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June 22, 2015

Subject: Service Bulletin 159-036-00, Rev. 0 for Load Cell Torsional Fatigue Failure

Affected Kit Numbers: 200-196-00, 200-250-00, 200-259-00, 200-259-01, 200-259-02, 200-280-00, 200-280-01, 200-280-02, 200-280-03, 200-280-04, 200-286-00, 200-286-01, 200-286-02, 200-292-00, 200-292-01, 200-292-02, 200-295-00, 200-298-00, 200-321-00

Affected Load Cell Numbers: 210-046-01, 210-179-00, 210-199-00, 210-199-01, 210-199-02, 210-214-00, 210-249-00, 210-249-01, 210-249-02

Dear Valued Customer:

Onboard Systems has issued a Service Bulletin for the above-referenced parts and we strongly recommend that all operators comply with the instructions provided. This service bulletin and updated manuals may also be downloaded from our website at:

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

Please review this Service Bulletin and determine if the equipment is still in your possession. If this equipment is no longer in your possession, please forward this information to the current owner or your customer.

Onboard Systems can provide the materials required to comply with this service bulletin. Please contact us directly for more information or to obtain a quote. All parts are supplied FOB Onboard's factory.

Onboard Systems is dedicated to supporting helicopter external load operators and we welcome any feedback and comments you may have. If you have any questions or require additional information, please feel free to contact us.

Best regards,

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SERVICE BULLETIN

Subject: Load Cell Torsional Fatigue Failure

Applicability: Helicopter models AS350, AS355, EC130, Bell 206L and Bell 407 with an Onboard Systems superseded load cell installed per Table 1.

Table 1 – Superseded and Replacement load cells by Aircraft

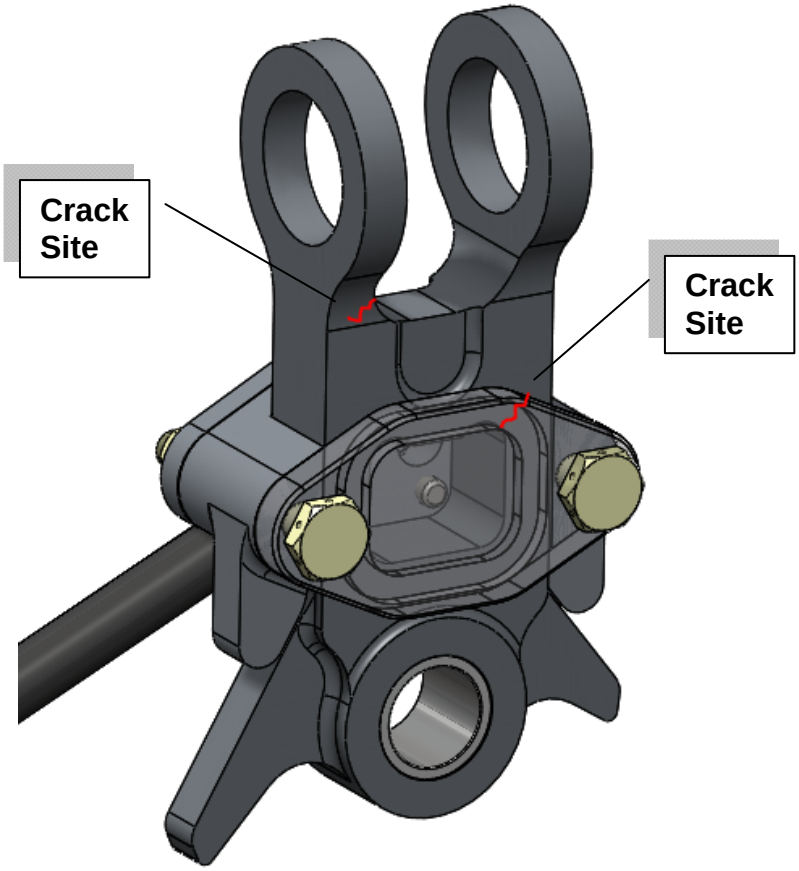
Aircraft	Kit Numbers	FAA STCs	Superseded load cell	Replacement load cell
AS350	200-280-XX 200-286-XX	SR01164SE SR01393SE	210-199-00 210-199-01 210-249-00	210-249-03
AS350	200-295-00 200-298-00	SH1262NW SR01812SE	210-046-01	210-046-02
EC130	200-321-00	SR01815SE	210-199-02 210-249-01	210-249-04
AS355	200-292-XX	SR01424SE	210-214-00 210-249-02	210-249-05
Bell 206L, Bell 407	200-196-00 200-250-00 200-259-XX	SR00418SE SR00724SE SR00898SE	210-179-00	210-179-01

Compliance: Recommended (See ***Action*** on Page 5 for conditions and schedule)

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:. A small number of load cells have been reported to have structurally failed in the field, leading to loss of load. In each instance, investigation has suggested that these failures occurred as a result of repetitive torsional loading, as defined herein. Certain types of external cargo configurations place torsional loads on the cargo hook attachment, including the load cell. Over time, fatigue failure may result.

Figure 1 – Crack initiation site of load cell due to torque loads (210-249-XX). Note: cracks may begin under cover plates and not be observable without disassembly.



WARNING

The superseded load cells called out in this bulletin, when subject to repetitive torsional loads defined herein, may fail suddenly—resulting in load separation, loss of equipment and injury / death of ground crew.

Solution: Several Onboard Systems load cells have been redesigned to better accommodate torsional loads. If torsional loading is a part of your helicopter operations (as defined herein), it is recommended that that you upgrade to the latest configuration as expeditiously as possible. If torsional loading is *not* part of your helicopter operations, it is recommended to upgrade at time of next overhaul.

Torsional Load Description: A substantial torque reaction may be generated when-

- A load is attached to the cargo hook with a spreader bar, e.g., typical fertilizer slinger.
- A load is rigidly attached to the cargo hook, e.g., an aerial saw

Loads attached to the cargo hook via a long line do not typically develop significant torsional loads, even if a swivel is not used.

Figure 2 – Fertilizer application using bucket and spreader bar. Photo: Lister Helicopters

Action: To comply with this service bulletin:

(1) Inspect your equipment to determine what part number configuration load cell is present on your aircraft. If you already have the 'replacement load cell', no further action is required. If part number marking is missing, contact Onboard Systems for assistance. If you have a superseded load cell installed, continue below.

(2) If torsional loading is present per the ***Torsional Load Description*** definition on page 3, limit external load time to 100 hours between overhaul of the load cell. Upgrade the load cell to the latest configuration as soon as possible. Remove and replace the load cell per the applicable Instructions for Continued Airworthiness manual. Time between overhaul then returns to the period defined in the applicable documentation (see Publications Affected).

(3) For others not generating torsional loads per the ***Torsional Load Description*** definition on page 3, it is recommended to upgrade to replacement version of loads cell at time of overhaul.

Manpower: Approximately 1.0 man-hour will be required to remove and replace the load cell.

Required Parts: Contact Onboard Systems to order a replacement load cell. Table 1 lists superseded and replacement load cells by aircraft.

Removal and replacement of a load cell will also require replacement cotter pins: 1 each 510-178-00 (MS24665-302 or equivalent), 1 each 510-115-00 (MS24665-136 or equivalent) and in some cases tie-wraps: 3 each 512-011-00, or equivalent.

Special Tools: None

Weight and Balance: Not affected / Negligible

Electrical Load Data: Not affected

Publications Affected:
Owner's Manuals: 120-055-00, 120-085-00, 120-092-00, 120-092-01, 120-104-01, 120-104-02, 120-104-03, 120-107-00, 120-107-01, 120-112-01, 120-112-02, 120-114-00, 120-117-00, 120-131-00

ICA Manuals: 123-007-00, 123-007-01, 123-011-01, 123-011-02, 123-011-03, 123-014-01, 123-014-02, 123-017-01, 123-017-02, 123-019-00, 123-029-00

The latest manual revisions are available through Onboard Systems' web site at www.onboardsystems.com.

***Point of Contact**:* For additional assistance, contact Keys Miller at Onboard Systems. Phone: 360-546-3072 or 1-800-275-0883. Email: keys@onboardsystems.com, Techhelp@OnboardSystems.com

***Disposition of Parts Removed**:* If obtaining a replacement load cell from Onboard Systems, return the superseded load cell to the factory for trade-in.

***Material/Part availability**:* Contact Onboard Systems for parts availability.

Revision	Date	Reason for Revision
0	TBD	Original Issue