

National Transportation Safety Board

Office of Research and Engineering

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ENGINE DATA MONITOR

Specialist's Factual Report

July 29, 2026

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A. ACCIDENT

Location: Oxford, Maine
Date: August 3, 2024
Time: 1125 Eastern Daylight Time (EDT)
1525 Coordinated Universal Time (UTC)
Airplane: Hendrickson Glasair 3, Hendrickson Claude, N121CH

B. ENGINE DATA MONITOR SPECIALIST

Specialist: Christopher Hoffmann
Aerospace Engineer (Vehicle Recorder Specialist)
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

A group was not convened.

The NTSB Vehicle Recorder Division received a J. P. Instruments Engine Data Management 760 (JPI EDM-760) electronic data file from the N121CH aircraft.

1.0 EDM 760 Description

The J. P. Instruments EDM-760 is a panel-mounted engine gauge that can record up to 24 parameters related to twin-engine operations. In this case, the device was installed on a single-engine aircraft. 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 which stores the measured and calculated parameters. The device can store up to 20 hours of data at a 6 second per sample rate. The data can be downloaded using the J.P. Instruments software.

2.0 EDM Data Description

The Vehicle Recorder Division received a single data file from the EDM-760. This file contained the event flight, and its duration was approximately 1 hour and 23 minutes. The data was recorded at a rate of one sample per second.

2.1 EDM Engineering Unit Conversions

The data was converted into engineering units by the device. Appendix A lists the EDM parameters verified and provided in this report.

2.2 EDM Time Correlation

The EDM records time with each data sample based on the unit's internal clock. This clock is set during installation and can be updated by the operator.

The accident reportedly occurred at about 1125 EDT, but the time stored on the device differs from this significantly. This discrepancy is due to either user error inputting the correct time, time drift due to the nature of the device's battery used to keep track of time passed, or a combination of the two. The EDM did not record any geographic information like latitude/longitude, nor is there any available ADS-B data that could be a source of aircraft position and track. Because of this, there is no way to offset the device's clock time to align with the accident time. Therefore, the plots in Figures 1 to 3 use time elapsed since the device began recording.

D. FIGURES AND TABULAR DATA

Figures 1 to 3 contain EDM data recorded during the event flight on August 3, 2024. All the parameters listed in table 1 are plotted.

Figure 1 shows EDM data for the entirety of the accident flight, figure 2 shows EDM data for the final two traffic patterns of the flight, and figure 3 shows EDM data for the final minute of the flight.

Approximately 49 seconds prior to the end of recorded data, the engine parameters began to deviate from their expected values during that phase of flight. Oil pressure, engine RPM, exhaust gas temperature, and cylinder head temperature

began to decrease, while fuel pressure, fuel flow, and manifold pressure began to increase. This is denoted by a red dashed line in figures 2 and 3.

Approximately 16 seconds prior to the end of recorded data, the recorded data showed significant changes in engine parameters. Oil pressure and engine RPM declined rapidly to zero; fuel pressure and fuel flow decreased as well but to a nonzero value. This is denoted by a solid red line in figures 2 and 3.

The corresponding tabular data used to create figures 1 to 3 are provided in electronic comma-separated value (CSV) format as attachment 1 to this report.

Submitted by:

Christopher Hoffmann
Aerospace Engineer (Recorder Specialist)

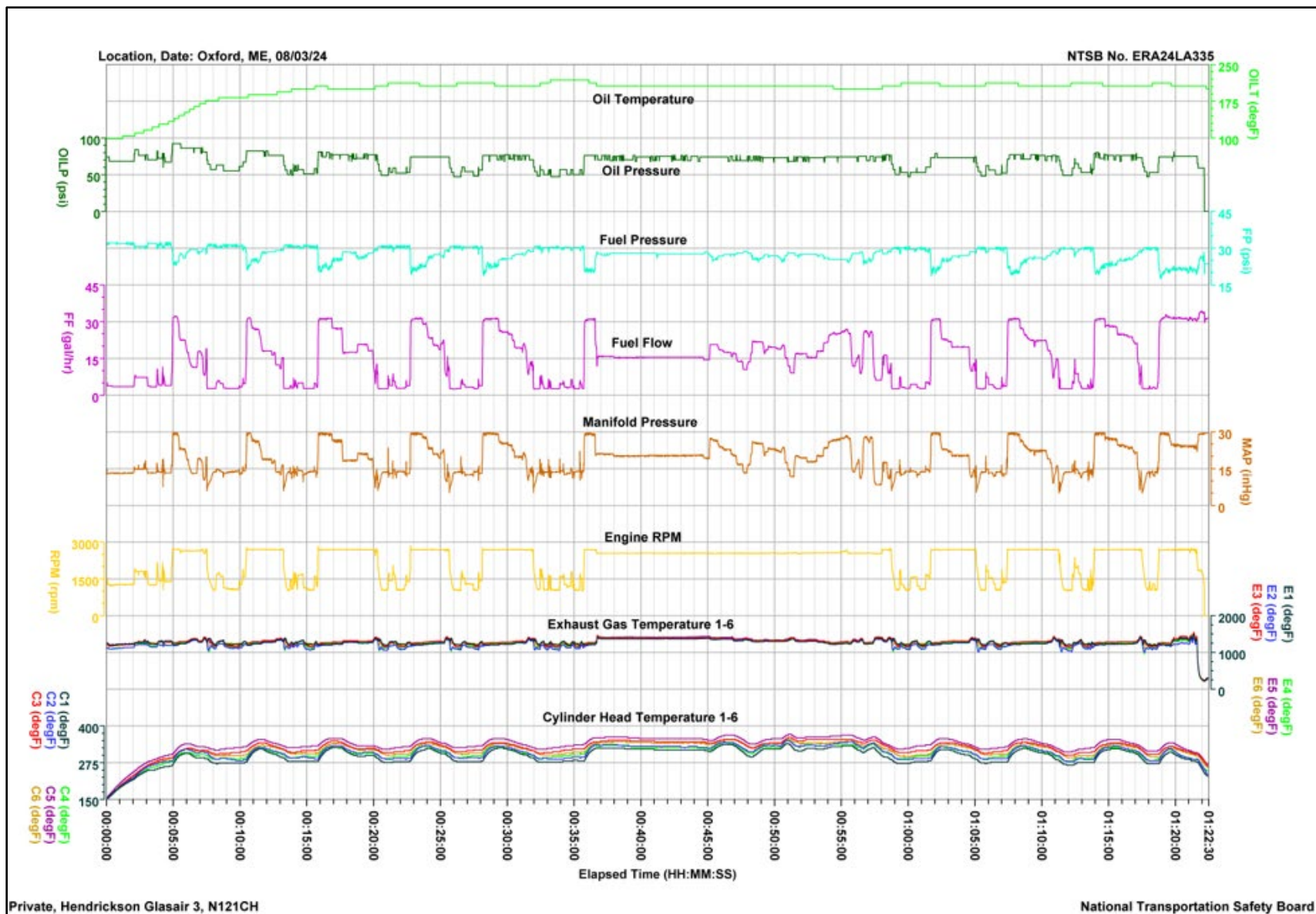


Figure 1. Plot of EDM parameters for the entire duration of the recorded accident flight.

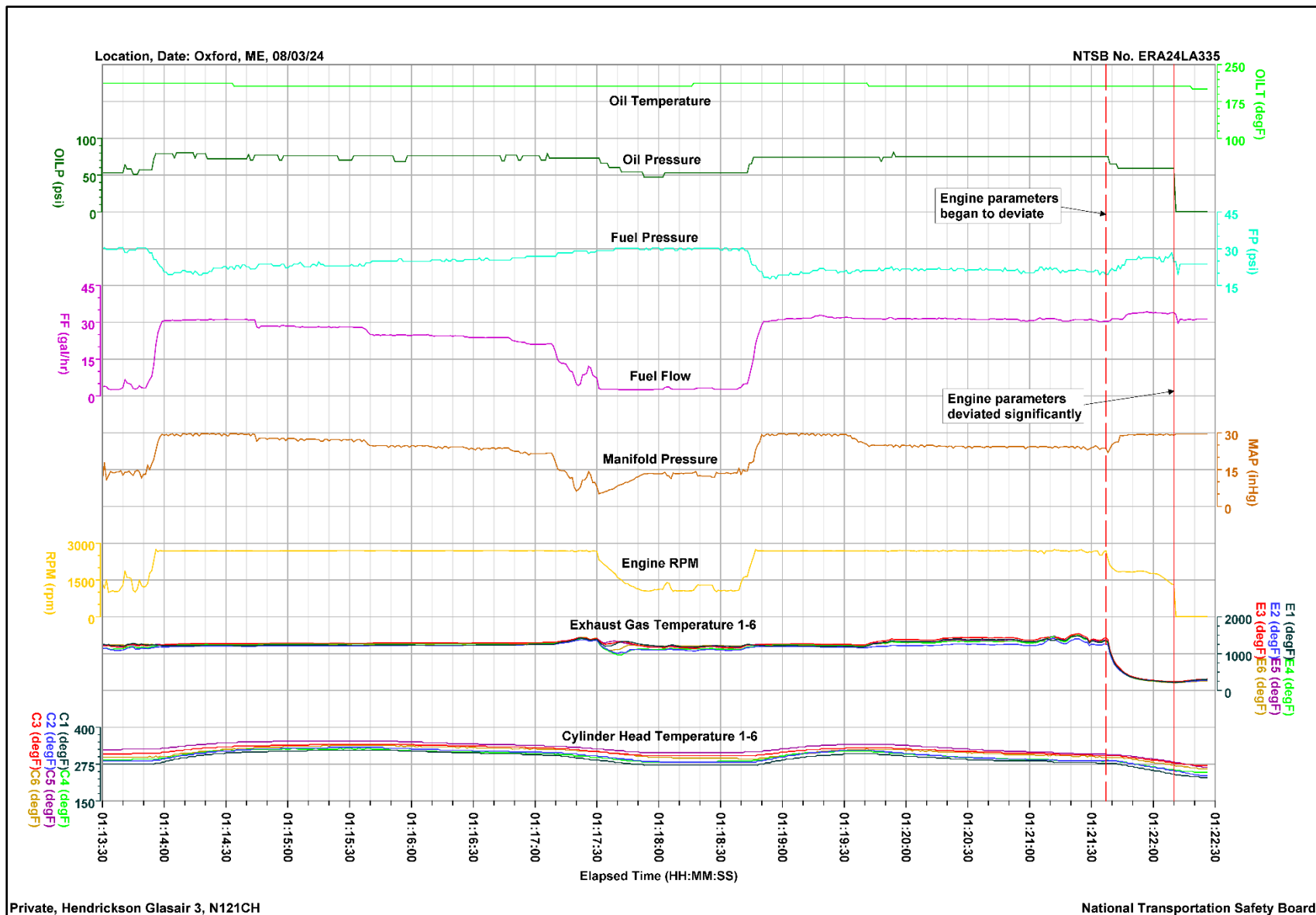


Figure 2. Plot of EDM parameters for the final two traffic patterns flown during the flight.

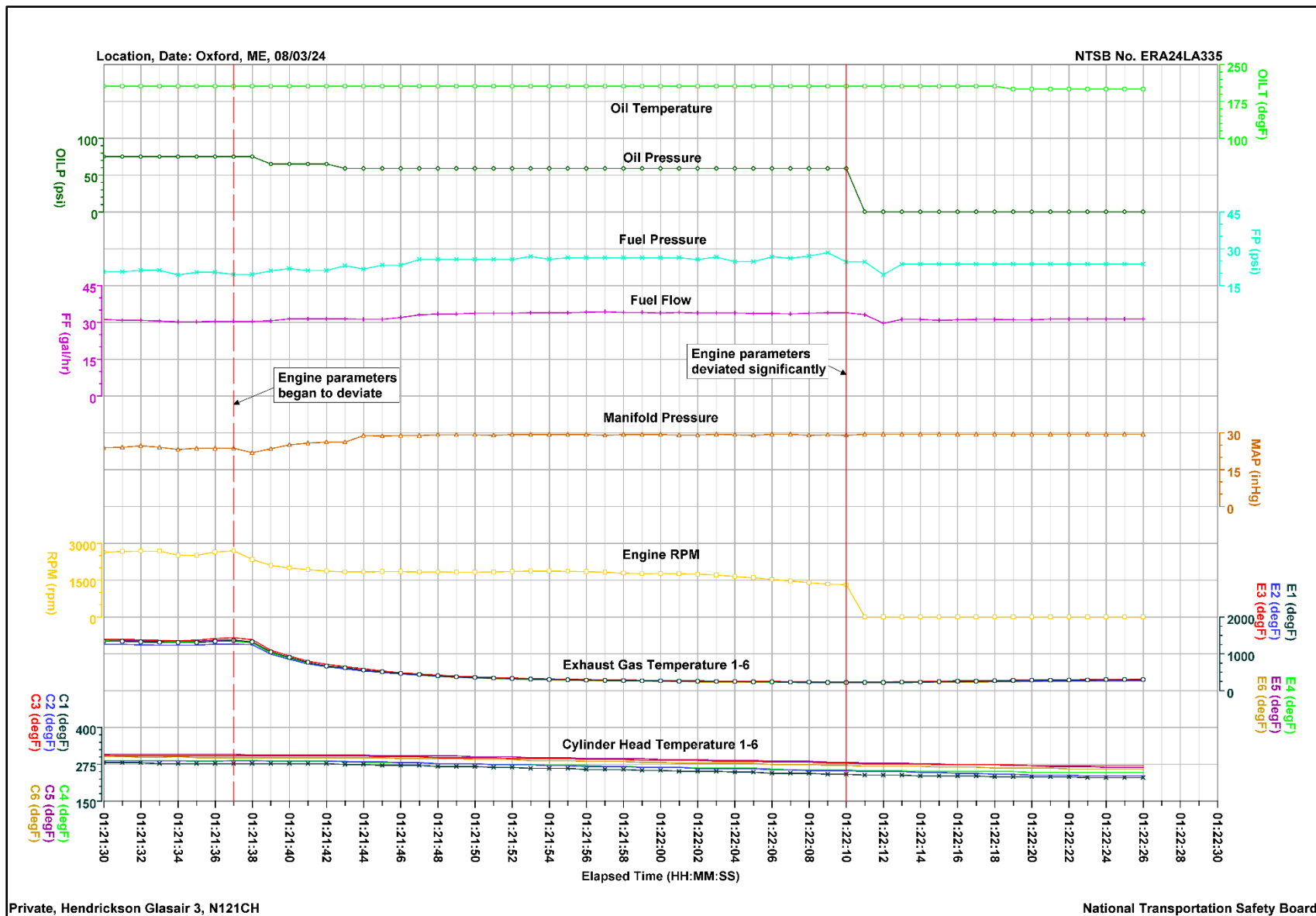


Figure 3. Plot of EDM parameters for the final minute of the flight.

APPENDIX A. VERIFIED AND PROVIDED PARAMETERS

This appendix describes the parameters provided and verified in this report. Table 1 lists the parameters and Table 2 describes the unit abbreviations used in this report.

Table 1. Verified and provided parameters.

Parameter Name (units)	Parameter Description
C# (degF)	Cylinder Head Temperature Cylinder # ¹
E# (degF)	Exhaust Gas Temperature Cylinder # ¹
FF (gal/hr)	Fuel Flow
FP (psi)	Fuel Pressure
MAP (inHg)	Manifold Pressure
OILP (psi)	Oil Pressure
OILT (degF)	Oil Temperature
RPM (rpm)	Revolutions Per Minute

Table 2. Unit abbreviations.

Unit Abbreviations	Descriptions
degF	degrees Fahrenheit
gal	gallons
hr	hour
inHg	inches of mercury
psi	pounds per square inch
rpm	revolutions per minute

¹ Depending on aircraft configuration number of cylinders that are instrumented varies. In the data plots the '#' is replaced with the appropriate cylinder ID.