Aviation Investigation Final Report

Location:	Sioux Falls, South Dakota	**Accident Number:**	CEN20LA215
Date & Time:	June 7, 2020, 04:25 Local	**Registration:**	N44MX
Aircraft:	Mitsubishi MU2B	**Aircraft Damage:**	Destroyed
Defining Event:	Unknown or undetermined	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The pilot departed on a cross country flight in a turbine-powered, multiengine airplane at night and in visual meteorological conditions. Recovered GPS data revealed that as the airplane accelerated down the runway, it drifted to the right of the runway centerline. A video recording showed that shortly after takeoff, the airplane rolled right, the nose dropped, and the airplane impacted the ground. It came to rest on its left side with both wings separated and the fuselage was highly fragmented forward of the main landing gear.

A post-accident examination of the airframe and engines found no mechanical malfunctions or anomalies that would have precluded normal operation.

A witness that spoke to the pilot shortly before the accident flight stated that the pilot exhibited difficulty in completing some paperwork; however, no medical reasoning for this difficulty could be determined based upon the available evidence.

The investigation determined that at the time of the accident the pilot had been on duty for about 19 hours and 20 minutes, which was contrary to duty and rest regulations. At his estimated arrival time into the destination, the pilot would have accumulated about 20 hours and 54 minutes of duty time. The investigation was unable to determine if the pilot took advantage of the opportunity for rest that existed during the day, and therefore could not determine if fatigue contributed to the accident.

Investigators were unable to determine the reason for the loss of control on takeoff with the available information.

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 takeoff for reasons that could not be determined.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Takeoff	Unknown or undetermined (Defining event)

On June 7, 2020, about 0425 central daylight time, a Mitsubishi MU-2 airplane, N44MX, was destroyed when it was involved in an accident near Sioux Falls, South Dakota. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* (CFR) Part 135 on-demand cargo flight.

The flight, operated by McNeely Charter Service, Inc., originated at Snohomish County Airport (Paine Field) (PAE), Everett, Washington, about 2115, and was originally destined for Huron Regional Airport (HON), Huron, South Dakota, for a fuel stop. Air traffic control information and weather data was consistent with the pilot diverting to Joe Foss Field Airport (FSD), Sioux Falls, South Dakota, due to weather at HON at the time of intended arrival. The flight landed at FSD at 0140. The final destination was Kokomo Municipal Airport (OKK), Kokomo, Indiana.

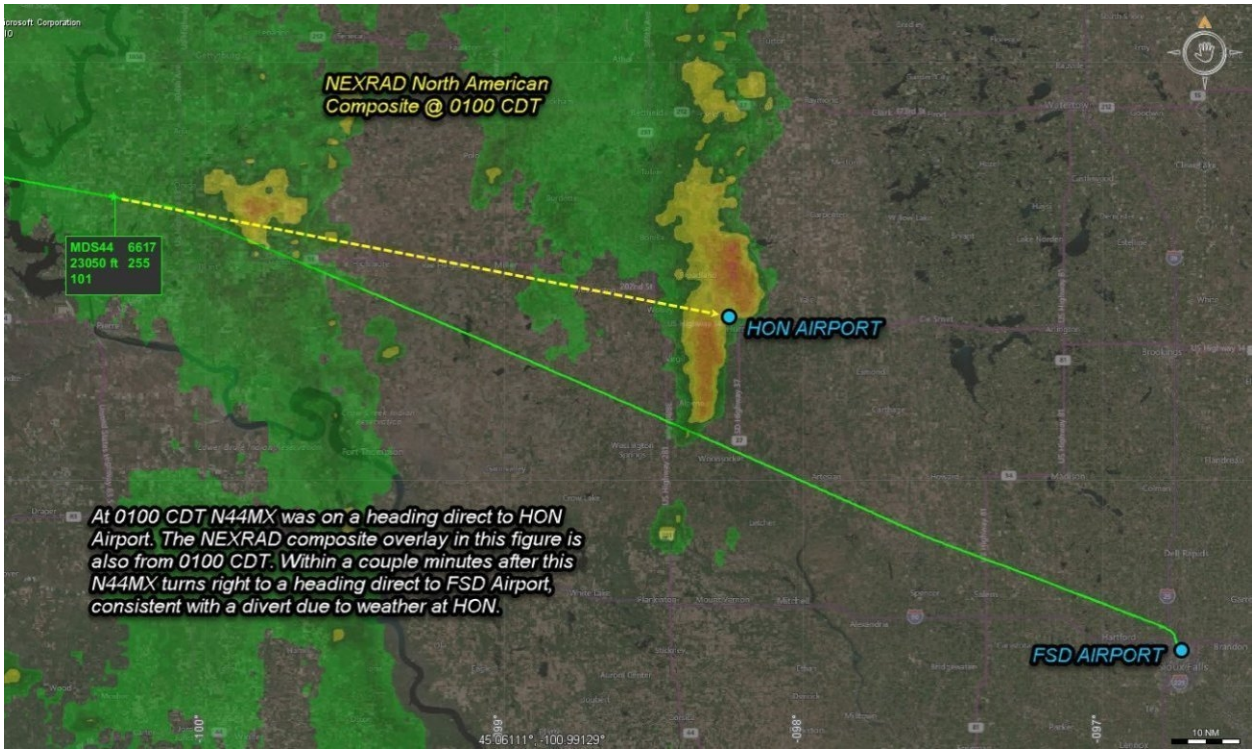

Figure 1: Final segment of inbound leg that had originated from Everett, Washington.

Recovered GPS data revealed that the airplane departed FSD from runway 15 at 0426. According to a video recording from FSD, the airplane appeared to have a normal takeoff roll. After rotation, a high pitch angle was established for initial climb out and the right wing began to dip. As the airplane climbed,

the right wing continued to drop, and the airplane rolled over to the right side. The airplane nosed over on the right side and continued in a nose down attitude and impacted terrain. Radar track data for the flight began when the airplane reached about 45 ft above ground level (agl) and was limited to 3 radar hits in 3 seconds.

Figure 2: A Google Earth plot showing the accident aircraft's ground track and altitude depiction.

Pilot Information

Certificate:	Commercial	**Age:**	58,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:**	August 19, 2019
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 11, 2019
Flight Time:	(Estimated) 22000 hours (Total, all aircraft), 10900 hours (Total, this make and model)		

A review of McNeely Charter Service, Inc. (McNeely) personnel records indicated that the pilot completed recurrent company training in the SA-226/227 on September 3, 2019. He completed an airman competency/proficiency check in accordance with Part 135.293, 135.297, and 135.299 on September 11, 2019, in the SA-227. The instrument proficiency check in accordance with 135.297 listed an expiration date of March 31, 2020.

The most recent competency check in accordance with 135.293 in the MU-2B was accomplished on March 23, 2019. His most recent MU-2 Special Federal Aviation Regulation (SFAR) training was completed on March 16, 2020, with Howell Enterprises, Inc.

At the time of the accident, the pilot was operating under Federal Aviation Administration (FAA) exemption 18510 as listed in operations specifications paragraph A005 which allowed two additional grace months for the completion of the training and qualification requirements of 14 *CFR* 135.293 for the MU-2B.

Aircraft and Owner/Operator Information

Aircraft Make:	Mitsubishi	**Registration:**	N44MX
Model/Series:	MU2B 60	**Aircraft Category:**	Airplane
Year of Manufacture:	1981	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1526 S.A.
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	August 6, 2019 Continuous airworthiness	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	2 Turbo prop
Airframe Total Time:	12104 Hrs as of last inspection	**Engine Manufacturer:**	Honeywell
ELT:		**Engine Model/Series:**	TPE331-10-511M
Registered Owner:		**Rated Power:**	900 Horsepower
Operator:		**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:		**Operator Designator Code:**	MCCA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	KFSD,1428 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	03:56 Local	**Direction from Accident Site:**	246°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots / 27 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	150°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.76 inches Hg	**Temperature/Dew Point:**	26°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sioux Falls, SD (FSD)	**Type of Flight Plan Filed:**	IFR
Destination:	Kokomo, IN (OKK)	**Type of Clearance:**	IFR
Departure Time:	04:25 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	Joe Foss Field FSD	**Runway Surface Type:**	Concrete
Airport Elevation:	1429 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	15	**IFR Approach:**	None
Runway Length/Width:	8000 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	43.58139,-96.743614(est)

The airplane wreckage was located in the infield area north of taxiway B3 between taxiway B and runway 3-21. It came to rest on its left side with both wings separated and the fuselage was highly fragmented forward of the main landing gear.

During a post-accident examination, flight control continuity was established from the main cabin to all respective control surfaces.

Examinations of the airframe and engines, which included the fuel control units and propeller governors did not reveal evidence of any pre-existing anomalies that would have precluded normal operation.

Additional Information

McNeely operated without assigned duty/rest periods. According to Part 135.267(d), each crewmember must have had at least 10 consecutive hours of rest during the 24-hour period that preceded the planned completion time of the assignment.

The *Aircraft and Engine Log* was recovered in the debris field following the accident. Two entries were made on the form for June 5, 2020. The first entry was for a flight from West Memphis, Arkansas, (AWM) to Scottsbluff, Nebraska (BFF). For this flight, an "out" time of 1552 was listed with an" in" time of 1754. The second entry was for a flight from BFF to PAE. For this flight an "out" time of 1926 was shown with an "in" time of 2321.

According to family members, on June 5th, the accident pilot left home to go to his office about 0800 where he remained until the flight to PAE. It was estimated to take about 30 minutes to drive from the pilot's home to his office.

According to cell phone records for the pilot on June 6th, the first company email was sent from the pilot at 0906, followed by a text message conversation with the company president from 1026 until 1044. Text messages, phone calls, and emails continued until about 1245 and then began again about 2023. The investigation was unable to determine if the pilot took advantage of the opportunity for rest during the day.

FAA Legal Interpretations

In 2016, the FAA published a legal interpretation of the rest requirements provided in 14 CFR 135.267(b) and (d). The FAA's interpretation stated:

> *"Section 135.267(b) provides that a one-pilot crew, not in a regularly assigned duty period, may not exceed 8 hours of flight time during any 24 consecutive hours. Each flight-time assignment must provide for at least 10 consecutive hours of rest during the 24-hour period that precedes the planned completion time of the assignment. In addition, under the "moving 24 consecutive hour" limitation of § 135.267(b), operators may use a duty or on-call schedule that requires pilots to respond and report for duty at varying times from day to day. Although § 135.267 does not contain an explicit duty time limitation, crewmember schedules must fulfill the rest requirements of § 135.267(d). The FAA has consistently interpreted the term "duty" for purposes of § 135.267 to mean actual work for an air carrier or present responsibility to work should the occasion arise. Legal Interpretation to Mr. David Bodlak from Donald P. Byrne, Chief Counsel, Regulations and Enforcement Division (Oct. 28, 1991).*

Regarding rest, a pilot's rest for purposes of § 135.267 must be (1) continuous, (2) determined prospectively (i.e., known in advance), and (3) free from all restraint by the certificate holder, including freedom from work or freedom from present responsibility from work should the occasion arise. The hypothetical scenario you present for consideration does not clarify where the pilot's rest would be determined in advance; the scenario only states the pilot may be considered for assignments at various times. Therefore based on the scenario you posit, the FAA cannot determine whether the rest is determined prospectively, or known in advance.

For the purposes of § 135.267, the period of rest cannot consist of required on-call or standby status while awaiting a possible assignment of flight duty throughout the entire 24-hour day…A 24-hour oncall schedule cannot meet the rest requirements of 135.267(d) because, in such a situation, the rest period is not known in advance nor is it free from all restraint."

Medical and Pathological Information

An interview with the line service technician who fueled the airplane just before the accident stated that he observed the pilot have difficulty filling out fueling paperwork, but the pilot gave no explanation for the difficulty.

According to the autopsy performed by the Sanford Health Pathology Clinic, the cause of death was blunt force injuries, and the manner of death was accident. The examination was limited by the degree of injury. Atherosclerotic stenosis (80%) of the circumflex coronary artery was identified without any evidence of scar from previous ischemia. No other natural disease was identified.

Toxicology tests performed by the FAA Forensic Sciences Laboratory did not identify any tested-for substances.

Organizational and Management Information

McNeely Charter Service, Inc. was a Part 135 air carrier that held on-demand operations specifications. The air carrier was authorized to conduct business exclusively under the business name "McNeely Charter Services, Inc."

The director of operations (DO) was the pilot-in-command of the accident airplane. Section 2 of the General Operations Manual stated that the DO was responsible for the management of the FAA issued

Air Carrier Certificate as well as the "administrative head for McNeely Charter Service, Inc. flight department, maintenance department and other operations personnel" and exercised operational control. The chief pilot stated in an interview that the accident pilot was primarily the "DO, overseeing the operations and oversight" and also flew "when he needed to."

Administrative Information

Investigator In Charge (IIC):	Liedler, Courtney		
Additional Participating Persons:	Todd Obritsch; Federal Aviation Administration; Rapid City, SD Laddie Hostalek; McNeely Charter Services, Inc.; West Memphis, AR Yoshiaki Asako; MHIA; Dallas, TX Les Doud; Hartzell Propeller; Piqua, OH Dana Metz; Honeywell Aerospace; Phoenix, AZ		
Original Publish Date:	March 30, 2022	**Investigation Class:**	3
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=101397		