INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

SKID TUBE STEP FOR R44 AND R66 HELICOPTERS

LONGHORN AVIATION SERVICES LLC
317 COMMERCIAL ST NE STE A PMB285
ALBUQUERQUE, NM 87102

LOG OF REVISIONS

REVISION	DATE	APPROVED BY	COMMENTS
N/C	07/15/2020	B. Touey	Original submittal

Table of Contents

1.0 GENERAL

1.1 INTRODUCTION AND DESCRIPTION

The following document outlines the Instructions for Continued Airworthiness (ICA) for the LHA-44-1 Skid Tube Step.

The Skid Tube Step installs on the left-hand or right-hand landing gear skid tube of the Robinson R44 or R66 helicopters. The Skid Tube Step enables passenger and crew to enter and exit the helicopter with greater ease.

This Skid Tube Step Forward Clamp assembly (LHA-44-001, -002, -007) clamps to the front of the skid tube and the Aft Attachment Bracket (LHA-44-005) bolts to the skid tube and landing gear joint using existing skid tube mounting holes. The Step (LHA-44-003) is then installed onto the two brackets using counter sunk fasteners.

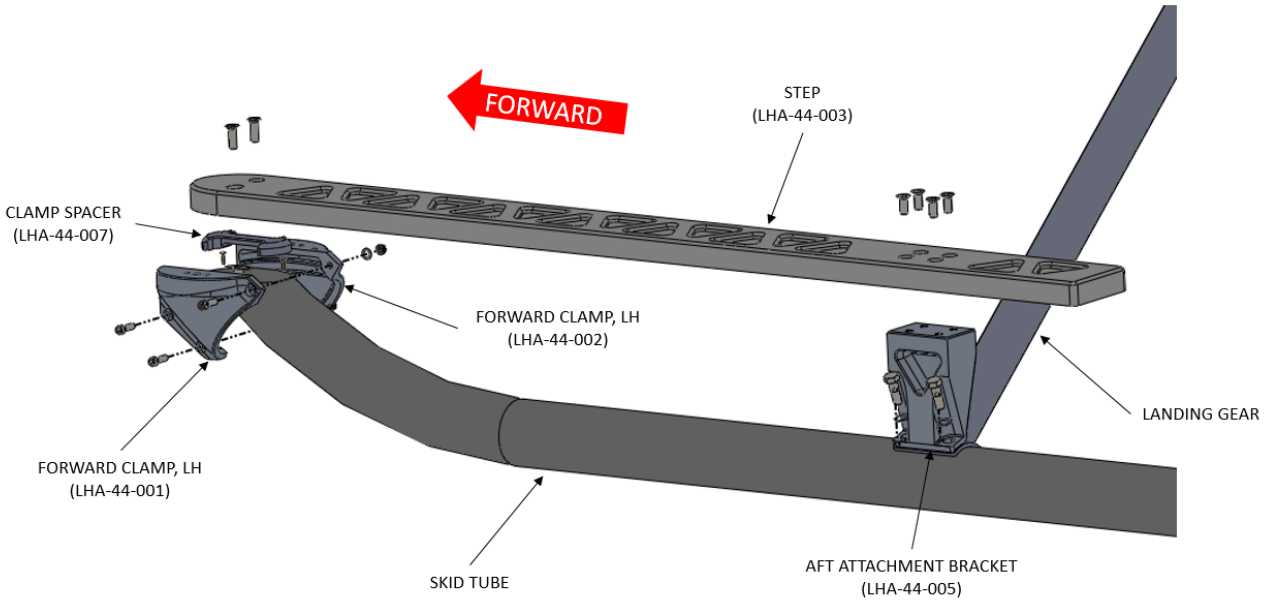

Figure 1. Skid Tube Step Installation.

1.2 SCOPE

The scope of this document is limited to information, procedures, requirements, and limitations for this Supplemental Type Certificate. When a requirement specified in the appendix to the regulations is not applicable to this Supplemental Type Certificate the requirements will not be included in the Maintenance Instructions.

1.3 APPLICABILITY

These Instructions for Continued Airworthiness are applicable to the Longhorn Aviation Services LLC Skid Tube Step Assembly, P/N LHA-44-1 when installed on Robinson R44 and R66 helicopters.

1.4 CHANGE CONTROL DISTRIBUTION

Before any maintenance is preformed on any of the Skid Tube Steps, ensure that the LHA-44-1 Instructions for Continued Airworthiness Document in your possession is the latest approved version available. Changes to this document will be available to registered owners of the Skid Tube Step within 10 days of revision approval on line at http://longhornaviation.com. Changes to this document will be indicated by revision number in the header, vertical lines adjacent to the specified change, and listed in the Record of Revision table.

2.0 AIRWORTHINESS LIMITATIONS

NONE.

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under §43.16 and §91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

3.0 INSPECTION REQUIREMENTS

3.1 SCHEDULED INSPECTIONS

The scheduled inspections required by this ICA are contained on the following checklist. This checklist, when completed, is to become a permanent part of the rotorcraft records. All ICA inspection and maintenance, when complied with shall be documented in the aircraft permanent records/logbook in accordance with FAR 43.9.

NOTE: There are no field repairs or overhaul allowed for the Skid Tube Step assembly.

If the Skid Tube Step fails the following inspections, the Skid Tube Step is to be removed from the aircraft and returned to Longhorn Aviation Services LLC.

3.1.1 100 HOUR INSPECTION INTERVALS

The 100 hour time in service inspections consist of visually inspecting the Skid Tube Step and supporting airframe structure.

The inspections per Table 3.1.1 are required while the Skid Tube Step is installed on the aircraft at the time in service interval as specified. The inspection is to be performed by qualified maintenance personnel.

TABLE 3.1.1 100 HOUR TIME IN SERVICE INSPECTION ON AIRCRAFT

Inspection Interval Hours	Inspection	Maintenance Personnel Initials
100	Visually inspect Skid Tube Step components and all support structures, including the landing gear and skid tube for cracks, nicks, or deep scratches	
100	Visually inspect hardware for security and damage	
100	Verify security of all fasteners.	

3.1.2 1200 HOUR INSPECTION INTERVALS

The 1200 hour time in service inspections is to be performed every 1200 hours of time in service. The Skid Tube Step must be removed from the Aircraft and disassembled as described in Section 4.2.

The inspections per Table 3.1.2 are required after the Skid Tube Step removed from the aircraft at the time in service interval as specified. The inspection is to be performed by qualified maintenance personnel.

TABLE 3.1.2 1200 HOUR TIME IN SERVICE INSPECTION ON AIRCRAFT

Inspection Interval Hours	Inspection	Maintenance Personnel Initials
1200	Visually inspect bolt holes for damage or corrosion.	
1200	Visually inspect brackets for corrosion, cracks, nicks, or deep scratches	
1200	Visually inspect the aircraft landing gear for chafing at the skid step attach locations. Inspect the bolted joint at the forward cross tube to skid tube for cracks or corrosion. Repair any damage in accordance FAA approved method before further flight.	

3.2 INSPECTION LIMITS

The Skid Tube Step assembly is to be removed from service and returned to Longhorn Aviation Services LLC if the following inspection limits are exceeded.

Cracks:	Any indication
Bolt hole elongation:	Any indication
Dents, scratches or nicks:	Greater than 0.020 inches
Corrosion	Any indication

Repair any damage or distress found on the airframe in accordance with FAA approved methods before continued flight.

4.0 INSTALLATION AND REMOVAL

Refer to the Longhorn Aviation Services LLC document LHA-44-INST (Skid Tube Step Installation Instructions) for detailed installation and removal instructions.

CAUTION
The LHA-44-1 Skid Tube Steps are incompatible with Pop-Out Floats. Do not install on any aircraft with floats installed.

4.1 INSTALLATION

TOOLS AND MATERIALS:

1. LHA-44-1 Skid Tube Step Assembly
2. 5/16” Wrench and/or Ratchet
3. 3/16” Allen Wrench and/or Ratchet
4. 9/16” Wrench and/or Ratchet
5. Phillips #3 Screwdriver
6. Torque Wrench (capable 50-423 in-lbs)
7. CA1010 Mastinox Jointing Compound or equivalent.

LHA-44-1 SKID TUBE STEP INSTALLATION (LH and RH installations are similar)

1. Assemble the right-hand forward clamp half (LHA-44-002) to the clamp spacer (LHA-44-007) by sliding the clamp spacer into the pocket on the clamp half. Secure the clamp spacer by installing two screws (NAS514P440-8P).

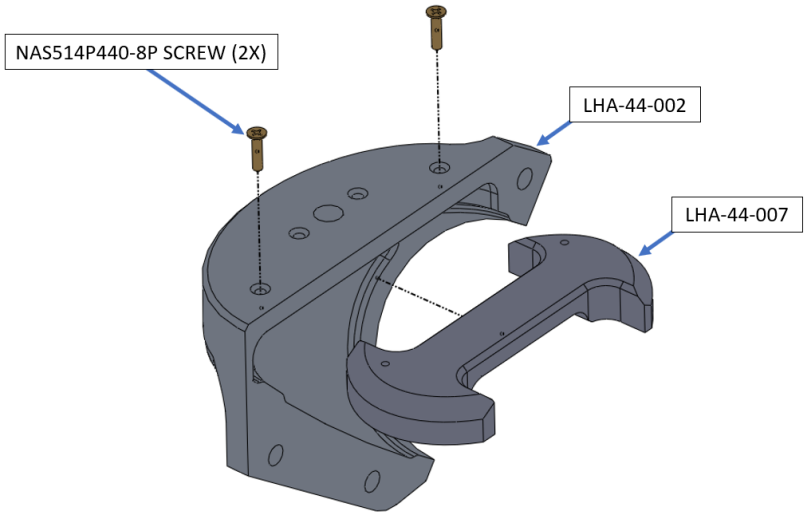

Figure 1 – Assembly of the Right-Hand Clamp Half to Clamp Spacer.

2. Assemble the two forward clamp halves using 3X NAS1351-4-12 socket head cap screws, 6X NAS620-416L washers, and 3X MS21043-4 locking nuts. Keep fasteners finger tight to allow movement of the clamp halves.

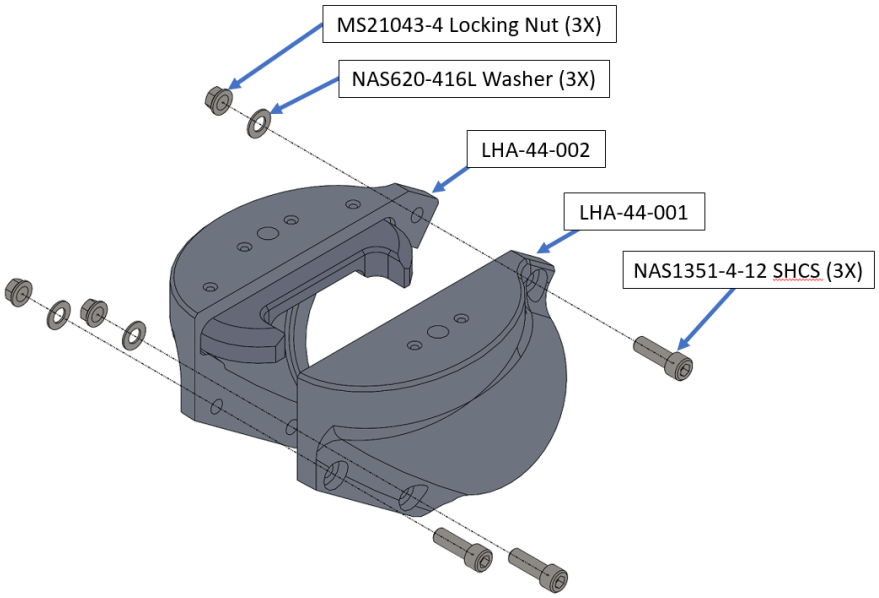

Figure 2. Assembly of the Forward Attachment Landing Gear Skid Clamp

3. With the forward mount clamping bolts loose, slide the loosened clamp over the top front of the helicopter skid and tighten the NAS1351-4-12 SHCS's to a snug fit. Do not torque hardware until all Skid Tube Step hardware is installed.

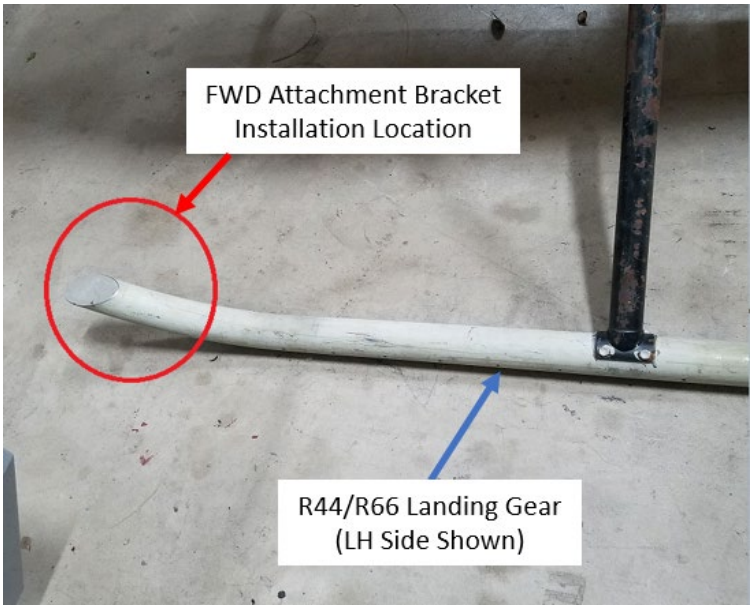

Figure 3. Forward Attachment Clamp Installation Location

4. Using 9/16" ratchet remove exterior two bolts from forward Landing Gear Cross Tube to Skid Tube attachment shown in Figure 4. They will be replaced with the NAS6606-7 hex bolts used to attach the LHA-44-005 Aft Attachment Bracket.

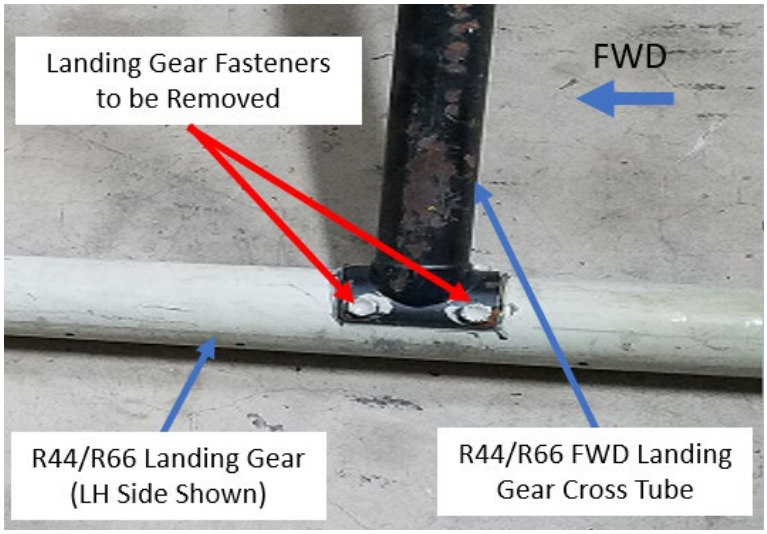

Figure 4. Exterior leg mounting bolts (at forward cross tube)

5. Mount the LHA-44-005 Aft Attachment Bracket onto the Landing Gear Cross Tube bracket using the provided NAS6606-7 hex bolts and NAS1149-0632 washers. Install NAS6606-7 bolts wet with CA1010 (Mastinox Jointing Compound) or equivalent. Hand tighten bolts to snug, do not torque until all Skid Tube Step hardware is installed.

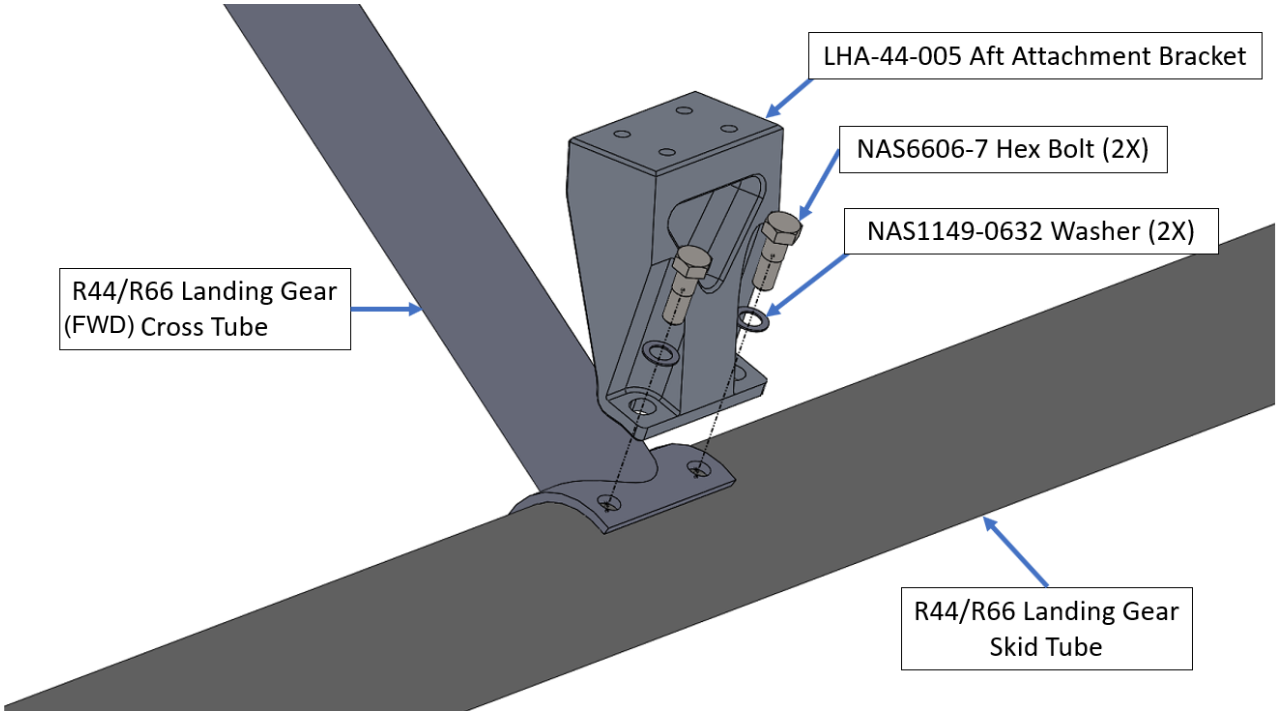

Figure 5. Installation of the LHA-44-005 Aft Attachment Bracket onto the R44/R66 Landing Gear

6. Attach the LHA-44-003 Step onto the Forward and Aft mounting brackets using the supplied NAS517-5-4 and NAS517-5-7 countersunk screws. Attach screws with Phillips Head Screwdriver. Install fasteners hand tight. Figure 6 shows the mounting locations on Skid Tube Step and unit as assembled.

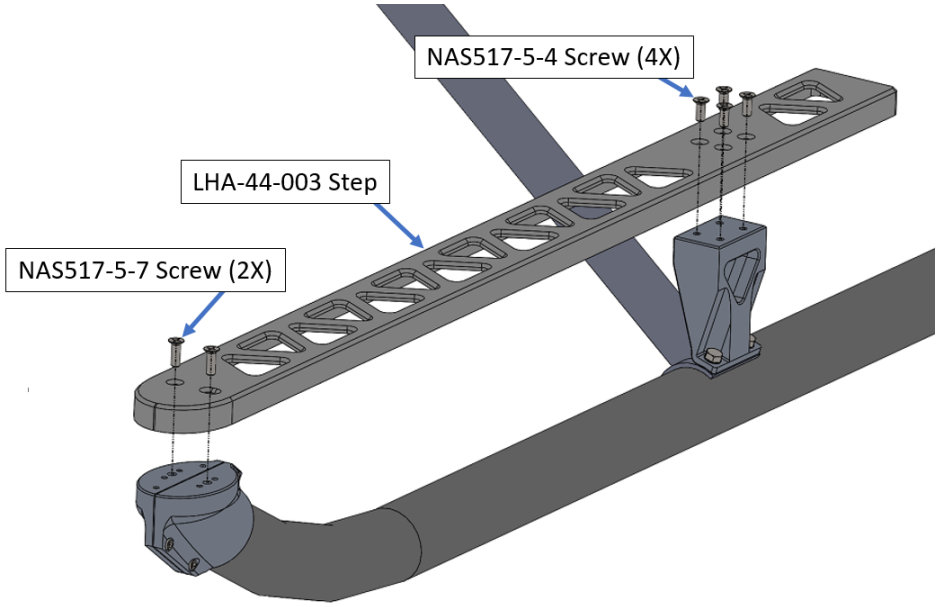

Figure 6. Installation of the LHA-44-003 Step onto the Forward and Aft Attachment Brackets

7. Tighten all hardware to the torque specs shown in the table below:

Table 1. Torque Values for LHA-44-1 Installation (per AC43.13-1B Chapter 7, Section 3.4) unless otherwise noted.

Item	Fastener Description	Torque Value
1	NAS1351-4-12	50-70 in-lb
2	NAS6606-7	347-423 in-lb
3	NAS517-5-7	50-70 in-lb
4	NAS517-5-4	50-70 in-lb
5	NAS514P440-8P	2-3 in-lb

8. Update the Aircraft Weight and Balance as shown:

Table 2 Weight and Balance

Component Weight	Weight (lbs)	Long. Arm (in)	Long. Moment (in-lbs)	Lat. Arm (in)	Lat. Moment (in-lbs)
LH Skid Tube Step Assembly	8.1	49.08	397.6	40.75	330.1
RH Skid Tube Step Assembly	8.1	49.08	397.6	-40.75	-330.1

9. Update the Aircraft Instructions for Continued Airworthiness with Skid Tube Step ICA Supplement LHA-44-ICA.

NOTE
A Rotorcraft Flight Manual (RFM) Supplement is NOT required for this installation. The basic RFM remains applicable and valid.

4.2 REMOVAL

1. Using screwdriver remove screws that attach the LHA-44-003 Step to the forward and aft mounting brackets. Remove skid tube step from mounting brackets and set aside.
2. Using 9/16” wrench and/or ratchet remove hex bolts from LHA-44-005 Aft Attachment Bracket. Remove Aft Attachment Bracket from skid.
3. Replace bolts securing front cross tube leg to helicopter skid using original type bolts and torque per applicable aircraft maintenance manual.
4. Lastly use 3/16” Allen wrench and 5/16” wrench to loosen socket head cap screws on forward mounting bracket clamp. Remove clamp and removal is now complete.
5. Update Weight and Balance to account for the removed equipment.