

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, D.C. 20594

August 10, 2018

Engine Data Monitor (EDM)

Specialist's Factual Report
By Sean Payne

1. EVENT SUMMARY

Location: Hamilton, Ohio
Date: May 15, 2018
Aircraft: Grumman AA-1B
Registration: N6550L
Operator: Private
NTSB Number: CEN18LA173

On May 15, 2018, about 0945 central daylight time, a Grumman American Aviation Corporation AA 1B airplane, N6550L, impacted terrain during a forced landing at the Butler County Regional Airport-Hogan Field (HAO), near Hamilton, Ohio, following a loss of engine power. The commercial pilot sustained serious injuries. The airplane received substantial wing and fuselage damage. The airplane was registered to an individual and was operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 test flight. Day visual meteorological conditions prevailed in the area about the time of the accident, and the flight was not operated on a flight plan. The local flight was originating from HAO at the time of the accident.

2. ENGINE DATA MONITOR GROUP

An Engine Data Monitor (EDM) group was not convened.

3. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following EDM:

Recorder Manufacturer/Model: **JPI EDM-350**
Recorder Serial Number: **1011**

3.1. JPI EDM-350 Description

The J. P. Instruments EDM-700/800 is a panel mounted LCD display that the operator can monitor, and records up to 24 parameters related to engine operations. Depending on the installation engine parameters monitored can include:

- Exhaust Gas Temperature (EGT)
- Cylinder Head Temperature (CHT)
- Oil Pressure and Temperature

- Manifold Pressure
- Outside Air Temperature
- Turbine inlet Temperature
- Engine Revolutions per Minute
- Compressor Discharge Temperature
- Fuel Flow
- Carburetor Temperature
- Battery Voltage

The unit can also calculate, in real-time, horsepower, fuel used, shock cooling rate and EGT differentials between the highest and lowest cylinder temperatures. The calculations are also based on the aircraft installation.

The unit contains non-volatile memory for data storage of the parameters recorded and calculated. The rate at which the data is stored is selectable by the operator from 2 to 500 seconds per sample. The memory can store up to 20 hours of data at a 6 second sample rate. The data can then be downloaded by the operator using the J.P. Instruments software.

3.1.1. Data Recovery

The recorder had a damaged screen, but was otherwise in good condition and the data were extracted normally from the recorder using a USB stick.

Figure 1. Exterior of flight recorder.

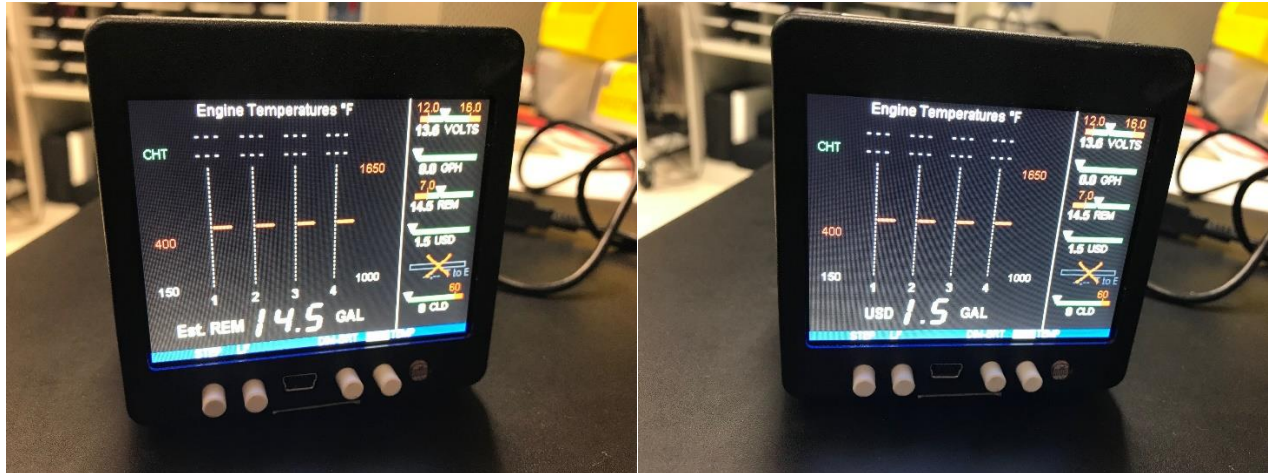


3.1.2. Data Description

The download of the EDM produced a manufacturer proprietary file. The proprietary file contained recordings for six flights, however, the data was marked as “BADFLT” and no engine data was recorded within each file.

The unit stored the amount of fuel available and the amount of fuel used. The amount of fuel used displayed as 1.5 gallons. The amount of fuel available displayed 14.5 gallons. Figure 2 shows the unit’s screen displaying these parameters.

Figure 2. Fuel totalizing information.



3.1.3. Engineering Units Conversions

The engineering units conversions used for the data contained in this report are based on documentation from the manufacturer of the EDM.

3.2. Time Correlation

No time correlation was available.

3.3. Plots and Corresponding Tabular Data

No data was recovered from the device.