



**ONBOARD SYSTEMS  
INTERNATIONAL**

11212 NW St. Helens Road  
Portland, Oregon 97231  
USA

Phone: 503-286-4956

Fax: 503-286-0370

Toll Free: 800-275-0883

[www.OnboardSystems.com](http://www.OnboardSystems.com)

## SERVICE BULLETIN

Document No. 159-005-02, Rev 0

Jan. 10, 2002

**Model affected:** Bell 204B, 205A, 205A-1, 212, 412, 412EP and Garlick UH-1H

**Subject:** Cargo Hook enhanced safety.

**Helicopters Affected:** All aircraft with Onboard Systems part number 528-002-00 Cargo Hook, Serial Number CAL829 to CAL1135 inclusive and all affected hooks in spares.

These hooks may be installed on aircraft with the Bell manufactured suspension system with P/N 528-002-00 hook installed per STC SR00277SE or Canadian STA SH96-77. Also included are aircraft with Onboard Suspension Systems P/N 200-088-01, -02 and -03 or 200-089-01, -02 and -03 that have been installed per STC SH5707NM or Canadian STA SH93-50. These suspension systems had several possible hook part numbers installed. Only the systems equipped with Onboard hook part number 528-002-00 are affected.

**Compliance:** Mandatory. 300 hours time in service from the effective date, or 90 days, whichever comes first. The effective date is Jan 25, 2002.

**Description:** In August of 1999 Onboard issued Service Bulletin 159-005-001 that required replacement of an internal extension spring. The purpose of the spring replacement was to decrease the possibility of uncommanded load releases by increasing the tension on the release mechanism. A fatigue failure of the replacement spring P/N 650-066-00 has been reported from the field. The field failure was on a hook being used as the lower hook on a long line, so it could accumulate more cycles in a shorter time than would be typical of a primary belly hook application. Subsequent testing on our test stand shows that the spring can fail with as little as 14,000 release cycles on the hook. In estimating the number of cycles on a particular hook please be aware that each full motion of the release mechanism counts as a cycle. This applies whether or not the hook is empty or loaded when cycled. The "machine gunning" of the mechanism that is part of the preflight test also counts against the total at the rate of 10-20 cycles per second.

This bulletin provides for the installation of a redesigned spring that has an enhanced service life.

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



**ONBOARD SYSTEMS  
INTERNATIONAL**

11212 NW St. Helens Road  
Portland, Oregon 97231  
USA

Phone: 503-286-4956  
Fax: 503-286-0370  
Toll Free: 800-275-0883

[www.OnboardSystems.co](http://www.OnboardSystems.co)

**Manpower:** Approximately 1.0 man-hours will be required to install the kit, after the hook is removed from the aircraft. Man-hours are based on hands-on time and may vary with personnel and facilities available. If the hook is already disassembled for scheduled inspection or overhaul, the kit installation will take no additional time. 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:

Part number 650-069-00      Spring Assy, Toggle      Quantity 1  
Grease (MIL-G-23827)  
Cotter Pins for hook attach bolts

**Special Tools:** Test Stand for performing ATP on reassembled hook. (18,000 lbs. capacity)

**Weight and Balance:** Not affected

**Electrical Load Data:** Not affected

**References:** TBD

**Publications affected:** Onboard Systems 6,000 lb Cargo Hook Owners Manual, P/N 120-044-00 and Onboard Systems UH-1 Cargo Hook Suspension System Manual P/N 120-031-01.

**Accomplishment Instructions:**

1. Prepare helicopter for maintenance and disconnect main battery.
2. Remove the P/N 528-002-00 hook from the suspension system. Refer to appropriate maintenance manual instructions.
3. Disassemble P/N 528-002-00 hook as required to split the case halves. Refer to appropriate maintenance manual, 120-031-01 or 120-044-00 for instructions.
4. Remove P/N 650-066-00 or 650-041-00 Spring, Toggle and replace with P/N 650-069-00 Spring Assy, Toggle. Do not remove the plastic cover from spring. Refer to figure 1 for correct orientation of spring installation. End of spring with plastic cover can be pushed over roll pin in toggle assy without removing roll pin and then hook the opposite end of spring over pin in case.
5. Reassemble hook per maintenance manual instructions.
6. Perform Acceptance Test Procedure in accordance with Section 8 of manual 120-031-01 or Section 4 of manual 120-044-00, as appropriate.
7. Stamp or clearly vibro-engrave "MODS." plate on side of hook with SB6 in any available box on the right side of the plate, to identify that the service bulletin has been complied with.



**ONBOARD SYSTEMS  
INTERNATIONAL**

11212 NW St. Helens Road  
Portland, Oregon 97231  
USA

Phone: 503-286-4956  
Fax: 503-286-0370  
Toll Free: 800-275-0883

[www.OnboardSystems.co](http://www.OnboardSystems.co)

8. Reassemble hook onto suspension system and reinstall suspension onto aircraft per maintenance manual instructions. Check rigging.
9. Make logbook entry.

**Figure 1 Cargo Hook , Spring Assembly showing orientation of plastic spring cover.**

