FAA
Aircraft Certification Service

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: SW-09-44
Date: July 28, 2009

SUBJ: Cabin door

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) informs you, owners or operators, of an airworthiness concern regarding possibility of separation of the cabin door while in flight for the following **Schweizer Models: 269A, TH-55A, 269A-1, 269B, 269C, serial numbers 001 through 1917, 269C-1, serial numbers 0001 through 347, and 269D, serial numbers 0001 through 0073**.

Background

There are two door hinges for each cabin door on Schweizer models 269 series aircraft. Each door hinge consists of the hinge pin assembly which is attached to the airframe and the door hinge plate which contains top and bottom hinge pin receptacles installed on the door. The hinge pin assembly has two door hinge pins with a spring located in between. The two hinge pin receptacles are opened-end cylinders. When the door is installed on aircraft, the spring-loaded door hinge pins engage the top and bottom hinge pin receptacles respectively. Serrated hinge pins (Schweizer Pilot's Flight Manual refers these pins as hinge pin tabs) are installed on each door hinge pin to provide travel stops to the door hinge pins inside the hinge pin receptacles, and they are also used to retract the door hinge pins out of the hinge pin receptacles for door removal. The serrated hinge pins are secured in position by an interference press fit. Loss of the serrated hinge pin will result in lost of retention of the door hinge pin inside the hinge pin receptacle. When both serrated hinge pins inadvertently come off from the door hinge pins, the stop is lost and the spring will push the lower door hinge pin through the hinge pin assembly and falls out of the open end of the bottom hinge pin receptacle. With the lower door hinge pin missing at the bottom hinge pin receptacle, the upper door hinge pin inside the top hinge pin receptacle will drop down, and the vibrations of the aircraft will cause the upper door hinge pin to fall out of the bottom hinge pin receptacle. The door hinge plate will separate from the hinge pin assembly which could result in separation of the door from the aircraft.

Since 2005, there have been several occurrences of the cabin door detaching from aircraft due to the serrated hinge pins coming off from the door hinge pins, allowing the door hinge pins to separate from the hinge pin receptacles on the cabin door. In December 2007, a cabin door was reported separated from an aircraft in flight as a result of separation of the serrated hinge pins from the door hinge pins. Schweizer decided a "fail safe" device was needed to preclude any future door losses, and the production hinges are now manufactured with caps to replace the open ends of the hinge pin receptacles. For those aircraft in the field, Schweizer issues service bulletins to provide an alternate method to retain the door hinge pins within the hinge pin receptacles for all affected aircraft. These service bulletins provide instructions to weld a stainless steel rod on the open ends of the hinge pin receptacles (Figure 1) to prevent the door hinge pins from falling out of the hinge pin receptacles when the serrated hinge pins are lost.

The door hinge is the original design that has been in continuous production since the type certificate was issued. Therefore, the door hinges installed in all Schweizer models 269 series helicopters manufactured to this date are affected.

There has been no reported incident since December 2007. At this time, this airworthiness concern is not an unsafe condition that would warrant AD action under Title 14 of the Code of Federal Aviation Regulations (14 CFR) part 39.

Recommendations

We recommend all owners and operators comply with actions outlined in Schweizer Service Bulletins DB-026, C1B-028 and B-292 (as appropriate). It is recommended to conduct a visual check of the cabin door hinge installation before each flight until implementation of the appropriate service bulletin at the next available maintenance opportunity. The service bulletin action is not required when the new production hinge is installed.

For Further Information Contact

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For Related Service Information Contact

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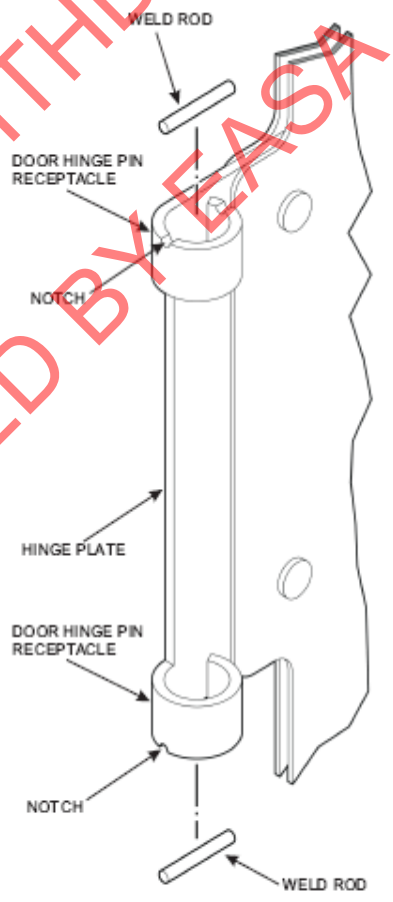

Figure1: Addition of rods to hinge pin receptacles per the service bulletin