

# NATIONAL TRANSPORTATION SAFETY BOARD

Aviation Safety  
Alaska Office

June 21, 2018

## Engine Data Monitor JPI-830

### FACTUAL REPORT

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Investigator-In-Charge

## 1. EVENT

Location: Chuckanut, Washington  
Date: February 12, 2018, 1913 PST  
Aircraft: Mooney M20K  
Registration: N123JN  
Operator: Private  
NTSB Number: ANC18FA024

On February 12, 2018, about 1913 pacific standard time, a M20K Mooney airplane, N123JN, was destroyed after impacting terrain on Chuckanut Mountain near Bellingham, Washington, while on a visual flight rules (VFR) approach to Bellingham International Airport (BLI). The private pilot sustained fatal injuries. The airplane was registered to Flying Llama LLC and operated by the pilot as a 14 *Code of Federal Regulations* Part 91 visual flight rules personal flight. Night visual meteorological conditions prevailed at the time of the accident, and no flight plan was filed. The flight departed Harvey Field (S43), Snohomish, Washington, at about 1851, and was destined for BLI.

## 2. DETAILS OF INVESTIGATION

A JPI EDM 830 engine data monitor was removed from the wreckage after recovery at the examination facility. The unit had cracked a glass face and was otherwise undamaged. See figure 1.



Figure 1. JPI EDM-830 during download.

## **2.1. JPI EDM-830**

The JPI EDM-830 is a panel-mounted gauge that allows the operator to monitor and record up to 24 parameters related to engine operations. This device was set up to record and display: Exhaust Gas Temperature (EGT), Cylinder Head Temperature (CHT), Turbine Inlet Temperature (TIT), Manifold Pressure (MAP), Engine Revolutions Per Minute (RPM), Differential (DIF), Shock Cooling Rate (CLD), and Battery Voltage. The memory can store up to 20 hours of data at a 6 second-per-sample rate. The data can then be downloaded by the operator using the J.P. Instruments software.

### **2.1.1. JPI EDM-830 Data Recovery**

Information was extracted normally using the manufacturer's software (EZ Trends.) All times are in Coordinated Universal Time (UTC) which was 8 hours advanced from Pacific standard time (local) the day of the accident.

### **2.1.2. JPI EDM-830 Data Description**

The data extracted included 7 sessions from January 24, 2018, through February 13, 2018. The last recorded session was determined to be related to the accident and is included in this report. The data was recorded at a 6 second-per-sample rate.

The date and time on the device is manually adjusted by the operator. The device begins recording data when power is applied and stops when power is disconnected. Precise time correlation could not be made due to the device display in minutes only. All times in this report are from the device and may not align with flight track data information.

### **2.1.3. Engine Data Summary**

The engine data indicated a normal start up and ground runup profile. The takeoff and cruise profiles were also normal, indicated by stable EGTs, CHTs and TIT temperatures. After the takeoff, RPM and MAP were steady about 2400 and 25 inches, respectfully. About 0308 the CHTs decreased about 15 to 20 degrees likely due to increased airspeed during the descent. The last 3 data points indicated a MAP decrease to 17.8 inches with RPM steady about 2400. All temperatures decreased a corresponding amount. The last data point indicated no anomalies or impact indications.

## **3. OVERLAYS AND TABULAR DATA**

Figure 1 is a plot of parameters from the accident flight recorded on the JPI EDM-830 device for the entire flight. The time interval is 02:41:56 to 03:12:08 UTC.

The tabular data from the accident flight recorded by the JPI EDM-830 device is included as Attachment 1. This attachment is provided in electronic comma separated value (csv) format.

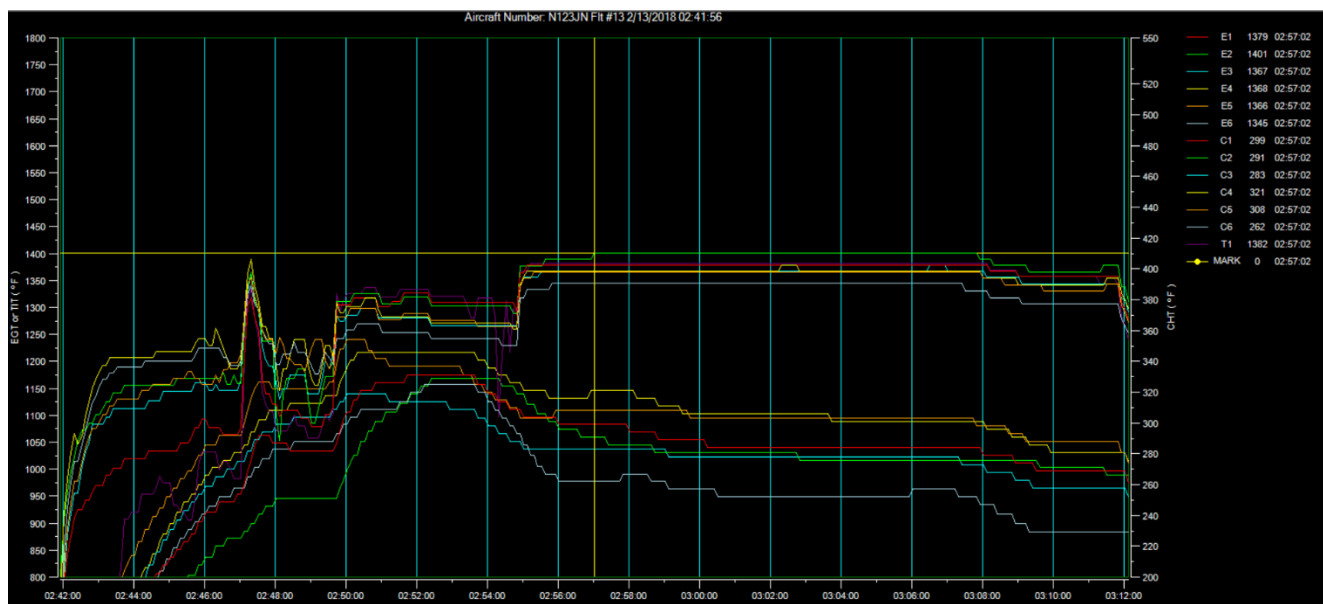


Figure 2. EZ Trend graphical display of engine data