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Federal Aviation
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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: Boeing Model 757 and 767 Airplane Inadvertent Pilot Activation of Go-Around Mode.

Purpose: This SAFO warns of the potential for inadvertent pilot activation of the go-around mode on Boeing 757 and 767 airplanes.

Background: On February 23, 2019, a Boeing 767-375BCF entered into a steep dive and crashed into the shallow marsh area of Trinity Bay, Texas, about 41 miles east-southeast of George Bush Intercontinental/Houston Airport (IAH), Houston, Texas. The two pilots and a passenger were fatally injured.

The aircraft departed from Miami International Airport (MIA), Miami, Florida, destined for IAH. The flight was uneventful through the departure from MIA, en route cruise, and initial descent toward IAH. As the aircraft descended towards the IAH airport, the flightcrew extended the speedbrakes, selected flaps position 1, and began setting up the flight management computer for an approach. The second in command (SIC), seated in the right seat, was the pilot flying (PF) the aircraft. The pilot in command (PIC), seated in the left seat, was the pilot monitoring (PM). The autopilot and auto throttle remained engaged throughout the remainder of the flight. Analysis of the weather information determined the flight had penetrated the leading edge of a cold front, and the flight data recorder (FDR) indicated load factors consistent with the airplane encountering light turbulence.

The airplane's go-around mode was activated after the airplane descended to about 6,300 feet (ft) mean sea level (MSL) towards a target altitude of 3,000 ft MSL. The location of the aircraft and the phase of flight were inconsistent with any scenario in which a pilot would intentionally select go-around mode and neither pilot announced a go-around callout to indicate this was an intentional activation. Within seconds of the go-around mode activation, the FDR indicated pilot induced manual elevator control inputs that overrode the autopilot, eventually forcing the airplane into a steep dive from which the pilots did not recover.

Discussion: The National Transportation Safety Board (NTSB) determined that one probable cause of the accident was an inappropriate response by the PF to an inadvertent activation of the go-around mode. (See [NTSB/AAR-20/02 PB2020-101004](https://www.ntsb.gov/investigationreports/2020/PB2020-101004)). The NTSB also noted that the PM's failure to adequately monitor the airplane's flightpath and to assume positive control of the airplane to intervene effectively, also contributed to the accident.

On Boeing 757 and 767 airplanes, the go-around mode is armed when the flaps/slats are extended, or the glideslope is in the active pitch mode. The flight crew can activate go-around mode by pushing either go-around switch located on the outboard underside of either thrust lever. During the referenced flight, the cockpit voice recorder (CVR) detected a characteristic “click” sound that corresponded with the FDR for the mode change.

The Boeing 757/767 Flight Crew Training Manual (FCTM), published by the manufacturer, recommends that the PF keep a hand on the speedbrake lever when the speedbrakes are extended to prevent leaving the speedbrakes extended when no longer required. Additionally, the pilot training and procedures, prescribed by the air carrier operating the flight, indicate that while operating with the autopilot engaged and with the speedbrakes extended, the PF should keep one hand on the speedbrake lever. The purpose of this is to remind the PF to retract the speedbrakes after the autopilot takes the aircraft to the selected altitude and associated automatic increase in thrust.

Prior to activation of the go-around mode on the referenced flight, air traffic control (ATC) had instructed the flightcrew to expedite a descent to 3000 ft MSL. The flight crew had selected flaps 1 and extended the speedbrakes. Assuming that the PF had a hand on the speedbrake lever, the go-around mode was likely activated because of an unintended contact between the PF’s left wrist or watch and the left go-around switch because of turbulence-induced loads. The NTSB demonstrated in a full flight simulator, that light turbulence could reasonably cause a PF that is holding the speedbrake lever to move his or her arm enough to hit the go-around switch inadvertently.

Once the go-around mode was activated in the referenced flight, the airplane’s automation advanced the thrust levers and increased the airplane’s pitch to initiate a climb. With an effective instrument scan the PF and PM could have recognized the mode change associated with the go-around mode activation. However, neither pilot acknowledged that the airplane had transitioned to go-around mode or disengaged the autopilot or autothrottle. The PF over-rode autopilot inputs with manual inputs. Thus, the NTSB concluded that, despite the presence of the go-around mode indications on the flight mode annunciator and other cues that indicated that the airplane had transitioned to an automated flight path that differed from what the pilots had been expecting, neither the PF or PM were aware that the airplane’s automated flight mode had changed.

Recommended Action:¹ Although available data indicates that inadvertent activation of the go-around mode on Boeing 757 and 767 airplanes may be a rare event, the FAA recommends that pilots, operators, and training providers should be aware of the facts and circumstances of February 23, 2019 accident described in this SAFO. The FAA reminds Boeing 757 and 767 pilots, operators, and training providers of the close proximity of the speedbrake lever to the left go-around mode switch and the risk that a pilot seated in the right seat may inadvertently activate the go-around mode when manipulating or holding the speedbrake lever. Similarly, there is the possibility of an inadvertent activation of the go-around mode by a pilot seated in the left seat, when he or she reaches across to move the flap lever and makes contact with the right go-around mode switch. An emphasis on proper instrument crosschecks could help to prevent inadvertent events such as these from escalating.

Contact: Please direct any questions or comments regarding this SAFO to Federal Aviation Administration (FAA), Transport Aircraft Seattle Branch at Telephone: (206) 231-3950. Email: 9-AVS-AFS-110@faa.gov.

¹ The recommended action in this SAFO is consistent with NTSB Recommendation A-20-37.