

ALERT BULLETIN

AB 2024:214/3-26

11/26/2024

2177327

TO: Textron Aviation (Cessna), FAA (AFS-100)

INFO: FAA (AVP-1, AVP-200, AFS-260, AFS-800, AFS-200, AIR-360, AIR-780, MKC-AEG, ANM-100), AMFA, AOPA, ASAP, ATSG, GAMA, IAM, IBT, ICASS, NBAA, NTSB, PAMA, TWU

FROM: Becky L. Hooey, Director
NASA Aviation Safety Reporting System

SUBJ: CE-680 Stabilizer Trim Malfunction

We recently received ASRS reports describing a safety concern that may involve your area of operational responsibility. We do not have sufficient details to assess either the factual accuracy or possible gravity of the report. It is our policy to relay the reported information to the appropriate authority for evaluation and any necessary follow-up. We feel you should be aware of the following:

ASRS received a report from a CE-680 Captain describing a stabilizer trim malfunction during takeoff. The Captain stated that after rotation they felt more forward pressure than normal was needed to maintain control of the aircraft. The First Officer had to help push the nose down and they eventually received "...AP STAB TRIM INOP and PRIMARY STAB TRIM FAIL..." messages. The flight crew attempted to use the secondary trim but that did not work either, and both crew members continued to exert forward pressure on the control column to control the aircraft. The crew ran the Jammed Stabilizer Trim System checklist, which had them slow to 140 KIAS resulting in less force required to maintain control as they diverted to a suitable airport.

To properly assess the usefulness of our alert message service, we would appreciate it if you would take the time to give us your feedback on the value of the information that we have provided. Please contact Dr. Becky Hooey at (408) 541-2854 or email at becky.l.hooey@nasa.gov.



Aviation Safety Reporting System
P.O. Box 189 | Moffett Field, CA | 94035-0189



ACN 2177327

DATE / TIME

Date of Occurrence 202410
Local Time Of Day 0001 to 0600

PLACE

Locale ZZZ.TRACON
State US
Altitude - MSL 70

ENVIRONMENT

Flight Conditions VMC

AIRCRAFT / EQUIPMENT X

ATC / Advisory - TRACON ZZZ
Make Model Name Cessna Citation Sovereign (C680)
Operating Under FAR Part 135

COMPONENT 1

Aircraft Component Horizontal Stabilizer Control

PERSON 1

Function - Flight Crew Captain
Function - Flight Crew Pilot Flying
ASRS Report Number 2177327

EVENTS

Anomaly Aircraft Equipment Problem - Critical
Detector - Automation Aircraft Other Automation
Detector - Person Flight Crew
Result - General Flight Cancelled / Delayed
Result - General Maintenance Action
Result - Flight Crew Landed in Emergency Condition
Result - Flight Crew Overcame Equipment Problem
Result - Flight Crew Requested ATC Assistance / Clarification
Result - Air Traffic Control Provided Assistance

NARRATIVE 1

The flight was originating from ZZZ airport to ZZZ1 airport at night with no passengers. I'm pilot in command (PIC) of the trip, pilot flying from the right seat while second in command (SIC) pilot monitoring from the left seat. As per the weight and balance and TOLD (Take-off & Landing Data) card, I set the trim to -2.7 degrees. We started our engines at about XA05. We used the company/FAA approved Normal checklists: Before Start, Engine Start, After Start, Taxi, and Takeoff Checklist. We held short of Runway XX then cleared for takeoff. The left seat pilot lined up on the runway, transferred control to me on the right. Both pilots performed a flight control check on the runway, before I commenced the takeoff. No CAS (Crew Alert System) message was displayed, and APU was off. Takeoff was about XA15.

I (right seat) rotated, with the left seat pilot calling normal callouts. After rotation, I felt more downward force was needed than normal as airspeed was increasing. I told him that I needed a lot more forward pressure, and that I don't have control. The SIC came up on the controls with me, as we both used both of our hands to push

the nose down. We received the following Amber CAS messages: AP STAB TRIM INOP and PRIMARY STAB TRIM FAIL and I [advised ATC].

The controller asked to state the situation and asked if we wanted to head back. I said, "No, going to ZZZZ". We were cleared direct ZZZZ, then I asked for vectors. We were given heading of 360 degrees. The controller then asked what attitude we wanted. The left seat responded that we cannot control the airplane and was given any altitude.

The SIC selected secondary trim, and tried to add forward trim but it did not move. I also tried, and again it did not move.

I pulled out the aircraft's "Pilots' Checklist" referred to the Emergency/Abnormal Procedures and ran the appropriate checklists. AP STAB TRIM INOP checklist was completed then moved on to PRIMARY STAB TRIM FAIL. While running the checklist, I also assisted the SIC with the forward pressure on the control column. As per the checklist, it referred me to the Emergency/Abnormal procedures, Jammed Stabilizer Trim System checklist. I used the second bullet point per our situation "Jammed at -2.00 To -5.0 (Typical Low Speed Cruise/Approach Configuration)" Our trim setting was at -2.7 degrees and stayed at that trim setting the entire flight. As per the checklist, it asked for speed limitation of "140 KIAS Maximum". We slowed the plane down and this allowed us more control at slower airspeed and less forward pressure was needed.

I asked for the landing runway at ZZZZ and was given the weather. We flew the visual to Runway XY backed up with the RNAV-Y. I manually set up the V REF of 106 KIAS. We were switched to tower and were cleared to land Runway XY. The Abnormal/ Emergency Checklist was completed.

The SIC still has both hands on the control while I had my right hand on the yoke and left hand on the throttles. We flew the final together and landed together.

We stopped on the runway was asked by tower if we can taxi with our own power. I replied in the affirmative, and was instructed to taxi via Runway XY and left on taxiway 1 to the ramp. ARFF (Airport Rescue and Firefighting) followed us to the ramp. We parked, completed the After Landing and the Shutdown/APU Off Checklist. I met with the maintenance team that was waiting for us outside of the hangar and also spoke to the Fire Chief.

SYNOPSIS

CE-680 Captain reported the stabilizer became jammed after takeoff rotation. CAS messages indicated inoperative autopilot stabilizer trim and primary stabilizer trim failure. Flight crew attempted to use secondary trim but that also did not work, requiring both crew members to exert forward pressure on the control column and slow the aircraft to maintain control and divert to a suitable airport.