

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA24FA088

ELECTRONIC DEVICES

Specialist's Factual Report

May 1, 2024

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A. ACCIDENT

Location: Leyden, Massachusetts
Date: January 14, 2024
Time: 1125 eastern standard time (EST)
Airplane: Beechcraft 95-B-55, N7345R

B. ELECTRONIC DEVICES SPECIALIST

Specialist: Gerald Kawamoto
Recorder Specialist
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

A group was not convened. The NTSB Vehicle Recorder Division received the following electronic devices:

Recorder Manufacturer/Model: JPI EDM-760
Recorder Serial Number: 1175

Recorder Manufacturer/Model: Shadin Avionics Digiflo-L
Recorder Serial Number: 10659

1.0 JPI EDM-760 Description

The J. P. Instruments (JPI) EDM-760 is a panel mounted gauge that the operator can monitor and record 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 may contain non-volatile memory for data storage of the parameters recorded and calculated, depending on model capability.¹ The data can then be downloaded by the operator using the J.P. Instruments software.

1.1 JPI EDM-760 Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an external examination revealed the device sustained impact damage, as shown in Figure 1. An internal examination revealed further damage to internal components and that the unit was not manufactured with the onboard memory module, therefore, no data were recovered.



Figure 1. Front and back of the JPI EDM-760 as received.

¹ Non-volatile memory is semiconductor memory that does not require power for data retention.

2.0 Shadin Digiflo-L Description

The Shadin Digiflo-L is a digital fuel management system designed to provide fuel management information under real-time flight conditions. The unit is connected to the engine fuel flow transducers and is capable of transmitting fuel information to certain GPS receivers for additional calculations and display of fuel management data. The unit does not interface with an aircraft's fuel quantity indicating system. The unit requires the flight crew to enter the initial fuel on board the aircraft. All calculations and data provided by the unit are based on fuel flow. Between power cycles the unit retains the last fuel used and fuel remaining.

2.1 Shadin Digiflo-L Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an external examination revealed the device sustained impact damage, as shown in Figure 2. The device powered on normally with a functioning lab surrogate display.



Figure 2. Shadin Digiflo-L as received.

2.2 Shadin Digiflo-L Data Description

The last fuel used was 53.1 gallons, as shown in Figure 3, and fuel remaining was 82.8 gallons, as shown in Figure 4.

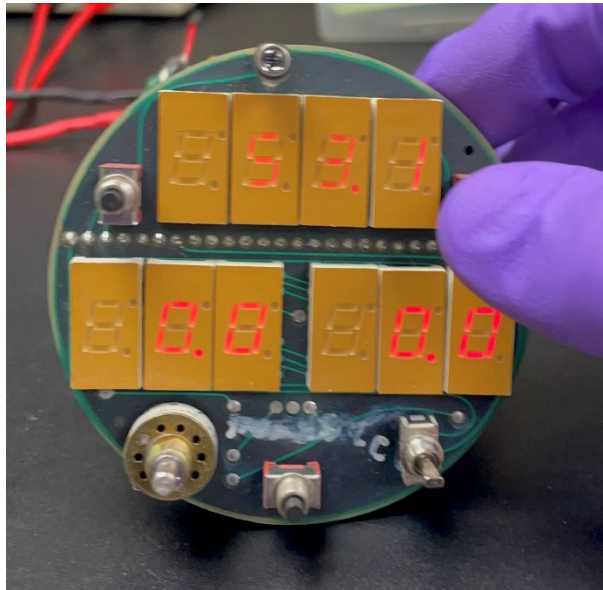


Figure 3. Fuel used.

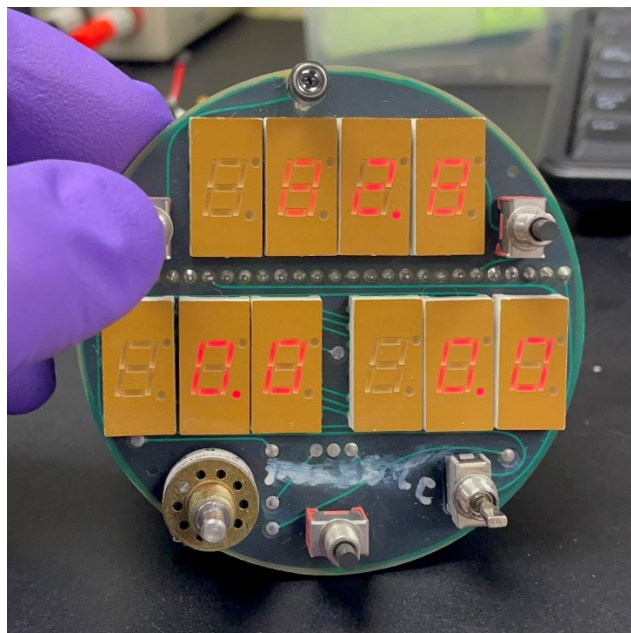


Figure 4. Fuel remaining.

Submitted by:

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