

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

July 3, 2017

Engine Data Monitor

Factual Report

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NTSB Air Safety Investigator

1. EVENT SUMMARY

Location: Monticello, Iowa

Date: July 1, 2017

Aircraft: Flight Design CTSW light sport airplane

Registration: N62JN

Operator: Mooney of Monticello, Inc.

NTSB Number: CEN17FA249

2. DETAILS OF INVESTIGATION

The following device was downloaded:

Device Manufacturer & Model Number: Dynon EMS-D120

Device Part Number: 100563-000

Device Serial Number: 001118

2.1. Data Recovery

The device was undamaged and was downloaded normally using the Dynon Support Software.

2.2. Data Description

The recovered data, recorded at 1-second intervals, included the final 41 minutes 32 seconds of the flight. The data set consisted of, but was not limited to, various engine parameters, latitude, longitude, ground speed, ground track, fuel flow, and fuel remaining. The airplane's altitude and indicated airspeed were not recorded by the engine monitor. A review of the recorded data did not reveal any anomalies with engine operation during the flight.

The recorded data began at 1522:09 with the airplane about 5.6 miles northeast of Temple, Iowa, flying east-northeast at a ground speed and engine speed of 120 knots and 4,900 rpm, respectively. The airplane continued to fly east-northeast until 1532:15 when it turned north over the Mississippi River about 1 mile north of Bellevue, Iowa. At 1532:55, the airplane turned left and proceeded southwest away from the Mississippi

River. At 1554:45, the airplane was about 4.5 miles southeast of MXO. The airplane flew northwest for about a minute before turning north. At 1556:38, the airplane began a left turn onto a 2 mile final approach to runway 27 at MXO. At 1557:55, the airplane began a 360° left turn southeast of the airport. At 1600:48, the airplane had completed the 360° turn and was on a 1.4 mile final approach to runway 27. The airplane remained on final approach for about 7 seconds before it began a right 360° turn northeast of the final approach course.

At 1602:25, the airplane had completed the right 360° turn and was on a 1.2 mile final approach to runway 27. At that point, the airplane's ground speed and engine speed were 77.5 knots and 3,294 rpm, respectively. The airplane continued inbound toward runway 27. At 1603:00, the airplane was ½ mile from the runway 27 threshold and its ground speed and engine speed had decreased to 51.6 knots and 2,299 rpm, respectively. At 1603:15, the airplane was ¼ mile from the runway 27 threshold and its ground speed and engine speed had further decreased to 46.8 knots and 2,188 rpm, respectively. At 1603:34, the airplane crossed the runway 27 threshold, at an unknown altitude, and the ground speed and engine speed had decreased to 35.6 knots and 2,000 rpm, respectively. At 1603:37, about 163 ft past the runway 27 threshold, the airplane entered a right turn toward north and away from the runway. At that time the airplane's ground speed had decreased to 34.1 knots, but the engine speed had increased to 4,343 rpm. At 1603:41, the final data point was recorded about 160 ft north of the runway centerline with the airplane still in a right turn. The final data point indicated a ground speed of 41.3 knots, an engine speed of 4,833 rpm, a fuel flow of 3.125 gallons per hour, and that there were 12.9 gallons of fuel remaining.

The surface wind at the time of the accident, 280° at 13 knots, would have resulted in airspeeds about 12.8 knots higher than the recorded ground speeds while the airplane was on final approach to runway 27. At 1603:34, the airplane crossed the runway threshold at a calculated airspeed of 48.4 knots. At 1603:37, when the airplane began a right turn from the runway heading after crossing the runway threshold, the calculated airspeed was 46.9 knots. At 1603:41, the final recorded data point, the airplane's heading was 357° and had a calculated airspeed of 44.1 knots.

According to the airplane's Pilot Operating Handbook (POH), the wings-level aerodynamic stall speed with flaps-retracted (0°) and flaps fully-extended (40°) is 42 knots and 39 knots, respectively. The minimum and maximum continuous engine speed for takeoff is 4,500 rpm and 5,500 rpm, respectively.

2.3. TABULAR DATA

Tabular data in electronic comma-delimited (.csv) format is included with the docket materials associated with NTSB Investigation No. CEN17FA249 (Monticello, Iowa).