SERVICE BULLETIN

***Subject**:* Bell 407 Suspension Beam Interference

***Helicopters Affected**:* Bell 407

Parts Affected: Kits installed under P/Ns & STC listed in Table 1

Table 1 – Affected Part Numbers

Kit P/N	Description	FAA STC
200-329-XX	Bell 407 Suspension System	SR01943SE
200-394-00	Bell 407 Fixed Provisions Kit, Hydraulic	SR01943SE
200-415-00	Bell 407 Fixed Provisions Kit w/ Load Weigh, Hydraulic	SR01943SE
200-415-01	Bell 407 Fixed Provisions Kit w/ Load Weigh, 5V Indicator	SR01943SE

***Compliance**:* Recommended.

Ownership: Please review this information and determine if the equipment is still in your possession. If this equipment is no longer in your possession, please forward this notice to the current owner or to your customer, as applicable.

***Description**:* Onboard Systems has been notified of interference between the Bell 407 Suspension Beam and Pillow Block mounting fasteners. This interference can act as an unintended travel limiter in the aft direction and cause fretting wear on the Suspension Beam.

Investigation has revealed that the interference may occur due to two contributing factors: 1) utilization of fastener series MS21250 (versus MS21134), and 2) a machining nonconformance present in certain lots of the Suspension Beam.

Action: To comply with this bulletin, perform the following:

1) **Check Beam for sign of interference**. Inspect the Bell 407 Suspension Beam by pivoting it towards the aft direction, as far as possible. Ensure that the Suspension Beam makes full travel to the stop present at the Pillow Block. Verify that the Pillow Block mounting fastener head is not an unintended travel stop. Ensure sign of contact (paint chipping, fretting) is not present.

Figure 1 – Unintended travel stop at fastener heads (circles) versus intended travel stop (arrow) of Suspension Beam.

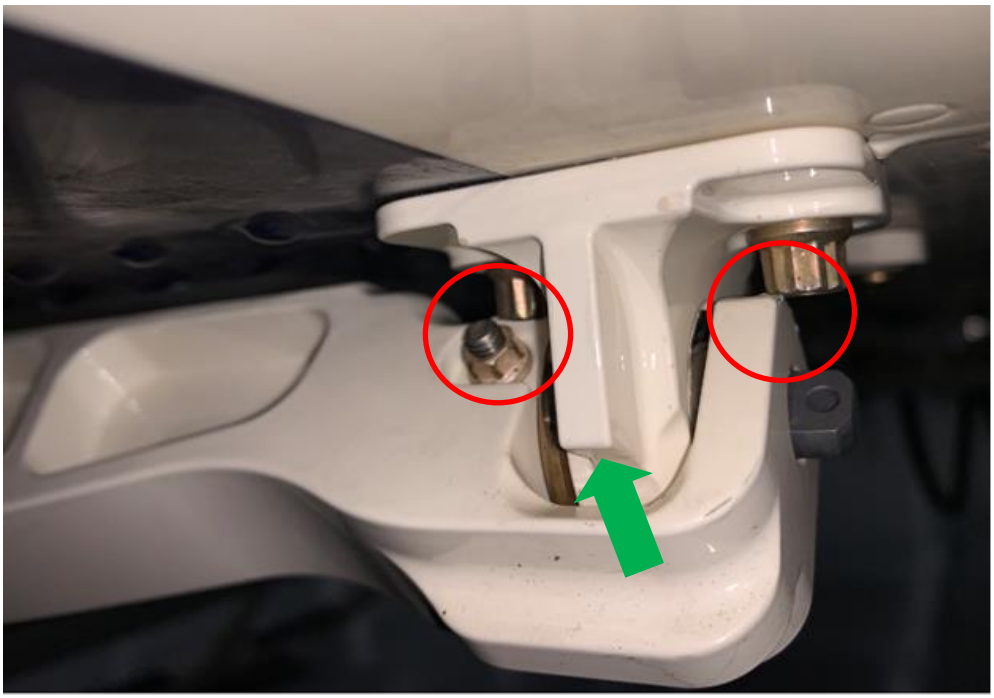


Figure 2 – Paint chipping evidence

2) If unintended contact is *not* found, no further action is required related to this service bulletin. If unintended contact *is* observed, proceed to the accomplishment instructions section**.**

Manpower*:* Approximately 3.0 man-hour(s) will be required.

Required Materials*:* Depending on which components are installed, one or both of the following items are required for accomplishment of this bulletin.

Table 2 - Materials

Part No.	Description	Quantity
510-725-00	Bolt (MS21134-04018 OR NASM21134-04018)	4
510-234-00	Nut (MS21084L04)	4

Special Tools*:* None

Weight and Balance*:* Not affected

Electrical Load Data*:* Not affected

References*:* None

Publications Affected: The following publications can be downloaded from the company web site by visiting the following link:

http://www.onboardsystems.com/Support/Manuals_and_Documents.php

Owner's Manuals: 120-146-00, 120-136-00

ICA(s): 123-032-00, 123-040-00

Contact Information*:* Technical support question regarding this bulletin can be addressed through the following contact methods:

Onboard Systems
13915 NW 3rd Court
Vancouver, WA 98685 USA
Phone: 360-546-3072
Fax: 360-546-3073
E-mail: techhelp@onboardsystems.com
Web: www.onboardsystems.com

Disposition of Parts Removed*:* Discard.

Material/Part availability*:* Contact Onboard Systems for pricing and availability of replacement parts.

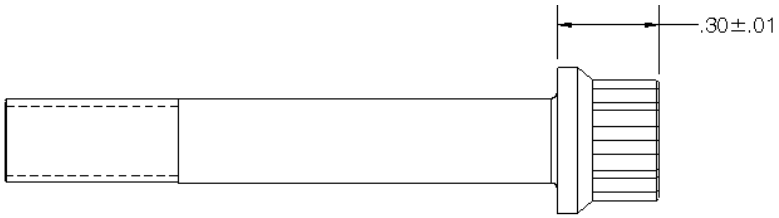
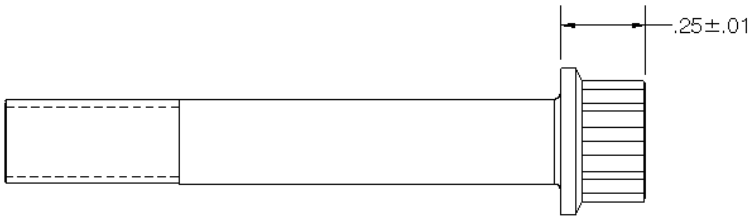
Accomplishment Instructions:
Section 1 of the accomplishment instructions provides instructions for removing and replacing the aft Pillow Block fasteners. Section 2 provides instructions for performing a trial fit of the Suspension Beam to determine next steps. Section 3 provides instructions for reworking the Suspension Beam lug profile, if necessary. Section 4 completes the re-installation & performs an installation check-out.

Section 1 – Measure (and potentially change) Pillow Block fasteners

Measure the head height of the 12-point attachment screws (P/N 510-725-00) of the Pillow Blocks using calipers per Table 3 (also See Figure 1). If the fastener head does *not* measure 0.25 ± .010 inches [6.35 ± .25mm], remove and replace fasteners per the instructions in this section.

If the fastener head height measures correctly and interference is still observed, proceed to Section 3.

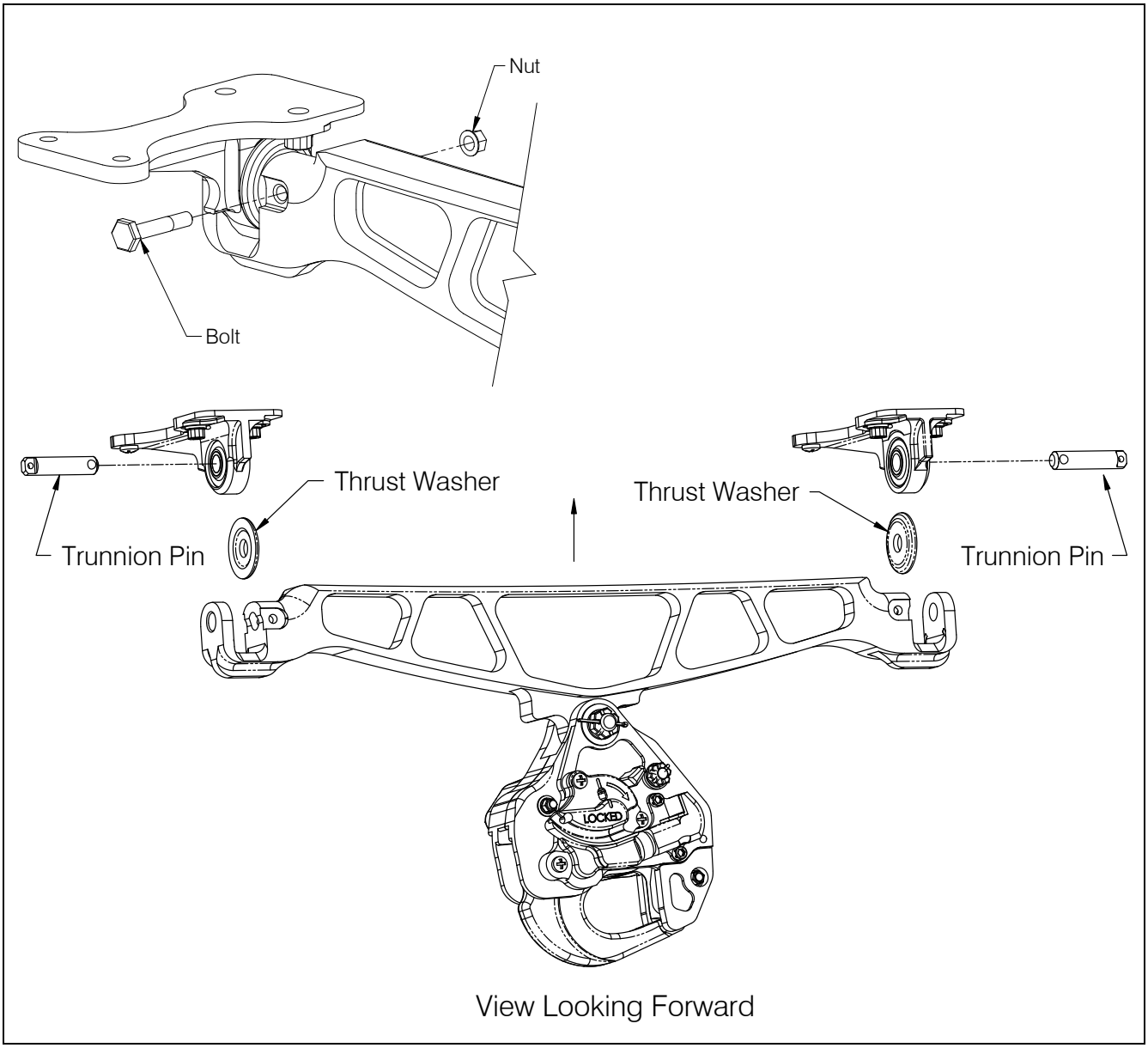
Table 3 – OK / Not OK Fastener Comparison (P/N 510-725-00)

✗	**MS21250-04020** **MS21250-04018**	
✓	**MS21134-04018** **NASM21134-0418**	

Remove & replace fasteners

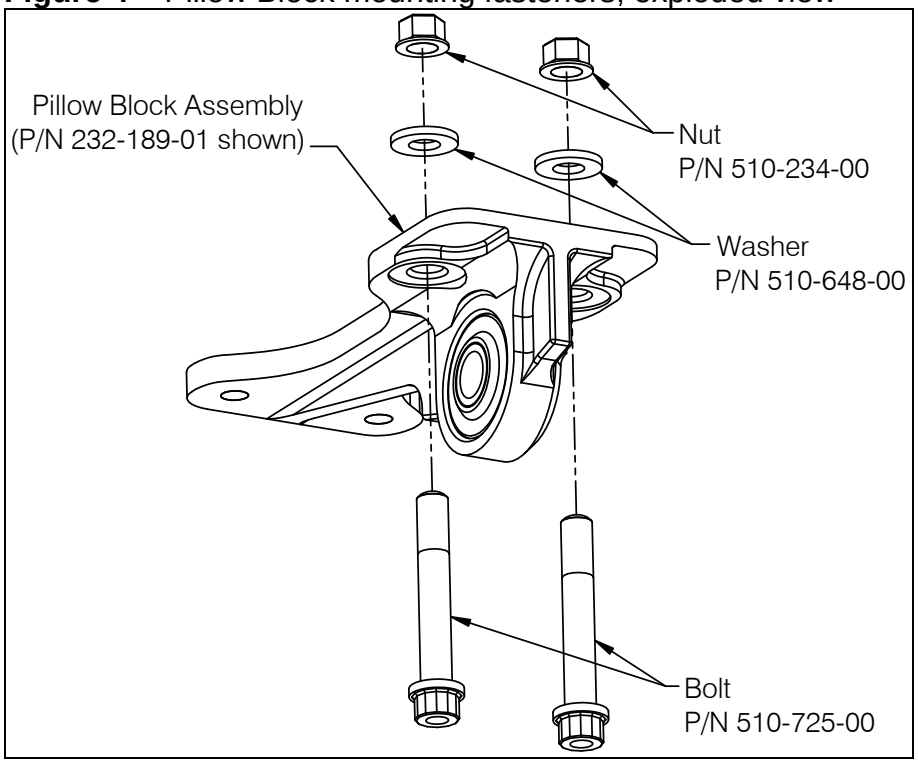
1. Disconnect the Cargo Hook control cables at the disconnect bracket. Remove the Suspension Beam and Cargo Hook from the aircraft as an assembled unit per figures below.

Figure 3 – Removal of Suspension System from aircraft



2. One at a time, remove and replace offending fasteners, P/N 510-725-00. Note: the Pillow Blocks *do not* need to be fully removed from the aircraft (they are typically sealed in place). Replace self-locking nuts (P/N 510-234-00) with new and torque nuts to 84 – 107 in-lb [9.1 – 12.1 Nm], plus drag torque. See figure 4 below:

Figure 4 – Pillow Block mounting fasteners, exploded view



NOTICE

Pillow blocks need not be fully removed to change fasteners. If Pillow Blocks were fully removed, observe that the Pillow Block Assemblies are sensitive to right and left.

Section 2 – Perform trial fit of Suspension Beam

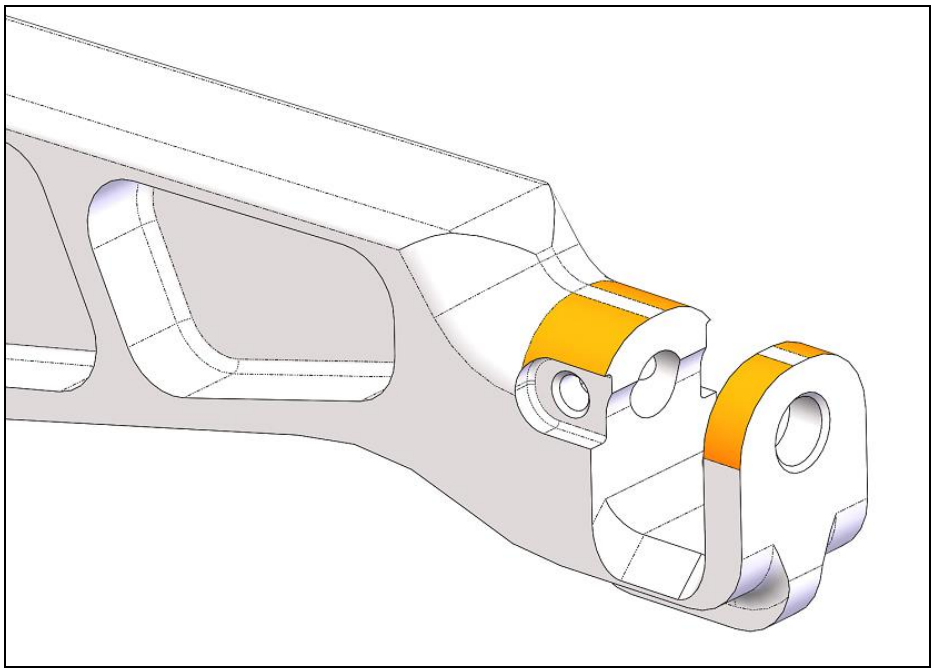
This section gives instructions for a trial fit of the Suspension Beam to determine next steps.

3. Re-install the Suspension Beam on the aircraft in the reverse order as above. Again, pivot the Suspension Beam to the aft direction, as far as possible. Ensure that the Suspension Beam can make full travel to the stop present on the Pillow Block. Verify that the Pillow Block mounting fastener head is not an unintended travel stop.
4. If interference is still present, proceed to Section 3. If not, the service bulletin is completed at this step.

Section 3 – Rework Suspension Beam lug profile, if necessary

5. Accomplishment of this section requires returning the Beam (P/N 290-852-01) to Onboard Systems for rework. As CNC machining is involved, the rework modification is not readily accomplished in the field. Onboard Systems will re-machine, inspect & re-finish the Suspension Beam lug areas to drawing conformance in the filleted areas shown in Figure 5.

   Figure 5 – Suspension Beam rework areas



6. Once the Suspension Beam has been reworked, re-install per Owner's Manual instructions and verify the Suspension Beam can make full aft travel unimpeded. If interference is still observed, contact Onboard Systems for further direction.

Section 4 – Installation checkout

7. Follow the applicable Owner's Manual instructions (120-146-00 or 120-136-00) to completely re-assemble the equipment. Perform the installation check-out instructions as described in the Owner's Manual.
8. Make logbook entry referencing compliance with this service bulletin.