

**NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594**

SUMMARY OF ENGINE DEEC EXAMINATIONS

CEN20LA028

A. ACCIDENT

Location: Detroit, Michigan
Date: December 3, 2019
Time: 0833 eastern standard time
Aircraft: BAE 125 800A, N469RJ

B. PARTICIPANTS

Edward Malinowski
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C. ACCIDENT SUMMARY

On December 3, 2019, about 0833 eastern standard time, a BAE 125 800A airplane, N469RJ, impacted terrain during an instrument landing system (ILS) approach to runway 33 at the Coleman A. Young Municipal Airport (DET), near Detroit, Michigan. The airline transport pilot and copilot were uninjured. The airplane's right wing sustained substantial damage during the impact with terrain. The airplane was registered to and operated by Business Jet Managers Inc. as a Title 14 Code of Federal Regulations Part 91 repositioning flight for a subsequent Part 135 flight. Day visual meteorological conditions prevailed in the area about the time of the accident, and the flight was operated on an instrument flight rules flight plan. The flight

originated from the Willow Run Airport (YIP), near Detroit, Michigan about 0819 and was destined for DET.

According to initial information, about 0807, a BAE 125 800A airplane landed at DET. The pilot of that airplane stated that he witnessed another 800A exiting runway 33 traveling through the grass and across the taxiway coming to rest in the grass past the taxiway. The witness was in his own airplane on the ramp waiting for passengers. His airplane's flight to DET lasted approximately 18 minutes. Before entering the clouds, the witness reported the TKS [Tecalemit-Kilfrost-Sheepbridge Stokes] ice protection system, engine heat, and engine ignitions were turned on. The witness, in part, stated, "Soon afterwards our ice detected light came on. We were vectored at 3000 ft for the ILS 33. We reported light ice and outside air temperature was -9 C. At Approximately 1000 ft AGL [above ground level] we broke out and landed visually. All operations were normal. Our landing weight was 22,500 lbs. We bugged the airspeed indicator for Ref 129 and approach 139. On final our airspeed varied from 134 to 140 knots. Our touchdown speed was approximately ref minus 8. After landing we had some minor ice on the wing leading edge. The small temperature probe had an umbrella shaped ice formation. The outboard ends of the horizontal stabilizer had the typical "T" ice formation on about the outer 9 inches of both horizontals."

According to initial information from the pilot in command who was flying the accident airplane, the crew was conducting an ILS approach to runway 33. The airplane broke out about 1,500 ft AGL. The airplane had picked up rime icing during the flight. The air traffic controller at YIP advised them of the icing conditions present. The airplane had a TKS type weeping wing for deicing. Spots where the weeping wing panels joined had an ice build up. The airplane did not have any airspeed oscillations during the approach and the crew maintained 140 kts on approach. The flight's calculated Vref speed was 128 kts. The pilot reported that the right wing "dropped" and a stall occurred. He said that there was no shaker activation during the flight.

The captain held an Airline Transport Pilot certificate, with a multi-engine land class rating. He held two type ratings, which included a type rating for BAE-125 airplanes. He was issued a first-class airman medical certificate in July 2019, with a restriction that the holder shall possess glasses for near & intermediate vision.

The copilot held an Airline Transport Pilot certificate, with a multi-engine land airplane rating. He held eight type ratings, which included a type rating for BAE-125 airplanes. He was issued a first-class airman medical certificate in October 2019, with restrictions that the holder must wear corrective lenses & possess glasses for near & intermediate vision and an additional restriction that the medical certificate is not valid for any class after 04/30/2020.

N469RJ, a BAE 125 800A airplane with serial number 258067, was a pressurized, transport category airplane, powered by two Honeywell TFE731 turbo fan engines.

At 0844, the recorded weather at DET was: Wind 280° at 8kts; visibility 10 statute miles; sky condition overcast clouds at 1,000 ft; temperature -2° C; dew point -3° C; altimeter 29.86 inches of mercury.

DET, located approximately five miles northeast of downtown Detroit, Michigan, was a publicly owned, towered airport that was owned by the City of Detroit. It was continuously attended. DET's surveyed field elevation was 626 ft above mean sea level. DET was serviced by two runways, 7/25 and 15/33. Runway 7/25 was a 3,714 ft by 100 ft asphalt runway and runway 15/33 was a 5,090 ft by 100 ft, asphalt runway. Runway 15/33 was marked as a precision approach runway and was serviced by a four-light precision approach path indicator on the runway's left side

The airport had 4 published approaches: ILS OR LOC RWY 15, ILS OR LOC RWY 33, RNAV (GPS) RWY 15, and RNAV (GPS) RWY 33

The airplane was equipped with a magnetic tape cockpit voice recorder (CVR), Fairchild model A100A, serial number 58758, which was removed from the accident aircraft and retained for readout and evaluation.

The airplane was equipped with a L3 Communications Avionics Systems, Inc. Landmark TAWS 8000 unit and two digital electronic engine control (DEEC) units. These units were removed from the accident aircraft and will be retained for readout and evaluation.

D. DETAILS OF ENGINE DEEC EXAMINATIONS

The engine DEECs were shipped from the Federal Aviation Administration office in the Detroit, Michigan, area to the Honeywell Aerospace facility in Phoenix, Arizona for an examination under National Transportation Safety Board supervision on January 16th, 2020, at the Honeywell Aerospace facility in Tucson, Arizona.

E. SUMMARY OF ENGINE DEEC EXAMINATIONS

DEEC, S/N 35-BY0398, FROM ENGINE S/N P-91196, RIGHT NACELLE

DEEC, S/N 35-BY0399, FROM ENGINE S/N P-91148, LEFT NACELLE

The download of the incident recorder data and fault history data from both N1 DEECs was completed successfully. Review of the data revealed that both engines were rotating, operating, and responding to power lever inputs throughout the approach and accident sequence. About 130 seconds after the accident sequence, power was removed from the DEECs.

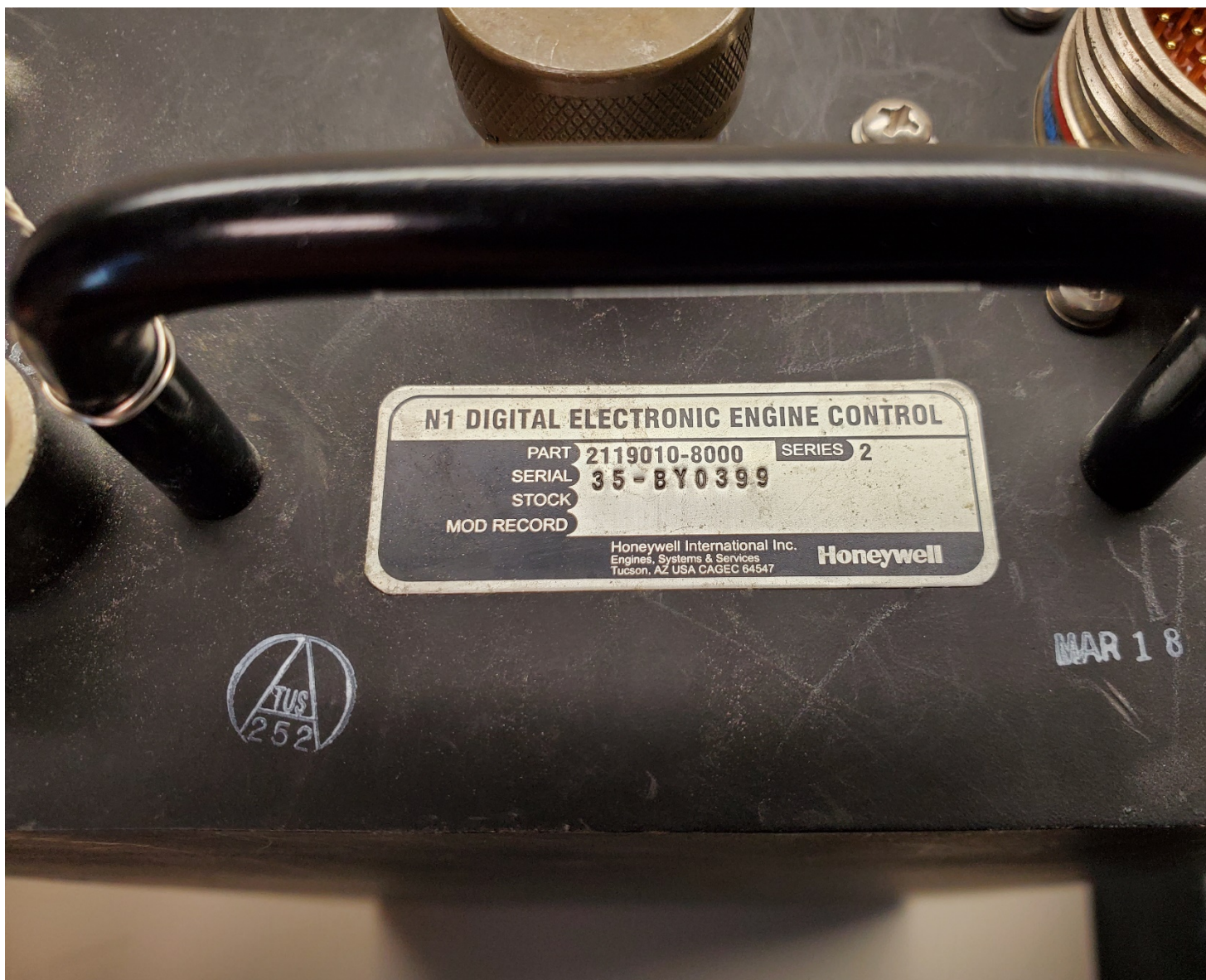


Photo 1 – DEEC s/n 35-BY0399



Photo 2 - DEEC s/n 35-BY0398