



U.S. Department
of Transportation
**Federal Aviation
Administration**

Small Airplane Directorate
901 Locust, Room 301
Kansas City, Missouri 64106

Mr. Craig J. Spence
Vice President, Regulatory Affairs
Aircraft Owners and Pilots Association (AOPA)
421 Aviation Way
Frederick, Maryland 21701

Dear Mr. Spence:

Subject: AOPA Concerns with Airworthiness Directive 2009-10-09

Reference: AOPA letter dated May 18, 2009

This letter is in response to the referenced AOPA letter, which cited concerns with Airworthiness Directive 2009-10-09 affecting Cessna Aircraft Company (Cessna) 150 and 152 series airplanes. The AOPA letter specifically requests the following actions of the Federal Aviation Administration (FAA):

- a. Provide a detailed background on how the FAA determined these aircraft had a design flaw.
- b. Move back the effective date of the AD 30 days to allow time for the FAA to provide an explanation of item a and for aircraft owners to decide how they would like to comply.
- c. Consider ways to decrease the impact of this AD. Specifically, allow aircraft owners and mechanics to fabricate the placard and perform the required airplane flight manual change and the associated maintenance log entry described in compliance option 1 in the AD.

The following presents the FAA's response to each of AOPA's requests. Each response corresponds to its lettered request.

In response to item a: The FAA began its investigation into the rudder system of the Cessna 150/152 following the fatal 1998 Canadian accident. The following timeline details the events leading to the issuance of AD 2009-10-09.

The Wichita Aircraft Certification Office (ACO) oversees the Cessna 150 and 152 series aircraft. From 2000 through 2005, the Wichita ACO investigated this issue, including the review of two different fatal accidents. During this time period the Wichita ACO considered the following:

- notifying Cessna 150 and 152 operators about the circumstances and findings of the Canadian accident investigation,
- restricting spin operations until airworthiness action was taken to prevent rudder jamming,
- investigating effects of spin recovery with a full pro-spin rudder, and
- mandating Cessna's Service Bulletin SEB01-1 through an airworthiness directive.

The Wichita ACO determined the FAA should issue an Aviation Maintenance Alert in AC 43-16, advising maintenance technicians to inspect the rudder system. Additionally, Cessna developed and produced kits to rework the rudder stop system (this was released in January 2001 as SEB01-1). The ACO recognized that the accident aircraft were either missing components in the rudder system or had parts that were installed incorrectly; therefore the aircraft were not in conformity with their type design. At that time, it was believed that the rudder could not over-travel on an airplane conforming with its type design.

In November 2005, the Wichita ACO developed a preliminary risk assessment and issued an airworthiness concern sheet (ACS) to solicit input from type clubs/owners/operators on the potential unsafe condition associated with the rudder control system. It was determined that actions taken to date were sufficient, and a Notice of Proposed Rulemaking (NPRM) AD action was not necessary.

On March 21, 2007, the FAA's Small Airplane Directorate and the Wichita ACO were tasked to address NTSB Safety Recommendation A-07-33. The NTSB recommended the FAA issue an AD to mandate the installation of Cessna Service Bulletin SEB01-1 and inspect the new installation at the next 100-hour or annual inspection to verify it was installed correctly. The FAA partially agreed with this recommendation and initiated rulemaking. The basis for this position was as follows:

- Given the previous history associated with this issue, including the various different perspectives on it, the FAA decided to take a fresh look at the issue. They created a multi-disciplinary, multi-level team consisting of subject matter experts from various ACO disciplines. The team considered the accident investigators' determination that under certain circumstances it was possible to jam the rudder past its normal travel limit.
- Previous FAA investigations determined that the aircraft could be recovered from a fully developed spin with the rudder deflected to the normal travel limit. However, once the rudder exceeds the normal travel limits we had no assurance of the continued operational safety of the aircraft.

Thus, the FAA determined that an unsafe condition could exist on the aircraft and published an NPRM on April 16, 2007. The NPRM proposed the installation of Cessna's rudder stop kits per Service Bulletin SEB01-1. This mandatory action would apply to all Cessna Models 150/152 aircraft listed in the service bulletin.

After the NPRM was issued, Cessna provided a letter to the FAA stating the rudder could be actuated beyond the rudder stops on an airplane in full conformity to type design. AD 2009-10-09 discusses Cessna's position in Comment #2 of the Supplementary Information section. When the rudder travels past the rudder stops, it can contact and interfere with operation of the elevator. Markings on one accident aircraft indicate previous contact between the rudder and elevator, and similar markings were noted on several in-service airplanes.

This provided additional justification that the rudder stop issue needed correction due to a design issue, not a maintenance issue. It also reinforced that installing the kit per the NPRM would prevent the rudder from going past the rudder stops and causing undesirable consequences such as contact between the rudder and elevator.

In response to item b: The FAA received many comments during the NPRM process from organizations and aircraft owners. These comments were closely reviewed and considered when the wording of the final rule AD was created. Due to the extensive comments regarding the NPRM, the FAA looked for options to minimize the impact of the AD. This led to the second option of addressing the unsafe condition by prohibiting spins and other acrobatic maneuvers. The FAA added this second option to the final rule AD action to decrease the impact on the 17,000 aircraft affected. The compliance time for the two options offered by the AD is 100 hours or 12 months, whichever occurs first. Additionally, the AD was published on May 13, 2009, with an effective date of June 17, 2009. This is an adequate amount of time for aircraft owners to decide which method of compliance they would like to implement.

Preparing a response to answer AOPA's concerns is not justification for extending the effective date of the AD. As stated above, during the course of AD development, the FAA had already considered and taken actions to minimize the impact to the owners and operators of these aircraft. Therefore, we do not feel a change to the effective date of the AD is warranted.

In response to item c: The FAA understands AOPA's concern regarding minimization of the impact on owner/operators in complying with the AD. As stated in the response to item b, the FAA attempted to minimize impact by offering two options to address the unsafe condition. Specifically, with regard to AOPA's request that owners and mechanics be allowed to perform certain actions in the AD, the FAA must follow the current regulatory framework provided in 14 CFR part 43. The FAA is reviewing the suggestions presented by AOPA, and when we have completed that effort, we will notify you of the results.

In closing, the FAA believes it is justified in the determination of an unsafe condition. First, the FAA followed the Small Airplane Directorate Airworthiness Concern Process, which provides an early opportunity for the notification and solicitation of owner/operators to provide feedback to the FAA when considering potential airworthiness concerns. Later, in developing the NPRM and the final rule AD, the Wichita ACO and the Small Airplane Directorate followed the established process in the Airworthiness Directives Manual (FAA-IR-M-8040.1B). We provided ample opportunity for public comment and have considered those comments in the formulation of the final rule. The FAA was responsive to comments received during the public comment

period by creating a second means to address the unsafe condition, thus minimizing the impact of the AD.

We hope we have adequately addressed your concerns on items a and b. We will provide you with a response for item c once we complete our evaluation. We look forward to maintaining our excellent collaborative relationship with your organization.

Sincerely,



Scott Horn
Acting Assistant Manager
Small Airplane Directorate