



## Safety recommendation no. 593

<b>Date of the publication</b>	12.09.2023
<b>Number of the final report</b>	2401
<b>Safety deficit</b>	<p>Cruising at flight level 400, the pilots of a Learjet 45 are confronted with a Crew Alerting System (CAS) alert that the autopilot has failed. When, in accordance with the checklist, they switched to manual flight, the aircraft entered a difficult to manage, jerky roll to the left, amplified by Pilot Induced Oscillations (PIO). The pilots noticed that the spoilers' travel did not correspond to the roll commands given manually and deactivated the spoiler function by pulling one of its 2 circuit breakers. Roll oscillations ceased and the aircraft was once again stable and maneuverable.</p> <p>The investigation revealed that on this aircraft the function of the spoilers was reversed: the one on the left wing deployed instead of the one on the right wing, and vice versa.</p> <p>The aircraft was modified in accordance with the Bombardier Service Bulletin SB 45-27-20 ATA-27-60, which improves the reliability of the spoiler system, but removes the function of the Control Wheel Master Switch (MSW) button, which allows pilots to push the spoilers down in the event of uncommanded aircraft movements around the yaw and roll axes. This function is the core element of the "Roll or Yaw Axis Uncommanded Motion" checklist, which is the basis for the systematic search for the cause of uncommanded motion.</p> <p>The investigation established that this checklist had not been updated in line with the changes made by the service bulletin application, and therefore lost its function of mitigating operational malfunctions on the aircraft.</p>
<b>Safety recommendation</b>	The Federal Aviation Authority (FAA) should ensure that the manufacturer updates checklists in line with changes made by a service bulletin.
<b>Addressees</b>	Federal Aviation Administration; Federal Aviation Administration
<b>Stage of the implementation</b>	Not implemented – In its letter of 10 April 2025, the Federal Aviation Authority (FAA) takes the following final position: "After reviewing the STSB final report we requested Learjet's assessment of it as well. The FAA and Learjet determined the existing procedures within the flight crew checklist and Quick Reference Handbook (QRH) are adequate to take appropriate action. Both the checklist and QRH are intentionally concise to provide quick access to the necessary information. Additionally, the Airplane Flight Manual includes more relevant information regarding system status."
<b>Investigation report concerning the safety recommendation</b>	<a href="#">Rapport de première information</a> <a href="#">Rapport final</a>