

National Transportation Safety Board

Office of Research and Engineering

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ERA24LA208

COCKPIT DISPLAY - RECORDED FLIGHT DATA

Specialist's Factual Report

April 17, 2025

TABLE OF CONTENTS

A. ACCIDENT.....	3
B. COCKPIT DISPLAY - RECORDED FLIGHT DATA SPECIALIST	3
C. DETAILS OF THE INVESTIGATION	3
1.0 GARMIN GDU 460 DESCRIPTION.....	3
1.1 Garmin GDU 460 Data Recovery	3
1.2 Garmin GDU 460 Data Description	4
D. FIGURES AND TABULAR DATA.....	5

A. ACCIDENT

Location: DeLand, Florida
Date: May 2, 2024
Time: 1404 eastern daylight time (EDT)
1804 coordinated universal time (UTC)
Airplane: AirCam, N848HP

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 cockpit display:

Recorder Manufacturer/Model: Garmin GDU 460
Recorder Serial Number: 7Y9100212

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, 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.¹ 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 as received by the NTSB Vehicle Recorder Laboratory is shown in figure 1. Data were extracted normally from an 8 GB SD card mounted in the device's SD card slot.

¹ Non-volatile memory (NVM) is semiconductor memory that doesn't require external power for data retention.

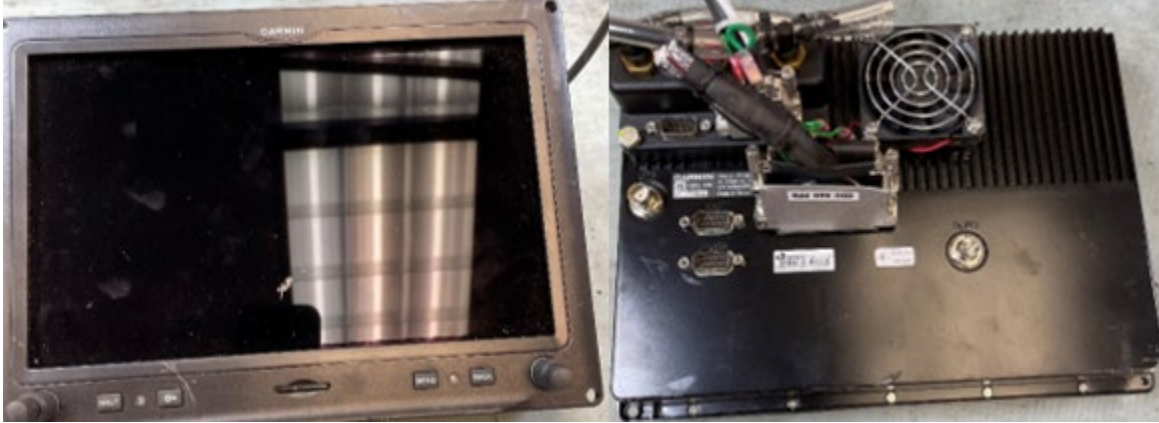


Figure 1. Front and back of the Garmin GDU 460 as received.

1.2 Garmin GDU 460 Data Description

Data included files recorded from March 1, 2024, through May 2, 2024. All data in this report are presented in EDT, the local time of the accident. The accident session started at 13:47:33 EDT and ended at 14:03:51 EDT on May 2, 2024. Table 1 describes Garmin GDU 460 parameters provided and verified in this report. Engine 1 parameters are preceded by E1 and engine 2 parameters are preceded by E2.

Table 1. Verified and provided Garmin GDU 460 parameters.

Parameter Name (unit)	Parameter Description (unit)
EGT # (degF)	Exhaust Gas Temperature (degrees Fahrenheit)
FFlow (gph)	Fuel Flow (gallons per hour)
FPres (psi)	Fuel Pressure (pounds per square inch)
GPS Altitude (ft)	GPS Altitude (feet)
GPS Ground Speed (kts)	Groundspeed (knots)
GPS Ground Track (deg)	Ground Track (degrees)
Indicated Airspeed (kts)	Indicated Airspeed (knots)
Vertical Speed (fpm)	Vertical Speed (feet per minute)
Lateral Acceleration (G)	Lateral Acceleration (gravitational acceleration)
Latitude (deg)	Recorded Latitude (degrees)
Longitude (deg)	Recorded Longitude (degrees)
Magnetic Heading (deg)	Magnetic Heading (degrees)
MAP (inHg)	Manifold Pressure (inches of Mercury)
Normal Acceleration (G)	Normal Acceleration (gravitational acceleration)
OilP (psi)	Oil Pressure (pounds per square inch)
OilT (degF)	Oil Temperature (degrees Fahrenheit)
Pitch (deg)	Pitch Angle (degrees)
Pressure Altitude (ft)	Pressure Altitude (feet)
Roll (deg)	Roll Angle (degrees)
RPM (rpm)	Engine Revolutions per Minute
True Airspeed (kts)	True Airspeed (knots)
Vertical Speed (fpm)	Vertical Speed (feet per minute)

D. FIGURES AND TABULAR DATA

Figure 2 is a Google Earth overlay of the accident flight recorded on the Garmin GDU 460. 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.

Figure 3 is a Google Earth overlay of the end of the accident flight. The reported wreckage location is marked with a red pin. The end of runway 12 at DeLand Municipal Airport-Sidney H Taylor Field (DED) is marked with a red arrow.

Figure 4 is a plot of basic parameters of the entire accident flight recorded on the Garmin GDU 460. The time displayed is 13:47:00 EDT to 14:04:00 EDT.

Figure 5 is a plot of basic parameters of the end of the accident flight recorded on the Garmin GDU 460. The time displayed is 14:03:00 EDT to 14:03:55 EDT.

Figure 6 is a plot of engine parameters of the entire accident flight recorded on the Garmin GDU 460. The time displayed is 13:47:00 EDT to 14:04:00 EDT.

Figure 7 is a plot of engine parameters of the end of the accident flight recorded on the Garmin GDU 460. The time displayed is 14:03:10 EDT to 14:03:55 EDT.

The corresponding tabular data used to create figures 2 through 7 are provided in electronic comma-separated value (CSV) format as attachment 1 to this report.

Submitted by:

Gerald Kawamoto
Recorder Specialist

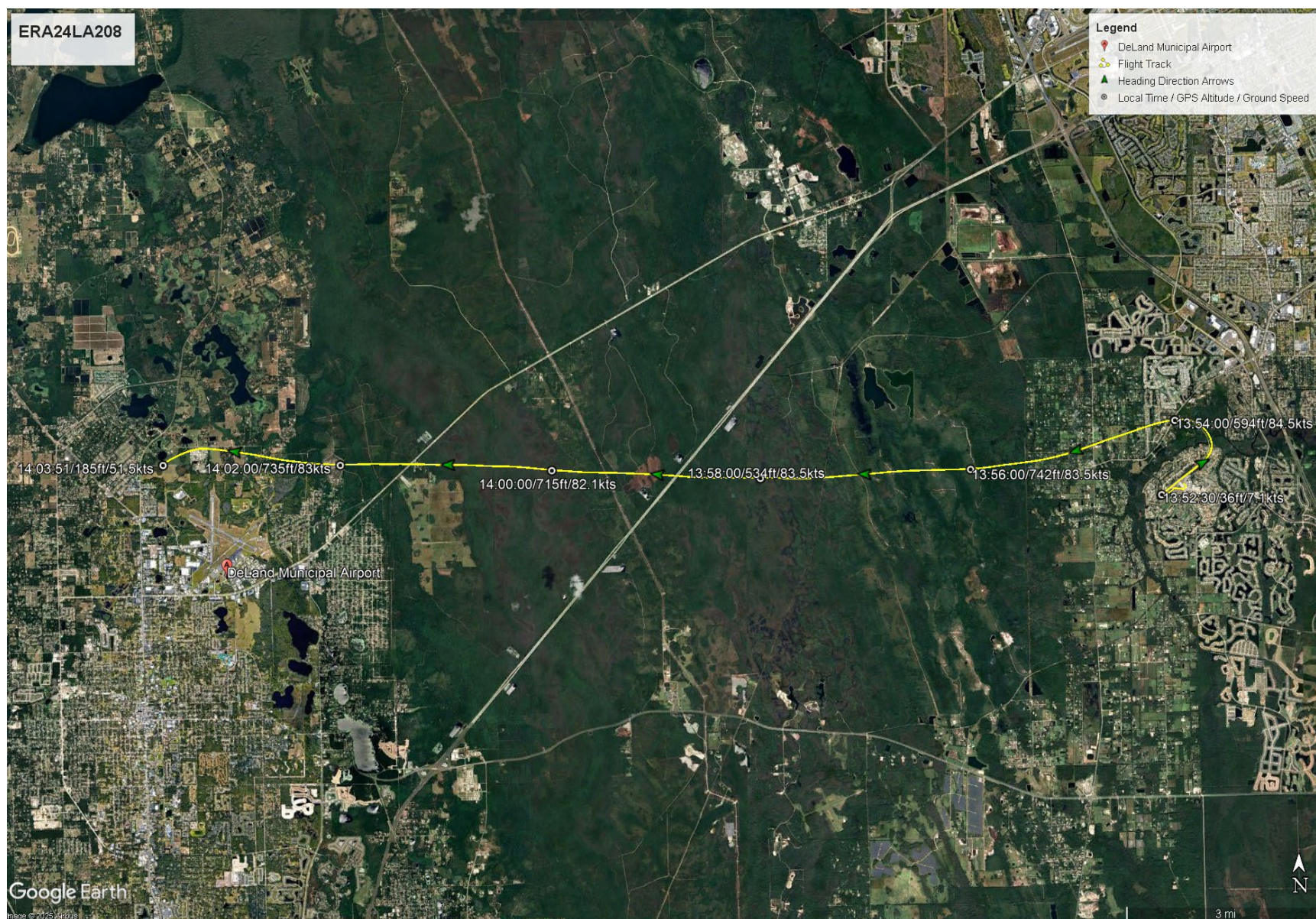


Figure 2. Google Earth overlay of the entire accident flight recorded on the Garmin GDU 460.



Figure 3. Google Earth overlay of the end of the accident flight recorded on the Garmin GDU 460.

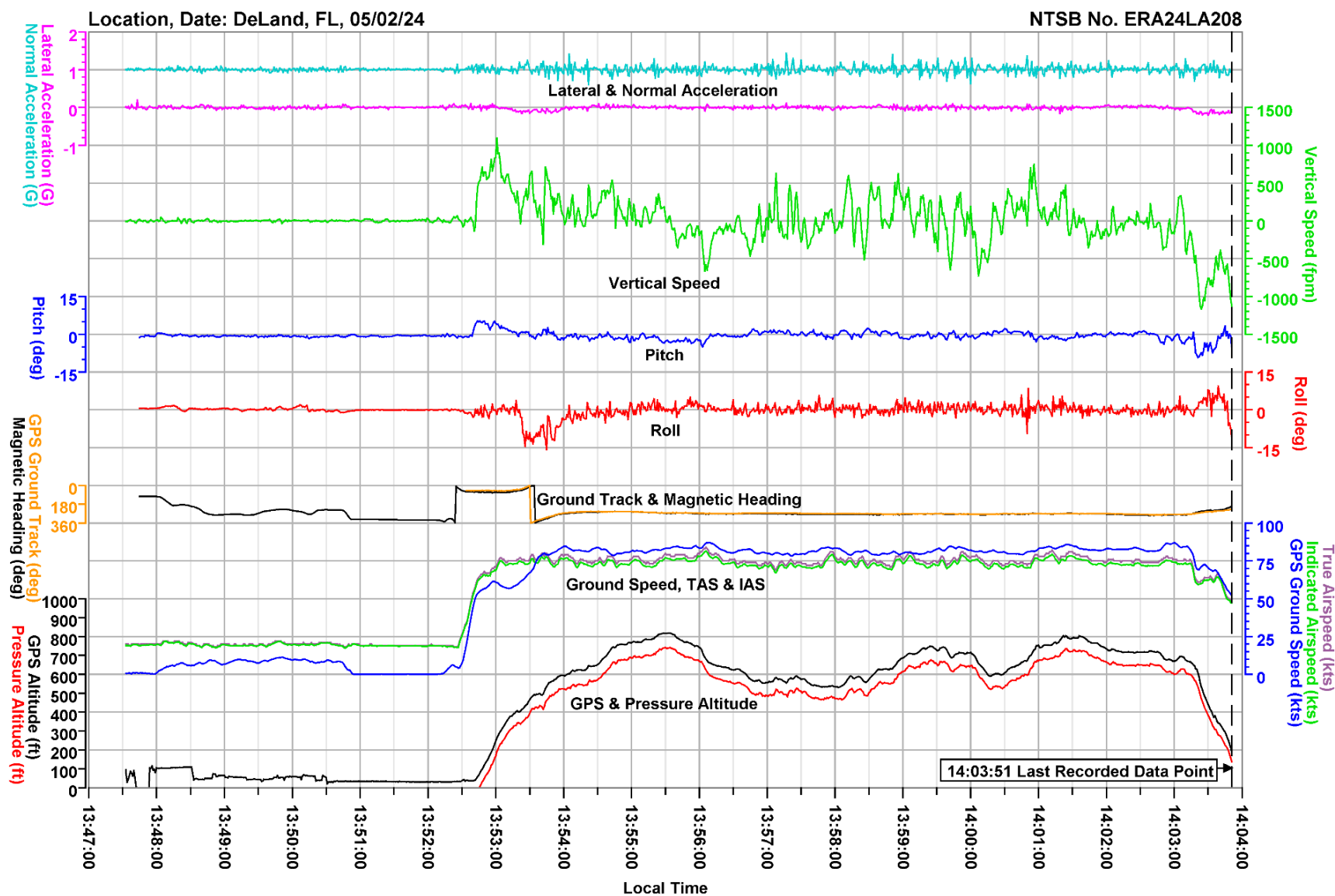


Figure 4. Plot of basic parameters for the entire accident session recorded on the Garmin GDU 460.

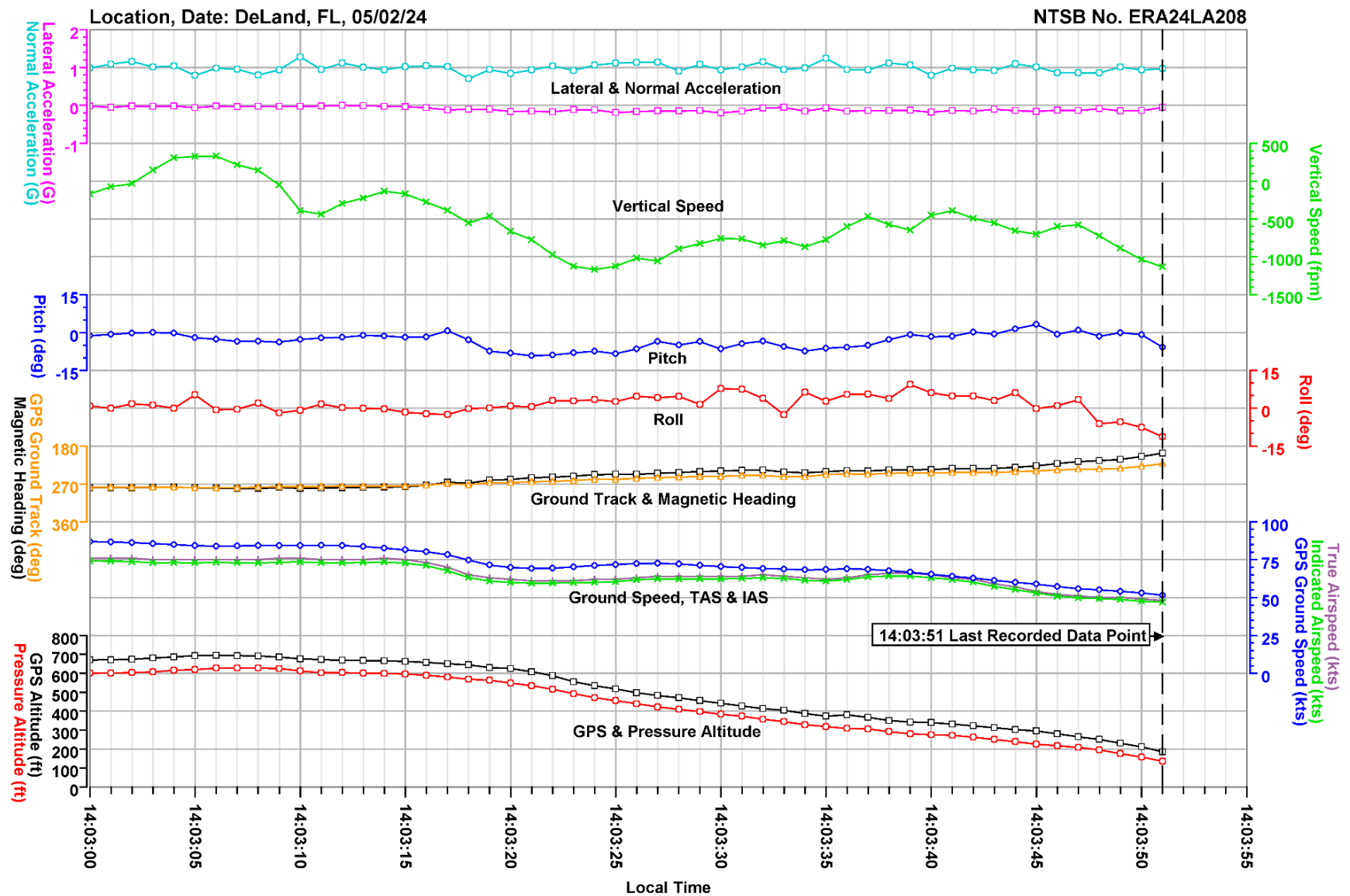


Figure 5. Plot of basic parameters at the end of the accident session recorded on the Garmin GDU 460.

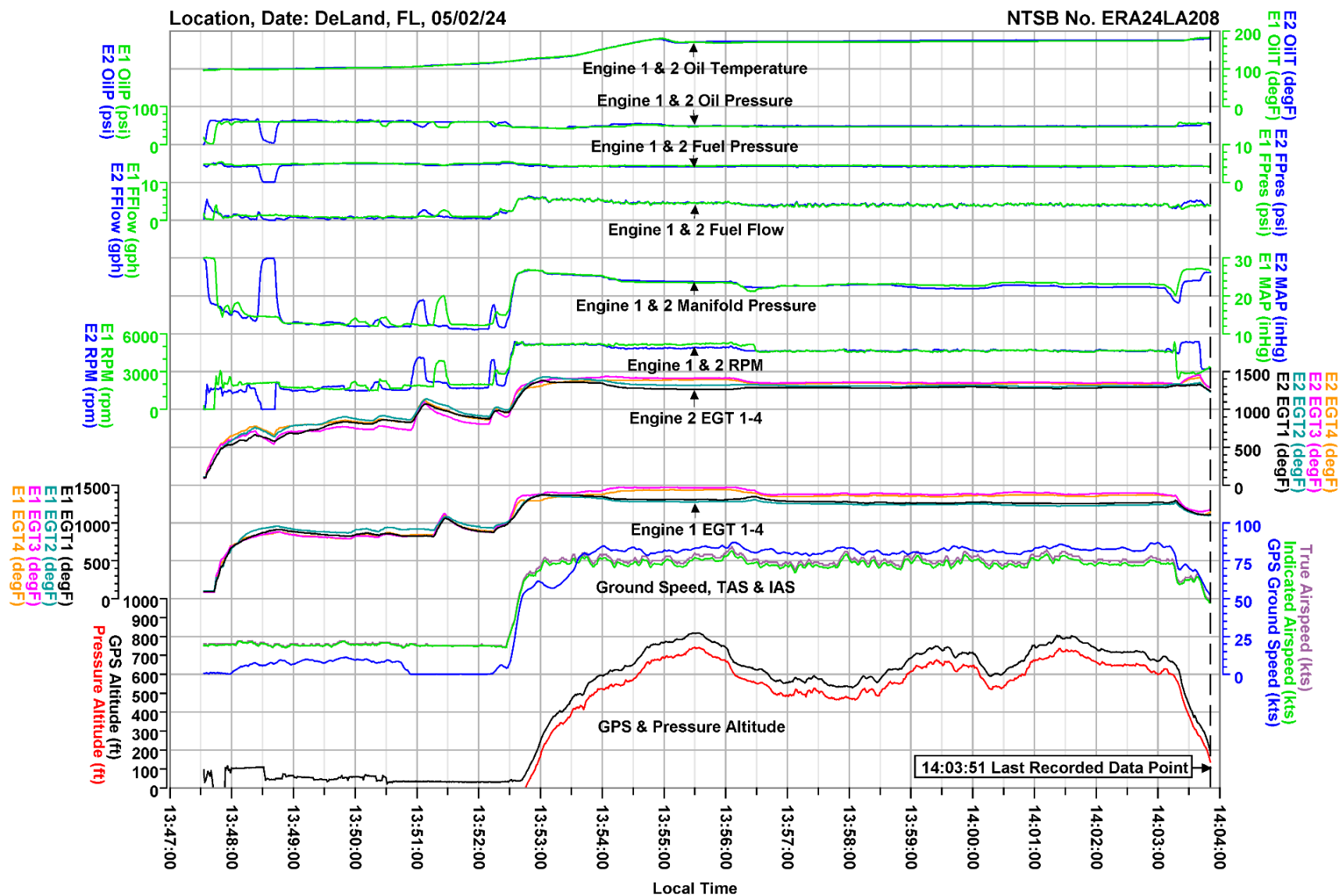


Figure 6. Plot of engine parameters for the entire accident session recorded on the Garmin GDU 460.

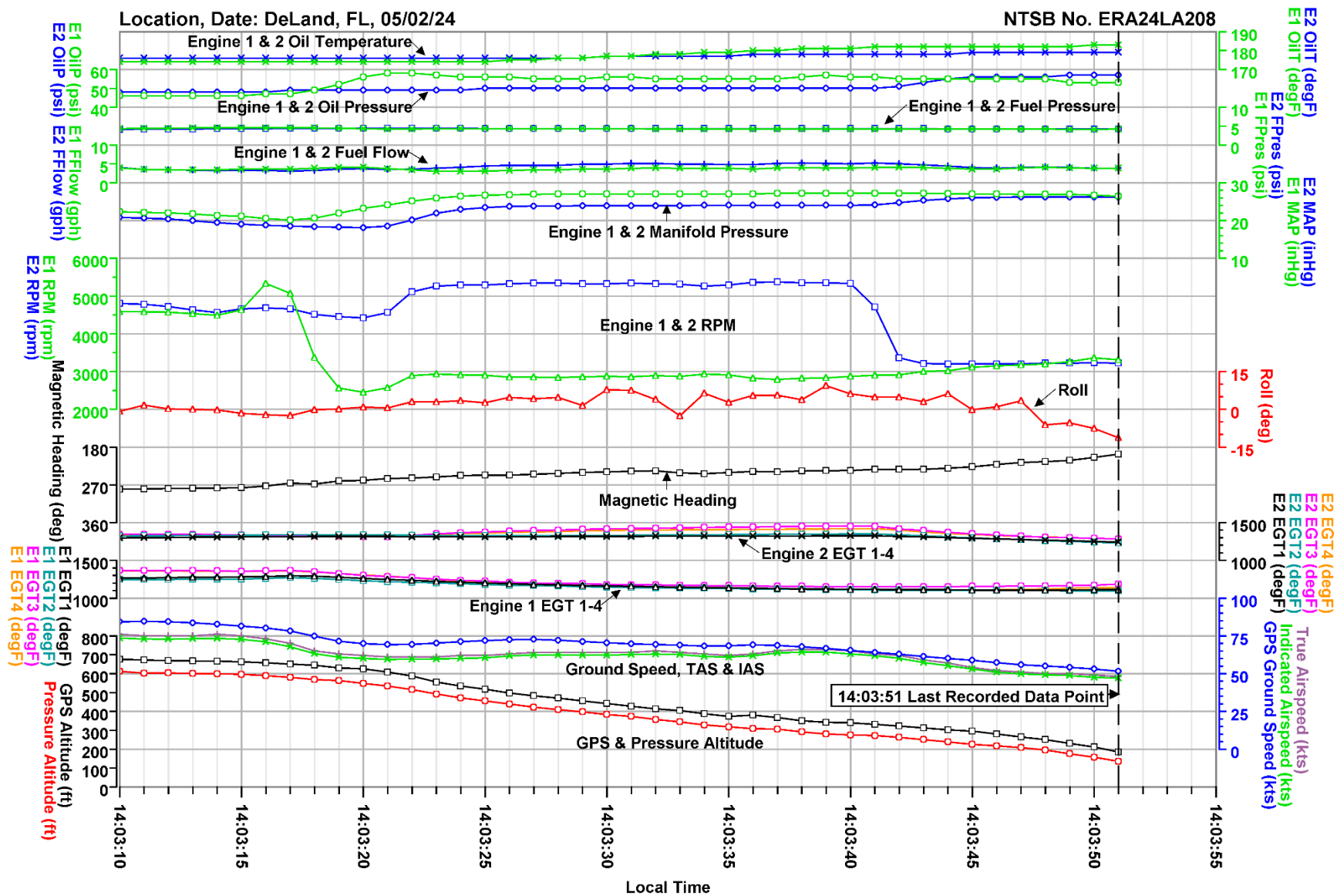


Figure 7. Plot of engine parameters at the end of the accident session recorded on the Garmin GDU 460.