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## SERVICE BULLETIN

Document No. 159-016-00, Rev. 0

October 21, 2005

**Subject:** R-44 Hook Gimbal.

**Helicopters Affected:** Robinson R-44 series with Onboard Systems Cargo Hook Kits installed per STC SR01064SE and SR00578SE.

**Compliance:** Recommended within 6 months of the release of this Service Bulletin.

**Description:** In June 2005 an operator of a Robinson R-44 helicopter operating a fertilizer bucket experienced a failure of Onboard Systems P/N 232-049-00 Gimbal Assembly. Consequently, a Service Bulletin, 159-015-00, dated June 23, 2005 was issued to advise operators to examine the Gimbal Assembly for cracks and verify proper installation. Concurrently, an investigation was initiated to determine the cause of the failure.

Onboard Systems has completed its investigation into the cause of the failure and has issued this Service Bulletin to implement corrective action. It was determined that the Gimbal Assembly was not structurally adequate to support the repetitive torsional loading induced by a rotating fertilizer bucket or other such equipment. The Gimbal Assembly and mating Pillow Block have been re-designed to suit this type of application.

This Service Bulletin contains instructions for replacing the Gimbal Assembly and Pillow Block. The actions recommended by this service bulletin are described below.

**Approval:** The engineering design aspects of this bulletin are FAA/DER approved.

**Manpower:** Replacement of the components will require 1.0 man-hours. Man-hours are based on hands-on time and may vary with personnel and facilities available. No machining operations are required. Installation consists of removing and replacing parts.

**Required Material:** The following material is required for accomplishment of this bulletin and may be obtained from Onboard Systems:

Qty 1 P/N 290-492-01 Pillow Block  
Qty 1 P/N 232-049-01 Gimbal Assembly  
Qty 1 P/N 510-528-00 Bolt  
Qty 1 P/N 510-100-00 Washer  
Qty 1 P/N 510-115-00 Cotter Pin

**Special Tools:** Not required

**Weight and Balance:** Not affected

**Electrical Load Data:** Not affected

**Publications Affected:**

Owner's Manual 120-077-00  
Owner's Manual 120-097-00  
Owner's Manual 120-111-00  
ICA 123-005-00  
ICA 123-016-00

**Accomplishment Instructions:**

Accomplishment recommended within 6 months of the release of this Service Bulletin.

**Section 1 - Remove existing components**

1. Disconnect electrical release harness and manual release cable from cargo hook.
2. Remove hardware attaching the Link Assembly, P/N 232-050-00, or Load Cell Assembly, P/N 210-181-00, (refer to Figure 1) to the Gimbal Assembly, P/N 232-049-00. Retain the nut.
3. Remove safety wire from cap screws, P/N 290-505-00, and remove the cap screws and remaining components. Remove the Roller Pin, P/N 290-440-00, from inside the Pillow Block to separate the Gimbal Assembly. Retain the cap screws and Roller Pin. Discard the Pillow Block and Gimbal Assembly.

## **Section 2 – Install replacement components**

1. Place the new Pillow Block (P/N 290-492-01) against the lower skin and install one of the cap screws as shown in Figure 2-1.
2. Grease the P/N 290-440-00 roller pin with Aeroshell 7, MIL-G-23827, or equivalent before assembly. Partially insert the roller pin into the Pillow Block. Align and hold the new Gimbal Assembly (P/N 232-049-01) in position within the slot of the Pillow Block and slide the roller pin through the Gimbal Assembly and into the other side of the pillow block.
3. Install the second cap screw and torque both screws to 26 ft-lbs.
4. Safety wire the cap screws to the safety wire ears on the pillow block.
5. Grease the bushings with Aeroshell 7, MIL-G-23827, or equivalent before assembly. Install the P/N 210-181-00 Load Cell Assembly or the P/N 232-050-00 Link Assembly (depending on kit being installed) to the Gimbal Assembly using the hardware shown in Figure 1. Tighten nut finger tight and then tighten to next available slot for cotter pin. Install new cotter pin.
6. Connect electrical release harness and manual release cable to Cargo Hook.

**Figure 1**

