



## Safety recommendation no. 594

<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 spoilerons' 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 established that the reversal of the spoilerons function, caused by a maintenance error, had never been detected by any of the flight crews who had flown the aircraft prior to the serious incident. On the synoptic representation of the flight control page, the left and right spoiler position indexes are grouped around a single vertical axis and can be easily confused. When checking the spoilerons prior to takeoff, pilots are thus likely to fall into confirmation bias by mistaking the indexes and confirming a sequence of deflections they believe to be true.</p>
<b>Safety recommendation</b>	The Federal Aviation Authority (FAA) should ensure that the manufacturer modifies the flight control display to best avoid the possibility of confusion between the left and right spoilers; this recommendation should apply to all aircraft equipped with similar displays.
<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: "The FAA noted the STSB's investigation determined that the primary cause of this incident was due to improperly performed maintenance. Also, the FAA did not find any historical evidence of a systemic flight control display issue. Furthermore, if performed correctly the existing maintenance procedure guidance requires a functional check to ensure proper system operation on the ground before the aircraft is returned to service."
<b>Investigation report concerning the safety recommendation</b>	<a href="#">Rapport de première information</a> <a href="#">Rapport final</a>