



FAA
Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: SW-18-29

Date: October 1, 2018

SUBJ: Rotorcraft Tail Boom, Attach Structure Failure

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) alerts owners, operators and pilots of an airworthiness concern on **Restricted Category Bell Model HH-1K, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, UH-1P, TH-1F, and TH-1L** converted from military helicopters.

This airworthiness concern and possible corrective actions are still under investigation and we are considering future Airworthiness Directive (AD) action under 14 CFR part 39. Until such time as we issue an AD, the information and recommendations provided herein are intended to educate and raise awareness of this concern and to minimize a possible tail boom attach structure failure. This SAIB's recommended actions may be different from any corrective actions mandated by AD.

Background

In January 1982, a tail boom separated from a UH-1B helicopter engaged in logging operations, resulting in a fatal accident. The National Transportation Safety Board's (NTSB) final report identified structural fatigue and inadequate maintenance as probable causes. In September 2013, a tail boom separated from another UH-1B helicopter engaged in logging operations, resulting in yet another fatal accident. The NTSB's final report for that accident identified the cause as fatigue failure of the upper two tail boom attach points. Contributing to this accident was poor maintenance throughout the helicopter's operational life.

In addition to these accidents, the FAA is aware of three forced landings due to tail boom attach structure failures, one in May 2014, one in August 2016, and one in August 2018. The helicopter involved in the May 2014 forced landing was engaged in construction operations. The helicopter involved in the August 2018 forced landing was engaged in firefighting operations.

In the first fatal accident and two of the forced landings, a loud pop or bang was heard in the rear of the aircraft at the moment of failure. In the second fatal accident, the pilot indicated before the flight that the helicopter felt like it "shuffled" during translational lift. Four of these incidents involved a failure of the upper left hand tail boom attach structure. In three cases it was the attach fitting on the tail boom side. In one case it was the longeron on the tail boom side. The upper left hand tail boom attach point is the most heavily loaded of the four attach points.

Recommendations

The FAA recommends all owners and operators of the helicopters listed in the Introduction section of this SAIB strictly adhere to the applicable Instructions for Continued Airworthiness which require repetitive 100 flight hour inspections. The 100-hour inspection requires inspection of all tail boom

attach structure (four locations, both fuselage and tail boom side) for cracks, bond separation, corrosion, damage and the attach bolts for security.

The following procedures supplement the Instructions for Continued Airworthiness. The attach fittings (tail boom and fuselage side) and cap angles running forward from the fuselage side fitting and longerons running aft of from the tail boom side fitting should be clean and free of paint and any non-faying sealant. It is recommended the structural inspections be made with a borescope, as the tail boom side fittings are difficult to access. The upper right hand tail boom side attach fitting is located behind a tail rotor pitch control rod. On the fuselage side fittings, particular attention should be given to the most forward fitting fasteners, the cap angle and the cap angle rivets just forward of the fitting as failures in these areas are more common. On the tail boom side fittings, particular attention should be given to the most aft fitting fasteners as failures in this area are more common. Smoking rivets are also an indicator of attach point issues.

It is further recommended that owners and operators of the helicopters listed in the Introduction of this SAIB which engage in heavy lift operations inspect the upper left hand attach fittings (fuselage and tail boom side), cap angle (fuselage side) and longeron (tail boom side) every 20 flight hours per the protocols in the preceding paragraph. The upper left hand attach fittings are the most critical as they are subject to the heaviest loads.

Finally, if a loud noise (typically a “pop” or “bang”) is heard in the rear of the aircraft during flight, we recommend minimizing hovering, slow flight, and pedal turns; reducing power when possible to avoid left pedal input; jettisoning external loads (if present) as soon as possible; and landing the aircraft as soon as possible. If an external load must be landed, perform a forward descent until load touches down.

For Further Information Contact

Richard Thomas, Aviation Safety Engineer, Denver Aircraft Certification Office (ACO), East 68th Avenue, Room 214, Denver, Colorado 80249; phone 303-342-1085; fax 303-342-1088; e-mail richard.r.thomas@faa.gov.

For Related Service Information Contact

The attachment below contains restricted category type certificate (TC) holder contact information. For surrendered TCs, contact the cognizant ACO Branch or the Aviation Safety Engineer listed above.

SAIB Attachment

TC Models	DAH Address	Phone Number	Email	Website	ACO
<u>H1RM</u> UH-1B	San Joaquin Helicopters 1407 South Lexington Street Delano, CA 93215	(661) 725-1898	info@sjhelicopters.com	http://www.sjhelicopters.com/	Los Angeles
<u>H3NM</u> UH-1B <u>H5NM</u> UH-1E UH-1L TH-1L HH-1K <u>H12NM</u> UH-1F UH-1P TH-1F <u>H13WE</u> UH-1B UH-1H	Rotorcraft Development Corporation PO Box 430 Corvallis, MT 59828	(207) 329-2518	certification@rotorcraftdevelopment.com		Denver
<u>H3SO</u> UH-1A UH-1B UH-1H	Richards Heavylift Helo, Inc. 1181 Osprey Nest Point Orange Park, Florida 32073				Fort Worth
<u>H4NM</u> UH-1L TH-1L UH-1E	Bell Helicopter Textron Inc. P.O. Box 482 Fort Worth, TX 76101	(817) 280-2011		http://www.bellflight.com/	Fort Worth
<u>H5SO</u> UH-1B	International Helicopters, Inc. 2900 14th Street North Naples, Florida 33940				Atlanta
<u>H6SO</u> UH-1B (SW204) UH-1H (SW205)	Southwest Florida Aviation International, Inc. 28000-A9 Airport Road, Bldg. 101 Punta Gorda, Florida 33982-9587				Atlanta

TC Models	DAH Address	Phone Number	Email	Website	ACO
<u>H7NE</u> UH-1F TH-1F <u>R00010SE</u> UH-1H	Tamarack Helicopters Inc 2849 McIntyre Rd, Stevensville, MT 59870	(406) 777-0144	thimt204@yahoo.com	https://www.tamarackhelicopters.com/	Seattle
<u>H7SO</u> UH-1B UH-1E UH-1H UH-1L TH-1L	Oas Parts, LLC 690 Aviation Blvd Enterprise, AL 36330	(928) 368-5151			Atlanta
<u>H8NM</u> UH-1E	Smith Helicopters 4800 Lakeridge Drive Ukiah, California 95482				Los Angeles
<u>H9NM</u> UH-1E	SURRENDERED				Los Angeles
<u>H11SW</u> UH-1F	AST, Inc. 34976 Kamph Drive NE Albany, OR 97322				Seattle
<u>H15NM</u> UH-1H	General Aircraft Services LLC 5101 NW A Ave Pendleton Oregon 97801	(800) 882-3554		http://www.genaircraft.com/	Seattle
<u>R00002RC</u> UH-1H	Global Helicopter Technology, Inc. 5070 South Collins, Suite 206 Arlington, Texas 76018			http://ghiti.net/about.html	Fort Worth
<u>R00004RC</u> UH-1H	JJASPP Engineering Services, LLC. 511 Harmon Terrace Arlington, Texas 76010	(817) 465-4495		http://www.jjaspp.com/	Fort Worth
<u>R00005SE</u> UH-1H	Northwest Rotorcraft, LLC 100085th Ave. S.E. Olympia, WA 98501	(360) 754-7200		http://www.nwhelicopters.com/	Seattle
<u>R00007DE</u> UH-1H	Arrow Falcon Exporters, Inc. 2081 S. Wildcat Way Porterville, CA 93257	(559) 781-8604	afe@arrowfalcon.com	http://www.arrowfalcon.com/	Los Angeles

TC Models	DAH Address	Phone Number	Email	Website	ACO
<u>R00008AT</u> UH-1F TH-1F UH-1P	Robinson Air Crane, Inc. 230 Bermuda Beach Dr Ft Pierce, FL USA 34949	(305) 302-9696			Atlanta
<u>R00012AT</u> UH-1B	Red Tail Flying Services LLC P.O. Box 2301 Sapulpa, OK 74067				Fort Worth
<u>H2NM</u> UH-1F	SURRENDERED				Los Angeles