HELIO

56-22-2 Helio Applies to Model H-391B Aircraft, Serial Numbers 003 to 029 Inclusive.

Compliance required within next 100 hours.

Cases have been reported of finding cracked upper wing attachment thrust washers, P/N HS-15. These are special heat-treated washers installed beneath the head of the bolt attaching the top of the front wing spar to the carry-through structure. Accordingly, these washers must be replaced with new improved type procured from the airplane manufacturer.

(Helio Field Service Bulletin No. 13 dated July 18, 1956, covers this same subject and specifies the bolt torque requirements.)

57-25-2 Helio Applies to Model H-391B Aircraft Serial Numbers 001 Through 055.

Compliance required as indicated.

Cracks have been found in the fin front spar underneath the steel attachment fittings holding the stabilizer to the fin. Cracks were also discovered in the flanges of the fins nose ribs second and third from the bottom. To preclude possible failure of the fin spar, the following inspections and rework are required:

1. Aircraft with less than 400 hours total time.

(*a*) Inspect visually for cracks the fin front spar and lower nose ribs within the next 100 hours of operation and every 100 hours thereafter until reinforced as described in Helio Service Bulletin No. 17 or equivalent.

(*b*) If cracks are found they must be stop-drilled and the parts reinforced prior to further flight.

(*c*) If no cracks are found reinforcement of the fin front spar and lower nose ribs attachments is required prior to the accumulation of 400 hours total time.

2. Aircraft having 400 hours or more total time.

(*a*) Visual inspection and reinforcement are required within the next 25 hours flight time. If any cracks are found, they should be stop-drilled prior to adding the reinforcements.

(Helio Service Bulletin No. 17 covers this subject.)

58-1-4 Helio Applies to Model H-391B Aircraft, Serial Numbers 003 to 063 Inclusive.

Several aileron-interceptor actuator bellcranks have been found to be cracked. Accordingly, the following inspection and replacement programs are required as indicated.

Compliance required within the next 100 hours.

Visually inspect the aileron-interceptor actuator bellcranks at the attachment of the control cables. Cracked bellcranks must be replaced.

(Helio Service Bulletin No. 16 covers this subject.)

58-25-4 Helio Applies to Models H-391B and H-395 Aircraft Incorporating Three Fin Hinge Attachments.

Compliance required not later than next 100 hours operation or March 31, 1959, whichever occurs first.

Failure of the fin upper hinge attachment has been reported. Accordingly, the following inspection and replacement programs are required:

Inspect the fin top hinge and attachment details. Cracked parts must be replaced; uncracked parts may be reinstalled. In any case, new reinforcement gussets (P/N 391-022-001-16) must be installed.

(Helio Service Bulletin No. 18 covers this subject.)

59-17-5 Helio Applies to All Model H-391B Aircraft Except Serial Numbers 093, 094, and 098; and Model H-395, Serial Numbers 502 Through 510.

Compliance required as indicated.

Within the next 10 hours unless already accomplished inspect the horizontal tail front spar splice plate, P/N 391-020-305, for cracks around all bolt holes and the 2.0-inches diameter lightening hole. If cracks are found, the fitting should be replaced with an identically

dimensioned part 0.063-inch 4130 steel. If no cracks are found the original aluminum fitting shall be inspected at each 25 hours thereafter until the next 100-hour inspection or October 1, 1959, whichever occurs first, when it must be replaced with a steel part.

(Helio Service Bulletin No. 21 covers this subject.)

59-17-6 Helio Applies to All Model H-391B Aircraft and Model H-395, Serial Number 075 and 502 Through 509 Inclusive.

Compliance required within next 100 hours or by November 1, 1959, whichever occurs first.

Install additional pulley guards at three 3-inch stabilator control system pulleys located at:

(a) The upper left-hand corner of the fuselage truss just aft of the firewall.

(b) Just forward of the lower left-hand side of the instrument panel.

(c) Directly under the forward attach point of the vertical stabilizer in the aft portion of the tail cone. (The cable makes a 180° turn around this pulley.)

(Helio Service Bulletin No. 20 covers this subject.)

62-12-5 Helio Amdt. 442 Part 507 Federal Register May 23, 1962. Applies to All Models H-391B, H-395 Serial Numbers 1 to 549 Inclusive and H-395A Serial Numbers 1 to 1007 Inclusive.

Compliance required prior to September 1, 1962.

To preclude possible loss of engine oil through the vacuum oil separator due to blockage of the engine breather tube with ice or snow, accomplish the following:

Modify the oil breather tube P/N 391-060-317 in accordance with Helio Service Bulletin No. 30, by slicing a flute cut 2.25 ± 0.250 inch from contour of lower cowl, 0.28 to 0.31 inch depth and 0.75 ± 0.13 inch in height on aft side of tube.

(Helio Service Bulletin No. 30 dated February, 6, 1962, covers this same subject.)

This directive effective June 25, 1962.

HILLER

51-20-3 Hiller Applies to the Following Aircraft: Model UH-12, Serial Numbers 105 to 135, Inclusive. (Incorporating the Collective Pitch Ballast System); Model UH-12A, Serial Numbers 136 to 176, Inclusive, and 178, 180 and 181.

Compliance required as noted below.

In order to preclude the possibility of protrusion of the bushings from the collective pitch ballast system bracket with resultant reduction of the pitch range of the main rotor blades and restricted controllability, the following should be accomplished:

(*a*) As soon as possible but not later than September 1, 1951, and at each 25-hour inspection period thereafter, visually inspect the collective pitch ballast system bracket P/N 31125-1 for protrusion of either upper or lower bushing P/N 31120-1. Particular inspection should follow each application of grease to the bracket.

(*b*) If the bushing(s) are found to be protruding, the assembly should be reworked by installing set screws in accordance with United Helicopters Mandatory Bulletin No. 19.

(*c*) Inspection of the bracket as specified in part (*a*) may be discontinued after the rework described in part (*b*) has been accomplished.

(Hiller Helicopters Mandatory Service Bulletin No. 19 covers this same subject.)

52-1-8 *Hiller* Applies to All Models UH-12, -12A and -12B Helicopters, Serial Numbers 104 and Up. (Incorporating Chrome Plated Main Rotor Blade Incidence Arms P/N 31114-1.)

Compliance required not later than the next 25-hour inspection, or not later than February 1, 1952, whichever occurs first and also as noted below.

As a precautionary measure to preclude possible serious danger which could result from failure of the main rotor blade collective pitch incidence arms (P/N 31114-1), the following should be accomplished:

(*a*) Inspect all main blade incidence arms (P/N 31114-1) to determine if chrome plated arms are installed.

(*b*) If chrome plated arms are installed, remove and magnaflux or magnaglow inspect each arm for possible minute cracks in the circumferential area of the flange radii.

(*c*) If the arm has had 100 hours service and cracks are not found, the part may be reinstalled and further compliance with this Note is not required. If the arm has less than 100 hours service, it must again be inspected at 100 hours or not to exceed 125 hours of service. If cracks are found in any arm, it must be replaced immediately.

(*d*) This Note also applies to spare and replacement chrome plated arms which should be inspected at 25 and 100 hours service as indicated above.

(Hiller Helicopter's Mandatory Service Bulletin No. 20 covers this same subject.)

52-29-1 Hiller Applies to All Models UH-12, -12A, -12B Helicopters.

Compliance required by February 1, 1953, and thereafter following any unusually hard landing, or following any maintenance work requiring loosening of the cardan joint assembly attachment to fuselage, or removal of the forward tail rotor drive tube or tail boom assembly.

Separation of the components of the forward tail rotor drive slip joint assembly, and eventual power loss to the tail rotor, may result from a severely hard landing, or from misalinement of the yoke, and cam followers of the "T" fitting following tail rotor drive system maintenance work of the nature described above. The condition may not be detected immediately, as it is possible to transmit torque to the tail rotor with the "T" fitting cam followers bearing on the outside of the yoke fingers. Failure of the "T" fitting under such conditions, however, will eventually result.

The following procedure, or equivalent, is necessary to permit inspection for proper alinement at the times specified by the compliance requirements above.

On the outboard surface of the fingers of the yoke, and adjacent to the slot, lightly scribe two marks: one at 0.72 inch and one at 0.78 inch aft of the closed end of the yoke slot. Then lightly scribe a mark through exact center of bearing cap on cam follower, at right angles to the yoke slot. With the helicopter at rest in a level attitude the line on the bearing cap of the cam follower must lie within the marks scribed on the yoke fingers. If correction is found necessary, refer to the Maintenance Manual, Section V, subsections 5-206—5-223. The following part numbers are given for reference:

UH-12B (Military HTE-2, H-23B)
Yoke P/N 24539-1.
"T" Assembly P/N 24564-3.
Fwd. Slip Joint Assy. P/N 24565.
UH-12, -12A (Military HTE-1, H-23A):
Yoke P/N 24523-1.
"T" Fitting P/N 24526-1.
Cam Followers P/N 24543-2.
Fwd. Slip Joint Assy. P/N 24500-9.

The following Military Publications cover this subject:

Navy BuAer Dispatch 131746Z September 13, 1952.

Air Force TO 01-255HB-31, September 19, 1952.

(Hiller Field Service Letter CD-2992 covers this procedure.)

53-9-3 Hiller Applies to All UH-12, UH-12A, UH-12B, HTE-1, HTE-2, H-23A and H-23B Model Helicopters.

Compliance required as soon as possible but no later than the next 25-hour inspection and as indicated in part C below.

The following has been found necessary to prevent fatigue failure of the clevis head on the outboard tension torsion bar pins, P/N 51414-1:

A. Inspect P/N 51414-1 pins to determine the fillet radius under the clevis head. If radius is less than 0.030 inch the pin must be scrapped and replaced with a pin having at least 0.030-inch radius before further flight.

B. If radius is 0.030 or greater and the pin has less than 500 hours total time it may be reinstalled. If a featheredge is found at the base of the clevis it should be carefully removed.

C. All 51414-1 pins must be replaced when they have accumulated a total of 500 hours of flight time.

(Hiller Service Bulletin No. 36 covers this procedure.)

53-12-1 Hiller Applies to All UH-12, UH-12A, UH-12B, HTE-1, HTE-2, H-23A and H-23B Helicopters Incorporating Horizontal Stabilizers With Short Spar Inserts or Without Spar Inserts.

Compliance required as indicated below.

Replacement of the horizontal stabilizer assembly, P/N 37001 on the above helicopters has been found necessary to prevent fatigue failure of the stabilizer spar.

(Hiller Service Bulletin No. 26 covers this procedure.)

(*a*) Stabilizer assemblies P/N 37001-9 incorporating short spar inserts (5.75 inches) must be removed from service when they have accumulated 300 hours total time. The replacement stabilizer is identified as 37001-14 and incorporates a long spar insert.

(*b*) Stabilizer assemblies P/N 37001-7 (without spar insert and identified as 37001) must be removed from service when they have accumulated 1,600 hours total time. The replacement stabilizer is identified as 37001-12 and incorporates a long spar insert.

(*c*) Stabilizer assemblies P/N 37001-12 and -14 incorporate long spar inserts (10.29 inches). Attachment to the aft bulkhead socket is made by two AN 174-17 bolts. The total service life of these assemblies is not limited.

53-24-2 Hiller Applies to All Model UH-12, UH-12A and UH-12B Helicopters.

Compliance required as indicated below.

There have been several recent failures of the tail rotor pitch change rod on UH-12B helicopters, resulting in loss of directional control. This pitch change rod, P/N 25036 or 25009, must be reinforced and/or inspected as follows on all UH-12 Series helicopters.

(1) Prior to the next flight and thereafter at periods not to exceed 10 hours operating time, remove the tail rotor pitch change arm and inspect the pitch change rod, P/N 25036 or 25009, in the shoulder area by dye penetrant method. If cracks are found the rod must be removed from service.

If no cracks are found, the pitch change rod is considered satisfactory for an additional 10 hours operating time. On reassembling the parts determine that chamfer of hole in arm does not interfere with radius on rod. If interference is noted, enlarge chamfer on arm to clear. Reinstall arm on pitch change rod, making sure woodruff key or bolt properly locates arm and that arm bottoms on shoulder. Install washer and nut on rod and torque to 50–75 inch-pounds (UH–12 and –12A Models) or 100–150 inch-pounds (UH–12B Models).

This periodic inspection must be continued until such time as the rod is reinforced as set forth in part (2).

(2) When the pitch change rod is reinforced by the addition of bracket, Hiller P/N 25104, the 10-hour inspections may be discontinued. Installation of this bracket is described in Hiller Service Bulletin No. 41. The service life of this installation is limited to 300 hours from time of modification.

This bracket, P/N 25104, should be installed as soon as possible but not later than January 31, 1954.

55–8–3 Hiller

Superseded by AD 62–3–1.

55–19–1 Hiller Applies to All UH–12, UH–12A, and UH–12B Model Helicopters.

Compliance required as indicated.

There have been several instances of cracking and failure of the tail boom rear bulkhead casting adjacent to the gearbox attachment holes. Cause of the cracking is not definitely known, but may be caused by flight loads or by damage incurred when the bulkhead is riveted to the tail boom. The following inspections are required:

(1) Prior to the next flight and every 25 hours operating time thereafter, remove the tail rotor gearbox in accordance with the pertinent Hiller Service Manual. Inspect the tail boom rear bulkhead P/N 62201 for evidence of cracking, using dye or fluorescent penetrant methods.

(2) Daily inspect the visible portions of the tail boom rear bulkhead P/N 62201 for visible evidence of cracking or failure.

(3) If cracks or other damage are found during the above inspections, the P/N 62201 (magnesium) bulkhead must be scrapped and replaced with the P/N 62202 (aluminum) bulkhead in accordance with Hiller Service Bulletin No. 49, revised August 23, 1955, prior to further flight. If a P/N 62202 bulkhead is not available, a new P/N 62201 bulkhead may be installed provided the inspections called for in paragraphs (1) and (2) are continued.

(4) As soon as the P/N 62202 bulkhead has been installed in accordance with Hiller Service Bulletin No. 49, revised August 23, 1955, the special inspections called for in paragraphs (1) and (2) may be discontinued.

56–9–1 Hiller Applies to All UH–12 Series Helicopters.

Compliance required as indicated.

Failures of tail rotor tension-torsion (T–T) bars, P/N 55003, have occurred in the threaded portion of the bars adjacent to the Rosan inserts in the yoke. These failures caused loss of the tail rotor and directional control of the helicopter. The failures were caused by excessive stresses in the T–T bars which resulted from adverse accumulation of machining and assembly tolerances and from unfavorable orientation of the T–T bar within the blade assembly. Excessive wear of the oilite bushings in the tail rotor blade root fitting may also cause high stresses in the bars.

1. To prevent recurrences of these T–T bar failures the following actions are required before the 100-hour replacement time of the T–T bars specified in telegraphic AD dated 11–1–55 has been accumulated.

(*a*) Disassemble the tail rotor blade sufficiently to determine the diametral clearance between the outside diameter of the tail rotor yoke and the inside diameter of the oilite bushings within the blade root fitting. If the differences in diameters exceed 0.005 inch, replace the bushings as necessary to obtain diametral clearances of 0.001 inch to 0.003 inch.

(*b*) Determine the run-out of the T–T bar at the Rosan insert in the yoke and at the end block in the blade root fitting. Methods of measuring the run-out are covered in Hiller Service Bulletin No. 53.

(*c*) Determine the orientation of the axes of the T-T bar as originally assembled. The major axis of the T-T bar elliptical section must be 90° plus or minus 15° to the blade chord.

(*d*) If the major axis of the T-T bar elliptical section is found to be within 15° of the perpendicular to the blade chord upon initial inspection and if the run-out is not greater than tolerances specified in Hiller Service Bulletin No. 53, the T-T bar may be continued in further use as provided in item 3. If one or both of the above conditions are not satisfied at the initial inspection, the T-T bar shall be replaced with a new bar at the time of this inspection.

2. Repeat the inspection for diametral clearance specified in item 1(*a*) at not to exceed every 150 hours of operation.

3. Replace the T-T bars at not to exceed every 600 hours of operation regardless of the conditions found in the 150-hour inspection periods.

4. Replaced T-T bars shall be mutilated to preclude further use in this application.

This supersedes AD 53-2-2 and telegraphic AD dated November 1, 1955.

56-27-2 Hiller Applies to All UH-12, UH-12A and UH-12B Helicopters Including Spares.

Compliance required as soon as possible but not later than February 28, 1957.

Investigation has revealed that defective welds may exist at the clamp lugs on the four upper lord mount supports on P/N 63100-2 lower frame assembly (engine mount), or on mounts, P/N 63100-2M, modified in accordance with Hiller Service Bulletin No. 51. Failure of this weld has resulted in tilting of the rotor mast and loss of collective pitch control. The following one-time inspection is required on the above mounts to detect possible defective welds which must be reworked as indicated.

1. If the engine mount is cadmium plated, no inspection of the weld will be required, since these lower frame assemblies have been fabricated subsequent to the period of questionable weldments.

2. If the engine mount is not cadmium plated, remove the paint from all four lord mount supports in the area of the clamp lugs and inspect for identification markings in or around the weld at the clamp lugs. If the weld is stamped with either a 7 or 8 or no stamp at all, it will be necessary to remove the mount from service until such time as the lugs can be removed and rewelded to CAM 18 standards.

(Hiller Service Information Letter No. 111 covers this subject.)

58-2-3 Hiller Applies to UH-12 Series Helicopters Equipped With Marvel-Schebler Automatic Altitude Compensating Carburetor Model MA-4-5AA (Aircooled P/N 19588).

Compliance required by June 1, 1958.

With a Marvel-Schebler Model MA-4-5AA carburetor installed, it is possible to start and run the engine with the carburetor mixture control in the idle cutoff position if the throttle is partially or fully opened. However, as soon as the throttle is fully closed, the idle cutoff will operate and shut off the engine. Therefore, it would be possible to start the engine, take off, and fly with the mixture in idle cutoff, as long as the throttle is never closed. The first time the throttle is closed, however, as in autorotation, an immediate engine stoppage would occur.

To prevent inadvertent engine stoppage in flight due to failure to place the carburetor mixture control in the "ALT. COMP" position before takeoff, the following measure is necessary:

Delete the carburetor mixture control from the cockpit and secure the carburetor setting at "ALT. COMP" at the carburetor.

Hiller will issue a service bulletin covering this subject. Appropriate FAA approved Helicopter Flight Manual revision required.

58-24-2 Hiller Applies to All UH-12, UH-12A, UH-12B, and UH-12C Helicopters as Indicated.

Compliance required as indicated.

The following measures are required to detect cracks and prevent failure of the tail rotor blades:

1. Prior to every flight and refueling, visually inspect both sides of the P/N 55008 and 55012 tail rotor blade skin for cracks in the area of the outer tension-torsion bar retention bolt and the six adjacent rivet holes or rivets

installed through the outer end of the root fitting. Paint must be removed from the areas to facilitate inspection.

2. Prior to the next fifty hours of flight time and every fifty hours thereafter inspect the above area for cracks by dye or fluorescent penetrant methods.

3. Blades found to be cracked must be removed and replaced with undamaged blades prior to further flight.

4. Prior to April 1, 1959, on all helicopters equipped with the large diameter (1.375 inches) spar stabilizer P/N 37003, install the stabilizer strut in accordance with Hiller Service Bulletin No. 75B. The inspections specified in items 1 and 2 must be continued.

5. Prior to April 1, 1959, on all helicopters equipped with the small diameter (1 inch) spar stabilizer P/N 37001, install the stabilizer strut in accordance with Hiller Service Bulletin No. 83. The inspections specified in items 1 and 2 must be continued.

6. For all helicopters, upon installation of the improved tail rotor blades P/N 55064, in accordance with Hiller Service Bulletin No. 80, and accomplishment of items 4 or 5, the special inspections called for in items 1 and 2 are no longer required.

This supersedes AD 57–13–6.

59–5–5 Hiller Applies As Follows: (a) UH–12, UH–12A, and UH–12B Incorporating Hiller Service Bulletin Numbers 50 or 50A After July 1, 1957. (b) UH–12C, Serial Numbers 934 and Up. (c) UH–12D, All Serial Numbers. (d) All Spare P/N 34141 Castings Delivered By Hiller After July 1, 1957. All UH–12 Series and All Serial Numbers Incorporating These Spares Are Affected.

Compliance required as indicated.

Due to improper casting techniques, two cyclic control scissor castings, P/N 34141, have failed in service on Model H–23D helicopters. As there is a possibility that additional P/N 34141 castings are defective, the following measures are required to detect cracks and prevent further failures:

(1) Prior to every flight and refueling, visually inspect P/N 34141 casting for cracks if part has accumulated more than 275 hours. If cracks are detected, the part must be removed from service prior to further flight.

(2) Effective September 1, 1959, P/N 34141 casting (including basic number and all dash numbers) must be removed from service prior to accumulation of 275 hours total time.

(3) Upon replacement with a new forging P/N 34158, the special inspection of item (1) may be discontinued. This forging has unlimited service life.

59–25–3 Hiller Applies to Hiller UH Series Helicoters As Follows:

(a) UH–12 and UH–12A—incorporating both P/N 34126 wobble plate shield and P/N 34158 forged lower cyclic scissors.

(b) UH–12B and UH–12C—incorporating the P/N 34158 forged lower cyclic scissors.

(c) UH–12D—all Serial Numbers.

(d) UH–12E—Serials 942, 954, and 2001 through 2018.

Compliance required as indicated.

To prevent contact between the lower cyclic scissors and the fllister head screws attaching the wobble plate shield, which can result in damage to the lower scissors and subsequent loss of cyclic control, the following inspection and rework are required.

(1) Daily inspect the lower cyclic scissors P/N 34158 on all models, or P/N 34141 on Models UH–12D and UH–12E for damage due to striking the wobble plate shield attachment screws. Damaged scissors must be replaced prior to next flight.

(2) Not later than January 1, 1960, replace the fllister head screws attaching the wobble plate shield with AN 509–8R4 flush head screws in accordance with the procedures in Hiller Service Bulletins No. 87 or No. 2004.

(3) Upon accomplishment of item (2) the inspections of item (1) may be discontinued.

60–7–5 Hiller Amdt. 125 Part 507 Federal Register April 1, 1960, revised by Amdt. 187 Federal Register August 6, 1960. Applies to All UH–12D and UH–12E Helicopters.

Compliance required as indicated.

Due to two failures which have occurred in the main rotor blade fork P/N 52110–3 at the

outboard tension-torsion bar retention bolt hole, the following inspections shall be conducted:

(1) Perform daily visual inspection of all P/N 52110-3 forks for cracks in the area of the outboard tension-torsion bar retention bolt hole. Washers and nuts need not be removed for this inspection.

(2) Perform dye penetrant inspection, or equivalent, of the bolt hole and adjacent milled surfaces within 10 hours' time in service and every 200 hours' time in service thereafter on all forks with 250 or more hours' time in service. For this inspection remove the nut, washer, and pin.

Cracked forks must be replaced prior to further flight.

60-17-2 Hiller Amdt. 190 Part 507 Federal Register August 16, 1960. Applies to All UH-12D and UH-12E Helicopters.

Compliance required as indicated.

Due to fatigue cracking of a UH-12E metal main rotor blade, Parsons P/N 2253-1101-03, the following inspections shall be conducted within the next 10 hours' time in service and daily thereafter:

Perform visual inspection on all main rotor blades, P/N 2253-1101-03, with 250 or more hours' time in service. Inspect both the top and bottom surfaces of each blade in the area at the outboard end of the brazed steel leading edge spar root doubler (approximately 27 inches from the blade root end) for doubler separation or signs of cracks in the leading edge spar near the end of the doubler. To properly inspect the bottom side of the blade for cracks, the tip of the blade should be supported. Blades with cracks or separation in the areas described must be removed from service prior to further flight. (Hiller Service Information Letter No. 3007 covers this subject.)

This amendment shall become effective on the date of its publication in the Federal Register.

61-5-4 Hiller Amdt. 261 Part 507 Federal Register March 8, 1961. Applies to All Models UH-12D (H-23D) and UH-12E Series Helicopters.

Compliance required as indicated.

As a result of two H-23D accidents and several inflight UH-12E and H-23D incidents involving main transmission malfunctions, the following must be accomplished:

Item 1. Applies to all Models UH-12D and UH-12E Series helicopters.

Compliance required prior to next flight.

(a) Inspect planet spur gear, P/N 23527, spiral bevel ring gear, P/N 23528, and tail rotor bevel gear shaft, P/N 23522, for heat lot number. The heat lot number is prefaced by the designation "VHI" and is etched on the gears. Remove and replace any of those gears not bearing the following appropriate lot VHI numbers: For P/N 23527 (UH-12E Series only), VHI 180, 185, 186, 196, 275, 309 and subsequent. For P/N 23527 (UH-12D only), VHI 35, 59, 71, 125, 171, 180, 181, 182, 185, 186, 196, 217, 245, 275, 309 and subsequent. For P/N 23528 (UH-12D and UH-12E Series), VHI 40, 40R, 277, 279, 286, 288, 293, 293A, 295, 309 and subsequent. For P/N 23522 (UH-12D and UH-12E Series),VHI 291, 292, 309 and subsequent. (Effective May 9, 1961.)

NOTE: Those gears not bearing any lot numbers and identified by Western Gear P/N's 1962C171, 1962D58, or 1962D65 are satisfactory and may be reinstalled. (Effective May 9, 1961.)

(b) Inspect the following gears for proper gear tooth pattern; Bevel ring gear, P/N 23528 or 1962D58 and tail rotor bevel gear shaft, P/N 23522 or 1962D65. Replace those gears found to have improper gear tooth pattern. Refer to earlier transmission overhaul manual for description of acceptable pattern.

Item 2. Applies to all Models UH-12D and UH-12E Series helicopters.

Compliance required prior to next flight and every 50 hours' time in service thereafter.

(a) Remove and check the oil nozzle orifice, P/N 23607, located at lower right-hand side of main transmission for obstruction. If this nozzle is obstructed, inspect the Borg Warner clutch for evidence of lack of lubrication. If such evidence is found, replace the clutch.

(b) Using a piece of 0.020-inch wire, check for obstruction in oil inlet orifices located at forward topside of upper case, forward side of tachometer drive cover, and (if generator is installed on transmission) upper outboard side

of generator drive housing. If any of these orifices are found obstructed, inspect the first stage planetary gear system for abnormal wear or overheating. If signs of such wear and/or overheating are noticed, overhaul or replace the first stage planetary system.

Item 3. Applies to all Models UH–12D and UH–12E Series helicopters.

Compliance required prior to next flight of UH–12D and UH–12E Series and every 10 hours' time in service thereafter for the UH–12D and every 25 hours' time in service thereafter for the UH–12E Series helicopters.

Remove, disassemble, and inspect the engine oil filter and transmission oil filter for the presence of metallic particles. If aluminum, bronze, or steel particles are found in either or both of these filters, inspect the first stage planetary system for abnormal wear or overheating. If signs of such wear and/or overheating are noticed, overhaul or replace the first stage planetary system.

Item 4. Applies to all UH–12D helicopters.

Compliance required prior to next 150 hours' time in service.

Incorporate P/N's 23549–3 and 23549–5 bushings and P/N 23578 planet gear shafts in the first stage planetary gear system. The inspection interval for the inspections outlined in Item 3, may be increased to 25 hours' time in service once this modification is accomplished.

(Hiller Service Information Letter No. 3015D covers this same subject.) (Effective May 9, 1961.)

This directive becomes effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by telegram dated February 21, 1961.

62–3–1 Hiller Amdt. 395 Part 507 Federal Register January 30, 1962. Applies to All UH–12A and UH–12B Helicopters.

Compliance required within the next 150 hours' time in service after the effective date of this AD.

To preclude additional failures of the tail rotor drive slip joints which can result in loss of power to the tail rotor, replace CR–10 or CR–10T type rollers of both fore and aft slip joints UH–12A Assembly Nos. 24500–9 and –10 and UH–12B Assembly Nos. 24565 and 24544, with the improved Torrington CR–10U type rollers.

(Hiller Service Bulletin No. 44, Revision A covers this same subject.)

This supersedes AD 55–8–3.

This directive effective January 30, 1962.

62–6–3 Hiller Amdt. 411 Part 507 Federal Register March 22, 1962. Applies to All Model UH–12D Helicopters and Model UH–12E Serial Numbers 942, 954, 2001 Through 2198 Inclusive.

Compliance required as indicated.

(a) Prior to next flight install placard in cockpit in full view of pilot to read as follows:

"Oil Warmup Procedure: 1. After Start Idle at 1,450 r.p.m. in Flat Pitch. A. If Oil Temperature is Less Than 20° C. Idle Engine For a Minimum of Four Minutes. Continue Idle As Necessary Until Oil Temperature Reaches 20° C. B. If Oil Temperature is Greater Than 20° C. Idle Engine For Two Minutes. 2. Complete Warmup at 2,350 r.p.m. Until Oil Temperature Reaches 40° C. Shut-Down Procedure. After Main Rotor Blades Come to Rest Crank Engine 20–25 Seconds With Magneto Switch Off."

(b) Within 10 hours' time in service after effective date of this directive and every 25 hours' time in service thereafter until accomplishment of paragraph (d), inspect the first and second stage planetary system in the transmission in accordance with Hiller Service Information Letter 3028 and at time of first inspection install ring gear spacer baffle P/N 23652 as described therein. Replace parts showing evidence of overheating or abnormal wear prior to further flight.

(c) Within 10 hours' time in service after effective date of this directive install placard in cockpit in full view of pilot to read as follows:

"Operation of Helicopter in Ambient Temperatures of −10° F., −23° C., or Colder is Prohibited."

This placard may be removed upon accomplishment of paragraph (d).

(d) Within 100 hours' time in service after effective date of this directive modify trans-

mission and lubrication system to incorporate additional lubrication provisions for the transmission. Conduct modification in accordance with Hiller Service Bulletin 2026.

NOTE.—The inspection and baffle installation specified in paragraph (b), are included in and required as part of Service Bulletin 2026.

(Hiller Service Information Letters 3027 dated January 19, 1962, 3028 dated February 2, 1962, 3029 dated February 14, 1962, and Service Bulletin 2026 dated February 26, 1962, cover this same subject.)

This directive effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by telegram dated March 2, 1962.

HOWARD

(*See Jobmaster*)

HUGHES

62–11–4 Hughes Amdt. 438 Part 507 Federal Register May 15, 1962. Applies to Model 269A Helicopters Equipped With Lycoming Model 0–360–C2D Engines of Serial Numbers L–3816–36 Through L–4599–36 and L–4601–36 Through L–4640–36.

Compliance required within 50 hours' time in service after the effective date of this directive.

Because of revisions to the operating limitations necessitated by changes in engine camshafts which resulted in a reduction in maximum horsepower, the FAA approved Flight Manual shall be revised to incorporate the new operating limitations as set forth in Hughes Model 269A Flight Manual revised page 24A.

When engines modified to incorporate a new camshaft in accordance with Lycoming Service Instructions are installed, the aircraft may be operated in accordance with original operating limitations.

This directive effective May 15, 1962.

62–14–3 Hughes Amdt. 455 Part 507 Federal Register June 21, 1962. Applies to Model 269A Helicopter Serial Numbers 0011 to 0059 Inclusive.

Compliance required as indicated.

(a) To prevent failure of the tail rotor blade, within the next 10 hours' time in service after the effective date of this AD, and each day thereafter, conduct a visual inspection of the tip of the Hughes P/N 269A6124 tail rotor blade for separation of the rib and the blade skin. This will appear as a crack in the bond line between the blade tip rib and the blade skin.

(b) If no separation is detected, the tail rotor blades may continue to be used in service for the remainder of their service life subject to the inspection specified in paragraph (a).

(c) If separation is detected, remove the tail rotor assembly and replace prior to further flight with an assembly incorporating tail rotor blades P/N 269A6124 Change E or later. After installation of P/N 269A6124 Change E or later, the normal inspection procedures may be followed.

(Hughes Tool Company, Aircraft Division, Hughes-O-Gram to operators dated May 2, 1962, covers the same subject.)

This directive effective June 26, 1962.

62–21–3 Hughes Amdt. 485 Part 507 Federal Register September 20, 1962. Applies to All Model 269A Helicopters Except Those Operated Under CAR Part 8 With Limitations Which Prohibit Flight Over Densely Populated Areas, in Congested Airlanes, or in the Vicinity of Busy Airports.

Compliance required as indicated.

Prior to further flight, unless already accomplished, incorporate modification in accordance with Hughes Service Bulletin No. 2A7 or equivalent approved by FAA Western Region.

This directive effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by telegrams dated August 17, 1962, and August 31, 1962.