

National Transportation Safety Board

Washington, DC 20594



Response to Petition for Reconsideration

August 6, 2026



In accordance with Title 49 *Code of Federal Regulations (CFR)* Part 845.32, the National Transportation Safety Board (NTSB) has reviewed the petition for reconsideration and modification of probable cause of the accident involving a Bellanca Citabria 7GCBC airplane in Fairbanks, Alaska, on December 7, 2016 (ANC17FA009). The petitioner has met the requirements for the NTSB's review of their petition; specifically, as the decedent pilot's daughter, she has a direct interest in the investigation and has offered claims that our report was erroneous. Based on our review of the petition filed on June 16, 2023, the NTSB grants the petition in part.

On December 7, 2016, about 1043 Alaska standard time, a tailwheel, ski-equipped Bellanca Citabria 7GCBC airplane, N88452, was substantially damaged when it impacted terrain about 17 miles southeast of Fairbanks, Alaska. The airline-transport-rated pilot was fatally injured. The airplane was registered to and operated by the pilot under Title 14 *CFR* Part 91 as a visual flight rules (VFR) personal flight. Visual meteorological conditions prevailed at the time of the accident, and a VFR flight plan was filed and activated. The local area flight departed Chena Marina Airport (AK28), Fairbanks, about 1026.¹

The probable cause of the accident, approved on August 15, 2018, was as follows:

The pilot's operation of the airplane at an altitude that was too low to allow for recovery from an intentional aerodynamic stall, which resulted in an impact with terrain. Contributing to the accident were the pilot's inability to recognize altitude deviations during slow flight due to the sun glare and the pilot's lack of knowledge of the stall performance characteristics of the airplane modified with vortex generators due to the lack of information from the manufacturer.

¹ Visit [ntsb.gov](https://www.ntsb.gov) to find additional information in the [public docket](#) for this NTSB investigation (case number [ANC17FA009](#)).

The petitioner is Ms. Cassy Bartch, the daughter of the pilot. Her June 16, 2023, petition asserts that “the NTSB’s probable cause is incorrect” and requests that upon reconsideration of the evidence the “probable cause be updated to reflect no pilot error.”

Background

The original investigation established that the pilot was conducting a post-maintenance test flight following the installation of vortex generators (VGs) on the airplane’s wings and horizontal stabilizers.² GPS track data obtained from the pilot’s onboard device were consistent with the pilot performing level turns, slow flight, and stalls. The last 2.5 minutes of data indicated a decelerating, descending flight profile consistent with performance of a power-off stall; during this time, the airplane descended from 1,092 ft above ground level (agl) to 510 ft agl and slowed from a ground speed of 81 knots to 26 knots.³ At 26 knots, an abrupt loss of control occurred, as indicated by a sharp right turn and a rapid descent rate of about 3,940 ft per minute (fpm). The GPS data and site examination indicated that the pilot likely lost control of the airplane while performing a full-flap aerodynamic stall and was attempting recovery from the maneuver when the airplane impacted trees.

According to the GPS data, the pilot initiated the practice stall sequence about 500 ft below the minimum practice stall recovery altitude of 1,500 ft agl recommended by the Federal Aviation Administration (FAA). As a result, the pilot had insufficient altitude to safely recover from the maneuver before the airplane impacted terrain.

The Bellanca 7GCBC Pilot Operating Manual states the airplane’s stall speed is 45 mph, or 39 kts, in a full-flaps configuration, assuming the airplane is operating at its maximum gross weight, idle power, and 1 g level flight. According to Micro AeroDynamics, the manufacturer of the VGs, application of the supplemental type certificate (STC) to the airplane would have reduced its published stall speed by about 8 percent, which would correspond to a calibrated airspeed (CAS) of 36 kts. Based on the GPS data, the airplane reached an estimated CAS of 36 kts while descending at a rate of 500 fpm through about 750 ft agl. Over the next 22 seconds, the airplane’s airspeed and altitude decayed further to 26 kts and 510 ft agl. Analysis of the GPS data indicate that the stall and loss of control occurred concurrently at

² The supplemental type certificate (STC) for the VGs directed the installer to determine compatibility with other STCs, and the installation manual for the VGs stated that STC compatibility may be accomplished by a flight test consisting of a “subjective evaluation of aircraft handling to determine that no adverse characteristics exist.”

³ The NTSB’s final report refers to GPS ground speed in its discussion of the airplane’s stall. While the accident airplane’s airspeeds are unknown, reported wind conditions at the surface near the accident site were between 1-5 knots. As a result, the airplane’s ground speed likely approximated its airspeed.

1043:28, at which time the airplane entered a right bank of 24° and its descent rate increased to 3,940 fpm.

The final report stated that, according to the Micro AeroDynamic test data used for its FAA STC type inspection application, the pre-modified airplane had a pronounced wing drop at the onset of stall but this characteristic was not noted after VG installation. The final report also noted that the VG installation manual contained no guidance on the characteristics a pilot should expect from a modified airplane or how to conduct a flight test to determine compatibility with other STCs. The report further stated that if such guidance had been available, the pilot may have selected an appropriate altitude for the test, allowing more margin for recovery.

Additionally, the final report indicates that the sun was low on the horizon at the time of the accident and closely aligned with the airplane's final track, indicating that the pilot was looking into the sun during the final leg of the flight and that the snow-covered ground may have intensified the glare through reflected sunlight. Thus, the final report stated that sun glare likely impaired the pilot's ability to see the flight instruments and terrain, rendering him unable to recognize altitude deviations during slow flight.

Petitioner's Claims

The petitioner asserts that the NTSB erred in our analysis that the pilot was practicing stalls during the accident sequence. The petitioner asserts instead that the pilot "was actually practicing an approach sequence." To support this view, the petitioner points to data recovered from the pilot's onboard GPS device, which includes three other flight sequences before the installation of the VGs that the petitioner characterizes as practice approaches that mirror the accident sequence before loss of control.

The petitioner claims that the pilot's "addition of flaps a notch at a time" during an approach to a go-around sequence, rather than a practice stall, caused the airplane's recorded flightpath to appear consistent with a "saw tooth pattern...whereby the nose comes up and then levels out again until full flaps and full power are added." The petitioner further contends that the airplane's flaps and power configuration with the VGs installed "caused a disruption in the airflow" that resulted in the airplane pitching up and entering a tail stall.

To support this contention, the petitioner highlights a May 6, 2016, airworthiness bulletin issued by Australia's Civil Aviation Safety Authority advising operators of small airplanes with VGs installed that loss of control may result from "one or any combination of the following":

- (a) Subtle wing surface defects upstream of the VG array.
- (b) Possible unfavorable interaction between unapproved configurations or combinations of aerodynamic performance enhancing STCs.

(c) An incorrectly configured aircraft, including manufacturer's boundary layer control devices, [that is], leading-edge stall strips, and engine configuration.

The petitioner further cites an NTSB investigation of a January 21, 2000, accident involving a Beech Baron 95-B55, N3MT, in Mexia, Texas, that crashed while maneuvering in an airport's traffic pattern; VGs had been installed on that airplane 9 days before.⁴ The petitioner asserts that the sequence of events in the crash of N3MT and the accident from which this petition arises are "the same."

The petitioner also points to a jury verdict for the plaintiff in a civil action brought by the pilot's estate against the VG manufacturer, Micro AeroDynamics, and summarizes some of the evidence presented at trial, contending that the record supports the petition's claims. Finally, the petitioner states that the final report mischaracterizes the quality and effect of the sun at the time of the accident, contending:

The sun is not harsh out on the horizon and looking into the rising sun in December in Alaska is not the same as looking into the rising sun on a summer day. The sun can easily be looked at directly at this time of the year in Alaska.

NTSB's Response

After reviewing the original final report, investigation, and petition, the NTSB does not believe the evidence supports the petitioner's main contention that the pilot was performing an approach to a go-around sequence rather than a stall sequence. Power-off stalls, also known as approach-to-landing stalls, are practiced to simulate the conditions of this phase of flight but at a safe altitude to allow time to recover. This similarity between the maneuvers may explain why the flight data appear to indicate an approach-to-go-around sequence. However, considered with the established purpose of the flight, the NTSB continues to believe the pilot was intentionally practicing stalls and recovery at the time of the accident.

If the pilot had been practicing a missed approach as the petitioner contends, prudent airmanship would have entailed identifying, assessing, and mitigating the risks associated with low-altitude maneuvering—including risk of stalling—and with delayed performance of a go-around at low altitude. These considerations would have been especially relevant on a test flight conducted for the purpose of determining whether newly installed STC equipment imposed any adverse aircraft handling characteristics.

The petitioner does not dispute that the pilot was conducting a test flight for the purposes of assessing the airplane's stall characteristics following the installation

⁴ Visit [ntsb.gov](https://www.ntsb.gov) to find additional information in the [public docket](#) for this NTSB investigation (case number FTW00FA072).

of VGs. The petitioner does not provide new evidence or show an erroneous finding by the NTSB that would explain why, as the petitioner contends, the pilot would have been practicing a missed approach, rather than assessing stall and handling characteristics as prescribed by the VG manufacturer, immediately following installation. For these reasons, the NTSB does not find the petitioner's argument compelling.

The petitioner also does not provide any evidence to support the assertion that a tail stall, rather than a wing stall, preceded loss of control. The NTSB believes that the question of which aerodynamic surface stalled, or stalled first, is irrelevant to the finding that the pilot allowed the airplane's airspeed to deteriorate such that the airplane likely stalled—and did so at an altitude that was too low to allow for recovery.

Similarly, the NTSB is not persuaded the civil jury verdict against Micro AeroDynamics supports the petition's claims. In reviewing the documentation provided, it is not possible to determine what evidence was presented at trial. It also is not possible to determine what evidence the jury relied on or discounted in its deliberations and determination of the verdict.

Concerning the petitioner's assertion that the circumstances surrounding the Mexia and Fairbanks accidents are similar, the approved probable cause for the Mexia accident was:

The pilot's failure to maintain airspeed while maneuvering in the traffic pattern, which resulted in a stall/spin. Factors were the partial failure of the landing gear indication system and the pilot's diverted attention.

Based on our analysis of the facts, the NTSB believes that the accident circumstances are only similar in that they demonstrate the problems that can quickly result from failure to maintain airspeed sufficient to prevent an aerodynamic stall, particularly at an altitude that precludes recovery. The fact that VGs had been recently installed on both airplanes before their respective accidents is incidental. Therefore, the NTSB does not believe the circumstances of the Mexia accident have any bearing on our findings and determination of probable cause concerning the Fairbanks accident.

With respect to the petitioner's contention that the final report mischaracterizes the quality of Alaskan sun in December and misattributes its glare as a contributing causal factor, the NTSB concludes based on our reevaluation that there is insufficient information to establish where the pilot's visual attention was directed during the final leg of the flight or the actual effects of glare on what he could see within the airplane. Furthermore, the original final report's conclusion that the sun's glare rendered the pilot unable to see terrain features and thus perceive altitude deviations was based on inference rather than evidence sufficient to establish that proposition.

Without information establishing whether the pilot was attempting to reference outside terrain cues, relying primarily on the flight instruments, or actually affected by glare in a manner that degraded his visual performance, the record does not permit a reliable assessment of whether sun glare impaired his ability to perceive altitude deviations or otherwise contributed to the accident sequence. Accordingly, the original final report's analysis regarding the lighting conditions has been removed, and "the pilot's inability to recognize altitude deviations during slow flight due to the sun glare" has been deleted from the probable cause.

Disposition

After review of the evidence, the petition for reconsideration of the NTSB's final report in connection with the aviation accident involving a Bellanca Citabria 7GCBC airplane in Fairbanks, Alaska, is granted in part. The aviation accident final report has been modified as shown in the attachment.

Chairwoman HOMENDY, Vice Chairman GRAHAM, and Members CHAPMAN and DELEEUEW concurred in the disposition of this petition for reconsideration.

Attachments

Revised Final Aviation Accident Report