Aviation Investigation Final Report

Location:	Hattiesburg, Mississippi	**Accident Number:**	CEN21FA209
Date & Time:	May 4, 2021, 23:01 Local	**Registration:**	N322TA
Aircraft:	Mitsubishi MU2B	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	4 Fatal, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was flying a nonprecision approach in instrument meteorological conditions at night. While flying the procedure turn for the approach, the airplane's speed decayed toward the stall speed before the airplane accelerated back to the standard approach speed. During the descent from the final approach fix, the airplane's descent stopped for about 30 seconds and then the airplane descended at a rate of about 1,300 ft per minute. The airplane decelerated and continued to descend until the airspeed was about 85 knots (about 7 knots above the calculated stall speed for flaps 20°) and the altitude was 500 ft mean sea level. The last recorded data point showed the airplane about 460 ft mean sea level and 750 ft from the accident site. The airplane impacted a private residence, and a postcrash fire ensued and destroyed the airplane.

Impact signatures were consistent with a low-energy impact. Examination of the airframe and engines did not detect any preimpact anomalies that would have precluded normal operations. Signatures on the engines and propellers were consistent with both engines providing power at impact.

A review of the pilot's toxicological information found that the level of eszopiclone in his specimens was subtherapeutic and thus not likely a factor in the accident. The circumstances of the accident are consistent with an inadvertent aerodynamic stall from which the pilot was unable to recover.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain control of the airplane during the night instrument approach which resulted in an inadvertent aerodynamic stall from which the pilot was unable to recover.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Approach-IFR final approach	Loss of control in flight (Defining event)
Approach-IFR final approach	Aerodynamic stall/spin

On March 4, 2021, about 2301 central daylight time, a Mitsubishi MU2B-60 airplane, N322TA, was destroyed when it was involved in an accident near Hattiesburg Bobby L. Chain Municipal Airport (HBG), Hattiesburg, Mississippi. The pilot, two passengers, and one person on the ground sustained fatal injuries, and two people on the ground sustained minor injuries. The airplane was operated under the provisions of Title 14 *Code of Federal Regulations* (*CFR*) Part 91 as a personal flight.

The pilot was flying under an instrument flight rules flight plan and departed Wichita Falls Municipal Airport (SPS), Wichita Falls, Texas, about 2058. According to the Federal Aviation Administration, the pilot checked in with the Houston Air Route Traffic Control Center and requested a descent into HBG. The flight was cleared to descend to 2,400 ft mean sea level (msl). During the descent, the pilot reported that he had the current weather information and requested a clearance direct to the HILGA intersection for the area navigation (RNAV) GPS runway 13 approach to HBG.

Automatic Dependent Surveillance–Broadcast (ADS-B) data provided by the Federal Aviation Administration captured the accident flight. About 2251, the pilot began to fly the procedure turn for the RNAV approach; at 2252:12, the airplane's airspeed was 88 knots. The airspeed fluctuated before the airplane accelerated back to 140 knots as the airplane crossed HILGA and descended to 2,000 ft msl. As the airplane approached the final approach fix (CUPPA), the airplane descended before the fix and crossed it 300 ft low. The airplane's descent stopped for about 30 seconds, and the airplane then descended about 1,300 ft per minute. The airplane's airspeed decreased as the airplane continued to descend; at 2301:24, when the airplane's airspeed was about 85 knots its altitude was 500 ft msl. The last recorded data point showed the airplane at an altitude of about 460 ft msl and 750 ft from the accident site. The airplane impacted the front of an occupied residence, and a postimpact fire ensued. Figure 1 shows the airplane's approach path and wreckage location.

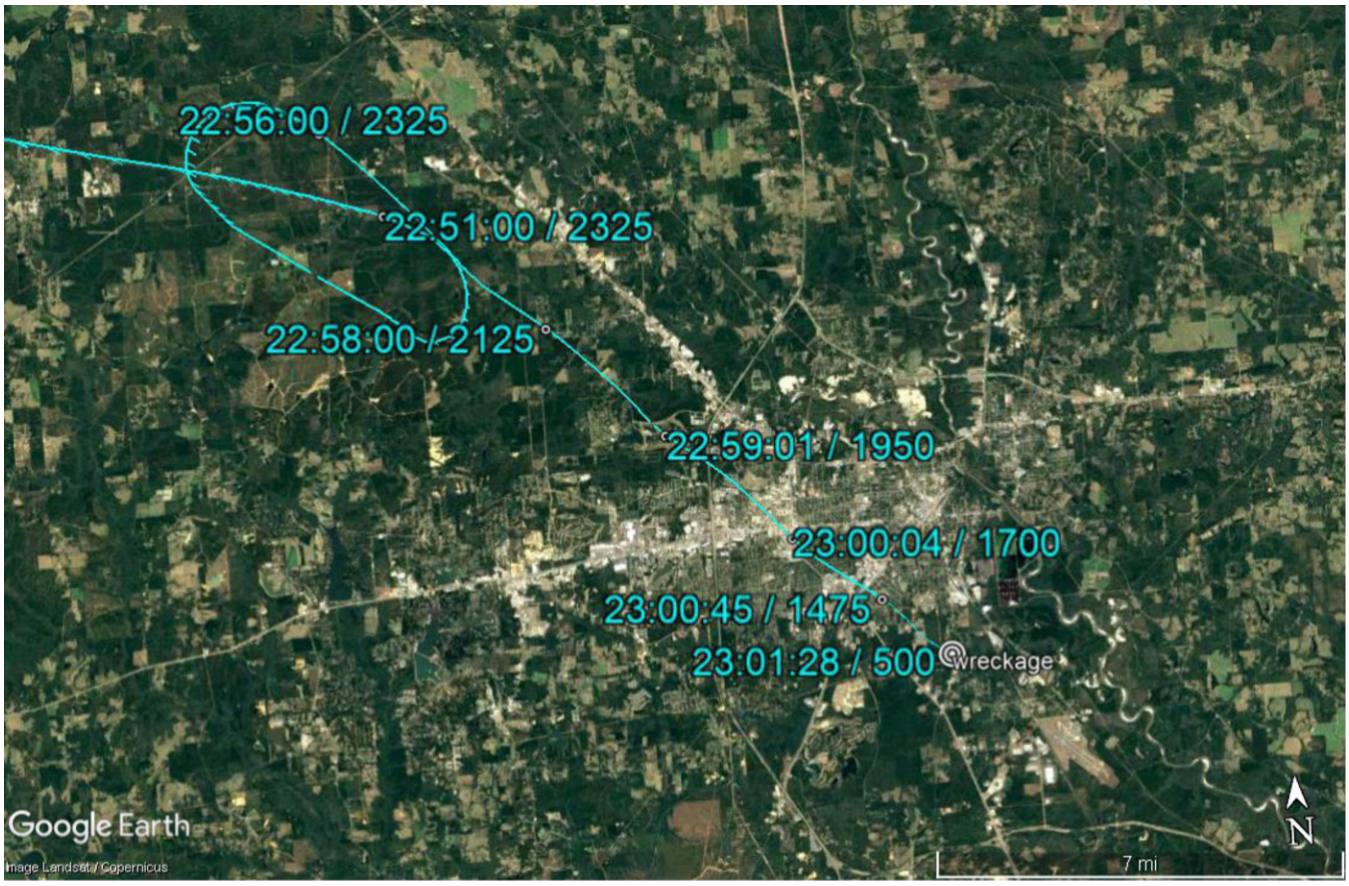

Figure 1. Airplane's approach path with accident site location with times and altitudes annotated.

Pilot Information

Certificate:	Private	**Age:**	67,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	June 24, 2020
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 14, 2020
Flight Time:	7834 hours (Total, all aircraft), 500 hours (Total, this make and model)		

The pilot's logbooks were not located during the investigation. On his last application for a Federal Aviation Administration medical certificate, the pilot reported having accrued 30 hours of flight time in the preceding 6 months. He was issued a Continued Authorization for Special Issuance.

On November 13, 2020, the pilot completed recurrent training to satisfy the Title 14 *CFR* Part 91, subpart N, Mitsubishi MU-2B series Special Training, Experience, and Operating Requirements. His training record indicated that the pilot received average scores.

On December 28, 2011, the pilot was involved in a hard landing while piloting an MU-2B-20, which resulted in substantial damage to the fuselage (See NTSB Report ERA12CA128). The pilot purchased N322TA on February 1, 2012.

Aircraft and Owner/Operator Information

Aircraft Make:	Mitsubishi	**Registration:**	N322TA
Model/Series:	MU2B 60	**Aircraft Category:**	Airplane
Year of Manufacture:	1979	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	760 S.A.
Landing Gear Type:	Retractable - Tricycle	**Seats:**	10
Date/Type of Last Inspection:	November 14, 2019 Annual	**Certified Max Gross Wt.:**	11575 lbs
Time Since Last Inspection:		**Engines:**	2
Airframe Total Time:	7610.1 Hrs as of last inspection	**Engine Manufacturer:**	
ELT:	Installed, not activated	**Engine Model/Series:**	
Registered Owner:	NORTHSHORE GROUP LLC	**Rated Power:**	
Operator:	On file	**Operating Certificate(s) Held:**	None

The airplane's logbooks were not located during the investigation. Maintenance facilities near the pilot's routes of flight indicated the dates of the most recent annual inspection and the most recent maintenance record, which was October 3, 2020.

The airplane was equipped with a Bendix/King KLN 94 GPS Navigation System that was certified for the lateral navigation (LNAV) approach only and would thus not be capable of displaying vertical navigation for the approach.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	KHBG,151 ft msl	**Distance from Accident Site:**	2 Nautical Miles
Observation Time:	22:53 Local	**Direction from Accident Site:**	108°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 700 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/ Clear air
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/ Moderate
Altimeter Setting:	29.95 inches Hg	**Temperature/Dew Point:**	19°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wichita Falls, TX (SPS)	**Type of Flight Plan Filed:**	IFR
Destination:	Hattiesburg, MS	**Type of Clearance:**	IFR
Departure Time:	20:57 Local	**Type of Airspace:**	Class G

Weather information for the accident flight revealed the potential for clouds between 700 to 1,400 ft, light low-level windshear between 1,100 and 2,300 ft, and light-to-moderate clear air turbulence below 4,000 ft.

Airport Information

Airport:	HATTIESBURG BOBBY L CHAIN MUNI HBG	**Runway Surface Type:**	Asphalt
Airport Elevation:	150 ft msl	**Runway Surface Condition:**	
Runway Used:	13/31	**IFR Approach:**	RNAV
Runway Length/Width:	6094 ft / 150 ft	**VFR Approach/Landing:**	None

The minimum descent altitude for the LNAV approach to runway 13 at HBG was 580 ft msl.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	1 Fatal, 2 Minor	**Aircraft Explosion:**	None
Total Injuries:	4 Fatal, 2 Minor	**Latitude, Longitude:**	31.291031,-89.285544

The accident site was located 2.24 miles from the approach end of runway 13. The postimpact fire consumed most of the airplane and the residence. The accident site was largely contained to one area with a small debris field, consistent with a low-energy impact, as shown in figure 2.

Figure 2. Accident site.

Postaccident examination of the wreckage found that the airplane was configured with its landing gear down and flaps at 20°. All major flight controls were found at the accident site. Disassembly of both engines revealed debris consistent with roofing tiles in the combustion chambers. In addition, both engines contained signatures of rotational scoring and torsional fractures. Both propellers displayed witness marks indicating blade positions between 25° and 28°, which was consistent with a low power setting. Examination of the airframe, engines, and

propellers revealed no preimpact anomalies.

The airplane's Honeywell KMH 920 Enhanced Ground Proximity Warning System was found in the wreckage. Data downloaded from the device revealed that alerts for mode 1 excessive descent rates ("sink rate" and "pull up") were generated before the accident. No input faults were detected.

Medical and Pathological Information

An autopsy of the pilot was conducted by the Mississippi Office of the State Medical Examiner, Pearl, Mississippi. His cause of death was blunt force injuries. No significant natural disease was identified by the medical examiner.

Toxicological testing by the FAA Forensic Sciences Laboratory detected zopiclone, which was related to the pilot's use of eszopiclone. a sedative used to treat insomnia.

On his application for an FAA medical certificate, date June 24, 2020, the pilot reported the use of losartan (to treat high blood pressure), sitagliptin-metformin (to treat diabetes), and atorvastatin (to treat high cholesterol).

Additional Information

Standard LNAV/VNAV Approach

FAA Advisory Circular (AC) 91-89, *Mitsubishi MU-2B Training Program*, states that before the final approach fix, the airplane should be configured with 5° flaps and a minimum airspeed of 140 kts. As the airplane approaches the final approach fix, the airplane should then be configured with 20° flaps, landing gear down, and a minimum airspeed of 120 kts.

Performance Study

A performance study was conducted on the accident flight using ADS-B data. The study found that when the airplane was in the procedure turn, the airspeed reached as low as 88 kts which coincided with the calculated stall speed for wings level, idle engine power, and 5° of flaps. The airplane's airspeed increased towards 140 kts. The airplane descended before the final approach fix, then stopped the descent for about 30 seconds before it resumed a descent rate of about 1,300 ft per minute. As the airplane descended it continued to decelerate. The last calculated airspeed was at 85 kts which was about 7 kts above the calculated stall speed for 20° flaps and power idle.

ADS-B data from the three flights before the accident were obtained for comparison purposes. Two approaches showed large variations in airspeed, either above or below the recommended approach speeds. The flight before the accident flight showed the airplane 200 ft above the glide path on final before regaining the glide slope.

Administrative Information

Investigator In Charge (IIC):	Aguilera, Jason
Additional Participating Persons:	Addison Baxter; FAA FSDO; Jackson, MS Yoshiaki Asako; Mitsubishi; Dallas, TX Dana Metz; Honeywell; Phoenix, AZ Les Doud; Hartzell Propeller; Piqua, OH
Original Publish Date:	September 20, 2023
Last Revision Date:	
Investigation Class:	Class 3
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=103032