



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

SAFO

Safety Alert for Operators

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http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo

A SAFO contains important safety information and may include recommended action. Besides the specific action recommended in a SAFO, an alternative action may be as effective in addressing the safety issue named in the SAFO. The contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.

Subject: Recommended Procedures for Operators of Boeing DC-9/MD-80 Series and B717 Model Airplanes When Wind/Ground Gusts Meet or Exceed Criteria Specified in the Applicable Aircraft Maintenance Manual (AMM).

Purpose: This SAFO informs operators that aircraft exposed to wind speeds that meet or exceed the ground gust criteria specified by the Boeing Company in the updated AMM are subject to damage that could cause an incident/accident.

Background: On March 8, 2017, the pilot of a Boeing MD-83 airplane executed a rejected takeoff at Willow Run Airport, Ypsilanti, MI, when the airplane failed to rotate because the right elevator was jammed in the trailing edge down position. As a result, the airplane overran the departure end of the runway. The elevator had been damaged by excessive wind gusts while the airplane was parked for two days near a large hangar at the airport. The National Transportation Safety Board (NTSB) investigated this runway overrun, and, on February 14, 2019, issued its Accident Report on the incident (NTSB/AAR/01; PB2019-100293). The NTSB determined that the large hangar generated localized turbulence with a vertical wind component. This vertical wind component moved the elevator surfaces rapidly up and down resulting in impacts against the elevator mechanical stops, ultimately jamming the elevator.

Discussion: The NTSB determined that the probable cause of this incident was the jammed condition of the airplane's right elevator. This condition, which resulted from exposure to localized, dynamic wind while the airplane was parked, rendered the airplane unable to rotate during takeoff. The NTSB noted that the horizontal wind gusts recorded at the airport had not exceeded those for which the airplane was certificated. However, the NTSB expressed concern that the certification standards may not adequately ensure that critical flight control systems are protected from hazards introduced by ground gusts that contain dynamic, vertical wind components. The NTSB made recommendations to lower the ground gust criteria that will require physical inspections and operational checks of the elevators by maintenance personnel.

The NTSB issued Safety Recommendation A-19-5 on March 8, 2019, recommending that the FAA take action to "Ensure that operators of Boeing DC-9/MD-80 series and B717 model airplanes have procedures that define who is responsible for monitoring the wind that affects parked airplanes, and for notifying

maintenance personnel when conditions could meet or exceed the ground gust criteria specified in the Aircraft Maintenance Manual.”

On December 13, 2018, Boeing published a Service Letter (SL) for DC-9/MD-80 series airplanes, and on June 24, 2019, published a similar SL for the B717 model airplanes. These SLs recommend that specific pre-flight inspection procedures be performed in accordance with referenced documents. These new procedures are intended to prevent an elevator jam from remaining undetected prior to departure. The FAA notes that the recommendations for the B717 model airplanes are different than those for the DC-9 and MD-80 airplanes because of differences in the design of those airplanes.

Recommended Action: Owners and operators of Boeing DC-9/MD-80 series and B717 model airplanes should:

- Become familiar with the SLs identified in this SAFO, and
- Review or develop procedures that define who is responsible for monitoring the wind speeds that affect parked airplanes, and who is responsible for notifying maintenance personnel when conditions could meet or exceed the ground gust criteria specified in the AMM as revised by Boeing.

Contact: Direct questions or comments regarding this SAFO to the Aircraft Maintenance Division, Air Carrier Maintenance Branch, at 202-267-1675 or via email at 9-AWA-AFS-300-Maintenance@faa.gov.