

National Transportation Safety Board

Office of Research and Engineering

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ERA24LA163

COCKPIT DISPLAY - RECORDED FLIGHT DATA

Specialist's Factual Report

May 1, 2025

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A. ACCIDENT

Location: Seffner, Florida
Date: April 4, 2024
Time: 15:22 eastern daylight time (EDT)
Airplane: Evektor-Aerotechnik A S Harmony LSA, N469JA

B. COCKPIT DISPLAY - RECORDED FLIGHT DATA 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: Garmin GDU 460
Recorder Serial Number: 7Y9100109

1.0 Garmin GDU 460 Description

The Garmin GDU 460 is a 10.6-inch display employing a touch-screen user interface and can be utilized as a Primary Flight Display (PFD), Multi-Function Display (MFD), Engine Monitoring Device (EDM), or a combination of all, depending on how the unit is integrated with other compatible avionics products. The unit has the ability to record data via an externally removable SD card or internally on a series of non-volatile memory (NVM) chips. Historical logs may be copied to an SD card inserted into the slot provided on the front of the unit. Data is exported in engineering units, in a comma delimited value (CSV) format. Each record contains UTC date and time, as well as an integer number of milliseconds since the unit was last powered.

1.1 Garmin GDU 460 Data Recovery

The device was in good condition upon arrival at the NTSB Vehicle Recorder Laboratory, as shown in Figure 1. No SD card was present in the device's SD card slot. Data were exported normally to a laboratory SD card using the manufacturer's procedures.



Figure 1. Front and back of the Garmin GDU 460 as received.

1.2 Garmin GDU 460 Data Description

Data included sessions recorded from September 15, 2023, through April 4, 2024. Three flights were recorded on April 4, 2024. The last session on April 4, 2024, corresponded to the accident event and started at 15:04:16 EDT and ended at 15:22:25 EDT on April 4, 2024. All data in this report are presented in EDT, the local time of the accident. Only data relevant to this event are provided in this report. Table 1 describes Garmin GDU 460 parameters provided and verified in this report.

Table 1. Verified and provided Garmin GDU 460 parameters.

Parameter Name (unit)	Parameter Description (unit)
Baro Altitude (ft)	Barometric Altitude (feet)
Coolant Temp (deg F)	Coolant Temperature (degrees Fahrenheit)
EGT # ¹ (deg F)	Exhaust Gas Temperature (degrees Fahrenheit)
Fuel Flow (gal/hr)	Fuel Flow (gallons per hour)
Fuel Pressure (PSI)	Fuel Pressure (pounds per square inch)
Fuel L & R Qty (gal)	Left and Right Fuel Level Indicators (gallons)
GPS Altitude (ft)	GPS Altitude (feet)
GPS Ground Speed (kts)	Ground Speed (knots)
Indicated Airspeed (kts)	Indicated Airspeed (knots)
Latitude (deg)	Latitude (degrees)
Longitude (deg)	Longitude (degrees)
Magnetic Heading (deg)	Magnetic Heading (degrees)
Manifold Press (inch Hg)	Manifold Pressure (inches of mercury)
Oil Press (PSI)	Oil Pressure (pounds per square inch)
Oil Temperature (deg F)	Oil Temperature (degrees Fahrenheit)
Pressure Altitude (ft)	Pressure Altitude (feet)
Pitch (deg)	Pitch Angle (degrees)
Roll (deg)	Roll Angle (degrees)
RPM	Engine Revolutions Per Minute
True Airspeed (kts)	True Airspeed (knots)
Vertical Speed (fpm)	Vertical Speed (feet per minute)
Volts M (V)	Main Bus Voltage (volts)

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

D. FIGURES AND TABULAR DATA

Figure 2 is a Google Earth overlay of the accident flight recorded on the Garmin GDU 460. The appearance of the flight track may not be representative of the airplane's actual flight track and may be attributed to the update rate of GPS parameters as well as the software encoding of the GPS input to the device. The weather and lighting conditions in Google Earth are not necessarily the weather and lighting conditions present at the time of the accident flight. GPS altitude and ground speed are depicted for data points shown and the reported wreckage location is marked with a red pin.

Figure 3 is a plot of basic parameters of the accident flight recorded on the Garmin GDU 460. The time displayed is 15:15:00 EDT to 15:22:30 EDT.

Figure 4 is a plot of engine parameters of the accident flight recorded on the Garmin GDU 460. The time displayed is 15:15:00 EDT to 15:22:30 EDT.

Figure 5 is a plot of engine parameters for all sessions recorded on April 4, 2024. The time displayed is 10:30:00 EDT to 15:30:00 EDT.

The corresponding tabular data used to create figures 2 through 5 are provided in electronic comma-separated value (CSV) format as attachment 1 to this report.

Submitted by:

Gerald Kawamoto
Recorder Specialist

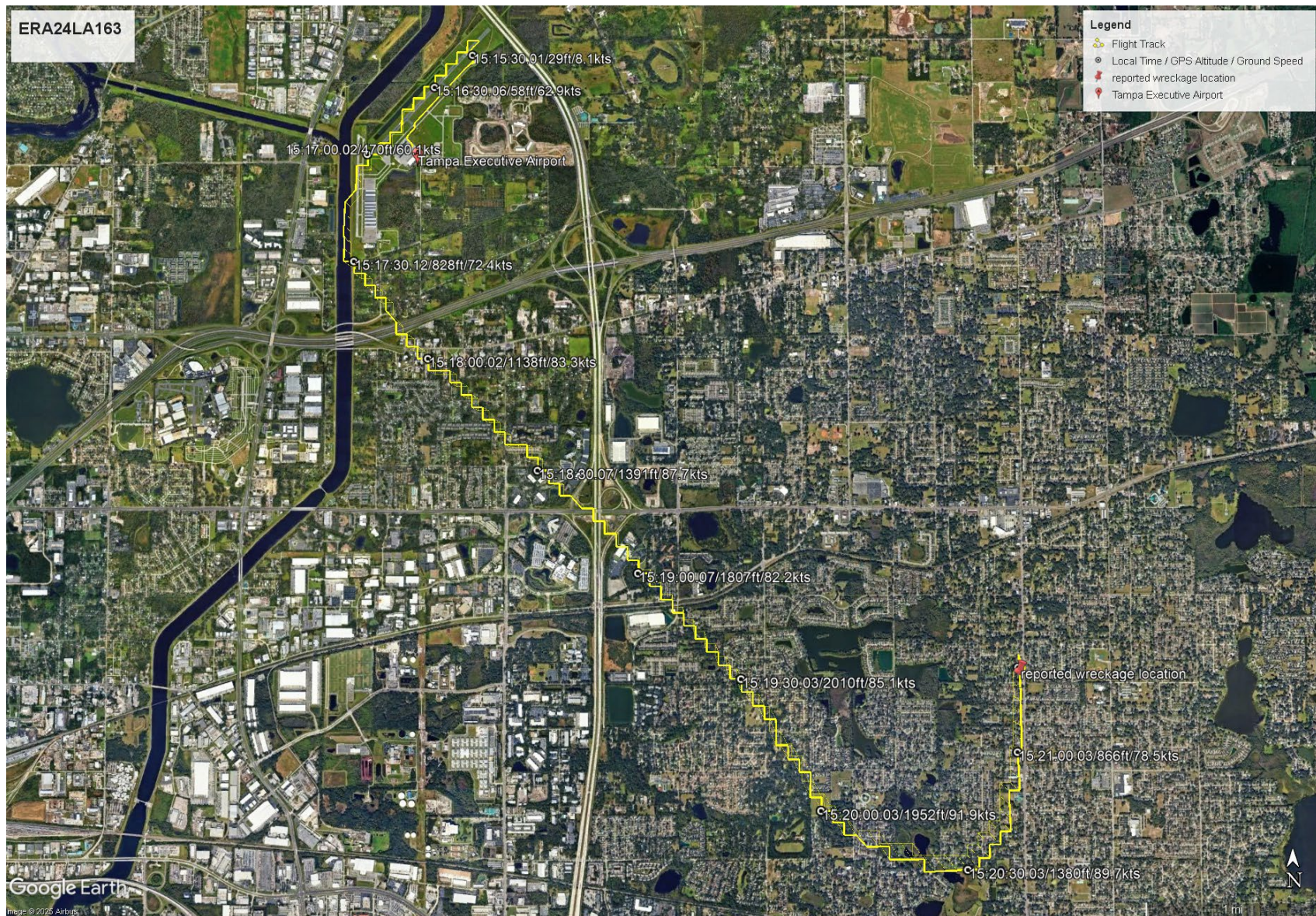


Figure 2. Google Earth overlay of GPS data from the accident flight. The appearance of the flight track may not be representative of the airplane's actual flight track.

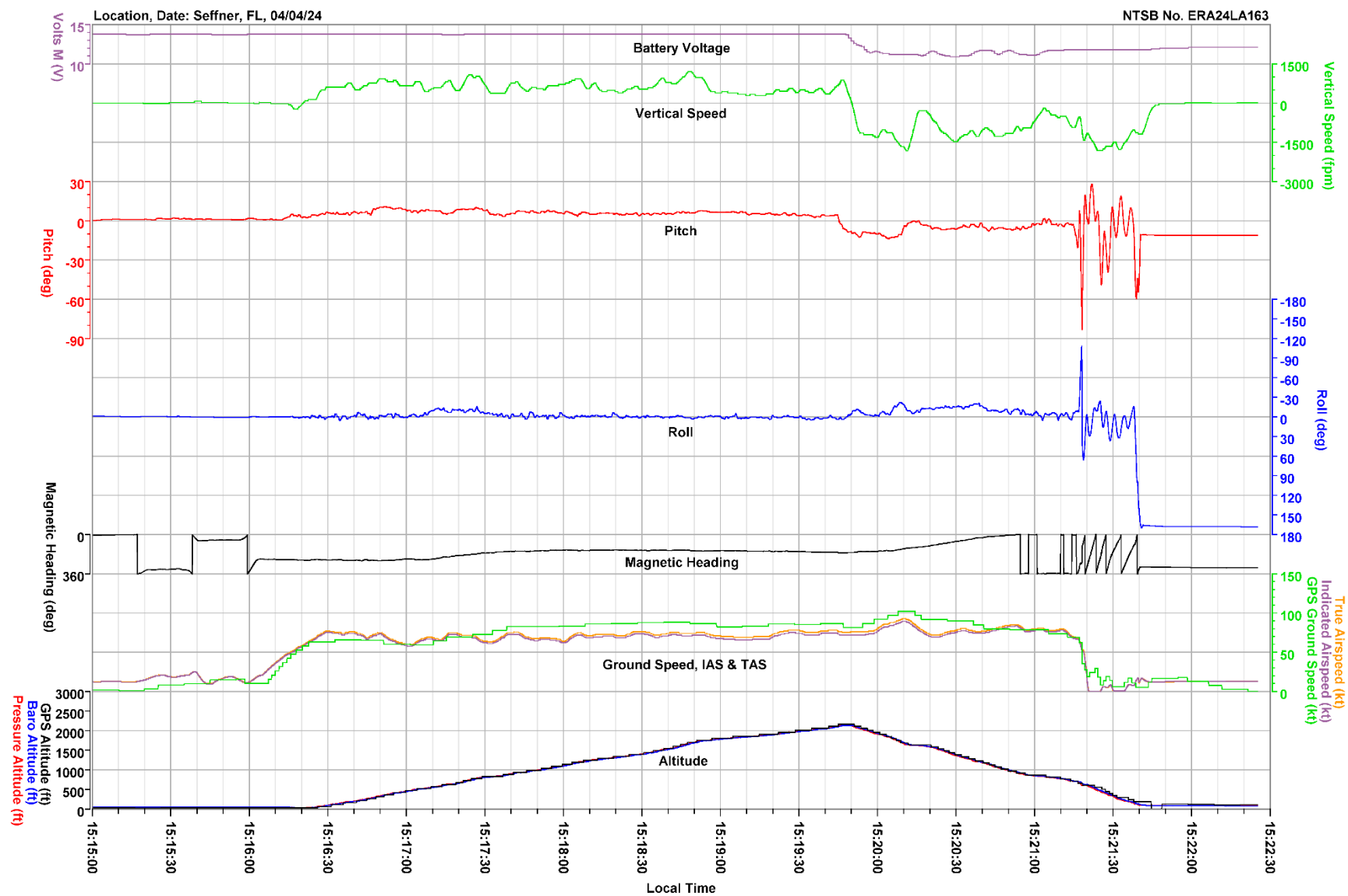


Figure 3. Plot of basic parameters for the accident flight.

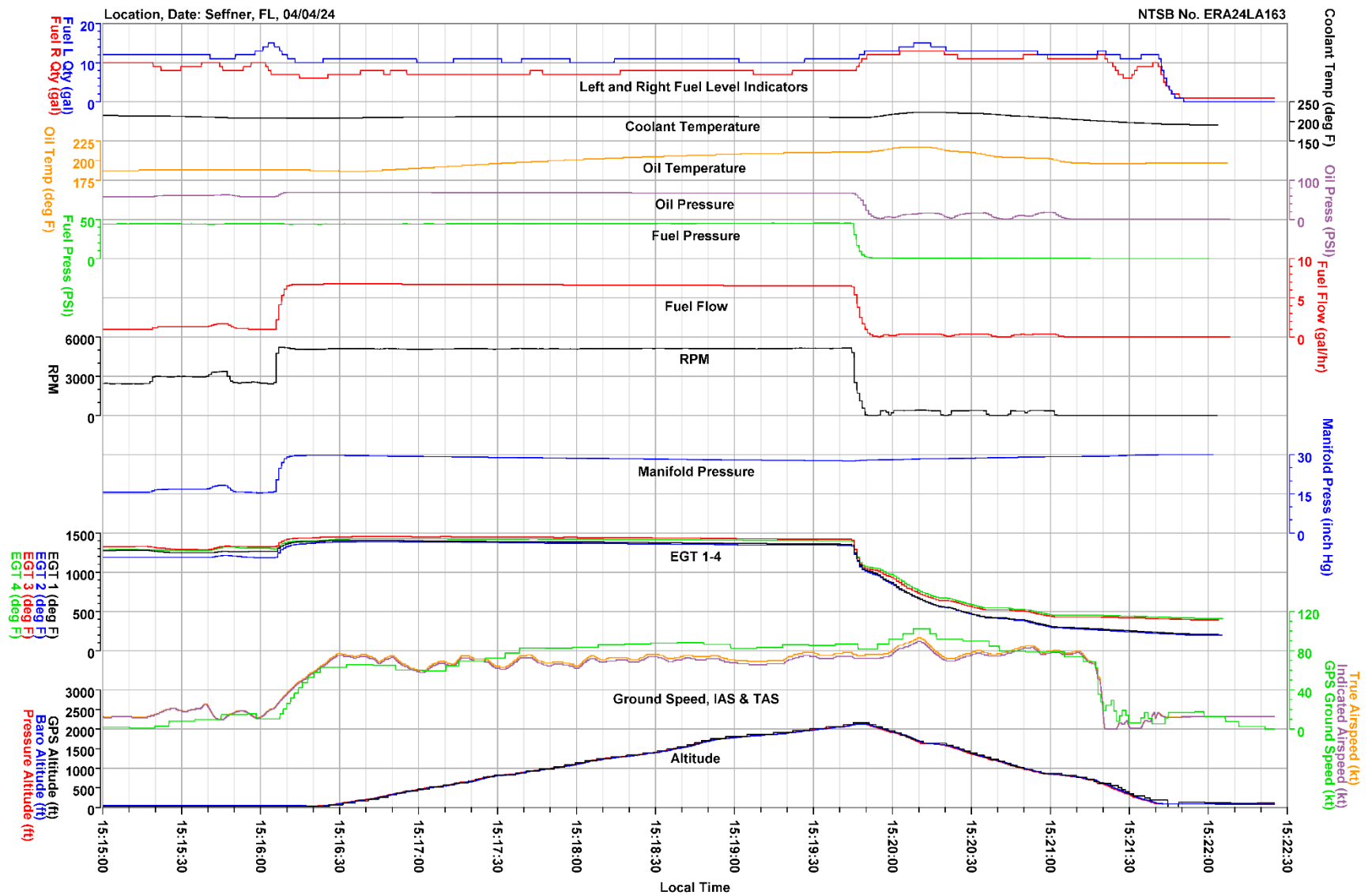


Figure 4. Plot of engine parameters for the accident flight.

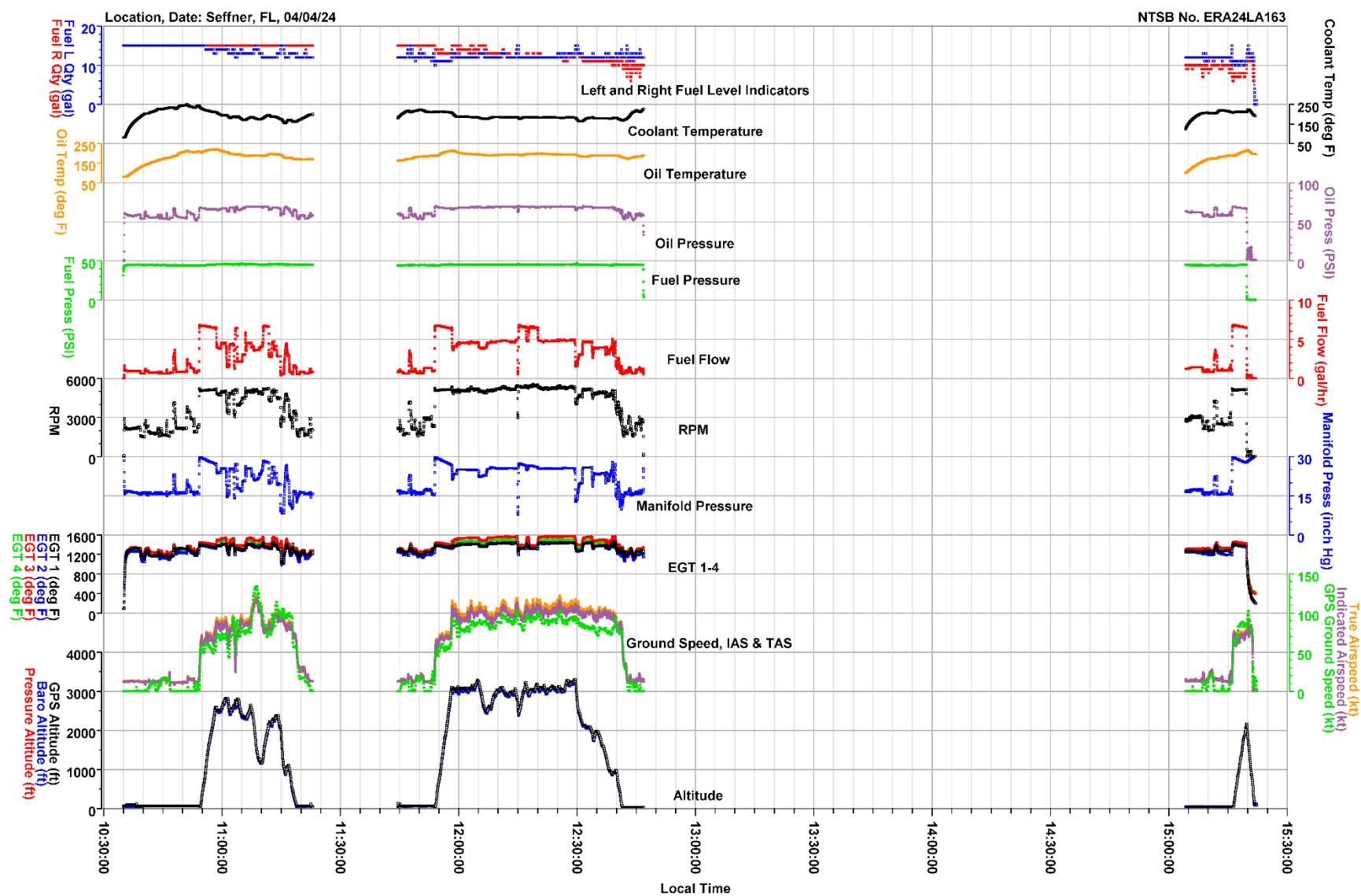


Figure 5. Plot of engine parameters for all sessions on April 4, 2024.