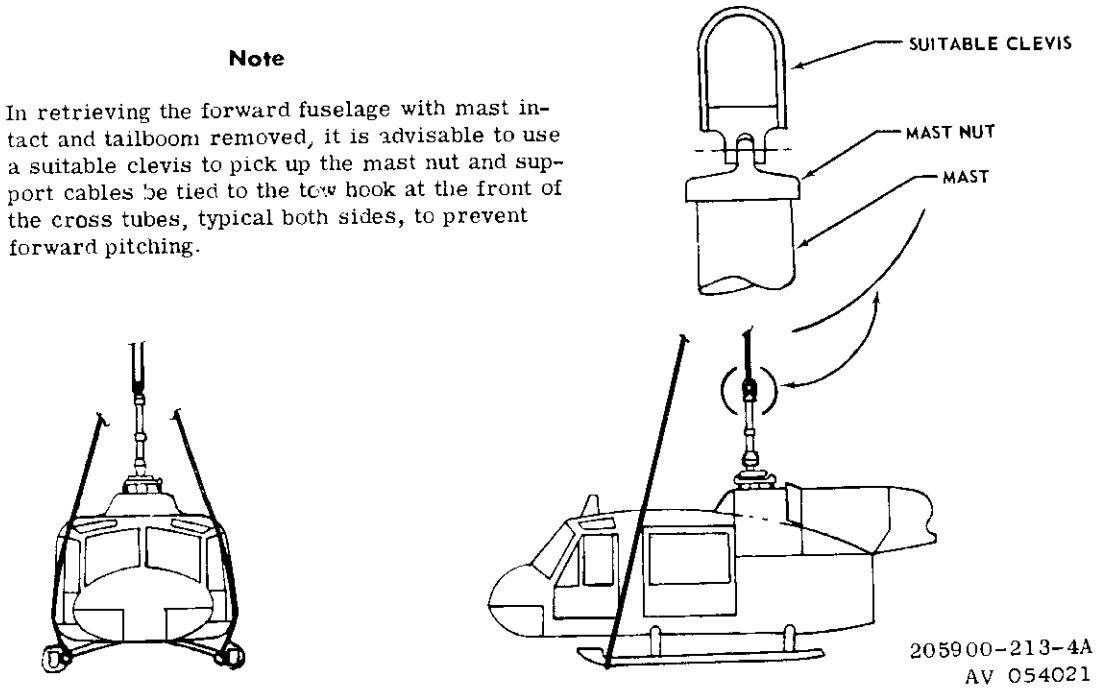


Figure 1-17. UH-1 retrieval forward fuselage with mast intact and tail boom removed

CHAPTER 2

LUBRICATION INSTRUCTIONS

SECTION I GENERAL LUBRICATION REQUIREMENTS

2-1. LUBRICATION INSTRUCTIONS.

2-2. GENERAL LUBRICATION REQUIREMENTS.

2-3. This Chapter covers the lubrication requirements of the aircraft as shown on Lubrication Chart in Section II.

SECTION II LUBRICATION CHART

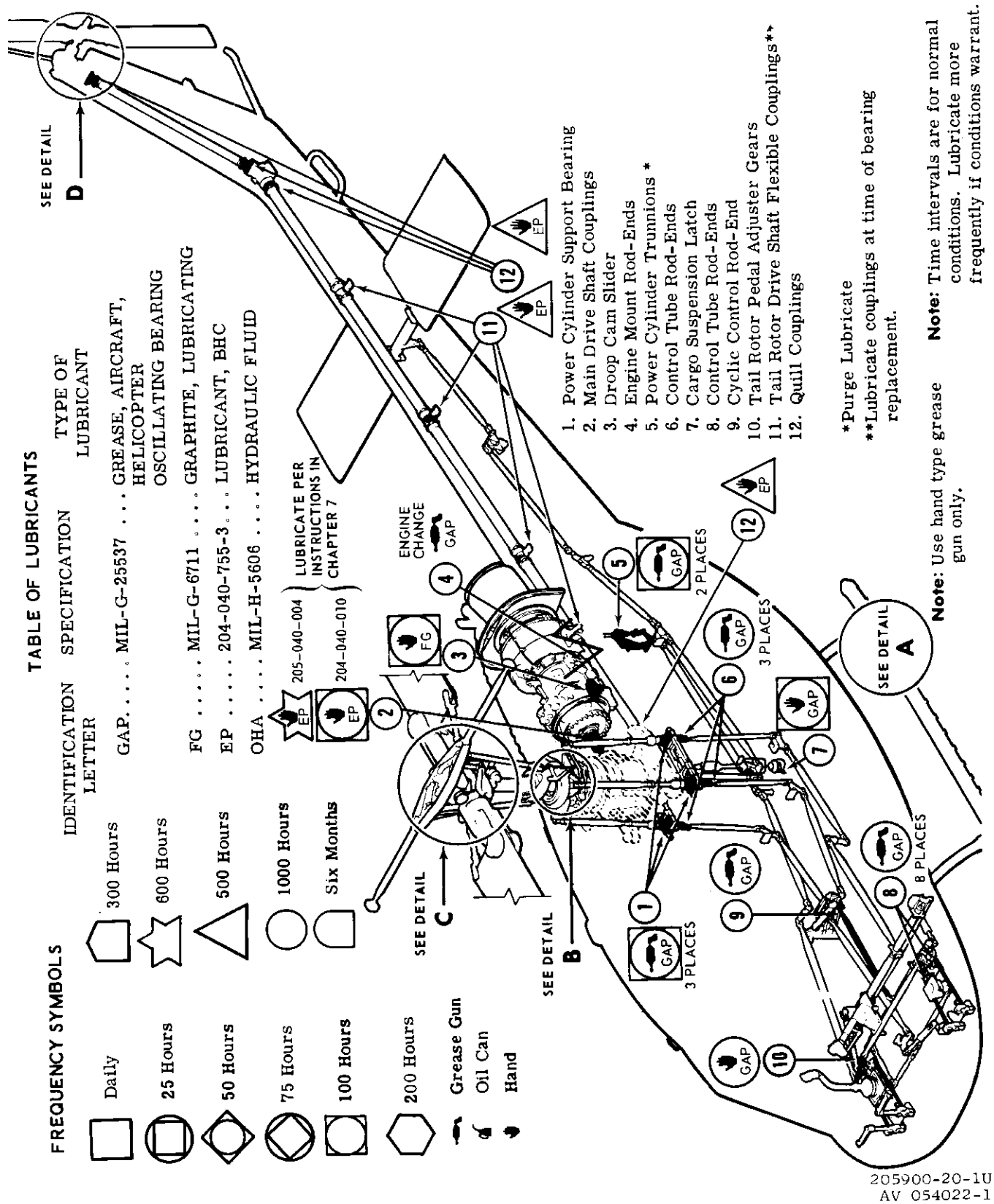


Figure 2-1. Lubrication chart (Sheet 1 of 3)

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 5	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(2) If visual inspection reveals yielding or deformation of mast (give particular attention to areas which would be contacted by static stops), or if cracked or broken or otherwise obviously unserviceable, condemn mast as non-reparable.		
		(3) If mast does not show such discrepancies, send to overhaul for evaluation.		
4		d. Transmission Assembly.		
		(1) Replace and visually inspect transmission assembly.		
		(2) If the mast assembly revealed torsional yielding, the transmission should be considered unserviceable and non-reparable.		
		(3) If mast did not show such damage, and there is no other obvious damage which makes transmission non-reparable, send transmission assembly to overhaul for evaluation.		
3		e. Main (Input) Drive Shaft.		
		(1) Replace and visually inspect main drive shaft assembly.		
		(2) If inspection reveals yielding or deformation, the drive shaft assembly should be considered unserviceable and non-reparable. Otherwise, unless obviously non-reparable for other reasons, send drive shaft assembly to overhaul for evaluation.		
5		f. Engine: Refer to TB 55-2800-200-30/1 Sudden Stoppage Inspection.		
6		g. Tail Rotor.		
		Note Known or suspected contact of tail rotor with soft ground, snow, water, or dense vegetation requires this special inspection to the extent of condemning the tail rotor hub and blade assembly, and conducting a progressive inspection of the tail rotor drive system. Automatic replacement of main rotor components would not be required.		
		(1) If sudden stoppage originated at main rotor, the tail rotor hub and blade assembly may remain in service providing there is no visible external damage. If there is obvious damage, replace and send tail rotor hub and blades to overhaul for evaluation.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 4	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		d. Swashplate and support assembly.		
		e. All connecting controls and control bolts.		
		f. Conduct engine-transmission alignment check.		
	4	AFTER SUDDEN STOPPAGE (POWER ON OR POWER OFF)		
		DEFINITION: Sudden stoppage is defined as any rapid deceleration of the drive system, whether by internal seizure of the transmission or by main or tail rotor blades striking something which causes rapid deceleration or enough tail rotor damage to require replacement.		
		INSPECTION: Conduct a progressive inspection, replacing components according to the following criteria.		
	4	a. Main Rotor.		
		(1) Visually inspect both blades for skin wrinkles and other evidence of damage.		
		(2) If either blade is damaged, replace both blades and the hub assembly. Send components to overhaul for evaluation.		
		(3) If neither blade shows damage, and there is no obvious damage to the hub, both blades and hub assembly may remain in service.		
	4	b. Main Rotor Rotating Controls.		
		(1) Replace all bolts in rotating controls.		
		(2) Replace swashplate assembly, scissors and sleeve assembly, and stabilizer bar and send to overhaul for evaluation if any of the following conditions exist:		
		(a) Severe main rotor damage (blade bent, twisted or badly torn).		
		(b) Main rotor pitch horn failure.		
		(c) Yielded stabilizer bar tube.		
		(d) Control tube buckled or broken.		
		(e) Transmission main support case mounting lug broken.		
	4	c. Mast Assembly.		
		(1) Replace and visually inspect mast assembly.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 3	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(1) Thorough engineering investigation has determined hard landings, as defined above, do not adversely affect the following components. If thorough visual inspection does not reveal any discrepancies or obvious damage to components listed below, they may be retained in service for continued usage. (a) Main Rotor Blades (b) Tail Rotor Blades (c) Main Rotor Hub (d) Tail Rotor Hub (e) 42 Degree Gear Boxes (f) 90 Degree Gear Boxes (g) Tail Rotor Driveshafts (h) Driveshaft Hanger Assemblies (i) Stabilizer Bar Assemblies (j) Swashplates (k) Scissors and Sleeve Assembly		
All Areas	AFTER A HARD LANDING: IF EXCESSIVELY HARD CONTACT OF MAIN ROTOR HUB STOP AGAINST MAST WAS EXPERIENCED, REPLACE AND ALIGN THE FOLLOWING COMPONENTS: a. Main rotor blades and attachments. b. Main rotor hub. c. Transmission and mast assembly. d. Transmission to fuselage lift link. e. Conduct engine-to-transmission alignment check.			
All Areas	AFTER A HARD LANDING IF DAMAGE IS FOUND IN ROTATING CONTROLS, REPLACE THE FOLLOWING COMPONENTS: a. Stabilizer bar. b. Main rotor pitch horns. c. Collective sleeve assembly.			

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 2	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		o. Inspect oil pump for loose bolts and cracked flanges. p. Check fuel control for cracked flanges. q. Check engine mounting pads for cracks. r. Check oil and fuel hose connections for tightness. s. Check all accessories for loose bolts, nuts, and connections.		
All Areas		AFTER A HARD LANDING: IF DAMAGE TO CENTER FUSELAGE STRUCTURE OR TAIL BOOM IS SUCH THAT A MAJOR REPAIR, REPLACEMENT OR ALIGNMENT IS NECESSARY, REPLACE THE FOLLOWING COMPONENTS: Note Hard landings for the purpose of the evaluation criteria outlined below may be defined as any incident in which the impact of the helicopter with the ground causes severe pitching of the main rotor allowing static stops to severely contact the mast; or pitching resulting in cracking the aft lugs of the transmission lower case. This definition is confined only to those incidents not involving sudden stoppage. a. Hard Landing Evaluation Criteria Established for Transmissions: (1) Remove the transmission and return to depot for evaluation overhaul. b. Hand Landing Evaluation Criteria Established for Input Driveshafts: (1) Remove input driveshaft and return to depot for evaluation overhaul. c. Hard Landing Evaluation Established for Masts: (1) If inspection reveals yielding or deformation in the area which would be contacted by the main rotor static stops or other obvious damage, the mast assembly should be considered unserviceable and non-reparable. (2) If post inspection does not reveal the discrepancies above, the component should be returned to depot for evaluation overhaul. d. Components Not Requiring Evaluation Criteria Due to Hard Landings:		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 1	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
All Areas		AFTER A HARD LANDING a. Inspect landing gear skid tubes and cross tubes for damage or more than normal deflection. Inspect aft cross tube mounting area for damage. b. Check all cowling and doors for proper fit and alignment. Misaligned cowling may indicate a distorted fuselage resulting in major stresses and damage to components. c. Remove all cowling necessary to perform a complete visual inspection. d. Inspect airframe structure with a ten-power magnifying glass at the transmission mounting points. Particular attention should be given to the rubber mount attachment points. Inspect lift link and attaching parts. Inspect engine mount legs for bends or cracks. e. Inspect tail skid tube and mounting for damage. Inspect tail boom internally and externally for cracks, distortion and loose rivets. Inspect the tail boom attachment points for elongated bolts and damaged structure. f. Carefully inspect the flight control system from pilot's controls to rotor head for bent or damaged tubes, bellcranks, supports, and damaged bearings. Particular attention should be given to the mast control rods and collective sleeve assembly. g. Using hydraulic test unit, pressurize hydraulic control system and check for leaks, interference or binding, and satisfactory operation. h. Inspect mast for indentation caused by hard contact and static stop for flattened or distorted condition. i. Inspect main rotor blades for contact with tail boom. If damage is found, refer to inspection AFTER SUDDEN STOPPAGE - MAIN ROTOR. j. Inspect tail rotor blades for damage. If damage is found, refer to inspection AFTER SUDDEN STOPPAGE - TAIL ROTOR. k. Inspect fuel and oil systems for damage. Before flight, pressurize fuel and oil systems and check for leaks. l. Check accessory drive gear box for cracked flanges. m. Check overspeed governor and tachometer drive for distortion, cracks, and bent shafts. n. Inspect oil filter for loose bolts, damaged filter element, and metal particles.		

SECTION II SPECIAL INSPECTION

3-5. DEFINITION AND GENERAL INFORMATION.

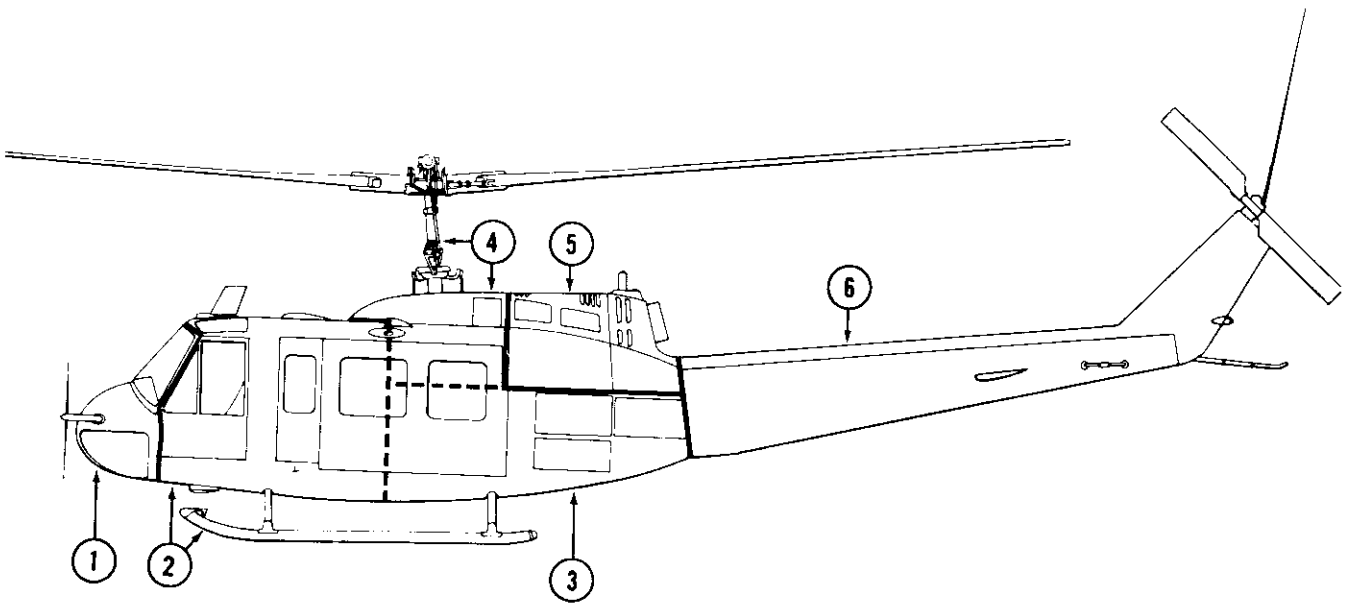
3-6. This section supplements the scheduled inspections as outlined in the Preventive Maintenance Inspection Checklists TM 55-1520-210-20PMD, -20 PMI, and -20PMP to include inspection of items which are required to be inspected at intervals not compatible with airframe operating time or airframe inspection intervals. Typical of this type inspection items are:

a. Inspection which is contingent upon specific conditions or incidents that arise, and only because of these conditions or incidents, immediate inspection is required to insure further safe flight; such as, hard landings, overspeed, sudden stoppage, etc.

b. Inspection of components or airframe, on a calendar basis; such as, first aid kits, weight and balance check, aircraft inventory, etc. This type inspection will be accomplished during the nearest intermediate or periodic inspection.

c. Specific definitive inspections on aircraft engines based strictly upon engine operating time.

d. Refer to TM 38-750 for applicable forms, records, and worksheets.



AREA No. 1	Nose Area	All surfaces, components, and equipment in nose compartment and on exterior ahead of crew doors.
AREA No. 2	Cabin and Landing Gear	All surfaces, components, and equipment inside cabin, and on cabin exterior between forward sides of crew doors and aft cabin walls and pylon island structure. Includes complete landing gear, but does not include forward fuel cell sumps on cabin underside.
AREA No. 3	Center Fuselage Area	All surfaces, components, and equipment in fuselage below engine deck level, between cabin area and tail boom attachment bulkhead. Includes fuel cells (also forward cells under cabin floor), compartment in pylon island below main transmission, and compartments accessible through side doors on fuselage.
AREA No. 4	Pylon Area	All surfaces, components, and equipment of the main rotor pylon group, from top of mast to bottom of transmission. Includes main rotor, mast and rotating controls, transmission with accessories and mounts, and main (input) drive shaft.
AREA No. 5	Engine Area	All surfaces, components, and equipment associated with engine installation, located above engine work deck and within engine cowling, tailpipe fairing, and intake fairing.
AREA No. 6	Tail Boom Area	All surfaces, components, and equipment located in or on the tail boom and vertical fin structure. Includes tail rotor, synchronized elevator, and control linkages; also the complete drive train of shafts and gear boxes between main transmission and tail rotor.

For: TM 55-1520-210-20 PMD
TM 55-1520-210-20 PMI
TM 55-1520-210-20 PMP

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Figure 3-1. Area inspection diagram

CHAPTER 3

INSPECTION REQUIREMENTS

SECTION I GENERAL INFORMATION AND SCOPE

3-1. GENERAL INFORMATION.

3-2. This chapter contains complete requirements for special inspections, test flight, overhaul and retirement schedule and standards of serviceability applicable to the aircraft.

3-3. SCOPE.

3-4. The inspections prescribed in this chapter will be accomplished at specified periods by organizational maintenance activities with the assistance of direct support activities when required. The following conditions will be noted during the performance of these inspections.

a. The inspection requirements are stated in such a manner as to establish what and when certain equipment is to be inspected and the condition to be sought. Compliance with the provisions outlined herein and with the Preventive Maintenance Inspection Checklists (TM 55-1520-210-20PMD, -20PMI and -20PMP) are required in order to assure that latent defects are discovered and corrected before malfunctioning or serious trouble results. In order to arrange inspection requirements as nearly as possible according to the manner in which work will be assigned, the requirements in each section are divided into groups under area headings. (See figure 3-1.) This figure will be the same as the area diagram presented in the appropriate Preventive Maintenance Inspection Checklist. An area title indicates a specific aircraft location which may be comprised of several systems or groups of related components within this given area.

b. Inspection methods employed; environmental and geographical conditions; availability of specialized, skilled, or semi-skilled manpower; and facilities utilized are extremely variable; therefore, flexibility is provided with respect to the order of performance of the various inspections as required by efficient management of the inspection function assuring that the inspection requirements designated are adhered to and accomplished.

c. This manual pertains to all UH-1D/H series aircraft and may therefore contain inspection requirements applicable to specific equipment not installed on individual aircraft. When this situation is encountered, those requirements that are not applicable should be disregarded.

d. The inspection requirements contained herein are printed on inspection checksheets which will be locally reproduced and utilized while performing the respective inspection.

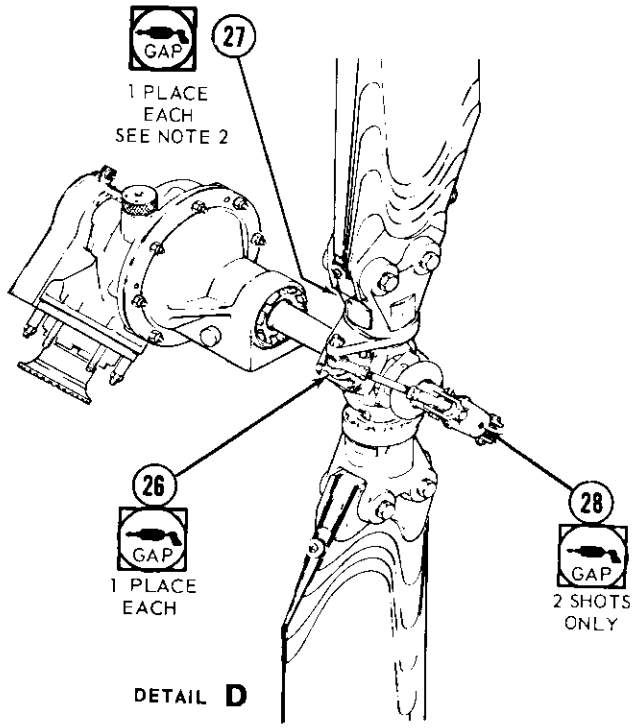
26. Trunnion Bearings
27. Grip Bearings
28. Crosshead Bearing
29. Pitch Change Link Universal
30. Outboard Mixing Lever Bearing*
31. Damper Link Rod Ends
32. Stabilizer Frame Bearing

Note 1: Use hand type grease gun only.

Note 2: If conditions warrant, purge lubricate tail rotor hub and blade grip bearings (Item 27) every 25 hours as follows:

1. Disconnect pitch link at one blade grip and purge bearing with grease. Rotate grip several times in both directions. Repeat purging procedure. Wipe off excess grease and reconnect pitch link.

2. Disconnect pitch link on opposite blade grip and purge bearing in accordance with step 1 procedure. Reconnect pitch link.



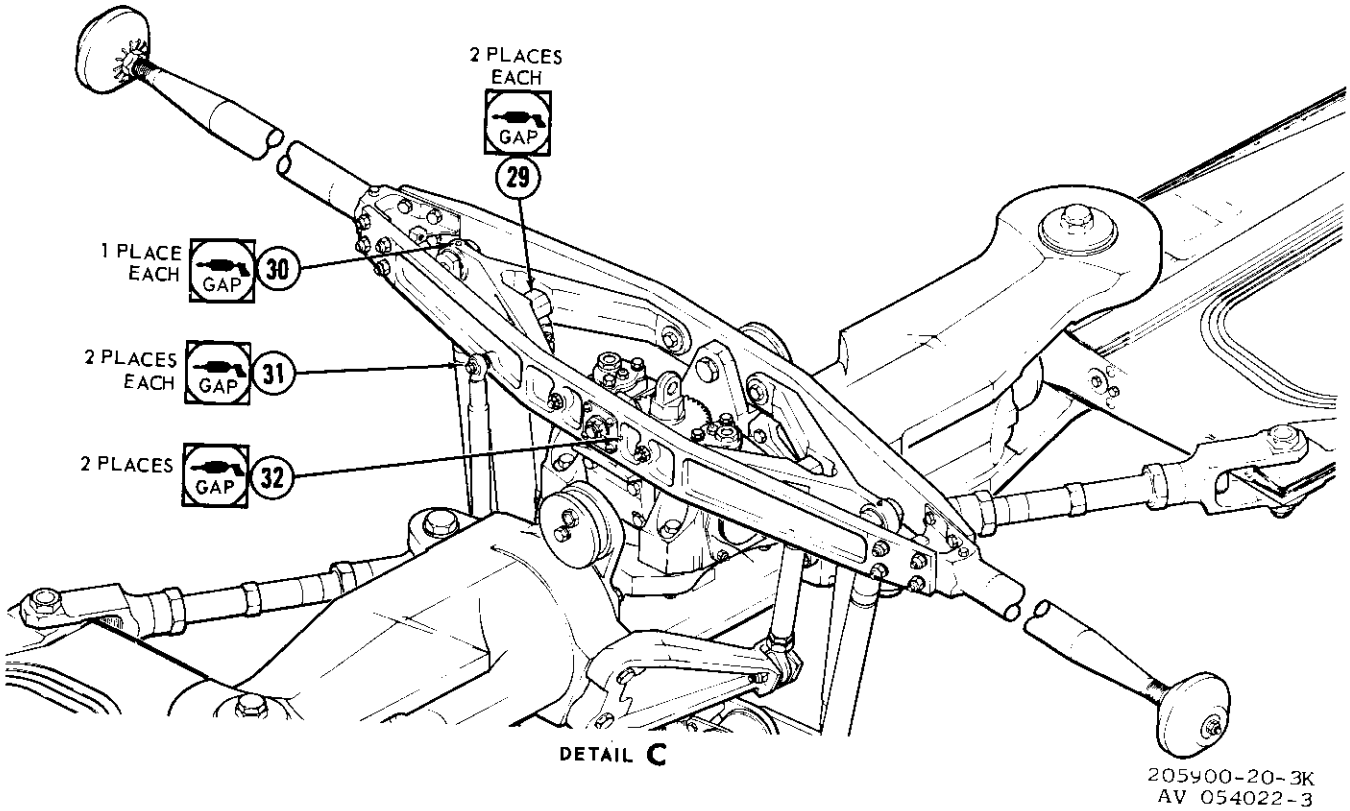


Figure 2-1. Lubrication chart (Sheet 3 of 3)

13. Axle Pivot Point
14. Actuating Cylinder Trunnions***
15. Wheel Bearings
16. Pin Assembly
17. Securing Pin
18. Collective Sleeve Bearings
19. Scissor Bearings
20. Collective Lever Trunnion***
21. Swashplate Bearings
22. Outer Control Plate Trunnions***
23. Control Plate Trunnions***
24. Scissors Pivot Cover Plate
25. Collective Sleeve Splines

***Disconnect the push-pull tube clevis and rotate the bearing while lubricating. Purge lubricate.

Note: Use hand type grease gun only

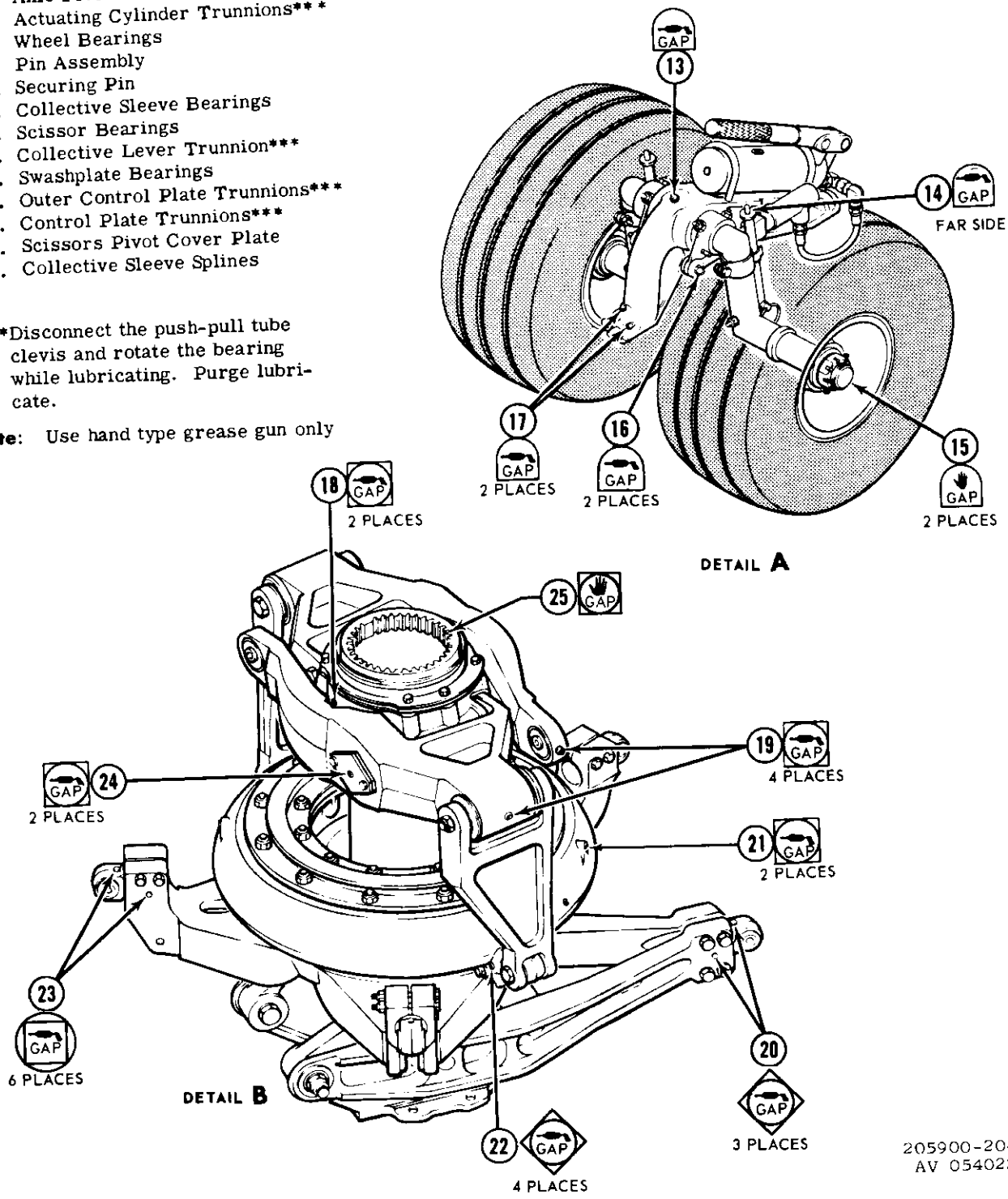


Figure 2-1. Lubrication chart (Sheet 2 of 3)

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 6	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(2) If sudden stoppage originated at tail rotor blades the tail rotor hub and blade assembly should be condemned as non-airworthy and non-reparable.		
		(3) If the sudden stoppage originated at the transmission or at the 42 or 90 degree gear box, replace tail rotor hub and blade assembly. Send removed hub and blade assembly to overhaul for evaluation.		
6		h. Gear Boxes 42 Degree and 90 Degree.		
		(1) Remove and visually inspect gear boxes. If broken or mutilated so that parts cannot be salvaged, the gear box should be considered unserviceable and non-reparable. Otherwise, send gear box assemblies to overhaul for evaluation.		
6		i. Tail Rotor Drive Shaft.		
		(1) Remove and visually inspect drive shafts.		
		(2) If a drive shaft shows any of the following, it should be considered unserviceable and non-reparable:		
		(a) Curvic faces distorted.		
		(b) Evidence of overload.		
		(c) Cracks.		
		(d) Loose or sheared rivets.		
		(e) Scratches exceeding damage limits. (Refer to Chapter 7.)		
6		j. Tail Rotor Drive Shaft Hangers.		
		(1) If there was drive shaft failure as result of torsional overload, all tail rotor drive shaft hangers shall be considered unserviceable and non-reparable.		
		(2) If there was main rotor contact with tail rotor drive shaft, or if damage from other circumstances caused a failure of the drive shaft, the hanger assemblies to which the failed shaft was attached should be considered unserviceable and non-reparable.		
		(3) If the above conditions do not exist, send hanger assemblies to overhaul for evaluation.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 7	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
4 & 6		AFTER MAIN ROTOR OVERSPEED Inspection and/or replacements are required after any report that main rotor has exceeded 339 RPM. When 356 RPM has been exceeded, additional requirements apply. MAIN ROTOR OVERSPEED LESS THAN 356 RPM. a. Inspect the following: b. Main rotor blades for damage, bond separation and distortion. c. Tail rotor blades for damage, bond separation and distortion. MAIN ROTOR OVERSPEED EXCEEDING 356 RPM a. Remove main rotor hub and return to overhaul facility for evaluation. b. Visually inspect main retention bolts and drag brace bolts for shear offset. c. Inspect main rotor blades as follows: (1) Visually inspect blade skin. Any wrinkle or deformation is cause for blade replacement. (2) Visually inspect for evidence of looseness of inertia weight inside blade spar. If blades have visible screws through the leading edge abrasion strip to attach inertia weight inside spar, inspect for loose screws or distorted holes. If screws are covered by the abrasion strip, remove tip cap to inspect inertia weight. Any evidence of looseness of weight is cause for blade replacement. (3) Blades which pass these inspections are acceptable for further service. Forward blades which do not pass inspection to higher maintenance echelon with complete report of discrepancies. d. Inspect tail rotor blades as follows: (1) If inspection reveals bond separation around tip block or crack in tip block through tip weight holes, remove blades and return to overhaul for evaluation. (2) If inspection reveals laminate or grip plate separation condemn the blade as non-reparable. e. Replace tail rotor retention bolts (4).		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 8	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		f. If thorough inspection reveals no discrepancies the tail rotor hub and blade assembly may be rebalanced and retained in service. g. The following parts may remain in service, if thorough inspection after overspeed reveals no obvious damage. (1) Transmission. (2) 42 Degree gear box (3) 90 Degree gear box. (4) Mast. (5) Input drive shaft. (6) Tail rotor drive shaft. (7) Drive shaft hanger assemblies. (8) Stabilizer bar assembly. (9) Swashplate. (10) Scissors and sleeve assembly. (11) Tail rotor hub. AFTER EXCESSIVE ENGINE TORQUE. Overtorque is defined as any incident in which torsional loads are introduced into the helicopter dynamic system in excess of 50 psi as determined on the engine torque meter. (For inspection of engine, refer to TB-2800-200-30/1.)		
4		OVERTORQUE FROM 50 THROUGH 54 PSI. a. Inspect transmission as follows: (1) Inspect main transmission magnetic plugs. (2) Inspect main transmission air maze oil screen. (3) If metal particles are found indicating internal failure, remove transmission and return to overhaul for evaluation. (4) If magnetic plugs and oil screen show no evidence of internal failure, continue to operate the transmission for five hours and repeat steps (1) and (2).		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 9	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(5) If metal particles or any evidence of internal failure are found after five hours of operation return the transmission to overhaul for evaluation.		
		(6) If no evidence of internal failure is indicated, normal operations should be resumed.		
4 & 6		b. The following parts may be retained in service, if thorough inspection after over torque of 50 through 54 psi, reveals no obvious damage:		
		(1) Main rotor blades.		
		(2) Tail rotor blades.		
		(3) Tail rotor hub.		
		(4) 42 Degree gear box.		
		(5) 90 Degree gear box.		
		(6) Tail rotor drive shafts.		
		(7) Drive shaft hanger assemblies.		
		(8) Stabilizer bar assembly.		
		(9) Swashplate.		
		(10) Scissors and sleeve assembly.		
		(11) Input drive shaft.		
		(12) Mast.		
4 & 6		OVERTORQUE FROM 54 THROUGH 61 PSI.		
		a. Inspect transmission as follows:		
		(1) Perform steps b. (1), through (6), as listed under overtorque from 50 through 54 psi.		
		b. Remove and replace main rotor pillow block bolts Part No. 205-011-171-1. Bolts Part No. 204-011-171-3 do not require replacement.		
		c. The following parts may remain in service, if thorough inspection after overtorque of 54 to 61 psi, reveals no obvious damage:		
		(1) Main rotor blades.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 10	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(2) Tail rotor blades.		
		(3) Tail rotor hub.		
		(4) 42 Degree gear box.		
		(5) 90 Degree gear box.		
		(6) Tail rotor drive shaft.		
		(7) Drive shaft hanger assemblies.		
		(8) Stabilizer bar assembly.		
		(9) Swashplate.		
		(10) Scissors and sleeve assembly.		
		(11) Input drive shaft.		
		(12) Mast.		
4 & 6		OVERTORQUE IN EXCESS OF 61 PSI		
		a. Return the following assemblies to overhaul for evaluation.		
		(1) Transmission assembly.		
		(2) Input drive shaft assembly.		
		(3) Main rotor blades.		
		(4) Main rotor hub assembly.		
		(5) Mast assembly.		
		b. The following parts may remain in service if thorough inspection after overtorque in excess of 61 psi reveals no obvious damage:		
		(1) Tail rotor blades.		
		(2) Tail rotor hub.		
		(3) 42 Degree gear box.		
		(4) 90 Degree gear box.		
		(5) Tail rotor drive shaft.		
		(6) Drive shaft hanger assemblies.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 11	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		(7) Stabilizer bar assembly. (8) Swashplate. (9) Scissors and sleeve assembly. Note It is imperative that component removal record of dynamic components should reflect overtorque as reason for removal.		
5 & 6		WHENEVER AN AIRCRAFT HAS BEEN SUBJECT TO A COMPRESSOR STALL (SURGE), THE FOLLOWING INSPECTION SHALL BE PERFORMED. a. Inspect the engine inlet guide vane and first stage compressor rotor blades for evidence of severe erosion and/or foreign object damage. Check the root areas of compressor blades for cutback due to erosion. Check for dirty or obstructed inlet housing. Note If surge occurs below 85% complete steps a. through f. If surge occurs above 85%, complete steps a. through k. Note If foreign object damage is evident, refer the engine to Direct Support and General Support Maintenance for repair. [D] b. Perform acceleration check as outlined in Section III, item 8. (Not authorized, T53-L-13 engine equipped helicopters.) c. Disconnect the fuel control pressure sensing line from the inlet housing. Start engine, advance throttle and increase collective pitch until highest power without gaining flight attitude is obtained. d. Operate above 80% nI for at least one minute and then decelerate as rapidly as possible toward flight idle. (Retard throttle.) When nI reaches 65 %, advance throttle and accelerate as rapidly as possible to 80 %. If no surge is evident, reconnect fuel control pressure sensing line and release aircraft for further operation. e. If compressor stalls (surges) are encountered in step d., [D] check operation of the bleed band, airbleed actuator, fuel control and inline valve to ensure they are not causing the stall. [H] Check operation of variable inlet guide vanes, bleed band, airbleed actuator and fuel		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 12	NO. OF PAGES 20
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AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		control to ensure they are not causing the stall. If, as a result of the above outlined investigation it is determined that genuine surge has occurred and cannot be corrected, it is recommended that engine be referred to a higher echelon of maintaince. f. If surge occurs below 85% nI speed, check tail boom pylon (fin) for evidence of damaged skin panels and/or structure, and rivets for looseness and/or sheared heads. If inspection shows negative indications of damage, return aircraft to flight status. If positive evidence of damage, comply with the following steps. g. If surge occurs at 85% nI speed or above, remove and disassemble tail rotor gear box (90 degree) in accordance with procedures outlined in the applicable reference manual and inspect the drive and driven gear for unusual load pattern on either the coast or drive side of gears. Inspect area of driven gear between lightening holes and gear teeth for cracks. Conduct this inspection, using a 10 power glass. h. If the above outlined inspections present negative indications of damage, reassemble gear box in accordance with outlined manual procedures. Reinstall gear box, tail rotor hub and blade assembly, and rig tail rotor controls in accordance with procedures as outlined in the applicable referenced manual. Return helicopter to flight status. i. If, as a result of the above inspections conducted, evidence of damage is indicated, comply with the following: (1) Remove and replace the following items with serviceable item (annotate DA Form 2410 that component has been installed on aircraft subjected to compressor stall). (a) 90 Degree gear box. (b) Tail rotor hub and blade assembly. (c) No. 6 tail rotor drive shaft. (2) Inspect the 42 degree gear box output gear for unusual load pattern on either the coast or drive side of the gear. If no evidence of damage is noted, return the gear box to service. If the above inspections reveal discrepancies, remove and replace gear box assembly and comply with step (3) below. (3) Remove the tail rotor drive output quill assembly from the transmission and inspect gear for unusual load pattern on either the drive or coast side of the gear teeth. If no evidence of damage is found, replace the quill assembly and return the transmission to service.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 13	NO. OF PAGES 20
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AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		j. If the above outlined inspection of the tail rotor drive output quill presents negative indication of damage, reinstall in accordance with instructions as outlined in appropriate technical manual and return helicopter of flight status. If inspection of the tail rotor output quill reveals discrepancies, remove transmission from service and return for overhaul. (Annotate DA Form 2410 as stated above.) If it is found necessary to replace the transmission, conduct the following inspection of the main rotor system and the fuselage. (1) Remove inboard and outboard drag brace bolts. Check bolts for deformation, then magnaflux. If satisfactory, return to service. (2) Visually inspect the stabilizer bar outer tubes for bending. (Allowable deflection is 0.150 inch in each tube.) (3) Remove main rotor pillow blocks from main rotor yoke and check for deformation of bushings and bushing holes in pillow blocks and yoke. (4) Perform close visual inspection of all other main rotor components. (5) If any discrepancies are noted as a result of inspection in steps (1), (2), (3), and (4), remove and replace the main rotor hub and blade assembly, the stabilizer bar assembly, and mast assembly. (Annotate records as stated above.) k. Fuselage. (If damaged per step f.) (1) Remove the skin from the tail boom fin adjacent to the 90 degree gear box mounting. Inspect all support structures in this area and repair as required. Install new skin. (2) Make close visual inspection of complete tail boom structure for distortion, buckles, skin cracks, and sheared or loose rivets, paying particular attention to tail boom attachment points at fuselage station 195 and adjacent fuselage to tail boom structure and the 42 degree gear box support structure. (3) Make close visual inspection of main rotor pylon support and engine mount attachment structure for distortion, buckles, cracks, sheared or loose rivets, etc. (4) If discrepancies found during inspections, steps (1), (2), and (3) cannot be repaired by standard procedure, make detailed report to the Commanding General, USAAVCOM, P.O. Box 209, St. Louis, Missouri, 63166.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 14	NO. OF PAGES 20
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AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
5		AFTER ENGINE OVER-TEMPERATURE.		

Note

An engine over-temperature condition exists when exhaust gas temperature limits have been exceeded in any of the following ways.

a. Over 760°C egt at any time.

b. During start and acceleration.

H (1) T53-L-13 over 675°C egt more than 5 seconds.

(2) T53-L-9/9A and -11 series over 650°C egt more than 5 seconds.

Perform an engine over-temperature inspection. (Refer to TB55-2800-200-30/1, T53 Engine Inspection Guide.)

Note

If engine cannot be operated without exceeding egt limits at takeoff power, military power or normal rated power, this is indication of engine malfunction or instrument error. Refer to trouble shooting (paragraph 5-34) to determine cause and correct action, as overtemperature inspection is not required.

5 AFTER ENGINE OVERSPEED.

An engine overspeed exists under the following conditions:

a. When nI speed exceeds 101.5 %.

b. When steady-state output shaft speed exceeds:

(1) 7180 rpm as a maximum limit.

D (a) 6640 rpm for more than 3 seconds and nI speed over 85%. (All engines except T53-L-13).

H (b) 6640 rpm may be exceeded for a period not to exceed 2 seconds up to a limit of 7165 rpm for T53-L-13.

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 15	NO. OF PAGES 20
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AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		Note A steady state output shaft speed of 6900 rpm at an nI speed of 85% or less is acceptable for all engines except T53-L-13. For engine model T53-L-13 a steady state output shaft speed of 6750 rpm at an nI speed of 91 % or less is acceptable. Caution There is no overspeed control if ENGINE GOV switch is set on EMER, or if nII adjustment is incorrect.		
5		ENGINE OVERSPEED LIMITS EXCEEDED. If overspeed limits are exceeded, perform overspeed inspection on engine: (Refer to TB55-2800-200-30/1.)		
5		INTERNAL INSPECTION OF ENGINE. a. Perform internal inspection of engine at time specified for hot end internal inspection. (Refer to TB55-2800-200-30/1, T53 Engine Inspection Guide for inspection procedures.) b. Perform functional test Exhaust Gas Temperature System, test temperature to be 600°C, system tolerance plus or minus 15°C. (Refer to TM 55-4920-244-15.)		
		ENGINE POST-INSTALLATION INSPECTION. This inspection shall be accomplished each time an engine is removed and reinstalled or replaced. a. Perform functional test exhaust gas temperature system, test temperature to be 600°C, system tolerance plus or minus 15°C. (Refer to TM 55-4920-244-15.) b. Check all linkage (nI and nII) for proper adjustment, alignment, and damage. c. Fuel control stops. d. Calibration of power settings on fuel control with corresponding settings on collective twist grip control. e. Twist grip for flight idle detent.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 16	NO. OF PAGES 20
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AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		f. Energize the fuel boost pump and check for leaks at all connections, particularly fuel control. g. Check engine mounts for cracks and security. h. Perform a complete Daily Inspection on engine. i. Operate engine for several minutes at ground idle and then shut down. j. Inspect engine for leaks and security of mounting of hoses and accessories. k. Start engine and run at ground idle for three minutes. Accelerate gradually until highest power is obtained and temperatures have stabilized, without gaining flight attitude. l. Decelerate engine to ground idle and run until EGT stabilizes. Shut down engine. m. Inspect engine for the following: (1) Leaks and security of mounting provisions, hoses, and accessories. (2) Inspect the main fuel strainer, fuel control inlet screen, fuel control pump discharge screen, servo filter, oil filter, magnetic plug, and externally accessible engine oil strainers for chips or foreign materials. n. If there is no accumulation of metal chips, lint, or other foreign material, continue with engine ground operation checks. o. If there is a slight accumulation of metal chips, lint, or foreign material, clean and reinstall the chip detector and oil filters. Restart engine and perform a second run for several minutes at highest power obtainable, without gaining flight attitude. If further accumulation is found, proceed to step p. p. If there is an excessive accumulation of metal chips, lint, or other foreign material, the source of contamination must be determined. If the source of contamination is within the engine, another engine must be installed and the preparation and ground runup procedures repeated.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 17	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
5		WHEN ENGINE ACCESSORY DRIVE GEARBOX HAS OIL PUMP DRIVE PAD WITH ONLY ONE LUBIRCATION HOLE This inspection is required on all T53-L-9 and -11 Series engines, Serial Number LE13129A and prior whose history indicates return to Depot or gearbox replacement in the field and all T53-L-13 engines prior to Serial Number LE 15150 and on engines LE 15174, LE 15180, LE 15200, LE 15253, and LE 15257, except when the accessory drive gearbox is marked with a scribed asterisk to indicate that engine does not require this inspection. a. Schedule inspection of affected engine according to operating time since new or since last overhaul, as follows: (1) Less than 300 hours, at 300-hour hot-end inspection. (2) More than 300 hours, at next 25-hour intermediate inspection. b. Inspect engine accessory drive gearbox oil pump drive pad in accordance with detailed instructions contained in Chapter 5.		
5		ENGINES DROPPED DURING HANDLING. a. If an engine is dropped during handling, make the following inspections and tests: (1) Check accessory drive gear box for overhaul flanges. (2) Check overspeed governor and tachometer drive for cracks, distortion, and bent shaft. (3) Inspect oil filter for loose bolts and damaged filter element. (4) Inspect oil pump for loose bolts and cracked flanges. (5) Check fuel control assembly for cracked flanges. (6) Check engine mounting pads for cracks. (7) Check air, oil, and fuel hose connections for tightness. (8) Check all accessories for loose bolts, nuts, and connections. b. If no visual damage is apparent, the engine will be functionally tested on the mobile engine test unit TE 12062, LTCT744 or airframe. A complete operational test run shall be made and shall include a vibration check, coast-down check, and post test inspection of oil filter, screens, and chip detector for metal chips, lint, or other foreign material.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 18	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
		Note The minimum test time is 30 minutes. If no defects are noted, engine is considered serviceable. Refer to applicable Field Maintenance Manual for test instructions.		
1		AFTER OVERFLOW OF BATTERY AND/OR BATTERY SUMP JAR (IF SUMP JAR IS INSTALLED). a. Sheet metal surfaces and overlaps, both internal and external, for damage. b. Rivets, bolts, screws, and other hardware in area, internally and externally, for damage. c. Hidden areas in vicinity of battery and sump jar for damage. d. All metal parts throughout contaminated area for damage.		
		EVERY 25 HOURS OF OPERATION Inspect control tube assembly P/N 205-001-012-7 on all YUH-1D/UH-1 D/H S/N 60-6029 through 66-16340 in accordance with TB 55-1520-210-20/8. Note If above S/N aircraft have MWO 55-1520-210-30/19 complied, above inspection is not required.		
2		12 MONTHS MAGNETIC COMPASS FOR DISCOLORATION OF LIQUID AND PROPER CALIBRATION; RECOMPENSATE IF NECESSARY.		
2		12 MONTHS FIRST AID KIT FOR INSPECTION PER TB 55-1500-308-25.		
2		12 MONTHS Replace cotton seat belt and shoulder harness. Refer to TM 55-405-3.		
2		5 YEARS Replace nylon and dacron seat belt and shoulder harness. Refer to TM 55-405-3.		
1		AFTER WASHING HELICOPTER. Check pitot - static system for moisture (drain plug removed).		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 19	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
All Areas		AFTER THE HELICOPTER HAS BEEN SUBJECTED TO SALT WATER OR SALT WATER SPRAY. Wash entire helicopter with fresh water, particularly inside of engine compartment doors. Wash all compartments which were exposed to salt water. Make a detail check of all surfaces for corrosion. Apply corrosion preventive compound to exposed nonpainted, anodized, or cadmium plated assemblies. Clean engine compressor, using water wash method.		
4		HELICOPTERS WHICH ARE BEING OPERATED UNDER HIGH HUMIDITY (80%) OR SALT LADEN ATMOSPHERIC (50% HUMIDITY) ENVIORONMENTAL CONDITIONS WILL REQUIRE THE FOLLOWING MINIMUM DAILY BLADE INSPECTION. Daily using a mild soap detergent wash blades thoroughly. Rinse with clear water and dry.		
4		EACH 25 HOURS OF OPERATION OR WEEKLY WHICH EVER OCCURS FIRST. ALL BLADES REGARDLESS OF OPERATIONAL ENVIORNMENT WILL REQUIRE THE FOLLOWING. a. Wipe blades with aliphatic naphtha Type 2. TT-N-95A, or dry cleaning solvent P-D-680 followed by a mild soap detergent wash. Thoroughly rinse with water and dry with clean cloths. b. Waxing of the blades will also be required. Wax (item 504, table 1-2) conforming to MIL-W-18723 is recommended. Wax containers indicating siliconized composition are not authorized.		
2		EVERY 6 MONTHS CF3BR type extinguisher, weight check cylinder less value. If cylinder is within 4 ounces of stenciled weight, reassemble and reseal.		
2		EVERY 12 MONTHS. a. Replace altimeters annually, if aircraft is to be flown in FAA controled airspace under IFR conditions. b. Perform static system leak check and calibration check. (Refer to TM 55-1520-210-35, paragraph 10-18 A/B.)		
5		AFTER THE HELICOPTER HAS BEEN OPERATED IN RAIN. Open engine inlet area and remove upper air filter assembly. Inspect and clean sand and dust separator parts. (Refer to paragraph 5-74.		

AIRCRAFT INSPECTION CHECKSHEET	TYPE OF INSP (Daily, Intermediate, etc.) SPECIAL	PAGE NO. 20	NO. OF PAGES 20
AIRCRAFT AND SERIAL NO.	INSPECTION NO.	DATE OF INSPECTION	

AREA NO.	REQUIREMENT EVERY	ITEM	STATUS	RECORDED ON WORKSHEET
6		AFTER INSTALLATION OF TAIL ROTOR. Between five and ten hours of flight, after installation of tail rotor, retorque tail rotor retaining nut. (300 to 400 inch-pounds.)		
All Areas		WHEN AVAILABLE INFORMATION INDICATES EXPOSURE TO RADIOACTIVITY. Accomplish the following: (Refer to TM 3-220.) a. Survey helicopter for level of radioactivity. b. Decontaminate helicopter as required.		
All Areas		UPON TRANSFER AND UPON RECEIPT OF A HELICOPTER, UPON EXPIRATION OF TWELVE MONTHS ELAPSED TIME SINCE LAST INVENTORY, AND UPON PLACING HELICOPTER IN STORAGE AND UPON REMOVING FROM STORAGE HELICOPTER NEED NOT BE INVENTORIED WHILE IN STORAGE/INVENTORY HELICOPTER FOR AVAILABILITY OF INVENTORIABLE PROPERTY. REFERENCE TM 38-750.		
All Areas		AFTER INSTALLATION, REMOVAL OR RELOCATION OF EQUIPMENT AND/OR MAJOR MODIFICATION WHICH RESULTS IN AN UNKNOWN CHANGE IN THE BASIC WEIGHT AND BALANCE; AFTER REPORT OF UNSATISFACTORY FLIGHT CHARACTERISTICS. Weigh helicopter and accomplish necessary entries in the Weight and Balance Data (DD Forms 365). (Refer to AR95-16 and TM 55-405-9.)		

SECTION III TEST FLIGHT

3-7. DEFINITION AND GENERAL INFORMATION.

3-8. This section contains test flight inspection requirements peculiar to Army Model UH-1D/H aircraft. Conditions requiring accomplishment of test flight shall be in accordance with TB AVN 23-16 and changes thereto. The requirements herein are established to assure a thorough inspection of the aircraft before flight, during flight, and upon completion of test flight. When a test flight is performed for the purpose of determining if specific equipment or systems are in proper operating condition, requirements not related to such equipment or systems should be disregarded.

The test flight inspection checksheets are presented in a format for local reproduction. Continuation sheets shall be used when necessary for each part.

TEMPERATURE	SEA LEVEL	1000 FT.	2000 FT.	3000 FT.	4000 FT.	5000 FT.
50°F (10°C)	0.0	0.0	0.1	0.2	0.3	0.4
60°F (16°C)	0.0	0.1	0.2	0.3	0.4	0.5
70°F (21°C)	0.2	0.3	0.4	0.5	0.6	0.7
80°F (27°C)	0.4	0.5	0.6	0.7	0.8	0.9
90°F (32°C)	0.5	0.7	0.8	0.9	1.0	1.1
100°F (38°C)	0.7	0.8	0.9	1.0	1.1	1.2

NOTE: All time correction factors are given in seconds and must be added to time attained at standard day conditions

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Figure 3-2. Acceleration time correction factors

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART I - GROUND CHECK	PAGE NO. 1	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE		9. ACTUAL INDICATION	10. LEGEND (See note)
		MIN	MAX		
1	Aircraft forms checked.				
2	Daily inspection complete.				
3	Flight readiness inspection complete.				
4	Interior inspection.				
	a. Cabin doors.				
	b. Blade tie-downs, pitot, tailpipe and intake covers, and tail rotor tie-down strap stowed under passenger seat.				
	c. Hydraulic fluid level.				
	d. Transmission oil level.				
	e. Seats adjusted.				
	f. Pedals adjusted.				
	g. Safety belts adjustment.				
	h. Shoulder harness fastened.				
	i. Operation of shoulder harness lock.				
	j. Cyclic, pitch, and pedals operation.				
	k. Circuit breakers				
	l. Electrical switches.				
	m. Inverter.				
	n. Battery switch.				
	o. Static position of all instruments.				

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART I - GROUND CHECK (CONTINUED)	PAGE NO. 2	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE MIN	8. RANGE MAX	9. ACTUAL INDICATION	10. LEGEND (See note)
	p. Compass slaving.				
	q. Altimeter.				
	r. Clock.				
	s. Main fuel switch.				
	t. Starting fuel switch.				
	u. Fuel transfer pump switch.				
	v. Low rpm audio switch.				
	w. Hydraulic control switch.				
	x. Force trim switch.				
	y. Radio equipment.				
5	Engine pre-start check.				
	a. Collective pitch lever.				
	b. Throttle.				
	c. Ignition system.				
	d. Starter relay circuit breaker.				
	e. Inverter switch.				
	f. Battery switch.				
	g. Starter-generator.				
	h. Main generator.				
	i. Fire warning light.				
	j. Fuel gage.				
	k. Caution panel warning light.				

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART I - GROUND CHECK (CONTINUED)	PAGE NO. 3	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE MIN	8. RANGE MAX	9. ACTUAL INDICATION	10. LEGEND (See note)
	1. Cyclic control.				
6	Engine Starting.				
	a. Fire guard.				
	b. Check rotor blades.				
	c. Battery switch.				
	d. Main fuel switch - ON.				
	e. Starting fuel switch - ON (if installed)				
	f. ENGINE GOV switch - AUTO.				
	g. Throttle - just below ENG IDLE STOP release.				
	h. GOV RPM INCR/DECR switch - decreased to minimum rpm.				
	i. Starter switch - ON and HOLD.		40 sec.		
	j. START FUEL switch - OFF at		400°C		
	Note The starting fuel switch is removed on UH-1D Serial No. 66-16034 and subsequent. With T53-L-11 series engine, the starting fuel switch has no effect on total fuel flow to the engine.				
	k. Starter switch	40%			

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART I - GROUND CHECK (CONTINUED)	PAGE NO. 4	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE MIN	8. RANGE MAX	9. ACTUAL INDICATION	10. LEGEND (See note)
7	Engine warm-up.				
	a. Accelerate to FLIGHT IDLE				
	[D] (rpm) (T53-L-9/9A/11	56%	58%		
	[H] (rpm) (T53-L-13)	70%	72%		
	b. Check oil pressure (psig) and torquemeter (some indication)	25			
	c. Check operation of avionics equipment.				
	d. Advance throttle to full open and check the following:				
	(1) Exhaust gas temperature				
	[D] T53-L-9/9A/11	390°C	640°C		
	[H] T53-L-13, with three probe system	390°C	645°C		
	[H] T53-L-13 with six probe system	390°C	625°C		
	(2) Engine oil pressure (psig)				
	[D] T53-L-9/9A/11	60	80		
	[H] T53-L-13	80	100		
	Note During cold weather operation of T53-L-13 engine, the engine oil pressure gage will indicate maximum upon starting. The engine should be warmed up at FLIGHT IDLE until the indication is within normal operating limits. The time required for warm-up is dependent on the starting temperature of the engine and lubrication systems.				
	(3) Engine oil temperature		93°C		
	(4) Transmission oil pressure (psig)	45	55		
	(5) Transmission oil temperature		110°C		
	(6) Torquemeter (check for indication)				

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART I - GROUND CHECK (CONTINUED)	PAGE NO. 5	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE MIN	8. RANGE MAX	9. ACTUAL INDICATION	10. LEGEND (See note)
	(7) DC Voltmeter (volts)		28		
	(8) Check operation of GOV RPM INCR/DECR switch through range of RPM	6000 ± 50	6700 ± 50		
	(9) Turn fuel boost pump switch off, allow approximately 30 seconds to purge air from system, then return switch to ON position.				
	(10) Check hydraulic servo controls for proper operation.				
	(11) Bleed air heater (check operation).				
	e. Check engine fuel system operation. (Only after engine change, after fuel control change, and during Intermediate Inspection.)				
	(1) Set nII speed with GOV RPM INCR/DECR switch		6600		
H D	(2) Retard throttle to flight idle. Retard throttle to flight idle, then advance and stabilize nI RPM at 70%.				
	(3) Position ENGINE GOV switch to EMER for five seconds. (Do not exceed.) Note that indicated nI speed drops as fuel solenoid valve operates.				
	(4) Return ENGINE GOV switch to AUTO. Note that indicated nI speed returns and stabilizes as follows:				
	D T53-L-9/9A/11		70%		
	H T53-L-13		72%		

Warning

At nI speeds above 6640 RPM, nI speed must remain below 85% for T53-L-9, 9A and 11 series and below 91% for T53-L-13 series.

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART I - GROUND CHECK (CONTINUED)	PAGE NO. 6	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE MIN	8. RANGE MAX	9. ACTUAL INDICATION	10. LEGEND (See note)
8	Engine Acceleration Check. Note [D] Engine acceleration check is applicable to T53-L-9/9A/11 engines ONLY. a. Check anti-icing system by operating the hot air solenoid valve. A slight rise in EGT will indicate that system is operating. Turn off system. Note This check is performed only to ensure that the anti-icing system is operating satisfactorily and that the hot air solenoid valve is closed during the following engine operational checks. b. Set collective pitch to minimum position (flat pitch). Note On cool days, aircraft may need additional weight to prevent lift-off. c. Advance throttle to full open. d. Set nII RPM selector e. Retard nI speed and allow to stabilize f. Use clock to check engine acceleration as follows: (1) Rapidly open throttle and note time to 85 % nI RPM.		6400 60% -L-9/9A 4.5 sec. -L-11 3.5 sec.	Warning [H] Acceleration ground check on aircraft equipped with T53-L-13 engine may result in airframe structural damage and component failure.	

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART I - GROUND CHECK (CONTINUED)	PAGE NO. 7	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE		9. ACTUAL INDICATION	10. LEGEND (See note)
		MIN	MAX		
	(2) Retard throttle and stabilize.		60%		
	g. Compare engine performance to specified max. acceleration time (4.5 seconds for T53-L-9/9A, or 3.5 seconds for T53-L-11) with correction for elevation and ambient temperature. (See figure 3-2.)				

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART II - INFLIGHT CHECK	PAGE NO. 8	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE MIN	8. RANGE MAX	9. ACTUAL INDICATION	10. LEGEND (See note)
1	Take-off to hovering:				
	a. Engine for specified:				
	(1) RPM (engine and rotor synchronized)				
	(Rotor)	294	324		
	(Engine)	6000	6600		
	(2) Engine oil pressure (psig)				
	[D] T53-L-9/9A/11	60	80		
	[H] T53-L-13	80	100		
	(3) Engine oil temperature		93°C		
	(4) Transmission oil pressure (psig)	30	70		
	(5) Transmission oil temperature		110°C		
	(6) Fuel pressure (psig)	5	35		
	(7) Tailpipe temperature				
	[D] T53-L-9/9A/11	390°C	640°C		
	[H] T53-L-13 with three probe system	390°C	645°C		
	[H] T53-L-13 with six probe system	390°C	625°C		
	(8) Percent RPM tachometer smooth operation in steady state.				
	b. Helicopter for control, stability, proper response to control forces.				
	(1) Cyclic response.				
	(2) Collective pitch response.				
	(3) Directional control response.				
	c. Flight characteristics.				
	(1) Hovering 360 degree turns left and right.				
	(2) Sidewards.				
	(3) Rearwards.				

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART II - INFLIGHT CHECK (CONTINUED)	PAGE NO. 9	NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE MIN	8. RANGE MAX	9. ACTUAL INDICATION	10. LEGEND (See note)
2	In-Flight.				
	a. Engine for specified:				
	(1) RPM (engine and rotor synchronized).				
	(Rotor)	294	324		
	(Engine)	6000	6600		
	(2) Engine Oil pressure (psig)				
	D T53-L-9/9A/11	60	80		
	H T53-L-13	80	100		
	(3) Engine Oil temperature		93°C		
	(4) Transmission oil pressure (psig)	30	70		
	(5) Transmission oil temperature		110°C		
	(6) Fuel pressure (psig)	5	35		
	(7) Tailpipe temperature				
	D T53-L-9/9A/11	390°C	640°C		
	H T53-L-13 with three probe system	390°C	645°C		
	H T53-L-13 with six probe system	390°C	625°C		
	(8) Percent RPM tachometer smooth operation in steady state.				
	D (9) nI Topping Check-(Go-No-Go Placard).				
	b. Rotors				
	(1) RPM (engine and rotor synchronization.)				
	(2) Observe tip path for intrack condition.				
	c. Instrument check.				
	(1) Airspeed indicator.				
	(2) Compass.				
	(3) Altimeter.				
	(4) Free air temperature				

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET PART II - INFLIGHT CHECK (CONTINUED)			PAGE NO. 10	NO. OF PAGES 12
1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE		9. ACTUAL INDICATION	10. LEGEND (See note)
		MIN	MAX		
	d. Check communication equipment for proper operation. e. Autorotation check (keep to a minimum).				

AIRCRAFT TEST FLIGHT INSPECTION CHECKSHEET
PART III - AFTER FLIGHT CHECK

PAGE NO. 11 | NO. OF PAGES 12

1. TYPE ACFT	2. SERIAL NO.	3. ORGANIZATION	4. DATE	5. PURPOSE OF TEST FLIGHT

NOTE: Symbol for Block 10 (✓) Satisfactory (X) Unsatisfactory (Explain in Remarks)

6. ITEM NO.	7. INSPECTION ITEMS	8. RANGE MIN	8. RANGE MAX	9. ACTUAL INDICATION	10. LEGEND (See note)
1	Reduce power to FLIGHT IDLE position prior to shutdown and observe the following readings:				
	a. Gas producer speed (RPM).				
	D T53-L-9/9A/11	56%	58%		
	H T53-L-13	70%	72%		
	b. Exhaust gas temperature				
	D T53-L-9/9A/11	390°C	620°C		
	H T53-L-13 with three probe system	390°C	625°C		
	H T53-L-13 with six probe system	390°C	610°C		
	c. Engine oil pressure (psig)				
	D T53-L-9/9A/11	25	80		
	H T53-L-13	25	100		
	d. Engine oil temperature		93°C		
	e. Transmission oil temperature		110°C		
	f. Transmission oil pressure (psig)	30	60		
2	Engine shutdown.				
	a. Exhaust gas temperatures - Stabilized (minimum one minute)				
	b. Throttle - Push and hold idle detent button, throttle to full off				
	c. Main fuel valve - Closed				
3	Note discrepancies on applicable forms.				

6. ITEM NO.	TEST FLIGHT INSPECTION CHECKSHEET PART IV - REMARKS	PAGE NO. 12	NO. OF PAGES 12

TYPED OR PRINTED NAME OF PILOT	SIGNATURE
TYPED OR PRINTED NAME OF OBSERVER	SIGNATURE

SECTION IV OVERHAUL AND RETIREMENT SCHEDULE

3-9. SCOPE.

3-10. This section lists units of operating equipment that are to be overhauled or retired at the period specified. Removal of equipment for overhaul may be accomplished at the inspection nearest the time when overhaul is due unless otherwise specified in TB AVN 23-10.

Overhaul Interval. The maximum authorized operating time or calendar interval of parts prior to removal for overhaul at category of maintenance authorized in accordance with the Maintenance Allocation Chart.

Retirement Schedule. The operating time or calendar interval specified for removal, condemnation, and disposal of parts in accordance with applicable directives.

Note

Items replaced on a calendar basis (for the purpose of overhaul or retirement) will not be listed on DA Form 2408-16, Component Installation and Removal Record, but will be listed on DA Form 2408-18, Equipment Inspection List, for scheduling purposes.

OVERHAUL AND RETIREMENT SCHEDULE

Model UH-1D/H Helicopter

AREA	OVERHAUL INTERVAL (HOURS)	RETIREMENT INTERVAL (HOURS)	ITEM AND PART NUMBER	
4			**Main Rotor**	
		2500	Main Rotor Blade Assembly	204-011-250-5
	1100		Main Rotor Hub Assembly	204-012-101-3
	1100		Main Rotor Hub Assembly	204-012-101-5
		2500	*Inboard Strap Fitting	204-012-102-1
		2200	*Outboard Strap Fitting	204-012-103-1
		2200	*Strap Pin	204-012-104-1
		2200	*Retention Strap	204-012-112-5
4			**Transmission**	
	1100		Transmission Assembly	205-040-001-1, -5, -11, -17
	1100		Transmission Assembly	204-040-016-1, -3
	50		Mast Assembly	204-040-366-5
		50	*Bearing	204-040-136-5
	1100		Mast Assembly	204-040-366-7, -9
		1100	*Bearing	204-040-136-7

OVERHAUL AND RETIREMENT SCHEDULE (CONT)

Model UH-1D/H Helicopter

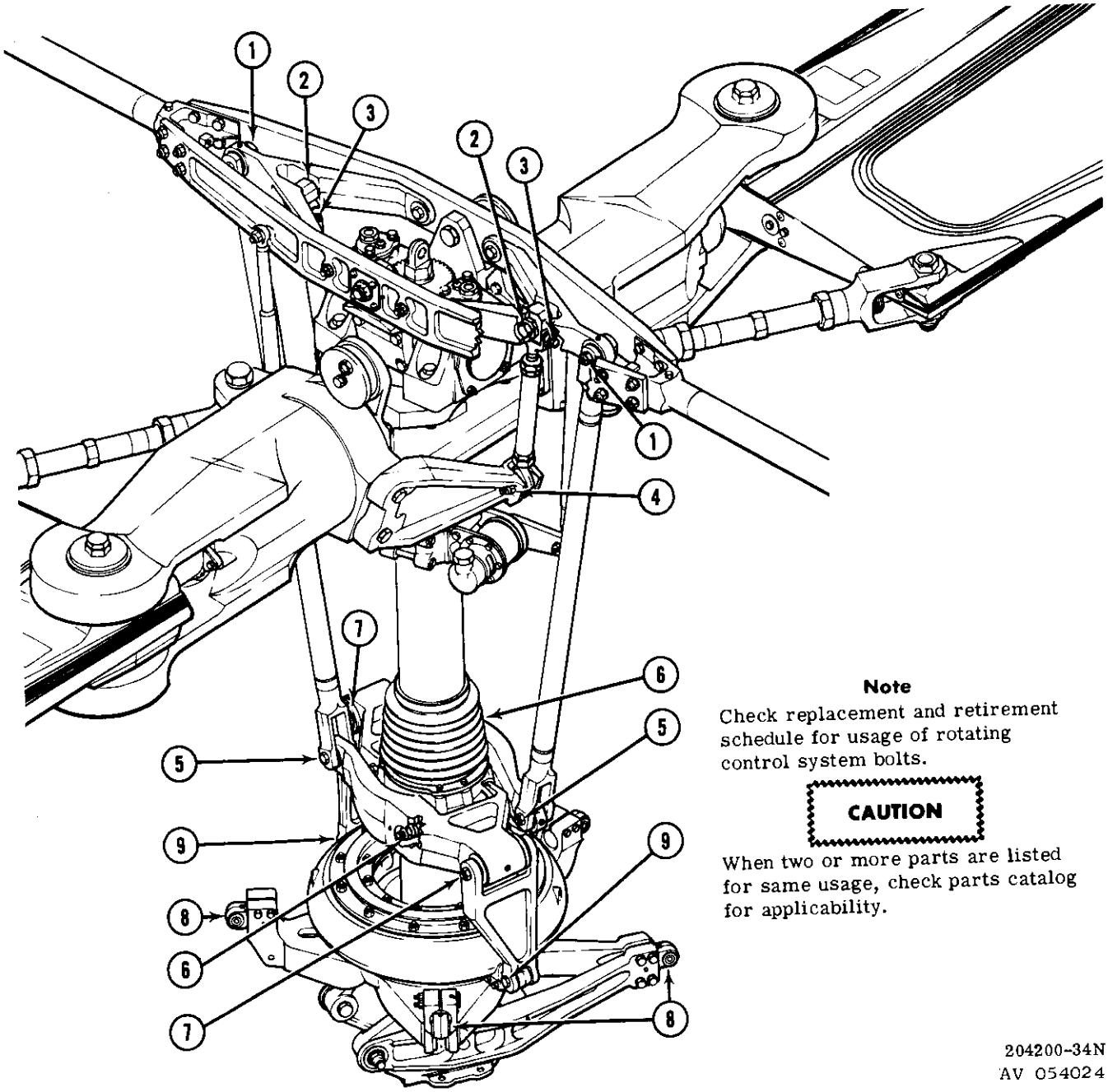
AREA	OVERHAUL INTERVAL (HOURS)	RETIREMENT INTERVAL (HOURS)	ITEM AND PART NUMBER	
5 & 6			**Tail Rotor and Drive System**	
		1100	Blade Assembly	204-011-702-15
		1100	**Hub Assembly, Tail Rotor	204-011-701-11,-13, -19, -29
		1100	Grip Assembly	204-011-706-9
		1100	Yoke Assembly	204-010-781-9
	1500		Gear Box, Intermediate	204-040-003-13,-23, -37
	600		Gear Box, Tail Rotor	204-040-012-1
	1100		Gear Box, Tail Rotor	204-040-012-7,-13
4			**Main Rotor Mast Controls**	
	1100		Swashplate and Support Assy.	204-011-400-7, -9
		3300	*Support	204-011-404-5
		3300	Collective Lever	204-011-438-1
	1100		Scissors and Sleeve Assy.	204-011-401-7, -9
4		600	**Rotating Control System Bolts Listed Below: (See figure 3-3.)**	
			Pitch Horn to Pitch Link	(Index No. 4) NAS464-6-26 (Index No. 4) NAS1306-31D
			Pitch Link to Universal	(Index No. 3) NAS1306-27D
			Universal to Mixing Lever	(Index No. 2) NAS464-6-35 (Index No. 2) NAS1306-34D
			Mixing Lever to Tube	(Index No. 1) NAS464-5-27 (Index No. 1) NAS1305-27D

OVERHAUL AND RETIREMENT SCHEDULE (CONT)

Model UH-1D/H Helicopter

AREA	OVERHAUL INTERVAL (HOURS)	RETIREMENT INTERVAL (HOURS)	ITEM AND PART NUMBER	
			Tube to Scissors	(Index No. 5) NAS464-5-27 (Index No. 5) NAS1305-27D
			Scissors Pivot	(Index No. 6) NAS464-8-90
			Scissors to Drive Link	(Index No. 7) NAS464-8-69
			Drive Link to Swashplate	(Index No. 9) NAS464-5-30 (Index No. 9) NAS1305-30D
			Cyclic Tubes to Swashplate	(Index No. 8) AN175-16
			Collective Tubes to Lever	(Index No. 8) AN175-16
6			**Synchronized Elevator**	
		3000	Elevator Assembly	205-030-856-19, 21
		3000	Elevator Horn Assembly	205-001-914-1
		3000	Elevator Bolt	205-030-476-3
5			**Power Plant**	
	1200		Engine	T53-L-9,-9A, -11, -11B
	1800		Engine	T53-L-11C, -11D
	600		Engine	T53-L-13
	1200		Engine	T53-L-13/L -13A
	1200		Rotor Turbine	1-100-490-01
			1st Stage Gas	1-100-490-02
			Producer Wedged	1-100-490-03
				1-100-490-04
				1-100-490-06

*Parts will be retired by the maintenance level overhauling the assembled component.
**Bearing set P/N 204-010-704-1 need not be retired if inspection criteria called out in TM 55-1520-210-35, Chapter 8, Section III, is met and bearings are found serviceable.



Note

Check replacement and retirement schedule for usage of rotating control system bolts.

CAUTION

When two or more parts are listed for same usage, check parts catalog for applicability.

204200-34N
AV 054024

1. Bolt, NAS 464-5-27 or NAS 1305-27D
   Mixing Lever to Scissor Tube (2 Places)
2. Bolt, NAS 464-6-35 or NAS 1306-34D
   Universal to Mixing Lever (2 Places)
3. Bolt, NAS 1306-27D
   Pitch Link to Universal (2 Places)
4. Bolt, NAS 464-6-26 or NAS 1306-31D
   Pitch Horn to Pitch Link (2 Places)
5. Bolt, NAS 464-5-27 or NAS 1305-27D
   Scissor Tube to Scissors (2 Places)
6. Bolt, NAS 464-8-90
   Scissors Pivot (2 Places)
7. Bolt, NAS 464-8-69
   Scissors to Drive Link (2 Places)
8. Bolt, AN175-16 (2 Places)
   Cyclic Tubes to Swashplate (3 Places)
   Collective Tube to Collective Lever (1 Place)
9. Bolt, NAS 464-5-30 or NAS 1305-30D
   Drive Link to Swashplate (2 Places)

Figure 3-3. Mast control system bolts

SECTION V STANDARDS OF SERVICEABILITY

3-11. STANDARD STATEMENTS.

3-12. PURPOSE.

3-13. This section provides a guide to all personnel engaged in the maintenance of Department of the Army aircraft in determining serviceability of aircraft.

3-14. MAINTENANCE FUNCTIONS AND INSPECTIONS.

3-15. The availability of serviceable aircraft is contingent upon effective maintenance management; therefore, the maximum utilization of available capabilities, faithful and timely performance of assigned maintenance functions, and conscientious performance of specified maintenance inspections augmented by careful supervision and strict quality control will enhance aircraft availability and serviceability.

3-16. STANDARDS OF SERVICEABILITY.

3-17. Serviceability can be determined only by actual inspection of the aircraft and can be determined at any time throughout the life cycle of the aircraft. Wear tolerance and maximum allowable deterioration, specified in maintenance and inspection requirements, have been designed to assure a high degree of serviceability, availability, and safety. These tolerances and limits are the basic standards for serviceability and are embodied in aircraft maintenance and inspection manuals; therefore, inspection for serviceability is performed during every maintenance inspection.

3-18. DEGREE OF SERVICEABILITY.

3-19. Transfer of aircraft generates administrative and technical problems for supply and maintenance management. To minimize the impact upon the receiving activity of a transferred aircraft, degrees of serviceability are established to supplement basic standards included in present maintenance and inspection requirements. The supplementary standards, contained in this section, have been designed to assure that sufficient reliable hours of flight are remaining on the aircraft and components to satisfy immediate operational and logistical receiving activity when the aircraft is being transferred within CONUS, overseas, or into combat operations. The degree of serviceability required for aircraft upon completion of overhaul will be to the same degree required for transfer within CONUS; except when aircraft is predetermined to be destined for overseas or into combat, in which case the overhauled aircraft will conform to the standard for the specific transfer condition.

Item No.	Item	Degree of Serviceability Required for Transfer Within Theater of Operations or from an Overseas Theater to CONUS	Degree of Serviceability Required for Transfer from One Theater of Operations to Another Theater of Operations	Degree of Serviceability Required for Transfer from a Non-Combat Theater to a Combat Theater of Operation
	General			
1	Inspection	Perform next Intermediate Inspection; when next Periodic Inspection is due within 25 operating hours, perform next Periodic Inspection	Perform next Periodic Inspection	Perform next Periodic Inspection
2	Modification	Accomplish all Urgent and Normal MWO & TCTM	Accomplish all Urgent MWO & TCTM. Accomplish all Normal MWO & TCTM which have an issue date of 3 months prior to date of transfer	Accomplish all Urgent MWO & TCTM. Accomplish Normal MWO and TCTM which have an issue date of 1 month prior to date of notice of transfer when aircraft is to be transferred and for which, more than 60 days notification was received.
3	Mission Essential Equipment	Assure mission essential equipment is installed	Assure mission essential equipment is installed and is completely operational	Assure mission essential equipment is installed and is completely operational
	Helicopter			
4	Helicopter Paint Condition	Touch up by area spraying as necessary to provide a protective seal on all required surfaces	Touch up by area spraying as necessary to provide a protective seal on all required surfaces. Completely repaint if condition of existing paint warrants. Paint necessary peculiar markings on helicopter required by the theater of operations	Touch up by area spraying as necessary to provide a protective seal on all required surfaces. Paint necessary peculiar markings on helicopter required by theater of operations

STANDARDS OF SERVICEABILITY (CONT)

Item No.	Item	Degree of Serviceability Required for Transfer Within Theater of Operations or from an Overseas Theater to CONUS	Degree of Serviceability Required for Transfer from One Theater of Operations to Another Theater of Operations	Degree of Serviceability Required for Transfer from a Non-Combat Theater to a Combat Theater of Operation
	Component Replacement			
5	a. Items having a scheduled replacement of retirement time below 500 hours	Replace if less than 50 hours of scheduled operating time remains	Replace if less than 100 hours of scheduled operating time remains	Replace if less than 300 hours of scheduled operating time remains
	b. Items having scheduled replacement time over 500 hours	Replace if less than 10% or 100 hours of scheduled operating time remains (whichever is least)	Replace if less than 25% or 200 hours of scheduled operating time remains (whichever is least)	Replace if less than 300 hours of scheduled operating time remains
	c. Items having a scheduled change based on calendar months	Replace only if change is due	Replace only if change is due	Replace if less than three months remain before change is required
	Control Cables			
6	a. 7 x 7 1/16 inch diameter 3/32 inch diameter	Replace when more than three wires are broken or coroded within a one inch distance	Replace when more than three wires are broken or corroded within a one foot distance	Replace when more than three wires are broken or corroded within a two foot distance
	b. 7 x 19 1/8 inch diameter	Replace when more than six wires are broken or corroded within a one-inch distance	Replace when more than six wires are broken or corroded within a one foot distance	Replace when more than six wires are broken or corroded within a two foot distance
	c.	Replace cables having "flat spots" as determined by a qualified inspector	Replace cables having "flat spots" as determined by a qualified inspector	Replace cables having "flat spots" as determined by a qualified inspector
7	Communications, Compass, Electronic & Navigation Equipment	Assure equipment is complete and fully operational	Assure type of equipment installed is compatible to type and system utilized at destination and equipment is fully operational	Assure type of equipment installed is compatible to type and system utilized at destination and equipment is complete and fully operational