# CHAPTER 5
## INSPECTIONS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10</td>
<td>Life-Limited Components</td>
<td>5.1</td>
</tr>
<tr>
<td>5-11</td>
<td>Time-In-Service Records</td>
<td>5.1</td>
</tr>
<tr>
<td>5-12</td>
<td>Retirement Procedure</td>
<td>5.1</td>
</tr>
<tr>
<td>5-20</td>
<td>Scheduled Maintenance and Inspections</td>
<td>5.3</td>
</tr>
<tr>
<td>5-30</td>
<td>Standard Inspection Criteria</td>
<td>5.5</td>
</tr>
<tr>
<td>5-31</td>
<td>Ball and Roller Bearings</td>
<td>5.5</td>
</tr>
<tr>
<td>5-32</td>
<td>Push-Pull Tubes</td>
<td>5.5</td>
</tr>
<tr>
<td>5-33</td>
<td>Rod Ends and Spherical Bearings</td>
<td>5.5</td>
</tr>
<tr>
<td>5-34</td>
<td>Elastomeric Bearings</td>
<td>5.7</td>
</tr>
<tr>
<td>5-35</td>
<td>Telatemp Indicators</td>
<td>5.7</td>
</tr>
<tr>
<td>5-36</td>
<td>Torque Stripes</td>
<td>5.7A</td>
</tr>
<tr>
<td>5-40</td>
<td>Operation Checks for 100-Hour / Annual Inspection</td>
<td>5.8</td>
</tr>
<tr>
<td>5-41</td>
<td>Ground Check</td>
<td>5.8</td>
</tr>
<tr>
<td>5-42</td>
<td>Run-Up</td>
<td>5.10</td>
</tr>
<tr>
<td>5-43</td>
<td>Flight Check</td>
<td>5.11</td>
</tr>
<tr>
<td>5-45</td>
<td>100-Hour / Annual Inspection</td>
<td>5.13</td>
</tr>
<tr>
<td>5-50</td>
<td>2000-Hour Inspection</td>
<td>5.39</td>
</tr>
<tr>
<td>5-55</td>
<td>12-Year Inspection</td>
<td>5.40</td>
</tr>
<tr>
<td>5-60</td>
<td>Special Maintenance and Inspections</td>
<td>5.41</td>
</tr>
<tr>
<td>5-61</td>
<td>Tail Skid Strike</td>
<td>5.41</td>
</tr>
<tr>
<td>5-62</td>
<td>Tail Rotor Strike</td>
<td>5.42</td>
</tr>
<tr>
<td>5-63</td>
<td>Main Rotor Strike</td>
<td>5.43</td>
</tr>
<tr>
<td>5-64</td>
<td>Rotor/Engine Overspeed</td>
<td>5.44</td>
</tr>
<tr>
<td>5-65</td>
<td>Hard Landing</td>
<td>5.47</td>
</tr>
<tr>
<td>5-66</td>
<td>Dye Penetrant Inspection of F020-1 Upper Frame</td>
<td>5.48</td>
</tr>
<tr>
<td>5-67</td>
<td>Corrosion on F020-1 Upper Frame</td>
<td>5.48</td>
</tr>
<tr>
<td>5-68</td>
<td>Main Rotor Gearbox Overtemp Illumination</td>
<td>5.48</td>
</tr>
<tr>
<td>5-69</td>
<td>Main Rotor Gearbox (MR) Chip Light Illumination</td>
<td>5.49</td>
</tr>
<tr>
<td>5-70</td>
<td>Tail Rotor Gearbox (TR) Chip Light Illumination</td>
<td>5.49</td>
</tr>
<tr>
<td>5-71</td>
<td>Main Rotor Gearbox Filter Bypass Indicator</td>
<td>5.49</td>
</tr>
<tr>
<td>5-72</td>
<td>Lightning Strike</td>
<td>5.50</td>
</tr>
<tr>
<td>5-73</td>
<td>Pop-Out Float-Equipped Helicopter Water Landing with Tail Rotor Contact</td>
<td>5.50</td>
</tr>
<tr>
<td>5-74</td>
<td>Main Rotor Gearbox Internal Visual Inspection</td>
<td>5.51</td>
</tr>
</tbody>
</table>
5-10 Life-Limited Components

5-11 Time-In-Service Records

It is the operator’s responsibility to maintain a record of time in service for the engine, airframe, and all life-limited components, as well as the number of start cycles for the engine. Two hourmeters are provided: the hourmeter on the console records all run time including ground idle and is provided for reference. The hourmeter located outboard of the pilot’s seat is collective-activated and records run time only when the collective is raised off the down stop. Both hourmeters are connected to main rotor gearbox oil-pressure switch. The collective-activated hourmeter may be used to determine time in service for maintenance purposes, including time in service for all life-limited components.

Calendar life begins on the date of the factory-issued airworthiness certificate or factory-issued authorized release certificate (FAA Form 8130-3, Airworthiness Approval Tag).

Engine life is limited by engine time in service and accumulated start cycles. The engine is equipped with an electronic Engine Monitoring Unit (EMU), which may be used to verify time in service and accumulated start cycles. An official, independent record of start cycles must be maintained by the operator.

When a life-limited replacement part or overhauled component is installed in the helicopter, record the part name, part number, serial number, and previous time in service in the aircraft maintenance record, including the installation date and helicopter total time. Previous time in service must be included when calculating remaining component life or time between overhaul (TBO).

**CAUTION**

Components with mandatory overhaul times or life-limits whose time in service is not reliably documented cannot be considered airworthy and must be removed from service.

If a part is fatigue life-limited or has a mandatory overhaul requirement and is interchanged between an R44 and an R66 helicopter, and if the part life-limit or overhaul requirement is different between an R44 and an R66 helicopter, the shorter life-limit or overhaul requirement must be used. If a part is fatigue life-limited or has a mandatory overhaul requirement, and the accumulated cycles and/or time in service are known but the helicopter type is unknown, the shorter life-limit or overhaul requirement must be used.

5-12 Retirement Procedure

The FAA-approved Airworthiness Limitations section in Chapter 4 lists the mandatory replacement time for affected components. Life-limited components must be removed from the helicopter at specified intervals and permanently retired from service by destroying or damaging each part beyond repair or beyond appearance of serviceable condition.
### TABLE 5-1 SCHEDULED INSPECTIONS

<table>
<thead>
<tr>
<th>Inspection</th>
<th>First 100 Hours*</th>
<th>100 Hours**</th>
<th>200 Hours**</th>
<th>300 Hours**</th>
<th>400 Hours**</th>
<th>600 Hours**</th>
<th>2000 Hours**</th>
<th>Annually**</th>
<th>12 Months***</th>
<th>24 Months***</th>
<th>3 Years**</th>
<th>5 Years**</th>
<th>12 Years**</th>
<th>15 Years**</th>
<th>3000 Cycles**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace main gearbox oil filter per § 12-12.</td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform 100-hour / annual inspection per § 5-45.</td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>As required by RR300 Series Operation and Maintenance Manual (OMM), perform maintenance and inspection.</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service inlet barrier filter per § 71-21.</td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace main gearbox oil per § 12-11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain and flush tail rotor gearbox per § 12-23.</td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace hydraulic filter per § 12-32.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean gearbox chip detectors per § 12-13 &amp; 12-22.</td>
<td>⬤</td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform 2000-hour maintenance and inspection per § 5-50.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform main gearbox internal visual inspection per § 5-74.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect emergency locator transmitter (ELT) per 14 CFR § 91.207.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform pop-out float leak check per § 32-64 Part A.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test and inspect transponder per 14 CFR § 91.413.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform pop-out float inflation check per § 32-64 Part B.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform pop-out float pressure cylinder hydrostatic test.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform 12-year maintenance and inspection per § 5-55.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pop-out float pressure cylinder maximum life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>⬤</td>
</tr>
</tbody>
</table>

* One-time maintenance after new or overhauled main rotor gearbox is installed.

** Recurring inspection not to exceed given interval.

*** See § 1-60 Definitions and Abbreviations.
5-20 Scheduled Maintenance and Inspections

The R66 helicopter required inspection intervals are given in Table 5-1. Required inspection intervals are maximum 100 hours time in service or 12 calendar months, whichever occurs first; the inspection interval may be extended up to 10 hours, without accumulation, if allowed by local regulations.

Some aircraft will reach calendar intervals before accumulating the associated service time. Unless noted, use the more conservative inspection interval. Refer to § 5-45 for inspection procedures.

Some aircraft may require maintenance and inspections in addition to the requirements in Table 5-1. Consult aircraft maintenance records, Service Bulletins (SB), aviation regulations, Airworthiness Limitations, and Airworthiness Directives (AD) for applicability.

Preventive maintenance is required between scheduled inspections. Fluid leaks, discoloration, fretting, galling, chafing, nicks, scratches, dents, cracks, and corrosion all warrant further investigation. Unairworthy items must be replaced or repaired as allowed by RHC.
NOTE
FOR MAXIMUM ROD EXTENSION WHEN NO WITNESS HOLE IS PROVIDED:

<table>
<thead>
<tr>
<th>ROD END</th>
<th>$\ell_{\text{max}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A101-4</td>
<td>1.10 in.</td>
</tr>
<tr>
<td>D163-1</td>
<td>1.40 in.</td>
</tr>
<tr>
<td>D173-1</td>
<td>1.30 in.</td>
</tr>
<tr>
<td>F101-4</td>
<td>1.10 in.</td>
</tr>
</tbody>
</table>

A PIECE OF 0.020 INCH DIAMETER SAFETY WIRE MUST NOT PASS THROUGH THE WITNESS HOLE.

AN316 JAM NUT
B330 PALNUT

TORQUE STRIPE*
MAXIMUM AXIAL PLAY 0.020 INCH

BALL BEARING
SAFETY WASHER

A115-1 OR C115-1 SPACER
(SMALL DIAMETER OF SPACER TO CONTACT ROD END BALL)

*Typical torque stripe location shown. Adjust location as required for maximum visibility during preflight & 100-hr inspection.

FIGURE 5-1 ROD END AND SPHERICAL BEARING PLAY LIMITS AND TORQUE STRIPE APPLICATION

Position rod ends for maximum rotation

FIGURE 5-2 ROD END CENTERING
5-30 Standard Inspection Criteria

This section contains standard inspection criteria for 100-hour/annual maintenance and inspection.

5-31 Ball and Roller Bearings

The first indication of bearing failure is usually an increase in bearing noise. Noise will almost always start several hours prior to bearing failure. Listen to drive system during start-up and shutdown. A failing bearing will produce a loud whine, rumble, growl, or siren sound. Upon hearing an unusual noise, thoroughly inspect all bearings before further flight.

A failing bearing may have a distorted seal or be exuding a large amount of grease. Monitor bearings for increase in temperature, but do not rely on Telatemps to detect failing bearings as temperature increase may occur only seconds before bearing disintegrates.

5-32 Push-Pull Tubes

1. Nicks, cuts, or scratches in tube not more than 0.010 inch deep and not more than 1/4 of tube circumference may be polished out in lengthwise direction using 320-grit or finer wet-or-dry abrasive paper to 1 inch minimum blend radius. Replace push-pull tube if depth exceeds these limits.

2. Replace push-pull tube if tube is dented or flattened more than 5% of its diameter in unswaged area; dents or flattening is not permitted in swaged (tapered and threaded) ends of tubes.

5-33 Rod Ends and Spherical Bearings

1. Maximum axial play: 0.020 inch
   Maximum radial play: 0.010 inch

2. Looseness between bearing outer race and rod end housing is not permitted.

3. Rod ends not riveted in place must block passage of 0.020-inch diameter wire through witness hole. Refer to Figure 5-1 for maximum rod end extension when no witness hole is provided.

4. Rod end jam nuts and palnuts must be torqued per Section 20-32 and torque striped per Figure 5-1 at the most visible position for pre-flight inspection. Torque stripe must extend across nuts to both rod end shank and push-pull tube (or pitch link barrel, yoke, support, strut, etc.). Torque stripes are subject to deterioration and must be periodically renewed.

5. Refer to Figure 5-2. Rod ends must be centered, or positioned, to allow as much push-pull tube or link rotational movement as possible without binding.

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teflon-lined bearings must not be lubricated or solvent cleaned.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly of flight controls is critical and requires inspection by a qualified person. If a second person is not available, RHC recommends the installer take a 5-minute break prior to inspecting flight control connections he has assembled.</td>
</tr>
</tbody>
</table>
Elastomer Fatigue

Elastomer Oil Contamination

Elastomer Overload

FIGURE 5-3 ELASTOMERIC BEARING DAMAGE
5-34 Elastomeric Bearings

Refer to Figure 5-3. Elastomeric bearings are used in the G062-1 tail rotor hub. Fatigue, oil contamination, or overload can degrade the elastomer.

Small surface cracks (fatigue cracks) and elastomer dust or “eraser crumbs” are normal and are not cause for replacement. As cracks grow, enough elastomer will be lost to cause reduced stiffness and increased vibration. Replace bearing if crack is deeper than 0.10 inch or cracks are present over more than 25% of elastomer face.

Avoid elastomer exposure to oil, grease, hydraulic fluid, cleaning solvent, and rust-preventative fluids. Immediately wash off contaminants with detergent and water. Replace a contaminated bearing that exhibits swelling, wavy edges, or debonding.

Overload occurs when elastomer’s tensile strength or rubber-to-metal bond strength is exceeded. This can occur when normal loads are applied to a bearing weakened by fatigue or oil contamination. Overload is indicated by large clean cracks or extrusions from elastomer.

Elastomer may also separate (debond) from metal bushings. Replace bearing if separation exceeds 25% of bonded area.

5-35 Telatemp Indicators

Refer to Figure 5-4. Self-adhesive Telatemp indicators record increases in operating temperatures of the hydraulic pump and tail rotor gearbox. To use a Telatemp, draw a reference line between the highest temperature square which has darkened during normal operation and the next undarkened square. During every check thereafter, determine if an additional square has blackened. If an indicated temperature increase cannot be accounted for by a change in operating conditions, carefully examine the component before further flight.

### NOTE

Telatemps can indicate erroneously if contaminated by a petroleum product, typically appearing as white, unactivated square(s) between darkened squares at each end; replace any Telatemp indicating as such and clean area with acetone prior to installing.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>F110-2</td>
<td>60°C / 140°F — 88°C / 190°F</td>
</tr>
<tr>
<td>F110-3</td>
<td>82°C / 180°F — 110°C / 230°F</td>
</tr>
<tr>
<td>F110-4</td>
<td>104°C / 220°F — 132°C / 270°F</td>
</tr>
</tbody>
</table>

FIGURE 5-4  TELETEMP INDICATOR WITH DRAWN REFERENCE LINE
5-36 Torque Stripes

If, during inspection, the remaining torque stripe on a fastener is insufficient to determine joint integrity, then remove accompanying palnut as required and apply specified torque to fastener. If fastener moves, disassemble joint and inspect parts for damage such as fretting, thread deformation, hole elongation, etc.; replace damaged parts. If fastener does not move, install new palnut as required & standard torque per § 20-32. Torque stripe fastener per § 20-31.
Intentionally Blank
5-40 Operation Checks for 100-Hour / Annual Inspection

Complete the following checklists in conjunction with 100-hour / annual inspection. Note and correct any discrepancies.

5-41 Ground Check (aircraft not running)

1. _______ Twist Grip:
   Verify twist grip smooth rotation without binding in full up and full down collective position. Verify over center spring holds twist grip full open or closed.

2. _______ Fuel Cutoff Valve:
   Verify smooth actuation without binding. Verify proper function of lock button.

3. _______ Collective Control:
   Verify proper operation through full control travel with and without friction applied. With friction off, verify approximately one-half inch total free play before encountering hydraulic resistance. Verify normal hydraulic resistance throughout remainder of control travel. With friction on, verify increased resistance but no binding or locking of control. Verify power turbine governor rigging as follows:
   a. _______ Turn battery switch on. With collective full down, hold beep switch actuator all the way down. Have a second person verify the PTG reads approximately 45°.
   b. _______ With collective full down, hold beep switch actuator all the way up. Have a second person verify the PTG reads approximately 65°. Return actuator to nominal position. Turn battery switch off.

4. _______ Cyclic Control:
   With friction off, verify approximately one-half inch total longitudinal and one inch total lateral free play before encountering hydraulic resistance. Verify normal hydraulic resistance throughout remainder of control travel. With friction on, verify increased resistance but no binding or locking of control.

5. _______ Tail Rotor Pedals:
   Verify smooth actuation without binding. Verify proper pedal position for pilot and locking pin security.

6. _______ Removable Controls (if installed):
   Verify proper operation and locking pin security.
7. **Lighting and Instruments**: (Turn battery switch on.)

**ANNUNCIATOR PANEL**

a. Main rotor gearbox temperature / pressure segment illuminates.
b. Engine oil segment illuminates.
c. Generator segment illuminates.
d. Rotor brake segment illuminates (if rotor brake is applied).
e. Low RPM segment illuminates.
f. Cowl door segment illuminates when one, two, or all of the following doors are open: fuel filler door, right side engine door, and/or baggage compartment door.
g. All segments illuminate when test button is depressed (slight delay on low fuel light).

**INSPECTION LIGHTING**

a. Left side cowl door - verify LEDs illuminate main rotor gearbox and hydraulic reservoir sight gages when cowl door is open (battery switch on or off).

**EXTERIOR LIGHTING**

c. Landing lights – check function.

**INTERIOR LIGHTING**

a. Panel lighting and dimmer control – check function (position lights must be illuminated to enable panel lighting and dimmer control).
c. Digital voltmeter – indicates approximately 24 volts.
d. Oil temperature gage – slight needle deflection with engine cold.
e. Fuel quantity gage – indication of fuel level.

(Turn battery switch off.)
5-41 Ground Check (continued)

8. **Aircraft Documents:**
   (Additional documents may be required in countries other than the US.)
   a. Inspect condition and verify R66 MT699-1 laminated pilot’s checklist is current revision. Check revision status online at: [www.robinsonheli.com](http://www.robinsonheli.com).
   b. Inspect condition and verify R66 Pilot’s Operating Handbook is current revision and contains correct Equipment List/Weight & Balance Data. Check revision status online at: [www.robinsonheli.com](http://www.robinsonheli.com).
   c. Verify airworthiness certificate onboard & matches helicopter S/N.
   d. Verify registration certificate onboard & matches helicopter S/N and all registration markings.

5-42 Run-Up

1. Clean engine gas path, if required, per RR300 Series Operation and Maintenance Manual (OMM).
2. Perform Pilot’s Operating Handbook (POH) Section 4 “Preflight” checklist.
4. Prior to start, verify rotor brake locks out starter.
5. Perform POH Section 4 “Starting Engine and Run-Up” checklist.
6. Generator light off.
7. Verify N2/Rotor tachometer functions with battery and generator switches off. Return switches to on.
8. No unusual bearing noise when varying RPM through operating range.
9. Carefully beep N₂ toward 104%. If N₂ can be beeped above 104% (do NOT exceed 105%), adjust PTG rigging per MM §§ 76-21 and 76-22.
10. Verify tachometer needles are properly adjusted/governed.
11. Verify proper generator voltage.
12. Heater operates properly.
13. Verify acceptable instrument variation when transmitting on various frequencies.
14. Verify operation and adjustment of low rotor RPM warning light and horn.
15. Engine performance indications are within acceptable parameters.
5-42 Run-Up (continued)

16. ______ Check hydraulic system operation. Using cyclic-mounted hydraulics switch, turn hydraulics OFF. Using small longitudinal cyclic inputs, there should be approximately one-half inch of freeplay before encountering stiffness and feedback. Return cyclic to neutral. Turn hydraulics ON. Controls should be free with no feedback or uncommanded motion (“motoring”). Complete flight checks with hydraulics on.

17. ______ Air conditioning (if installed): Verify system blows cold air on both low and high settings. Verify no EMI/RFI with other instruments and systems. After a flight with air conditioning on, verify water drains from drain tube in ship’s belly (may be little or no water in very dry conditions).

5-43 Flight Check

1. ______ Hover:
   a. ______ Verify normal gage indications.
   b. ______ Verify controllability in left and right pedal turns.
   c. ______ Verify hydraulic system zeros cyclic stick forces.
   d. ______ Evaluate vibration levels; if unacceptable, measure imbalance and correct.

2. ______ Level Flight:

   Conduct at typical cruise altitude (weather permitting) and maximum continuous torque. Loading to typical operating conditions or nominal weight and CG in middle of envelope will provide the most useful evaluation.

   a. ______ Verify tail rotor pedal position when yaw string is centered. Right pedal 0.25 to 0.75 inch forward of left pedal.
   b. ______ Verify tail rotor elastic trim cord zeros pedal forces (cord applies left pedal force).
   c. ______ Verify hydraulic system zeros cyclic stick forces and collective is balanced with no feedback.
   d. ______ Verify acceptable control forces (feedback) with hydraulics off.
   e. ______ Evaluate vibration levels; if unacceptable, measure imbalance and correct.
3. **Power Assurance Check:**

   Refer to R66 Pilot’s Operating Handbook (POH) Chapter 5 power assurance chart. Conduct at typical cruise altitude (weather permitting) and maximum continuous torque (83%). Turn heater, generator, and anti-ice switches OFF. Stabilize N2/R at 100% (beep as required) and record the following values:
   
   a. _____ N1
   b. _____ % Torque (83% nominal)
   c. _____ OAT
   d. _____ MGT
   e. _____ Pressure altitude
   f. _____ Oil pressure
   g. _____ Oil temperature
   h. _____ Determine max allowable MGT from power assurance chart.
   i. _____ Calculate margin. Margin = Max allowable MGT - Indicated MGT.

4. **Autorotation:**

   a. _____ Autorotate at 100 KIAS. Verify normal control forces and flying characteristics.

5. **Shutdown:**

   a. _____ Perform POH “Shutdown Procedure” checklist.
   b. _____ Verify rotor brake function and ROTOR BRAKE annunciator segment illuminates.
RHC recommends retaining a copy of the most recently performed 100-hour / annual checklist with the aircraft’s maintenance records to meet the requirement of 14 CFR § 91.417 (b)(1).

R66 Serial No.: ___________________ Technician Name: ___________________

Registration No.: ___________________

Collective-Activated (Time In Service) ___________________ Technician

Hourmeter Indication: ___________________ Certificate Number: ___________________

Helicopter Total Time In Service: ___________________

A. Preparation

_____ Operation Checks:
Perform ground and flight checks per § 5-40.

_____ Cleaning (required by 14 CFR Part 43, Appendix D, paragraph (a)):
Note any fluid leakage before cleaning. Clean main and tail rotor blades, hubs, and airframe exterior with a mild soap and water solution per Chapter 20.

CAUTION

Do not spray main rotor hub, tail rotor gearbox vent, hydraulic reservoir vent, swashplate area, or bearing seals with high-pressure water or solvent as water or solvent may cause corrosion or breakdown of lubricants. See RR300 Series Operation and Maintenance Manual (OMM) for engine cleaning instructions and precautions.

_____ Access and Inspection Panels:
Refer to R66 Illustrated Parts Catalog Chapter 6 for access and inspection panel locations. Remove or open necessary panels, doors, covers, fairings, and cowlings in accordance with 14 CFR Part 43, Appendix D, paragraph (a).

NOTE
If radio antennas are installed on removed panels, disconnect antenna lead and corresponding ground wire. Pull respective radio circuit breaker and tag circuit breaker with “Antenna Removed.”
B. Inspection

CABIN FORWARD FOOTWELLS

--- Tail Rotor Pedal Bearing Blocks:
Remove pedal bearing block covers as required. Examine accessible portion with inspection light and mirror. Inspect condition. Check for looseness or play in pedal bearings. Maximum allowable play is 0.080 inch axially and 0.030 inch radially. Verify bearing block security.

--- Adjustable Tail Rotor Pedals:
Inspect condition. Verify no cracks in welds. Verify locking pins engage holes to secure adjustable pedals. Verify proper operating clearance and smooth actuation.

--- Co-Pilot Removable Tail Rotor Pedals:
Inspect condition. Verify no cracks in welds. Verify locking pins engage holes to secure removable pedals. Verify proper operating clearance and smooth actuation.

--- Cabin Heater Diffusers:
Inspect condition. Verify marking legibility. Verify no significant nicks, scratches or dents, or cracks in welds. Verify security.

--- Fire Extinguisher and Mount:
Inspect condition. Inspect fire extinguisher per manufacturer’s instructions. Verify no loss of charge or obstructions in extinguisher nozzle. Verify security.

--- Map Holders:
Inspect condition. Verify no defects, tears, or material deterioration. Remove foreign objects and verify security.

--- License Holder:
Inspect condition. Verify no defects, cracks in plastic, or material deterioration. Verify security.

--- Cabin Chin and Floor:
Inspect condition. Verify equipment security. Retrieve and discard trapped debris.

CONSOLE

--- Console Assembly:
Inspect condition. Verify no significant nicks, scratches or dents; verify no cracks, corrosion, or loose rivets in lower console assembly. Verify hinge security.

--- HID Landing Lights:
Inspect condition. Verify proper installation and security of wiring and equipment.

--- Flight & Engine Instruments:
Inspect condition. Verify proper instrument markings per R66 POH Section 2. Verify proper installation and security of wiring and equipment.
CONSOLE (continued)

--- Post Lights:
Inspect condition. Verify proper function and equipment security.

--- Fuel Cutoff Control and Guard:
Inspect condition. Verify cable and mounting bezel security. Verify proper adjustment and smooth operation of knob. Verify guard is attached to console.

--- Radios and Radio Trays:
Inspect condition. Verify no cracks or corrosion. Verify proper installation and security of wiring and equipment.

--- Pitot & Static Lines:
Inspect pitot and static lines for obstructions, cracking, chafing, pinching or kinking. Verify integrity of pitot and static line connections. Verify line security.

--- Tail Rotor Pedal Bearing Block Supports:
Examine accessible portion with inspection light and mirror. Inspect both vertical sheet metal supports inside lower console and verify no cracks. Pay particular attention to area near NAS6603-13 bolts. Replace any cracked support prior to flight.

--- Tail Rotor Controls:
Examine accessible portion with inspection light and mirror. Inspect tail rotor control components for obvious defects. Verify operating clearance.

--- Cabin Heater Hose:
Inspect condition. Verify no collapsed areas or chafing. Verify hose clamp and hose security.

--- Copper Bus Bars:
Inspect condition. Verify no corrosion or bends in bus bar. Verify bus bar security and isolation from surrounding structure.

--- Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Verify neatness, proper routing and installation, and security.

--- Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

--- Close & Secure:
Verify foreign objects are removed. Verify equipment security and cleanliness of interior. Close console and verify security.
PILOT-SIDE CONSOLE (Optional equipment)

Pilot Avionics Support Weldment:
Inspect condition. Verify no significant nicks, scratches, or dents on console shell. Verify no cracks in welds. Verify weldment mounting security.

CAUTION
Ensure BATTERY switch is turned off while circuit breaker panel is open.

Panel Cover:
Inspect condition. Verify no damage to nutplates and rails in panel interior. Verify marking legibility.

Fuses and Fuse Holders:

Circuit Breakers:
Inspect condition. Check airworthiness directive applicability. Verify proper installation and security.

Copper Bus Bars:
Inspect condition. Verify no corrosion or bends in bus bars. Verify bus bar security and isolation from surrounding structure.

Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Verify neatness, proper routing and installation, and security.

Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

Close & Secure:
Verify foreign objects are removed. Verify equipment security. Verify cleanliness of interior and of access cover. Close cover and verify security.

UNDER LEFT FRONT SEAT

Lithium-Ion Battery Circuit Back-Up Batteries (required with optional Lithium-ion main battery):
Inspect condition. Verify presence and proper orientation of (2) 9V back-up batteries. Verify security of battery trays and G468-1 mount assembly. Verify legibility of silkscreen lettering on mount. Inspect wiring for obvious damage.
HORIZONTAL CONTROL TUNNEL (Front seats; continued)

___ Covers:
Inspect condition. Verify marking legibility.

___ Antenna Wiring & Connectors:
Inspect condition. Verify no loose, chafed, frayed, or broken wires. Verify no damaged connectors. Verify neatness, proper routing and installation, and security.

___ Cyclic Box Assembly:
Inspect condition. Verify no nicks, scratches, dents, cracks, corrosion, or loose rivets. Verify no distortion or damage on cyclic stop sheet metal assembly. Verify security.

___ Cyclic Stick Assembly:

___ Cyclic Boot:

___ Cyclic Friction Assembly:
Inspect condition. Inspect link rod end bearings per § 5-33. Verify no excessive flaring at either end of friction spacer. Verify proper installation, security, and operation.

___ Cyclic Pivot:
Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion. Inspect spherical bearings per § 5-33. Verify proper installation, security, and operating clearance.
HORIZONTAL CONTROL TUNNEL (Front seats; continued)

___ Cyclic Horizontal Torque Tube:
Examine accessible portion with inspection light and mirror. Verify no nicks, scratches, dents, cracks, or corrosion. Verify no cracks around reinforcement blocks on both ends of torque tube. Verify proper installation, security, and operating clearance.

___ Horizontal Push-Pull Tubes:
Examine accessible portion with inspection light and mirror. Inspect condition per §5-32. Verify no nicks, scratches, chafing, dents, cracks, or corrosion. Inspect rod end bearings per §5-33; verify rod ends are centered and palnut and jam nut are tight. Check witness holes for proper thread engagement. Verify proper installation, security, and operating clearance.

___ Collective Stick Assembly:
Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion. Verify no cracks in welds. Verify proper installation, security, and operation of collective micro switches. Verify security, proper operating clearance, and smooth actuation of both flight and throttle controls. Verify over center spring holds twist grip full open or full closed. Verify placard legibility.

___ Collective Stick Torque Tube:
Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion.

___ Collective Boot:

___ Fuel Valve Knob and Guard:
Inspect condition. Verify cable and mounting bezel security. Verify proper adjustment and smooth operation of valve. Verify guard is present.

___ Collective Friction & Stop Assembly:
Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion in stop assembly. Verify no bending or binding of stop through full control travel, with and without friction applied. Measure collective friction per §67-22. Verify proper installation and security of collective friction lever and stop assembly.

___ Co-Pilot Removable Collective Stick Assembly:
Remove co-pilot collective stick assembly. Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion. Verify no damage to spring pin and safety wire at coupling. Firmly grasp coupling and rotate twist grip in each direction with opposite hand. Verify no free play of coupling or spacer relative to torque tube. Install removable collective stick in helicopter and verify both locking pins engage holes to secure stick. Verify security, proper operating clearance, and smooth actuation of both flight and throttle controls. Verify placard legibility.

___ Co-Pilot Removable Collective Boot:
HORIZONTAL CONTROL TUNNEL (Front seats; continued)

___ Pitot & Static Lines & Drains:
Inspect pitot and static lines for obstructions, cracking, chafing, pinching, or kinking. Remove drain plugs from tee fittings in each line and clear any moisture from system. Install drain plugs. Verify integrity of pitot and static line connections. Verify line security.

___ Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Verify neatness, proper routing and installation, and security.

___ Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

___ Antennas:
Inspect condition. Verify no cracks where antennas mount to cowling. Verify security.

___ Close & Secure:

HORIZONTAL CONTROL TUNNEL (Aft seats)

___ Covers:
Inspect condition. Verify marking legibility.

___ Antenna Wiring & Connectors:
Inspect condition. Verify no loose, chafed, frayed, or broken wires. Verify no damaged connectors. Verify neatness, proper routing and installation, and security.

___ Cyclic Yoke:
Inspect condition. Verify no cracks, corrosion, or fretting. Inspect spherical bearings per § 5-33. Verify proper installation, security, and operating clearance.

___ Cyclic Fork:
Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion. Inspect rod end bearings per § 5-33. Verify proper installation, security, and operating clearance.

___ Cyclic Horizontal Torque Tube:
Examine accessible portion with inspection light and mirror. Verify no nicks, scratches, dents, cracks, or corrosion. Verify no cracks around reinforcement blocks on both ends of torque tube. Verify proper installation, security, and operating clearance.

___ Horizontal Push-Pull Tubes:
Examine accessible portion with inspection light and mirror. Inspect condition per § 5-32. Verify no nicks, scratches, chafing, dents, cracks, or corrosion. Inspect rod end bearings per § 5-33; verify rod ends are centered and palnut and jam nut are tight. Check witness holes for proper thread engagement. Verify proper installation, security, and operating clearance.
HORIZONTAL CONTROL TUNNEL (Aft seats; continued)

- **Fuel Cutoff and Throttle Control:**
  Inspect condition. Verify proper fuel cutoff and throttle control clearance to installed equipment and surrounding structure. Verify proper installation and security.

- **Cabin Heater Valve and Control:**
  Inspect condition. Verify control clearance to installed equipment and surrounding structure. Verify heater valve security. Verify proper installation and smooth operation of valve.

- **Flight Control Bellcranks:**
  Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion. Inspect spherical bearings per Section 5-33. Verify proper installation, security, and operating clearance.

- **Bellcrank Support:**
  Inspect condition. Verify no cracks or corrosion in welds. Verify no cracks where support mounts to keel panels. Verify proper installation and security.

- **Evaporator and Blower Assembly (Air Conditioning; if installed):**
  Remove middle seat assembly and cover, and inspect condition. Verify refrigerant line security, no damage, and clearance to adjacent structure. Verify no loose, chafed, frayed, or broken wires. Verify proper installation and security of blower and evaporator components.

- **Evaporator Drain Tubes and Valve (Air Conditioning; if installed):**
  Remove middle seat assembly and cover, and covers inside left and right seat compartments to access drain system. Verify tubes are unobstructed. Function-check drain system by simultaneously squeezing drain tube and sediment tube near tee-fitting and verify check-valve ball moves up momentarily.

VERTICAL CONTROL TUNNEL

- **Vertical Push-Pull Tubes:**
  Examine accessible portion with inspection light and mirror. Inspect condition per Section 5-32. Verify no nicks, scratches, chafing, dents, cracks, or corrosion. Inspect rod end bearings per Section 5-33; verify rod ends are centered and palnut and jam nut are tight. Check witness holes for proper thread engagement. Verify proper installation, security, and operating clearance.

- **Beep Switch Actuator:**
  Inspect condition. Verify proper control clearance to installed equipment and surrounding structure. Verify proper actuator installation, security, and operation.

- **Tunnel Interior:**
  Verify general cleanliness of tunnel interior. Inspect for fluid leaks or seepage; investigate cause and correct.

- **Seat Backs:**
  Inspect condition. Verify upholstery cleanliness and security.
CABIN BULKHEAD

_____ Blind Encoder & Engine Monitoring Unit (EMU):
Inspect condition. Inspect wiring for obvious damage. Verify no cracks where units mount to bulkhead. Verify proper installation and security. Download EMU data as required per RR300 Series OMM.

_____ Fuse Block and Fuses (Air Conditioning; if installed):
Inspect condition. Verify no corrosion. Verify correct fuse amperage and security.

_____ Antenna Wiring:
Inspect condition. Verify no loose, chafed, frayed, or broken wires. Verify neatness, proper routing and installation, and security. Check grommets for proper installation.

_____ Pitot & Static Lines:
Inspect pitot and static lines for obstructions, cracking, chafing, pinching, or kinking. Verify integrity of pitot and static line connections. Verify line security.

_____ Seat Back Interior:
Verify general cleanliness of seat back interior. Inspect for fluid leaks or seepage; investigate cause and correct.

_____ Cabin Bulkhead:
Examine accessible portion with inspection light and mirror. Verify no nicks, scratches, dents, cracks, corrosion, or loose rivets. Verify stiffener security. Verify upholstery cleanliness and security.

_____ Wiring:
Inspect condition. Verify no loose, chafed, or broken, wires or terminals. Verify neatness, proper routing and installation, and security.

_____ Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

_____ Antennas:
Inspect condition. Verify no cracks where antennas mount to cowlings. Verify security.

_____ Close & Secure:
Verify foreign objects are removed. Verify equipment security. Verify cleanliness of interior and of inspection and access covers and cowlings. Connect antenna leads and ground wires (if installed). Install covers and cowlings removed in preceding steps. Verify security.

BAGGAGE COMPARTMENT

_____ Door:

_____ Carpet:
Inspect condition. Verify no defects, tears, or material deterioration. Verify proper installation and security.
5-45  100-Hour / Annual Inspection (continued)

BAGGAGE COMPARTMENT (continued)

_____ Interior:
Inspect condition. Verify no structural damage. Verify general cleanliness of baggage compartment. Verify any installed equipment or passenger cargo are secure.

_____ Generator Control Unit (GCU) & Wiring:
Inspect condition. Verify no exposed, loose, chafed, or broken, wires & terminals. Verify proper installation and security of wiring covers and Generator Control Unit (GCU).

BATTERY

_____ Lead-Acid Battery Installations:
Inspect condition. Verify no cracks or corrosion on or near battery cable terminals. As required, perform capacity test or replace battery per manufacturer’s instructions. Verify battery cable security. Verify no corrosion in surrounding structure.

_____ Lithium-Ion Battery Installation (if equipped):
Refer to § 96-12. Inspect condition. Verify no cracks or corrosion on or near battery terminals. Verify vent hose, comm connector wiring, and battery cable security. Perform scheduled maintenance as required. Verify no corrosion in surrounding structure.

AUX FUEL SYSTEM (if equipped)

_____ Placards:
Verify placard legibility, proper installation, and security.

_____ Aux Fuel Tank:
Examine accessible portion with inspection light and mirror. Inspect condition of exterior and verify no leakage. Check bladder interior for foreign objects or debris. Verify security.

_____ Aux Fuel Tank Support:
Examine accessible portion with inspection light and mirror. Inspect condition of exterior; verify no cracks or obvious damage. Verify security.

_____ Aux Fuel Hoses:
Inspect condition. Verify no leakage, chafing, or obvious damage to fuel lines. Verify line clearance to installed equipment and surrounding structure. Verify security.

_____ Aux Fuel Gage Sender & Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Verify proper installation and security of sender and wiring.

_____ Aux Fuel Pump Wiring:
Inspect condition. Verify no loose, chafed, or broken wires. Verify proper installation and security of wiring.
5-45 100-Hour / Annual Inspection (continued)

AUX FUEL SYSTEM (If equipped; continued)

Aux Fuel Cap:
Inspect condition. Verify no damage or deterioration of gasket. Install cap and verify proper locking function. Verify security.

Aux Fuel Tank Sump Drain:
Inspect condition. Verify drain valve opens easily, drains fuel freely, springs closed, and seals completely. Inspect drain hose assembly for defects, tears, or material deterioration. Secure hose near drain valve at tab.

MT183-1 Tool Kit:
Inspect condition. Remove kit and verify kit contains loose parts listed in R66 Illustrated Parts Catalog. Clip kit to aux tank and verify security.

MAIN ROTOR GEARBOX COMPARTMENT

Cowling Doors:
Inspect condition. Verify proper operation of fasteners.

Antenna Wiring & Connectors:
Inspect condition. Verify no loose, chafed, frayed, or broken wires. Verify no damaged connectors. Verify neatness, proper routing and installation, and security. Check grommets for proper installation.

Placards:
Verify placard legibility, proper installation, and security. Refer to Chapter 11.

Fuel Tank:
Examine accessible portion with inspection light and mirror. Inspect condition of exterior and verify no leakage. Check bladder interior for foreign objects or debris. Verify security.

Fuel Gage Sender & Wiring:
Inspect condition. Verify no loose, chafed, or broken, wires or terminals. Verify proper installation and security of sender and wiring.

Low-Fuel Switch Assembly Warning:
Turn battery switch on. With a clean wooden dowel, gently depress low-fuel sender float in fuel bladder and verify LOW FUEL warning segment illuminates after approximate 1-second delay. Turn battery switch off.

Fuel Cap:
Inspect condition. Verify no damage or deterioration of gasket. Install cap and verify proper locking function. Verify security.
Fuel Tank Rollover Vents:
Inspect condition. Inspect Tygon® tube for defects, tears, or material deterioration. Verify proper safety wire installation and security. Verify 0.25 inch minimum clearance between cable assembly and vent assembly Tygon® tube; adjust cable as required. Verify no obstructions in vents.

Fuel Tank Sump Drain:
Inspect condition. Verify drain valve opens easily, drains fuel freely, springs closed, and seals completely. Inspect drain tube and clamp for defects, tears, or material deterioration. Clear fuel from drain tube and install clamp.

Fuel Valve:
Inspect condition. Verify cable and component security. Verify proper installation and (smooth) operation of valve.

Cabin Bulkhead:
Inspect condition. Verify no deformation, buckling, wrinkling, nicks, scratches, dents, cracks, corrosion, fretting, or loose rivets. Verify no leakage from fuel tanks. Verify security.

Main Rotor Gearbox:
Inspect condition. Verify no damage, material deterioration, or deformation of gearbox mounts. Verify no leakage at mast tube-to-gearbox attachment. Inspect mast tube for cracks. With ship on level ground, verify correct oil level and cleanliness through sight gage and adjust or flush as required. Verify security of Hall Effect senders and yoke magnets. Inspect oil lines for leakage, chafing, or obvious damage. Inspect oil pump mounting and fittings for leaking or obvious damage. Inspect gearbox oil filter for leakage or for tripped bypass indicator. Verify oil system proper installation and security.

NOTE
At 600 hours time in service or annually, whichever occurs first, remove chip detector and clean any varnish accumulation from detector’s magnetic probe and adjacent metal body using a toothbrush and approved solvent per § 12-13 Part B. Service gearbox, change oil and filter, and clean chip detector at intervals recommended in § 5-20.

Rotor Brake:
Inspect condition. Verify integrity of brake pads and 0.030 inch minimum pad thickness. Verify brake pads are clear of engine shaft with brake released. Inspect micro switches for cracks. Verify no loose, chafed, or broken wires or terminals. Verify security. Inspect both pulleys (one at end of lever, one next to fuel tank) for cracks. Verify no frayed strands or binding of rotor brake activating cable. Verify proper routing and installation, security, and operation of brake and brake micro switch.
5-45 100-Hour / Annual Inspection (continued)

MAIN ROTOR GEARBOX COMPARTMENT (continued)

___ Hydraulic Servo Support Frame:
Inspect condition. Inspect rod ends per § 5-33. Use an inspection light and mirror to inspect all parts of each weld. Verify no cracks or corrosion in servo support. Verify proper installation and security.

___ Jackshaft:
Inspect condition. Verify no cracks or corrosion in welded assembly. Inspect jackshaft to vertical push-pull tube attachment. Inspect jackshaft aft support frame attachment and forward attachment rod end per § 5-33. Inspect C343-8 tube and rod ends linking jackshaft to aft servo. Verify security and proper operating clearance.

___ Main Rotor Push-Pull Tubes:
Examine accessible portion with inspection light and mirror. Inspect condition per § 5-32. Verify no nicks, scratches, chafing, dents, cracks or corrosion. Inspect rod end bearings per Section 5-33; verify rod ends are centered and palnut and jam nut are tight. Check witness holes for proper thread engagement. Verify proper installation, security, and operating clearance.

___ Tail Rotor Push-Pull Tube & Forward Bellcrank:
Examine accessible portion with inspection light and mirror. Inspect condition per § 5-32. Verify no nicks, scratches, chafing, dents, cracks, or corrosion. Inspect rod end bearings per § 5-33; verify rod ends are centered and palnut and jam nut are tight. Check witness holes for proper thread engagement. Inspect bellcrank and bellcrank sheet metal mounting for nicks, scratches, dents, cracks, or corrosion. Inspect spherical bearings per § 5-33. Verify proper installation, security, and operating clearance.

___ Hydraulic Reservoir:
Inspect condition. Verify no significant leakage. Replace filter and packing at intervals specified in § 5-20. Drain and flush hydraulic system per § 12-33 if oil has turned dark or emits bad odor. Add fluid as required. Verify security.

---

CAUTION
Cleanliness of hydraulic fluid is vital to proper system operation. Service hydraulic system with clean fluid from sealed containers. Verify funnels, tubing, and other service tooling is free of contaminants.
Hydraulic Servos:
Inspect condition. Inspect rod ends per § 5-33. Verify approximately 0.040 inch total free play at servo valve input. Verify no significant servo leakage. Clean servo input rod end/clevis area with no-residue, non-alcoholic solvent as required. Verify no obvious defects and security of scissors at upper clevis of servos. Verify proper installation and clearance from surrounding structure through full control travel.

**CAUTION**
Use LPS PreSolve to clean hydraulic parts. Do not use alcohol.

Hydraulic Hoses, Lines, & Fittings:
Inspect condition. Verify no leakage, chafing, or obvious damage to hydraulic lines. Verify integrity of connections. Verify fluid line clearance to installed equipment and surrounding structure and sufficient fluid hose slack available through full control travel. Verify proper installation and security.

Hydraulic Pump:
Inspect condition. Inspect Telatemp per § 5-35. Verify no significant leakage. Verify proper installation and security.

Upper Steel Tube Frame:
Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion. Verify no chafing where wires, hoses, or clamps attach to frame. Examine each weld for cracks with an inspection light and mirror.

**CAUTION**
Upper steel tube frame is fatigue loaded and therefore susceptible to fatigue cracks. Inspect all joints thoroughly.

F908-1 (Tail Rotor Drive) Yoke Assembly:
Inspect condition. Verify no cracks, corrosion, or fretting. Verify proper installation, security, and operating clearance. Verify security of magnets.

G779-1 Pulley (Air Conditioning; if installed):
Inspect condition. Verify no cracks, corrosion, or fretting. Verify no nicks or sharp edges in fins that could damage v-belt. Verify proper installation, security, and operating clearance.

V-Belt (Air Conditioning; if installed):
Inspect condition. Replace belt if exhibiting frayed edges, excessive cracking, heat damage, or rubber deterioration. Verify 4.5-5.5 lb of force applied mid-span deflects belt 0.16-inch; adjust as required per § 21-21.
Compressor Assembly (Air Conditioning; if installed):
Inspect condition, including integrity of belt-tension slotted plate. Verify security of mounting. Verify no loose, chafed, frayed, or broken wires. Verify proper installation and security of pressure switches, snubber, and refrigerant lines.

Refrigerant Hose Assemblies (Air Conditioning; if installed):
Verify security, no damage, and clearance to adjacent structure. Verify dust caps installed on service fittings where lines mount to compressor.

F196-1 (Tail Rotor Drive) Fan Shaft:
Inspect condition. Verify no shaft corrosion. Remove any light surface corrosion and apply wax or suitable corrosion inhibitor. Verify no cracks, corrosion, or fretting in fore and aft weldment. Verify proper installation, security, and operating clearance.
C947-3 (Tail Rotor Drive) Plate Assemblies, Forward and Intermediate:
Refer to Figure 5-4A. Inspect condition. Verify no distortion, nicks, scratches, cracks, corrosion, or fretting. If fretting is detected, contact RHC Technical Support. Verify bonded washers are installed on both sides of each flex plate ear. Verify proper installation, security, and operating clearance.

Fanwheel Assembly and Scroll Assembly:
Clean fanwheel blades and inspect condition. Verify no cracks, corrosion, or obvious damage on blade leading edges or fan assembly. Verify 0.10 inch minimum gap between G174-1 fanwheel assembly and forward and aft F305-5 inlets. Check gap all the way around; rotate fanwheel and check gap again (several positions). If gap does not meet minimum limit, trim inlets per § 79-11. Verify proper installation, security, and operating clearance. Verify no cracks or damage to scroll assembly.

Emergency Locator Transmitter (ELT; if installed):
Inspect condition. Verify proper installation, security, and clearance from drive train components. Comply with 14 CFR § 91.207 (d), if required.

Pitot Line & Static Vent:
Inspect pitot and static lines for obstructions, cracking, chafing, pinching or kinking. Verify integrity of pitot and static line connections. Verify line security.

Horizontal Firewall:
Inspect condition. Verify no deformation, buckling, wrinkling, nicks, scratches, dents, cracks, corrosion, fretting, or loose rivets. Verify no leakage from fuel tanks.

Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Verify neatness, proper routing and installation, and security.

Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

Antennas:
Inspect condition. Verify no cracks where antennas mount to cowling. Verify security.

Cowling Doors:
Inspect condition. Verify proper operation of fasteners.

F910-1 (Main Rotor Drive) Yoke:
Inspect condition. Verify no cracks, corrosion, or fretting. Verify proper installation, security, and operating clearance.
5-45 100-Hour / Annual Inspection (continued)

MAIN ROTOR GEARBOX COMPARTMENT (continued)

A947-2 (Main Rotor Drive) Plate Assemblies:
Refer to Figure 5-4A. Inspect condition. Verify no distortion, nicks, scratches, cracks, corrosion, or fretting. If fretting is detected, contact RHC Technical Support. Verify bonded washers are installed on both sides of each flex plate ear. Verify proper installation, security, and operating clearance.

F642 (Engine) Shaft Weldment:
Inspect condition. Verify 0.2 inch minimum clearance between shaft weldment and firewall grommet; verify equal gap concentrically between shaft and box assembly hole edges. Adjust F174-1 support weldment rod ends per § 53-31 as required.

Rotate shaft and verify no cracks, corrosion, or fretting. Verify proper installation, security, and operating clearance.

Engine Firewall:
Inspect condition. Verify no deformation, buckling, wrinkling, nicks, scratches, dents, cracks, corrosion, fretting, or loose rivets. Verify no leakage from fuel tanks.

Engine Oil Tank:
Inspect condition. Verify no leakage or obvious damage to oil tank exterior. Check tank interior for foreign objects. Add oil as required per R66 POH Section 8. Verify tank security.

Tailcone Attachment:
Inspect condition. Verify no cracks near fasteners attaching tailcone to upper frame. Verify proper installation and security.

Upper Steel Tube Frame:
Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion. Verify no chafing where wires, hoses, or clamps attach to frame. Examine each weld for cracks with an inspection light and mirror.

CAUTION
Upper steel tube frame is fatigue loaded and therefore susceptible to fatigue cracks. Inspect all joints thoroughly.

Antenna Wiring & Connectors:
Inspect condition. Verify no loose, chafed, frayed, or broken wires. Verify no damaged connectors. Verify neatness, proper routing and installation, and security. Check grommets for proper installation.

Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.
5-45  100-Hour / Annual Inspection (continued)

MAIN ROTOR GEARBOX COMPARTMENT (continued)

___ Antennas:
   Inspect condition. Verify no cracks where antennas mount to cowling. Verify security.

___ Close & Secure:
   Verify foreign objects are removed. Verify equipment security. Verify cleanliness of interior and of inspection and access doors and cowlings. Connect antenna leads and ground wires, if installed. Install/close doors and cowlings removed in preceding steps. Verify security.
ENGINE

Refer to RR300 Series OMM, and applicable engine component manufacturer’s maintenance publications for service and inspection procedures.

Additional service and inspection intervals are specified in § 5-20.

NOTE
For engine-related matters, if there is a conflict between this manual and Rolls-Royce instructions, Rolls-Royce instructions take precedence. Notify RHC of discrepancy.

Inlet Plenum and Filter Bypass Indication:
Inspect plenum condition. Verify no foreign object debris or loose items. Turn battery switch on. Verify annunciator panel warning segment illuminates when bypass doors are opened individually, then simultaneously. Turn battery switch off.

Standard (Foam) Air Filter Assembly:
Inspect condition. Verify no tears, punctures, or damage to filter media or cage assembly; verify no corrosion, cracks, or distortion to filter assembly components. Service filter as required per § 71-21, Part D. Verify proper installation and security.

Inlet Barrier Filter (if installed):
Inspect condition. Verify no tears, punctures, or damage to filter media or cage assembly; verify no corrosion, cracks, or distortion to filter assembly components. Service or replace filter assemblies as required per § 71-21, Part E. Note indication on filter maintenance aid. Verify proper installation and security.

Engine Hoses:
Inspect condition. Verify no rips, holes, or collapsed areas. Verify proper installation and security.

Exhaust Pipe:
Inspect condition. Verify no cracks (illuminating exterior with bright light while viewing interior facilitates crack detection). Inspect condition and security of F173-1 struts. Inspect condition and security of gearbox vent and clamps.

Starter-Generator & Wiring:
Inspect condition. Verify no loose, chafed, frayed, or broken wires. Verify no damaged connectors. Verify neatness, proper routing and installation, and security.

Engine Oil and Oil Filter:
Add oil as required per R66 POH Section 8. Change oil and oil filter as required per RR300 OMM. Verify filter security.
Oil Lines:
Inspect condition. Verify no leakage where lines connect to tank. Verify no leakage, chafing, or obvious damage to oil lines. Verify line clearance to installed equipment and surrounding structure. Verify security.

Cooling Duct and Oil Coolers:
Verify installation security with no cracks in duct or mounting. Verify cooler line connections are tight and coolers have no nicks, dents, cracks, or corrosion. Verify duct and cooler cores are free of debris to allow full airflow.

Power Turbine Governor (PTG) Control:
Refer to Figure 76-2. Verify D333-13 fitting in PTG input lever moves in and out slightly with light finger pressure. If D333-13 fitting does not move in response to light finger pressure then follow compliance procedure in R66 Service Bulletin SB-01.

Fuel Control Unit (FCU) and Control Rigging:
Verify proper routing and security of throttle and fuel cutoff controls; verify smooth actuation of both controls without binding. Verify FCU throttle arm contacts idle stop with twist grip closed and contacts maximum throttle stop with twist grip open. Verify FCU cutoff lever rests in detent when control is OFF and has 0.030–0.090 inch clearance from maximum fuel stop when control is ON.

Fuel Filter:
Inspect condition; service fuel filter per RR300 OMM, as required. Verify proper installation and security of wiring and housing.

Fuel Hose:
Inspect condition. Verify no leakage, chafing, or obvious damage to fuel lines. Verify line clearance to installed equipment and surrounding structure. Verify security.

Firewalls:
Inspect condition. Verify no deformation, buckling, wrinkling, nicks, scratches, dents, cracks, corrosion, fretting, or loose rivets. Pay particular attention to structural attachment points. Inspect condition of engine-to-firewall seal. Verify no open holes.

**WARNING**
Open holes in engine-to-firewall seals are potential fire leak paths.

Engine Mounts:
Inspect condition. Verify no cracks or corrosion in engine mount weldment. Verify safety wire and security of mounting bolts.
5-45  100-Hour / Annual Inspection (continued)

ENGINE (continued)

_____ Lower Steel Tube Frame:
Inspect condition. Verify no nicks, scratches, dents, cracks, or corrosion. Verify no chafing where wires, hoses, or clamps attach to frame. Examine each weld for cracks with an inspection light and mirror.

CAUTION
Lower steel tube frame is fatigue loaded and therefore susceptible to fatigue cracks. Inspect all joints thoroughly.

_____ Condenser and Fan Assemblies (Air Conditioning; if installed):
Inspect condition. Verify security of fans, box assembly, condenser, and firewall supports. Verify security of desiccant cap.

_____ Refrigerant Line Assemblies (Air Conditioning; if installed):
Inspect condition. Verify security, no damage, and clearance to adjacent structure.

_____ Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Check for heat or fluid damage. Verify neatness, proper routing and installation, and security.

_____ Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

_____ Close & Secure:
Verify foreign objects are removed. Verify equipment security. Verify cleanliness of interior and of cover or cowling. Install/close inspection covers or cowlings removed in preceding steps. Verify security.
TAILCONE

- **Inspection Plugs:**
  Inspect condition. Verify proper operation of fasteners.

- **Tail Rotor Drive Shaft Assembly:**
  Examine accessible portion through inspection holes with inspection light and mirror. Verify no cracks, corrosion, or fretting in fore and aft weldment. Verify no evidence of drive shaft contact with tailcone bays. Verify no bowing, bends, dents, cracks, or corrosion. Perform tail rotor drive shaft runout per § 65-21. Verify proper installation, security, and operating clearance.

  **CAUTION**
  Bowing, bends, dents, cracks, or corrosion are cause for immediate replacement of tail rotor drive shaft.

- **Tail Rotor Push-Pull Tube & Forward Bellcrank:**
  Examine accessible portion through inspection holes with inspection light and mirror. Inspect condition per § 5-32. Verify no nicks, scratches, chafing, dents, cracks, or corrosion. Inspect rod end bearings per § 5-33; verify rod ends are centered and palnut and jam nut are tight. Check witness holes for proper thread engagement. Inspect bellcrank and bellcrank mount for nicks, scratches, dents, cracks, or corrosion. Inspect spherical bearings per § 5-33. Verify proper installation, security, and operating clearance. Verify tail rotor guard mounting screw shanks clear push-pull tube.

- **Tail Rotor Drive Shaft Hanger Bearing & Hanger:**
  Inspect condition. Inspect bearing for obvious damage. Verify integrity of bearing seals. Verify bearing’s inner race-to-drive shaft torque stripe is intact and no evidence of bearing slippage. Verify no bends, cracks, corrosion, or obvious damage to hanger and hanger mount to tailcone bulkhead. Verify proper installation, security, and smooth operation.

- **Tail Rotor Drive Shaft Damper Assembly:**
  Inspect condition. Inspect bearing for obvious damage. Verify integrity of bearing seals. Inspect bearing housing for cracks or corrosion. Verify bearing’s inner race-to-drive shaft torque stripe is intact and no evidence of bearing slippage. Verify no bends, cracks, corrosion or obvious damage to friction arms and (Teflon) bearings. Verify proper installation, security, and smooth operation.

- **Tailcone Interior:**
  Inspect condition. Verify no nicks, scratches, dents, cracks, corrosion, fretting or loose rivets. Verify no cracks where damper assembly mounts to tailcone. Verify no excessive wear in bulkhead bushings from push-pull tubes. Retrieve and discard trapped debris.
TAILCONE (continued)

_____ Tailcone Exterior:
Inspect condition. Refer to § 53-41. Inspect tailcone exterior for nicks, scratches, dents, cracks, corrosion, fretting or loose rivets. Verify no obstructions in drain hole at forward edge of each bay (except forward bay).

_____ Antennas:
Inspect condition. Verify no cracks where antennas mount to tailcone. Verify security.

_____ Anti-Collision Light:

_____ Tail Rotor Visual Warning Guard:
Inspect condition. Verify no cracks where guard mounts to tailcone. Inspect guard welds for cracks or corrosion. Verify security.

_____ Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Verify neatness, proper routing and installation, and security.

_____ Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

_____ Close & Secure:
Verify foreign objects are removed. Verify equipment security. Verify cleanliness of interior and of inspection plugs. Install plugs removed in preceding steps. Verify security.
5-45  100-Hour / Annual Inspection (continued)

TAIL ROTOR & TAIL ROTOR GEARBOX

NOTE
Verify proper hardware installation securing plastic inspection cover. Longer screws could contact aft flex coupling and yoke.

Plastic Inspection Cover:
Clean cover and inspect condition. Replace as required.

C947-3 (Tail Rotor Drive) Plate Assembly, Aft:
Refer to Figure 5-4A. Inspect condition. Verify no distortion, nicks, scratches, cracks, corrosion, and fretting. If fretting is detected, contact RHC Technical Support. Verify bonded washers are installed on both sides of each flex plate ear. Verify proper installation, security, and operating clearance.

Tail Rotor Gearbox Input Yoke:
Inspect condition. Verify no cracks, corrosion, or fretting. Inspect weld for cracks or corrosion. Verify proper installation, security, and operating clearance.

Tail Rotor Gearbox:
Inspect condition. Verify gearbox-to-tailcone mounting security. Verify no leakage at input or output seals, chip detector, vent plug-filler assembly, or sight gage. With ship on level ground, verify correct oil level and oil cleanliness through sight gage and adjust or flush as required. Inspect Telatemp per § 5-35. Inspect output shaft for nicks, scratches, dents, cracks, or corrosion. Verify proper installation of safety wire (if installed).

Empennage:
Inspect condition. Verify no nicks, scratches, dents, cracks, corrosion, fretting, or loose rivets on skins or near attachment points. Check tail rotor skid for evidence of tail rotor or tail rotor skid strike. Refer to § 5-61 for tail rotor skid strike inspection criteria. Verify no obstructions in lower vertical stabilizer and skid drain holes. Verify proper installation and security.

Aft Navigation Light:
TAIL ROTOR & TAIL ROTOR GEARBOX (continued)

Pitch Control Bearing Assembly & Aft Bellcrank:
Inspect condition. Verify pitch control assembly has less than 0.25 inch rotational play measured at pitch link attach bolt. Verify no leakage at bearing seals. Verify no nicks, scratches, dents, cracks, or corrosion on pitch control housing or bellcrank. Inspect bellcrank spherical bearings per § 5-33. Inspect spherical bearing atop stud protruding from underside of pitch control for cracks. Verify proper installation, security, and smooth actuation without binding.

NOTE
B345-4 tail rotor pitch links can have different shaft diameters. Balance tail rotor per § 18-20 if a different shaft diameter pitch link is installed.

Pitch Links:
Inspect condition. Inspect rod ends per § 5-33. Remove and reinstall pitch links with outboard end inboard and inboard end outboard as required to obtain maximum service life. Reinstall chordwise weights at respective attachment points for balance purposes. Verify proper installation of hat washers. Verify proper installation, security and operating clearance.

Tail Rotor Blades:
Inspect condition. Inspect blade surfaces for excessive erosion, nicks, scratches, buckling, voids or debonding, dents, cracks, or corrosion. Refer to § 64-30 for tap testing instructions and damage limitations. Verify no fretting of tail rotor blade root fitting bearings. Inspect bearings per § 5-33. Verify no obstructions in blade tip drain holes. Verify proper installation, security, and pitch change operation.

WARNING
Structural damage may occur if compressed air is applied to blade tip drain holes.

Tail Rotor Hub:
Inspect condition. Verify no nicks, scratches, gouges, dents, cracks, or corrosion. Inspect elastomeric teeter bearings per § 5-34. Teeter rotor hub and verify teeter bearing bolt, spacers, and nuts do not rotate. Verify hub teeters smoothly. Verify proper installation and security of blade bolts.

Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Verify neatness, proper routing and installation, and security.

Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.
MAST FAIRING

Mast Fairing:
Inspect condition. Verify no nicks, scratches, dents, cracks, corrosion, fretting, or loose rivets. Verify no yielding or cracking of pitot line and fuel vent restraint assembly.

NOTE
Yielding can be caused by over tightening screws in restraint nutplates.

Upper & Lower Ribs:
Inspect condition. Inspect for cracks especially around mast tube attachments. Verify proper installation and security of ribs and lower rib clamp.

Vertical Push-Pull Tubes:
Examine accessible portion with inspection light and mirror. Inspect condition per § 5-32. Verify no nicks, scratches, chafing, dents, cracks or corrosion. Inspect rod end bearings per § 5-33; verify rod ends are centered and palnut and jam nut are tight. Check witness holes for proper thread engagement. Verify proper installation, security, and operating clearance.

Pitot Tube & Line:
Inspect pitot and static lines for obstructions, cracking, chafing, pinching or kinking. Verify integrity of pitot and static line connections. Verify proper routing and security of pitot tube and line. Verify no cracks where pitot tube mounts to mast fairing. Verify no obstructions in pitot tube.

Fuel Vent Weldment and Tygon® Tubes:
Inspect condition. Verify no obstructions, cracking, chafing, pinching or kinking in plastic tubes. Inspect vents for cracks or obvious damage. Verify proper installation and security of safety wire.

Swashplate Upper Scissors:
Inspect condition. Verify bearing play within limits referenced in § 67-40, steps 9 and 10. Closely examine scissor linkage while a second person raises and lowers collective stick. Verify bolts and washers rotate together through full control travel without binding. Inspect fork assembly rod end bearing per § 5-33; verify rod end is centered and palnut and jam nut are tight. Verify proper installation of all parts, part security, and operating clearance.
Swashplate Lower Scissors:
Inspect condition. Verify bearing play within limits referenced in § 67-40, steps 9 and 10. Closely examine scissor linkage while a second person raises and lowers collective stick. Verify bolts and washers rotate together through full control travel without binding. Inspect fork assembly rod end bearing per § 5-33; verify rod end is centered and palnut and jam nut are tight. Verify proper installation of all parts, part security, and operating clearance.

Swashplate Slider Tube:
Inspect condition. Verify no cracks, corrosion, or loose rivets near tube base flange. Verify no damage or wearing through of anodized coating on tube surface.

Swashplate Interior:
Remove swashplate boot lower ty-rap. Lift boot from swashplate, and verify no boot defects, tears, or material deterioration. Examine swashplate interior with inspection light and mirror. Verify no corrosion or debris between main rotor drive shaft and inside of slider tube. Install swashplate boot lower ty-rap. Verify proper boot position, security, and operating clearance.

Swashplate:
Inspect condition. Verify no nicks, scratches, gouges, dents, cracks, or corrosion. Verify 0.020 inch maximum radial play between swashplate ball and slider tube. Rotate rotor by hand and verify no rough or dry bearings. Verify proper operation.

Swashplate Shimming:
Closely examine area between lower swashplate and swashplate ball while a second person slowly raises and lowers collective stick. Verify synchronized movement of swashplate ball with swashplate when swashplate reverses direction.

NOTE
Swashplate shimming is required when swashplate ball lags collective inputs, indicating axial play. Shim swashplate per Chapter 67.

Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

Close & Secure:
Verify foreign objects are removed. Verify equipment security. Verify cleanliness of interior and of access fairing. Close mast fairing and verify security.
5-45  100-Hour / Annual Inspection (continued)

ROTOR HUB & MAIN ROTOR BLADES

_____ Hub:
Inspect condition.  Verify no nicks, scratches, gouges, dents, cracks, or corrosion.  Verify no brown or black residue indicating bearing wear.  Verify proper installation and security.

_____ Hinge Bolts:
Inspect condition.  Check blade hinge friction by lifting blades until spindle tusks clear droop stops.  Hold one blade level and cone opposite blade; rotor hub should not teeter as blade is coned.  Repeat check on opposite blade.  Verify cotter pins are properly installed and secure.  Verify bolt heads and nuts are torque striped to thrust washers.

_____ Pitch Links & Rod Ends:
Inspect condition. Inspect rod end bearings per § 5-33; verify rod ends are centered and pal nut and jam nut are tight.  Check witness holes for proper thread engagement.  Verify security of rivet in pitch link barrel.  Verify no corrosion of pitch link assembly.  Verify proper installation of safety wire and hat washers.  Inspect condition of mandatory spacers contacting lower rod end bearings.  Verify proper installation, security, and operating clearance.

_____ Blade Spindles & Root Fittings:
Inspect condition.  Verify no cracks, corrosion, or obvious damage to blade spindles and horns.  Verify no cracks, corrosion or missing paint in blade root fittings, especially in area adjacent to inboard edges of skin and doublers.

---

FIGURE 5-5  MAIN ROTOR BLADE TIP AND TIP COVER
ROTOR HUB & MAIN ROTOR BLADES (continued)

____ Blade Boots:
Inspect condition. Verify no boot defects, tears, material deterioration, or pinholes resulting in oil leakage. Verify proper boot position and security. Verify sufficient clearance from hub assembly through full control travel.

____ Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

____ Blade Tips and Skin-to-Spar Bond Lines:
Remove tip covers. Remove corrosion and loose paint from tip covers, blade tips, and skin-to-spar bond lines. Using an AN970-4 washer or 1965-or-later U.S. quarter-dollar coin, tap-test critical bond areas and verify no dull or hollow sounds. Visually inspect critical bond areas and verify no separation. Epoxy prime, or prime and paint, any exposed bare metal on tip covers, blade tips, and skin-to-spar bond lines. Install tip covers, ensuring cover edges are flush with blade profile.

____ Blade Inspection and Care:
Refer to § 62-40. Inspect skins and doublers for scratches and corrosion. Inspect blades for dents, local deformations, and voids. As required, wax blades with soft cleaning cloths using carnauba-type wax (such as SC Johnson® Paste Wax). Ensure tip cover and blade tip drain holes are unobstructed. Verify placard legibility and remove old tracking tape and/or residue.

**WARNING**
Structural damage may occur if compressed air is applied to blade tip drain holes.

LANDING GEAR

____ Landing Gear Fairings (if installed):
Open as required to access landing gear structure for inspection. Inspect condition. Verify no nicks, scratches, dents, cracks, corrosion, fretting, or loose rivets. Verify hose clamp security and acceptable general cleanliness of fairing interior. Close and secure fairings.

____ Skid Tubes & Shoes:
Inspect condition. Verify skid tube and skid shoe wear is within limits specified in § 32-30 & 32-31. Verify drain holes are not obstructed. Verify security of rain caps; if rain cap is loose or damaged, verify no internal corrosion.

____ Struts Assemblies:
Inspect condition. Verify no cracks or corrosion, especially at collar and gusset joints and in weld areas at bottom of struts. Torque-check strut-to-skid-tube bolts. Verify security.

____ Cross Tubes:
Inspect condition. With helicopter on level ground, verify minimum tail skid height per § 32-20. Verify no cracks, corrosion, or fretting at elbows. Verify security of (clear plastic) rain caps; if rain cap is loose or damaged, verify no internal corrosion. (Note that one vent hole per cross tube is located near left or right end of tube to prevent pressurization.)
LANDING GEAR

_____ Landing Gear Attach Points:
Inspect condition. Verify no buckling, cracks, fretting, or loose fasteners. Inspect mounts and verify no loose swages or worn bearings.

_____ Fasteners & Torque Stripes:
Inspect condition. Verify proper installation and security of fasteners. Renew deteriorated torque stripes per Figure 5-1.

_____ D679 Cylinder assembly (Pop-out floats; if installed):
Inspect condition. Verify security. Verify pressure gage indicates correct pressure for ambient temperature; refer to placard on cylinder for limits.

_____ Inflation manifold (Pop-out floats; if installed):
Inspect condition. Verify no chafing or pinching of hoses, especially where hoses pass through structure.

_____ Float assemblies (Pop-out floats; if installed):
Inspect condition of stowed floats. Verify no holes, cuts, tears, abrasion through or unraveling of, float covers. If cover damage is found, inflate and inspect floats per § 32-64. Annually apply A257-7 dry-film lubricant to float cover snap mating surfaces. Verify snaps and hook-and-loop fasteners are properly secured. Verify float-to-skid attachment security.

CABIN

_____ General Interior:
Inspect condition. Verify general cleanliness of cabin and seat compartment interior. Verify no loose objects or equipment, which could foul controls or injure occupants in a hard landing. Verify legibility of placards and markings. Verify serviceable condition of switches, knobs, handles, and other controls.

_____ Seat Belts & Shoulder Harnesses:
Inspect condition. Verify no fraying or broken stitching of seat belts or shoulder harnesses. Verify no significant UV damage. Check inertia reels for proper operation by pulling harness quickly to verify locking function. Check buckles for proper operation. Check belt and reel attachment points for security. Verify no cracks in seat belt anchor welds. Verify rear seat suspension straps are not stretched or otherwise damaged. Verify security.

<table>
<thead>
<tr>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSO tag not required on factory-installed harnesses.</td>
</tr>
</tbody>
</table>

_____ Windshields & Windows:
Inspect condition. Minor defects or imperfections that do not impair pilot visibility or indicate impending structural failure are acceptable. Refer to § 52-30 for damage and repair limits. Verify proper installation and security.

_____ Static Ports:
Inspect condition. Verify no obstructions.
CABIN (continued)

_____ Yaw String:
Inspect condition. Verify minimum string length is 3 inches on each side of clip. Verify security.

_____ Landing & Taxi Lights:
Inspect condition. Verify lens cleanliness, clarity, and security. Verify proper operation.

_____ Landing Light Retainer & Support:
Inspect condition. Verify no cracks where retainer mounts to support. Verify security.

_____ Left & Right Navigation Lights:
Inspect condition. Verify no cracks where right and left navigation lights mount to fuselage. Verify red left, green right, lens cleanliness, clarity, and security. Verify proper operation.

_____ Exterior:
Inspect condition. Inspect cabin exterior for nicks, scratches, dents, cracks, corrosion, fretting, or loose rivets. Loose rivets may be indicated by cracked paint and/or black residue around heads. Verify general cleanliness.

_____ Doors:
Inspect condition. Verify no cracks and proper fit of door-to-door frame. Verify no structural cracks near door hinges or latches. Verify proper operation of door latching and locking mechanisms. Ensure door hinge pins are secured with cotter rings. Verify security of hinge mounting screws. Verify proper installation and operation of gas struts and door vent assembly.

SPECIAL EQUIPMENT

_____ Transmit and Intercom Switches:
Verify proper operation of special transmit and intercom switches.

_____ PA/Siren Speaker:
Inspect condition. Verify no cracks in speaker. Verify security of mounting.

_____ Wiring:
Inspect condition. Verify no loose, chafed, or broken wires or terminals. Verify neatness, proper routing and installation, and security.

LIFE-LIMITED PARTS, PARTS WITH A RECOMMENDED TBO OR REPLACEMENT TIME, ADs, & SBs

_____ Life-Limited Parts:
Refer to § 4-10. Verify life-limited parts correspond with aircraft maintenance records. Verify life-limited parts have sufficient time remaining for projected operations.

_____ Parts with a Recommended Time Between Overhauls (TBO) or Replacement Time:
Refer to § 4-20. Verify parts with a recommended TBO or replacement time correspond with aircraft maintenance records. Verify parts with a recommended TBO or replacement time have sufficient time remaining for projected operations.
LIFE-LIMITED PARTS, PARTS WITH A RECOMMENDED TBO OR REPLACEMENT TIME, ADs, & SBs

Airframe and Engine Accessories:
Refer to § 4-20 and accessory manufacturer’s maintenance publications. Verify accessories correspond with aircraft maintenance records. Verify accessories scheduled for maintenance have sufficient time remaining for projected operations.

Airworthiness Directives:
Verify applicable airframe, engine, and accessory Airworthiness Directives (ADs) have been performed according to AD compliance procedures. Some helicopters may be affected by ADs that require recurring inspections at less than 100-hour or annual intervals. Recent U.S. Airworthiness Directives are online at www.faa.gov.

Service Bulletins and Letters:
Verify applicable airframe, engine, and accessory Service Bulletins (SBs) and Service Letters (SLs) have been complied with according to manufacturers’ instructions. Some helicopters may be affected by SBs or SLs that require recurring inspections at less than 100-hour or annual intervals. RHC Service Bulletins and Service Letters are online at www.robinsonheli.com under the Publications tab.

REQUIRED DOCUMENTS AND PLACARDS

Documents:
Check that required documents (Airworthiness Certificate, Registration, applicable Radio Station License, Pilot’s Operating Handbook, Equipment List/Weight & Balance Data) are onboard, legible, and current.

Placards:
Verify required placards are properly installed, legible, and current. Refer to Pilot’s Operating Handbook Section 2 for placard requirements.

INSPECTION AND ACCESS COVERS

Foreign Objects Removed:
Verify all tools, loose hardware, rags, and other foreign objects are removed from helicopter.

Covers Closed and Secure:
Refer to Section 6-70. Install/close inspection and access covers and cowlings removed in preceding steps. Verify proper installation and security.

MAINTENANCE RECORDS

Maintenance Records:
Verify maintenance records are accurate, legible, and complete. Enter maintenance performed (such as part replacement, equipment adjustments, servicing, and lubrication) and inspection data. Data must include a description of (or reference to data acceptable to the Administrator) the work performed, date, helicopter total time in service, signature, certificate type and certificate number of person approving helicopter for return to service.

Inspection Procedures and Checklist completed:

Mechanic’s signature: _________________________________ Date: ________________
1. Order one KI-6602 2000-Hour Maintenance and Inspection Kit from any R66 Dealer or Service Center.

2. Refer to helicopter maintenance records and § 4-10. Replace life-limited parts as required.

3. Refer to helicopter maintenance records and § 4-20. Replace parts with a recommended TBO and parts with a recommended replacement time as required. Replace engine and accessories scheduled for maintenance as required.

4. Visually inspect vertical stabilizers. Verify no cracks, corrosion, loose rivets, dents, or deformation.


7. Fill and bleed hydraulic system per § 12-34 as required.

8. Drain engine oil per § 12-60; utilize a suitable clean container if reuse of oil is intended. Using a borescope or remote camera, inspect oil tank internal baffle and welds for signs of cracking. If cracks are detected, or if a broken baffle is found, replace oil tank per § 79-20. Add engine oil per § 12-60.


10. Perform tail rotor flight control and blade rigging per §§ 18-50 and 18-60.

11. If installed, perform leak check of air conditioning system per § 12-83.

12. Perform 100-Hour / Annual Maintenance and Inspection per § 5-45.


15. Drain and flush tail rotor gearbox per § 12-23.

16. Make appropriate maintenance record entries. Enter maintenance performed (such as part replacement, equipment adjustments, weighing, servicing, and lubrication) and inspection data. Data must include a description of (or reference to data acceptable to the Administrator) the work performed, date, helicopter total time in service, signature, certificate type and certificate number of person approving aircraft return to service.
5-55  12-Year Inspection

[Reserved]
5-60 Special Maintenance and Instructions

**WARNING**
Do not install or return to service any part removed from a damaged aircraft unless the part can be verified as undamaged. Return suspect parts to RHC, with details of damage history, for airworthiness evaluation.

5-61 Tail Skid Strike

A. If evidence of scuffing is found on the tail skid, inspect the rotorcraft as follows:

1. Visually inspect tail rotor blades for evidence of solid object or ground contact. If tail rotor damage is found, inspect tail rotor for strike per § 5-62.

2. Visually inspect vertical stabilizer for evidence of buckling, cracks, or loose rivets at tail skid and at lower vertical stabilizer-to-horizontal stabilizer attach points.

3. Visually inspect tail rotor guard for bending or cracking at attach mounts.

4. Visually inspect the horizontal stabilizer-to-tailcone attach points for evidence of buckling, loose rivets, or cracking.

5. Visually inspect tailcone for damage and tailcone-to-upper steel tube structure attach points for buckling and loose attach bolts.

B. For skid bending or breakage, or buckling of lower vertical stabilizer, perform the following inspections in addition to those listed in Step A.


2. Remove tailcone assembly per § 53-40. Perform dye penetrant inspection of F020 upper frame at tailcone attach points per § 5-66.

3. Visually inspect tailcone attachment points for elongated holes (0.454-inch diameter maximum).

4. Remove empennage assembly per § 53-50. Remove tail rotor gearbox per § 65-40. Remove paint from tailcone casting using a suitable paint remover per § 20-70. Dye penetrant inspect casting according to manufacturer’s instructions.

5. Visually inspect horizontal stabilizer attach points for elongated holes (0.386-inch diameter maximum) loose rivets or buckling.

6. Remove lower vertical stabilizer per § 53-51. Visually inspect attach points on vertical and horizontal stabilizers for elongated holes (0.266-inch diameter maximum); verify no buckling, cracks or loose rivets. Loose rivets may be drilled out and replaced.

7. Remove tail rotor guard per § 53-53. Remove paint from forward and aft attachment points and dye penetrant inspect according to manufacturer’s instructions. Remove guard mount from tailcone by removing four 10-32 screws and dye penetrant inspect same as above step.
The tail rotor strike inspection is listed in two parts. Part 1 concerns damage received by a tail rotor blade due to contact with a small stone, tall grass, or some small object contacting rotor blade in free air. Part 2 is concerned with sudden stoppage of tail rotor due to ground or solid object contact causing bending or shearing of a tail rotor blade or blades.

1. Inspect tail rotor blades per § 64-30 and perform Part 2, step (a).

2. If one or both tail rotor blades contact ground or a solid object causing bending or shearing of blades a tail rotor sudden stoppage inspection must be performed. Inspect per following procedure:
   a. Perform tail rotor drive shaft runout per § 65-21. If runout exceeds 0.025 inch at any location the shaft must be replaced or repaired.
   b. Remove tail rotor assembly per § 64-10 and tail rotor gearbox per § 65-40 and return to RHC.
   c. Visually inspect D224 tail rotor drive shaft for evidence of twisting, nicks, dents or scratches. Nicks and scratches may be polished out to a maximum of 0.003 inch deep. Evidence of twisting or dents is cause for replacement of the drive shaft.
   d. Remove yokes from each end of tail rotor drive shaft. Inspect arms for deformation and holes for any elongation. Strip paint and dye penetrant inspect yokes according to manufacturer’s instructions (forward yoke may be magnetic particle inspected).
   e. Remove F196-1 (tail rotor drive) shaft weldment per § 65-10. Strip paint back at least 2 inches from welds at both ends of shaft and dye penetrant or magnetic particle inspect. Verify no cracks.
   f. Replace C947-3 plate assemblies (forward, intermediate, and aft).
   g. Visually inspect F193-2 hanger and F172-3 (bearing) housing for cracks or deformation.
   h. Visually inspect tailcone and empennage for evidence of a tail rotor blade strike.
   i. Visually inspect main rotor system.
5-63 Main Rotor Strike

The main rotor strike inspection is listed in two parts. Part 1 concerns contact of main rotor blades with object in free air such as small stones, brush, small birds, etc. Part 2 is concerned with sudden stoppage of main rotor due to ground or solid object contact.

1. If main rotor blade has contacted a small object in free air such as small stones, brush, small birds, etc., inspect main rotor blades as follows:
   a. Verify any nicks, scratches, and dents are within § 62-10 limits; repair as required.
   b. Visually inspect trailing edge of blade for evidence of buckling or bending. This will be most evident near root of blade.

   **CAUTION**
   
   Any blade buckling or permanent bending is considered sudden stoppage and requires a sudden stoppage inspection of the entire rotorcraft.

2. If main rotor blade or blades have contacted ground or a solid object, they must be inspected for sudden stoppage. Sudden stoppage is evident when buckling or bending of the main rotor blades has occurred. Use the following procedure for inspecting rotorcraft after main rotor sudden stoppage has occurred:
   b. Visually inspect G027 scroll assembly and F193 bearing hanger for cracks and/or deformation.
   c. Remove the following components and return to RHC for inspection.
      
      C005-10 Main Rotor System
      F006 Main Rotor Gearbox
      F018 Clutch Assembly
      A947-2 Flex Plates
      C947-3 Flex Plates
      C017 Swashplate
      F906 Yoke
      F908 Yoke
      F910 Yoke
      F196 Shaft Weldment
      F642 Shaft Weldment
      G174 Fanwheel
   d. Inspect engine for sudden stoppage per engine manufacturer’s instructions.
5-64  Rotor/Engine Overspeed

1. For rotor overspeeds between 106 and 112%:


      CAUTION

      Any change in rotor dynamic balance greater than 0.3 ips requires inspection per Part 2.

   b. Remove main rotor blades. Drain pitch bearing housings. Remove outer blade boot clamps and fold boots away from pitch horns. Rotate spindles to verify no brinelling of pitch bearings.

      NOTE

      Bearings have a high preload; slight drag is normal. If roughness is evident, return blade and spindle assembly to RHC for repair.

   c. Visually inspect main and tail rotor blades.

   d. Check tail rotor drive shaft runout per § 65-21.

2. If an overspeed at or above 112% is reported or suspected or if balance changes or pitch bearing roughness is evident, perform following inspections in addition to Part 1.

   a. Perform Part 1 inspection.

   b. Check coning hinge bolts for evidence of bending. Replace any bent bolts.

   c. Coning hinge bolts, washers, and journals must be magnetic particle inspected. Replace any cracked bolts, journals or washers.

   d. Visually inspect hub and dye penetrant inspect any areas suspected of having cracks. Dye penetrant inspect according to manufacturer’s instructions.

   e. Reinstall blades and check balance. If a change in balance is evident, rotor system should be returned to RHC for inspection and/or repair.

3. Refer to RR300 Series Operation and Maintenance Manual (OMM) for overspeed inspection requirements.
FIGURE 5-6 SYMMETRY CHECK

Measure from RH and LH corners of cabin air vent box.

Measure to NAS6604-18 bolt (RH and LH).

Measure from aft rivet (RH and LH).

Measure to aft tailcone rivet.

(View Looking Up)

Tailcone cowl ing

Tailcone

C148-3 Bulkhead

FORWARD

Tailcone

Measure to aft tailcone rivet.
NOTE
RR300 Operation and Maintenance Manual requires special engine inspection (subtask 05-50-00-210-002) when a hard landing exceeds 10g. While there is no single indicator for a 10g impact, an impact was less than 10g if there was no contact between the fuselage belly or landing gear cross tubes and the ground. Yielding or buckling of any engine mount tubes or crushing of the energy absorbers within any occupied seat indicates the impact was likely greater than 10g.

The hard landing inspection is listed in two parts. Part 1 concerns yielding (bending) of the cross tubes due to hard landing such as hovering autorotations or run-on landings that do not apply side loads to the landing gear. Part 2 concerns hard landings that, in addition to yielding of cross tubes, have yielding of steel tube frames or fuselage primary structure.

NOTE
Buckling and bent steel tube structure are evidence of side loads on the airframe.

1. Yielding of cross tube due to hard landing with no side loads:
   c. Check landing gear cross tubes for yielding beyond serviceable limit. Place rotorcraft on level ground, push up on tail rotor gearbox and release, allowing rotorcraft to settle, then measure from tip of tail skid to ground. If less than 38 inches, one or both cross tubes must be replaced.
   d. Inspect front seat structure for yielding. Visually inspect, thru vent holes in seat bottoms, the internal box structure for any deformation. Inspect aft seat structure for yielding.

2. If yielding of steel tube frame(s) OR fuselage has occurred, inspect rotorcraft as follows:
   a. Perform Part 1 inspection.
   b. Verify no yielding or cracks in steel tube frames.
   c. Visually inspect fuselage, landing gear attach points, and firewalls for buckling or cracks.
   d. Dye penetrant inspect upper steel tube structure and all welded joints.
5-65 Hard Landing (continued)

2. e. Visually inspect tailcone for buckling or loose rivets.

f. Visually inspect landing gear skid tube-to-strut attach points for bending and cracks.

g. Hard landings can be accompanied by tail skid strikes, tail rotor strikes, main rotor blade strikes, etc. To inspect for these conditions, refer to the appropriate instructions in § 5-60. Refer to § 53-11 for cabin repairs. Any cracks, yielding or buckling in steel tube structure or tailcone are cause for replacement or factory repair.

h. Replace parts as required.

i. Check for symmetry if there is evidence of buckling of the cabin assembly per Figure 5-6. Position helicopter on a hard, level surface with the weight of the helicopter settled on the skids. Measure and record distances of lines A, B, C, and D. Verify the difference between lines A & B is not more than 0.30 inch and the difference between lines C & D is not more than 0.40 inch. If the difference between lines A & B or C & D is greater than the limits given, the cabin assembly must be returned to RHC for repair.
Intentionally Blank
5-66 Dye Penetrant Inspection of F020-1 Upper Frame

1. Carefully clean all paint, primer, oil, grease, etc from steel tube structure around and adjacent to four tailcone mounts.

2. Apply epoxy paint remover and allow the softening action to complete (temperature affects time required).

3. Remove softened paint by hand using a wire brush. Be sure steel structure is perfectly clean before application of dye penetrant.

4. Carefully check for cracks in and around each weld bead and along each steel supporting tube for at least two inches away from weld beads. Replace any frame exhibiting crack indications.

5. If no cracks are found, clean all inspection materials from steel tubing.

6. Prime with good quality zinc chromate or epoxy primer and allow adequate drying time.

7. Refinish area with gray epoxy top coat or equivalent.

5-67 Corrosion on F020-1 Upper Frame

1. Polish out corrosion on steel frame tube members.
   a. Polish out light surface corrosion on frame members using Scotchbrite or 400 grit wet-or-dry sandpaper. Verify 0.002 inch maximum depth after rework.
   b. Polish out corrosion pitting using 320-grit wet-or-dry sandpaper. Verify 0.004 inch maximum depth and 0.10 inch maximum diameter, after rework.

   **NOTE**
   For large areas of corrosion, it may be necessary to remove entire upper frame from aircraft and strip off paint to adequately determine extent of damage.

2. Prime bare metal with a good quality zinc chromate or epoxy primer.

3. Refinish area with gray epoxy top coat or equivalent.

5-68 Main Rotor Gearbox Overtemp Illumination

If the gearbox overtemp annunciator segment illuminates, remove main rotor gearbox per § 63-20 and return to RHC.

**NOTE**
Light illuminates at 240 ± 5°F.
5-69 Main Rotor Gearbox (MR) Chip Light Illumination

If the MR CHIP annunciator segment illuminates:

1. Remove main rotor gearbox chip detector per § 12-13. Inspect any particles found on the chip detector. Examine the particles and perform following appropriate corrective action:
   
a. For fuzz particles: Clean chip detector with compressed air or toothbrush (do not use magnet) and reinstall per § 12-13. Normal wear, especially new gearboxes, will produce fine fuzz.

b. For flake particles or slivers longer than 0.12 inch or wider than 0.02 inch: Clean chip detector. Replace gearbox filter per § 12-12. Visually examine old filter with 10X magnification; return gearbox to RHC if metallic debris is detected.

c. For large ferrous chips or chunky particles: Remove gearbox per § 63-20 and return to RHC. Return chips and/or particles if possible.

5-70 Tail Rotor Gearbox (TR) Chip Light Illumination

If the TR CHIP annunciator segment illuminates:

1. Drain the gearbox per § 12-21, straining the oil through a 190-micron (or finer) paint filter into a clean container.

2. Inspect any particles found in the paint filter or on the chip detector. Examine the particles for size; any particles larger (0.09 inch long or 0.02 inch wide) than fine fuzz (normal wear) should be identified as ferrous or non-ferrous by using a magnet. If particles are ferrous, remove tail rotor gearbox per § 65-40 and return it to RHC.

5-71 Main Rotor Gearbox Filter Bypass Indicator

NOTE

Extremely cold temperatures may cause the bypass to activate.

If the main rotor gearbox filter bypass indicator button continues to activate after two consecutive resets (at operating temperature), perform the following:

   
a. If filter is clean, replace (Purolator-Facet P/N) 1740839 bowl assembly or F651-1 filter assembly.

b. If filter is contaminated, return main rotor gearbox to RHC for overhaul, replace main rotor gearbox oil cooler and flush oil lines.
5-72 Lightning Strike

Lightning strikes are extremely rare for helicopters operating in VFR conditions.

If a lightning strike does occur, RHC recommends performing a 100-hour inspection per § 5-45 and performing the inspection for lightning strike damage per Rolls-Royce RR300 Operation and Maintenance Manual (OMM).

High voltage that is well conducted through the aircraft structure will dissipate and cause minimal damage. High voltage that is not well conducted through the aircraft structure can result in excessive heat, which can bake, burn, char, or even melt certain materials. Heat damage may or may not be detectable by visual inspection. A component may not exhibit obvious damage, but temperatures above 300°F can alter the strength of some materials and thus affect a component's service life and airworthiness.

Visually inspect main rotor blades, landing gear, drive train, airframe, and flight controls thoroughly for obvious damage such as electrical arcing or burns, pitting, or cracking. Particular attention should be given to rod ends, journals, etc., where the conductive path is most susceptible. If obvious damage is detected in any of the above-mentioned systems, additional components may require replacement. Contact RHC Technical Support with detailed documentation for further guidance prior to approving aircraft for return to service.

5-73 Pop-Out Float-Equipped Helicopter Water Landing with Tail Rotor Contact

1. Clean tail rotor blades, hub, and airframe exterior with a mild soap and water solution per Chapter 20.

   **CAUTION**

   Do not spray main rotor hub, tail rotor gearbox vent, hydraulic reservoir vent, swashplate area, or bearing seals with high-pressure water or solvent as water or solvent may cause corrosion or breakdown of lubricants. See RR300 Series Operation and Maintenance Manual (OMM) for engine cleaning instructions and precautions.

2. Inspect tail rotor blades per § 64-30; inspect trailing edges for buckling, and leading edges for bending. If either blade is damaged, remove tail rotor assembly per § 64-10 and tail rotor gearbox per § 65-40 and return components to RHC.

3. Perform tail rotor drive shaft runout per § 65-21. If runout exceeds 0.025 inch at any location:
   a. Remove tail rotor drive shaft assembly per § 65-20 and return drive shaft to RHC.
   b. Visually inspect F193-2 hanger and F172-3 (bearing) housing for cracks or deformation.
   c. Replace C947-3 plate assemblies (forward, intermediate, and aft).
5-74 Main Rotor Gearbox Internal Visual Inspection

1. Refer to Figure 5-7. Gain access to and remove main gearbox filler plug.

2. Via filler plug hole and using borescope, miniature camera, or smartphone camera with flash, visually inspect specified area of gear carrier. Rotate gearbox by hand-turning main or tail rotor as required to view entire circumference.

3. If no corrosion is evident, install filler plug and special torque per § 20-33.

4. If corrosion is detected, contact RHC Technical Support.