ONBOARD SYSTEMS

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CARGO HOOK

Suspension, Hook, and Load Weigh Systems

CROPHAWK

Flow Monitoring Systems

ENGINEERING

Customer Directed Development

SERVICE BULLETIN

Document No. 159-005-00, Rev 0

April 14, 1999

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 CAL1054 inclusive and all affected hooks in spares. This would include 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. These suspension systems had several 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.

Description: Under certain combinations of conditions, the subject hooks can release uncommanded. The sequence of events that is required for this to occur is as follows: 1) The hook must be lightly loaded (less than 500 lbs.). 2) The hook is sharply hit against the side of the hell hole. 3) The hook must be aligned so that the keeper end makes contact first. 4) At the instant the hook makes contact with the side of the hell hole, the load on the hook must bounce and give a sharp downward pull against the load beam. For most operations, the likelihood of this happening with the right timing is extremely remote. All known instances have occurred during logging operations with a long line. The most common scenario is when the logs are being placed on the landing and the remote hook is released before the logs are fully on the ground. This sends a whip type wave up the long line at the same time the load is reduced on the cable. This bangs the hook into the side of the hell hole in the belly and if everything is just right, the hook will release, dropping the long line.

This bulletin provides for the installation of a kit that will prevent the hook from opening in the above circumstances.

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

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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 650-066-00	Spring Toggle	Quantity 1
Part number 650-067-00	Spring, Torsion Internal Lever	Quantity 1
Part number 500-067-00	Spacer	Quantity 2
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.

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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 650-041-00 Spring, Toggle and replace with P/N 650-066-00 Spring, Toggle.
5. Install P/N 650-067-00 Spring, Torsion Internal Lever and P/N 500-067-00 Spacer as shown in Figure 1.
6. Install P/N 650-068-00 Washer, Retaining on pins as shown in Figure 1, holding spring against case.
7. Reassemble hook per maintenance manual instructions .
8. Perform Acceptance Test Procedure in accordance with Section 8 of manual 120-031-01 or Section 4 of manual 120-044-00, as appropriate.

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9. Stamp or clearly vibro-engrave "MODS." plate on side of hook with SB5 in any available box on the right side of the plate, to identify that the service bulletin has been complied with.

10. Reassemble hook onto suspension system and reinstall suspension onto aircraft per maintenance manual instructions. Check rigging.

11. Make logbook entry.

Figure 1 Cargo Hook Assembly