



## ASSESSMENT OF RESPONSE TO AVIATION SAFETY RECOMMENDATION A00-10

### NOTIFICATION OF OPERATORS RESTRICTING SPINS UNTIL AIRWORTHINESS ACTION IS TAKEN

#### Background

On 18 July 1998, at about 0850, Eastern Daylight Time, a flight instructor and a student took off on a local training flight from Runway 25 at Montréal/Les Cèdres Aerodrome, Quebec. The student pilot was practicing spins and recoveries. The student initiated a spin to the left, his sixth of the day, at an altitude of 3600 feet above sea level. The first 5 spins were to the right. The aircraft entered the spin normally. After 1.5 turns, the flight instructor asked the student to recover. The student applied pressure on the right rudder pedal, as taught by the flight instructor, and the rotation did not stop. The flight instructor took over the controls and applied pressure on the right rudder pedal to stop the rotation, but the rotation did not stop. The aircraft, by then, was established in a stabilized spin, rotating to the left, and continuing its descent. The flight instructor applied full power for a moment, then full flaps, to no avail. Throughout the recovery attempt, the flight instructor continued in his efforts to avoid the crash. The aircraft struck the surface of Lac Saint-François. The student pilot sustained serious injuries but managed to evacuate the sinking aircraft through the right, rear window. He then tried to pull out the unconscious flight instructor, but without success. A fisherman close to the scene rescued the student and transported him ashore where emergency vehicles were standing by. The flight instructor did not evacuate the aircraft and died in the accident.

The Board concluded its investigation and authorized the release of report A98Q0114 on 06 July 2000.

#### Board Recommendation A00-10 (14 July 2000)

Any mandatory airworthiness actions to retrofit Cessna 150 and 152 aircraft with newly designed rudder horn stop bolt systems will likely take considerable time to complete. In the meantime, these aircraft will be flying with a known safety deficiency. The circumstances of this accident suggest that the serious implications of the broken or missing rudder cable return spring were not fully understood. Moreover, the possibility of an irreversibly jammed rudder during intentional spin entry by full rudder deflection was not understood until this accident investigation was completed.

Therefore, the Board recommends that:

The Department of Transport, in conjunction with the Federal Aviation Administration, take steps to have all operators of Cessna 150 and 152 aircraft notified about the circumstances and findings of this accident investigation and the need to restrict spin operations until airworthiness action is taken to prevent rudder jamming.

A00-10

### **Transport Canada's Response to A00-10 (10 October 2000)**

In its response, Transport Canada (TC) indicated that the Cessna 150 and Cessna 152 are primary flight training aircraft. There are approximately 1500 such aircraft in Canada and an estimated 21 000 of these aircraft in service world-wide. Investigations by TC and the United States Federal Aviation Administration (FAA) have not found evidence of a previous occurrence of such an accident. There is, however, evidence that under certain conditions, the rudder of the Cessna 150 and 152 aircraft can over-travel the rudder stops. This would be a prerequisite to the rudder jamming in a fully deflected position.

To ensure awareness, TC issued Service Difficulty Alert (SDA) No. AL-2000-04, dated 09 May 2000, to owners, operators and the aviation maintenance community, informing them of the circumstances and safety issues related to this accident. The SDA, similar to FAA Aircraft Certification Office (ACE-118W), recommends a detailed inspection of the rudder control system.

### **Board Assessment of Transport Canada Response to A00-10 (21 March 2001)**

In its response, TC acknowledged that, under certain conditions, the rudder of the Cessna 150 and 152 aircraft can over-travel the rudder stops. To mitigate this risk, TC issued SDA AL-2000-04, dated 09 May 2000, to Canadian owners, operators, and the aviation maintenance community, informing them of the circumstances and safety issues related to this accident. This SDA also recommends a detailed inspection of the rudder control system. Although this SDA does not restrict spin operations, TC's AD CF-2000-20, dated 02 August 2000, does prohibit intentional spins and incipient spins in Canada until an airworthiness inspection of the rudder system is complete.

Consequently, TC's response is assessed as **Fully Satisfactory**.

### **Next TSB Action (21 March 2001)**

Nil.

This deficiency file is assigned an **Inactive** status.