ONBOARD SYSTEMS

INTERNATIONAL

13915 NW 3rd Court

Vancouver, WA 98685

USA

Phone: 360-546-3072

Fax: 360-546-3073

Toll Free: 800-275-0883

www.OnboardSystems.com

ALERT

SERVICE BULLETIN
Document No. 159-014-00, Rev. 1
September 27, 2005

Subject: AS350 Swing Frame Replacement.

Helicopters Affected: Eurocopter AS350 series with Onboard Systems swing suspension system P/N 200-280-00 installed per STC SR01164SE or swing suspension system P/Ns 200-285-00 or 200-286-00 installed per STC SR01393SE.

Compliance: Recommended, on condition (reference Service Bulletin 159-013-00 for condition requiring replacement) or within 6 months of the release of this revision to Service Bulletin 159-014-00 whichever comes first.

Description:

The swing frame referenced above (weldment P/N 235-096-00) has had several incidences of cracks developing around the tubular frame welds (reference Service Bulletin 159-013-00).

This service bulletin contains instructions for replacing an existing frame with an improved frame and installing a ground strap.

The actions required by this service bulletin are described below.

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

Manpower: Replacement of the frame will require 2.0 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 and installing a ground strap.

Required Material: The following material is required for accomplishment of this bulletin and may be obtained from Onboard Systems:
Qty 1 P/N 210-218-00 Swing Frame Replacement Kit
Qty 1 P/N 123-011-01 Instructions for Continued Airworthiness (ICA)

Special Tools: Not required

Weight and Balance: Not affected

Electrical Load Data: Not affected

Publications Affected: The new swing suspension frame is to be inspected and maintained in accordance with ICA document 123-011-01. Maintain the remainder of the swing suspension system in accordance with the existing manuals.

Accomplishment Instructions:

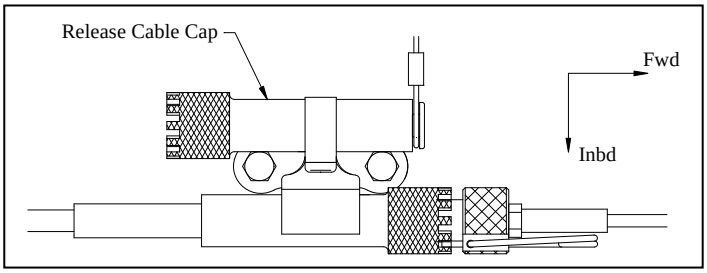
Accomplishment recommended on condition or within 6 months of the release of this revision to Service Bulletin 159-014-00 whichever comes first.

Section 1 - Remove existing swing suspension.

Remove existing swing suspension from the helicopter per the following.

- Remove the removable section of the manual release cable by un-clipping it from the bracket on the belly of the helicopter, disengaging the locking pin and unthreading the Adapter Fitting. Unclip the Release Cable Cap (see Figure 1.1) from the bracket and thread it over the open end of the fixed manual release cable assembly and clip it into the inboard spring clip on the bracket.

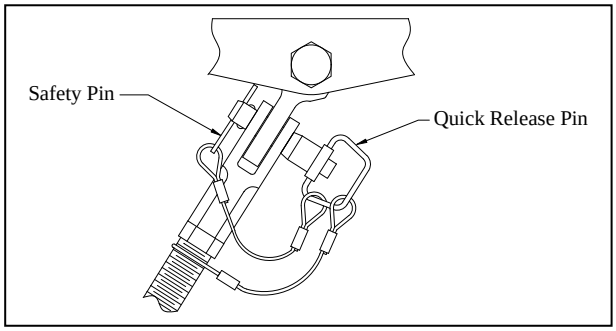
Figure 1.1



- Remove the electrical cables at the bulkhead connectors on the belly of the helicopter.

- Remove the swing suspension by removing the four safety pins and then the quick release pins that secure the cables to each of the Shackle Assemblies (see Figure 1.2).

Figure 1.2



Section 2 - Fixed ground strap installation

The fixed ground strap (P/N 270-125-00) is routed from the 3N grounding location to below the suspension system electrical connectors (see Figure 2.1 and Figure 2.2).

Remove the lower cowlings as necessary to access the areas where the ground strap is to be routed.

Figure 2.1

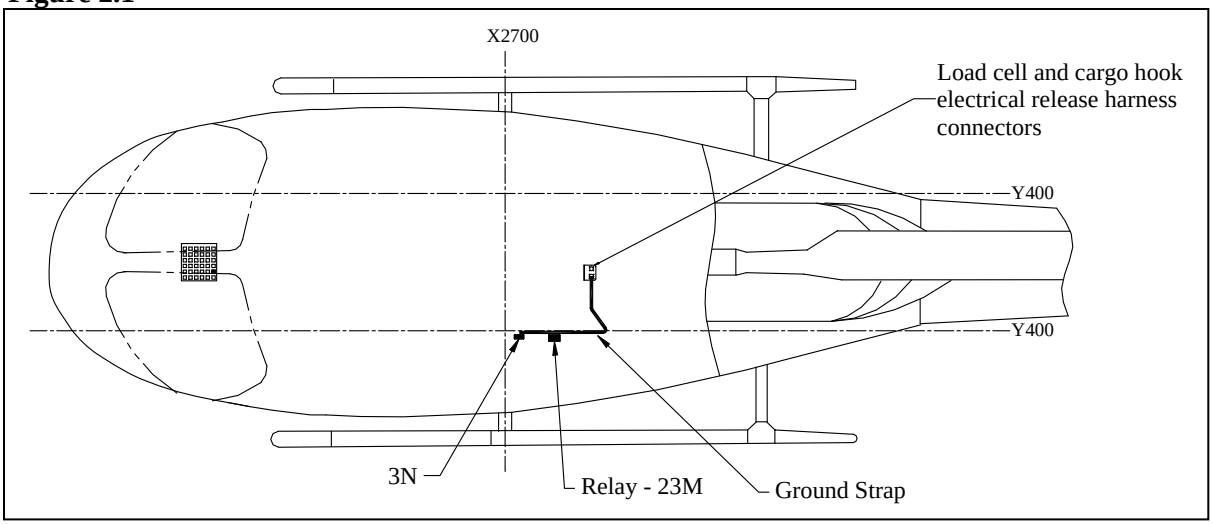
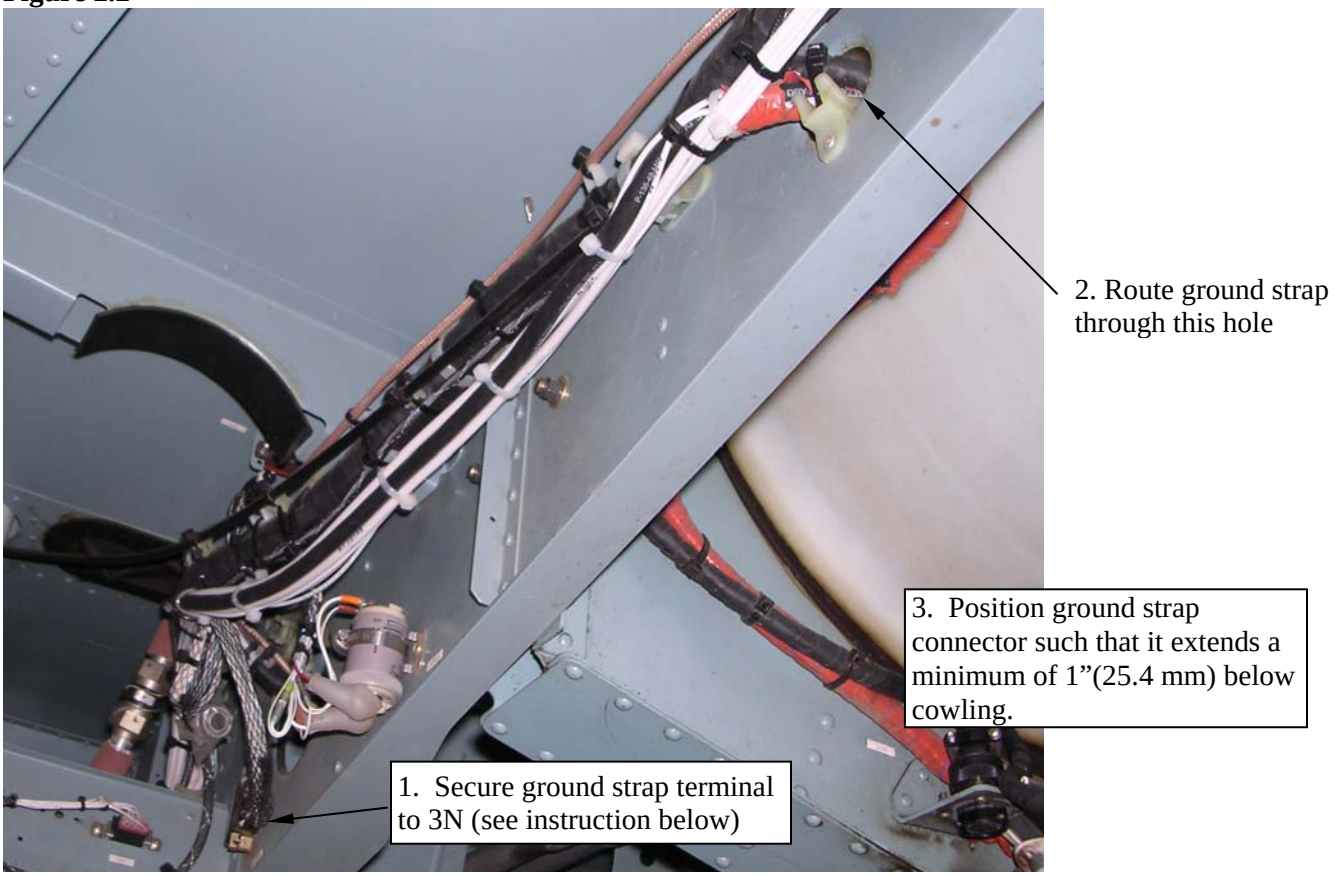


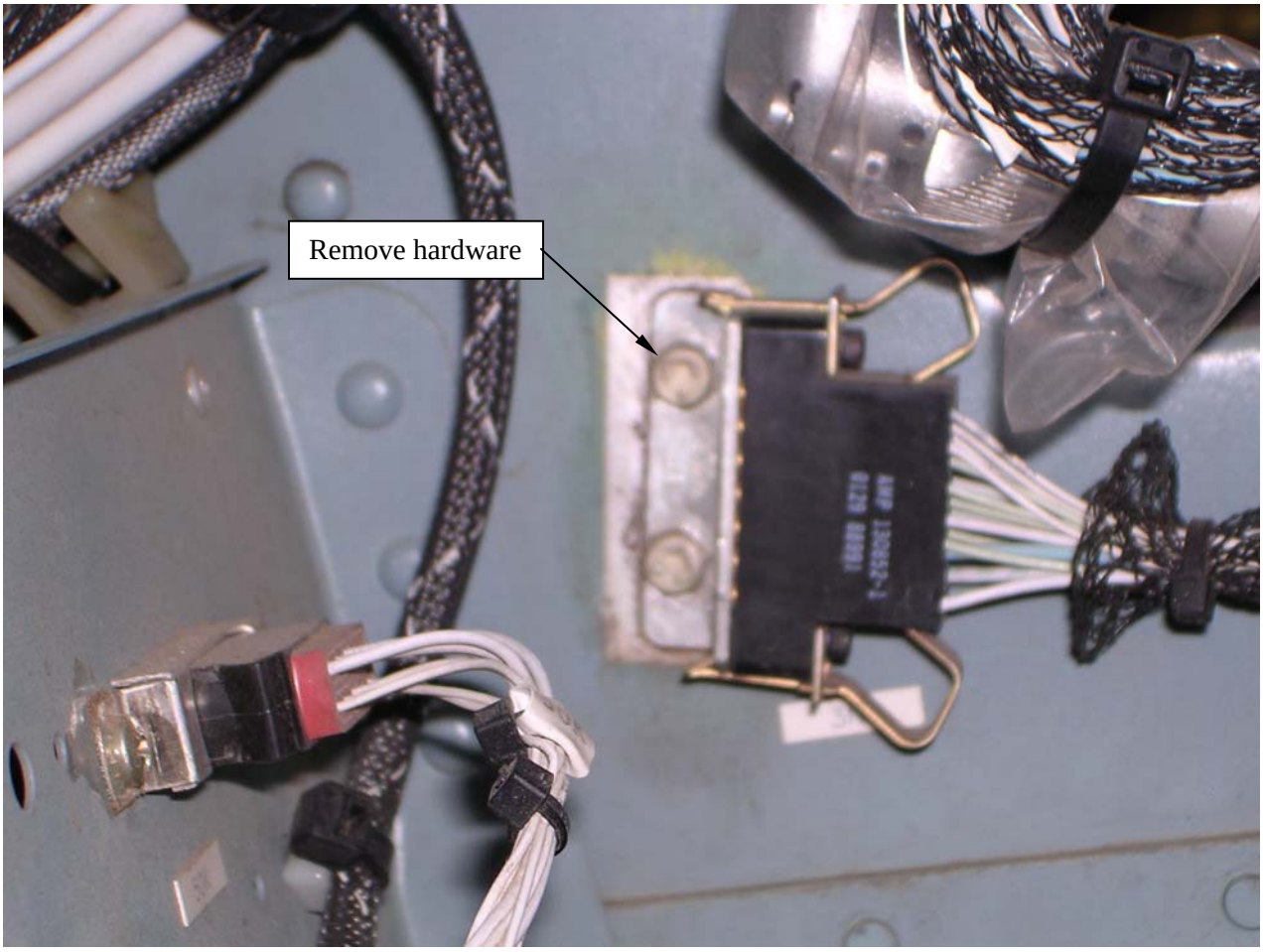
Figure 2.2



Install the ground strap terminal to 3N connector mounting bracket per the following:

- Remove upper mounting hardware (see below) and retain.
- Prepare the surface for electrical bonding per Eurocopter electrical bonding procedure. Refer to section 20.02.07 of the Eurocopter Standard Practices Manual.
- Install ground strap terminal, re-using hardware.

Figure 2.3



- Route the Ground Strap to the load weigh and electrical release harnesses and route with these harnesses, while securing with ty-wraps, to their termination points at the Connector Bracket (see Figure 2.2 above, Eurocopter connector shown). As noted above, position the ground strap connector so that it will extend a minimum of 1" inch (25.4 mm) below the cowling (when installed) for accessibility.
- Re-install lower cowlings.

Section 3 - Remove and replace swing suspension frame

- Remove the suspension cables and attachment hardware from the existing suspension frame and retain these items for use on the new suspension frame.
- Remove the hook (not shown) with electrical and manual release cables and load cell assembly from the gimbal on the existing suspension frame (not shown) by removing the hardware as illustrated below. Retain these items for use on the new suspension frame.
- Prepare the cargo hook surface for installation of the ground strap (P/N 270-126-00) by lightly sanding to remove the anodized layer at its area of contact (see below for location) with the ground strap terminal to be installed. Apply a suitable conductive chemical surface treatment, such as Alodine, to the bare metal.
- Route the ground strap through the hole in the bumper (as shown in Figure 3.2) and secure it to the cargo hook with screw P/N 510-391-00.
- Route the ground strap with the load cell and hook release electrical cables, securing it to them with ty-wraps.

Figure 3.1

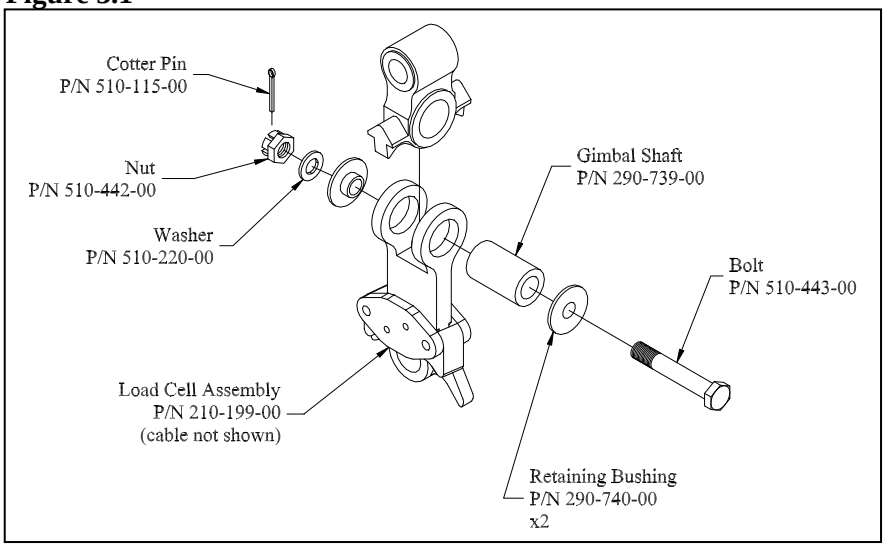
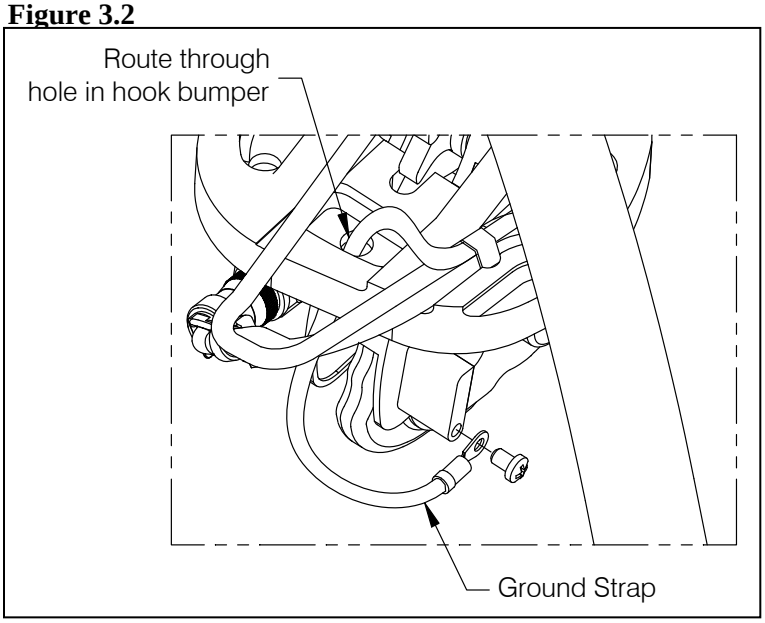


Figure 3.2



- Install the hook and load cell assembly onto the new suspension frame, re-using the hardware shown in Figure 3.1.

- Install the suspension cables onto the new suspension frame per the following:

  Fasten the two shorter cable assemblies onto the forward pivot points of the suspension frame and the two longer cable assemblies to the aft pivot points. The forward end of the suspension is determined by the orientation of the cargo hook. When the suspension is installed the cargo hook load beam must point to the left side of the helicopter (electrical and manual release cables go to the right side of the helicopter) and the shorter cables be attached to the forward landing gear fittings.

  Torque the castellated nuts on suspension cable pivot bolts to 100 in-lbs., then rotate nuts to next castellation, not to exceed 150 in-lbs. Install and secure cotter pins.

Section 4 – Install suspension onto helicopter.

- Re-install the suspension cables onto the helicopter as per Figure 1.2.

- Connect the removable section of the ground strap to the fixed ground strap.

- Connect the load cell connector to the mating connector at the belly of the helicopter.

- Connect the electrical release connector to the mating connector at the belly of the helicopter.

- Connect the manual release cable to fixed manual release cable.

Section 5 – Installation check-out

- After installation of the Cargo Hook Swing Suspension System, perform the following functional checks.

- Swing the installed Cargo Hook on the suspension to its full extremes to ensure that the manual release cable assembly and the electrical release cable have enough slack to allow full swing of the cargo hook assembly without straining or damaging the cables. The cables must not be the stops that prevent the Cargo Hook from swinging freely in all directions.

- Swing the Suspension to its full extremes to ensure that the manual release cable assembly and the electrical release cable have enough slack to allow full swing of the Suspension without straining or damaging the cables. The cables must not be the stops that prevent the Suspension from swinging freely in all directions.

- With no load on the cargo hook load beam, pull the handle operated cargo hook mechanical release, the Cargo Hook should release. Reset the cargo hook load beam.

- With no load on the cargo hook load beam, depress the cargo hook electrical release button, the Cargo Hook should release. Reset the cargo hook load beam.

- Record compliance with this service bulletin in the aircraft logbook as appropriate.