

National Transportation Safety Board

Office of Research and Engineering

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COCKPIT DISPLAY - RECORDED FLIGHT DATA

Specialist's Factual Report

March 1, 2024

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A. ACCIDENT

Location: Albertville, Alabama
Date: June 3, 2024
Time: 1246 central daylight time (CDT)
1746 coordinated universal time (UTC)
Airplane: Zenith 601XL, private operator, N601YP

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 device:

Recorder Manufacturer/Model: Dynon SkyView D1000
Recorder Serial Number: 7548

1.0 Dynon SkyView D1000 Description

The Dynon Skyview (SV) D1000 is a panel-mounted combination Electronic Flight Instrumentation System (EFIS) and Engine Monitoring System (EMS). The device is capable of displaying both EFIS and EMS data on a 10-inch LCD display. Data are stored in non-volatile memory.¹

1.1 Dynon SkyView D1000 Data Recovery

Upon arrival at the Vehicle Recorders Laboratory, an external examination revealed the device had sustained mechanical impact damage, as shown in figure 1. The device was received without its display. The internal circuit board containing the NVM was removed and read out using laboratory tools. Data were converted and provided by the manufacturer.

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

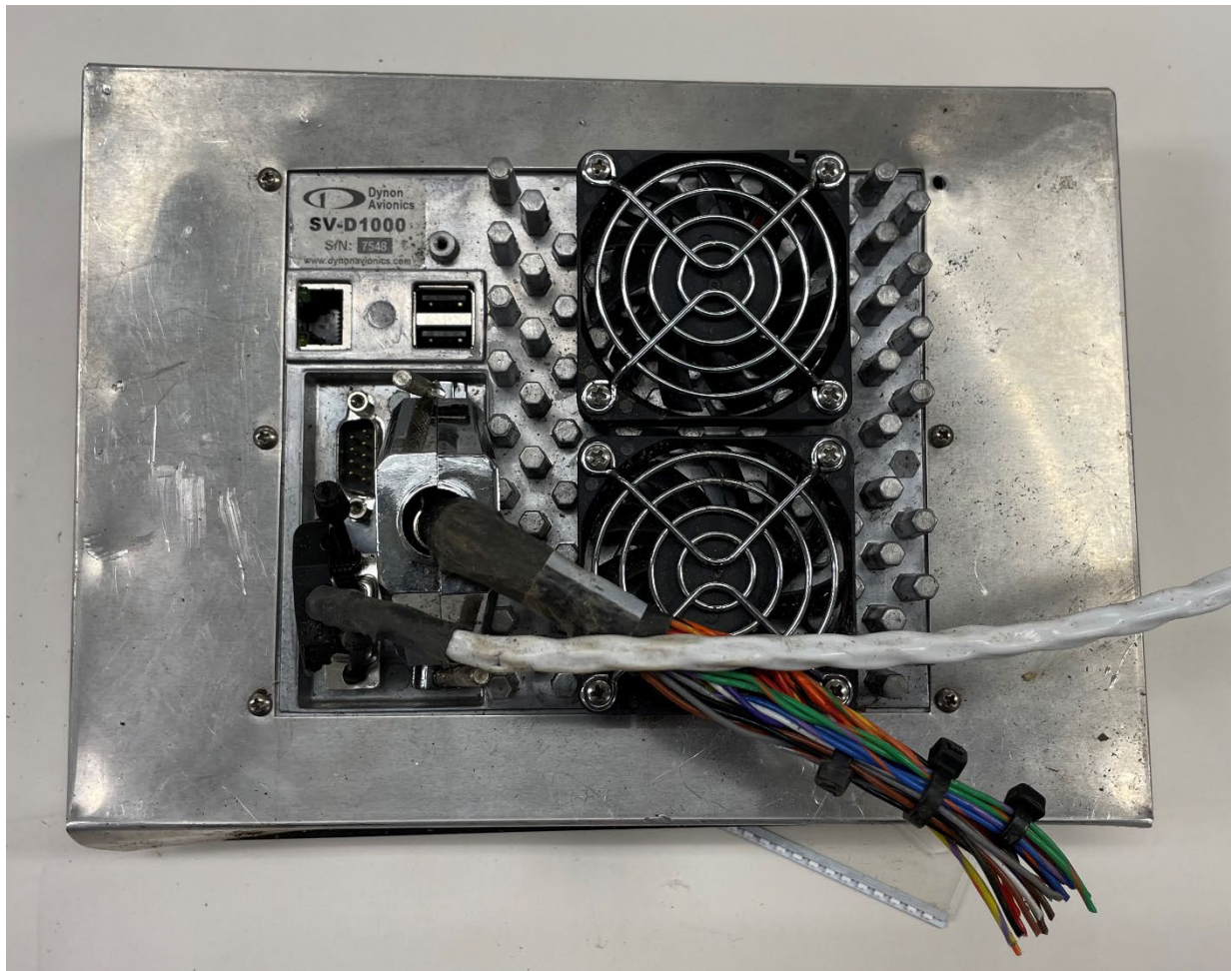


Figure 1. Dynon SkyView D1000 as received.

1.2 Dynon SkyView D1000 Data Description

The final session corresponded to the accident event and is included in this report. The session started at 17:19:11.875 UTC and ended at 17:46:49.938 UTC. Data from the device was provided in engineering units and no additional conversions were made. Data were sampled at a 16Hz rate. The "Barometer Setting" was 29.95 inHg during the accident flight.

Appendix A lists the Dynon SkyView D1000 parameters verified and provided in this report.

1.3 Dynon Time Correlation

The unit records clock time, either externally or internally. The time is set by the operator for the internal clock or if the unit is connected to a GPS, the unit will use the GPS system time. The GPS time is recorded in coordinated universal time (UTC). The difference between CDT and UTC is 5 hours, or 18,000 seconds.

D. FIGURES AND TABULAR DATA

Figures 2 through 7 contain data recorded during the event on June 3, 2023. Figures 2 through 4 are graphical overlays generated in Google Earth. Weather and lighting conditions shown in Google Earth may not be representative of the weather and lighting conditions at the time of the event flight. GPS Altitude and Ground Speed are depicted in the overlays.

Figure 2 shows the entire accident flight.

Figure 3 shows approximately the final minute of the accident flight and the reported wreckage location.

Figure 4 is a plot of basic parameters for the entire accident flight. The time shown is 17:18:00 to 17:48:00 UTC.

Figure 5 is a plot of basic parameters for approximately the final 50 seconds of the accident flight. The time shown is 17:46:00 to 17:46:55 UTC.

Figure 6 is a plot of engine parameters for the entire accident flight. The time shown is 17:18:00 to 17:48:00 UTC.

Figure 7 is a plot of engine parameters for approximately the final 50 seconds of the accident flight. The time shown is 17:46:00 to 17:46:55 UTC.

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

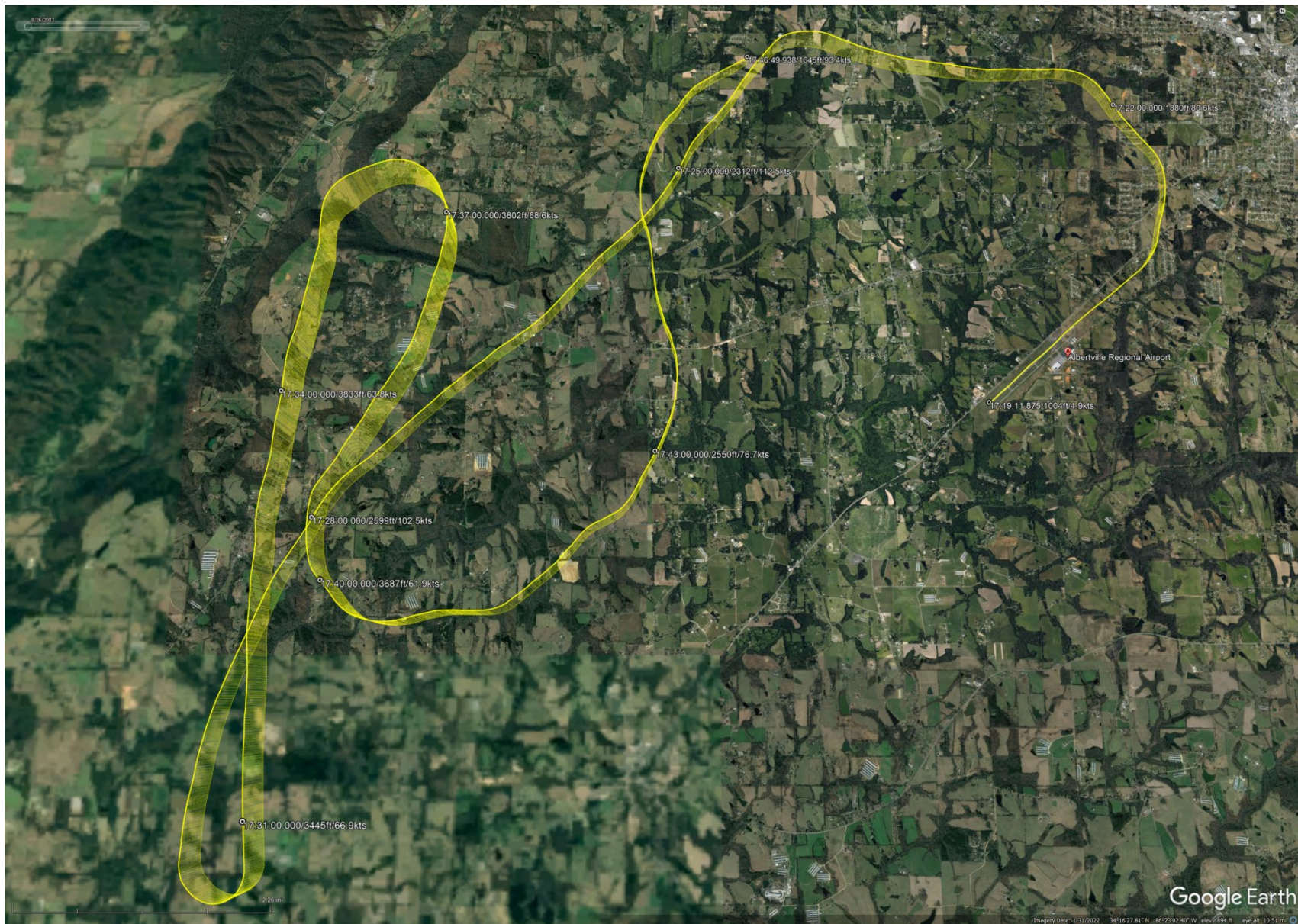


Figure 2. Google Earth overlay of the accident flight.



Figure 3. Google Earth overlay of the end of the accident flight and the reported wreckage location.

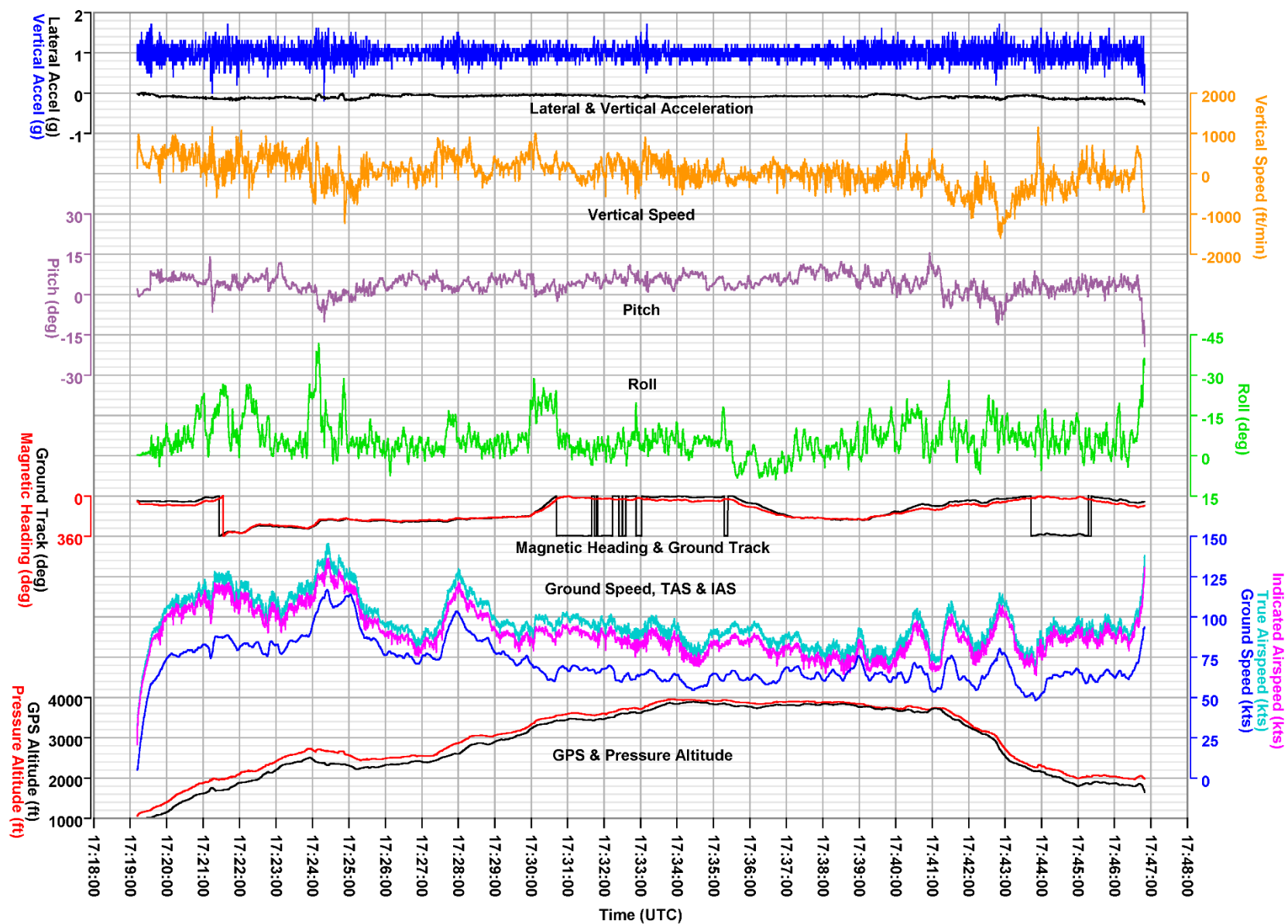


Figure 4. Plot of basic parameters for the accident flight.

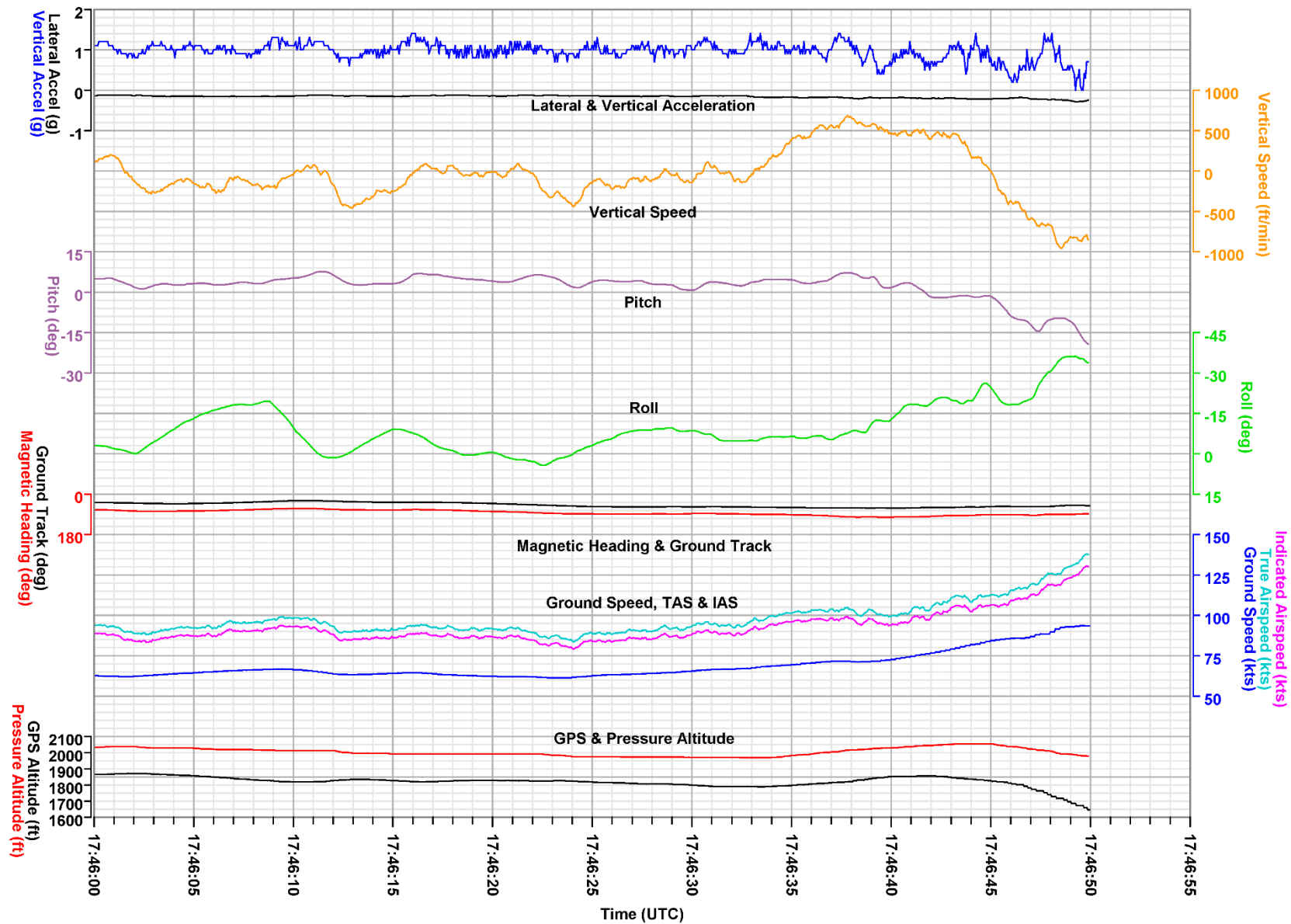


Figure 5. Plot of basic parameters at the end of the accident flight.

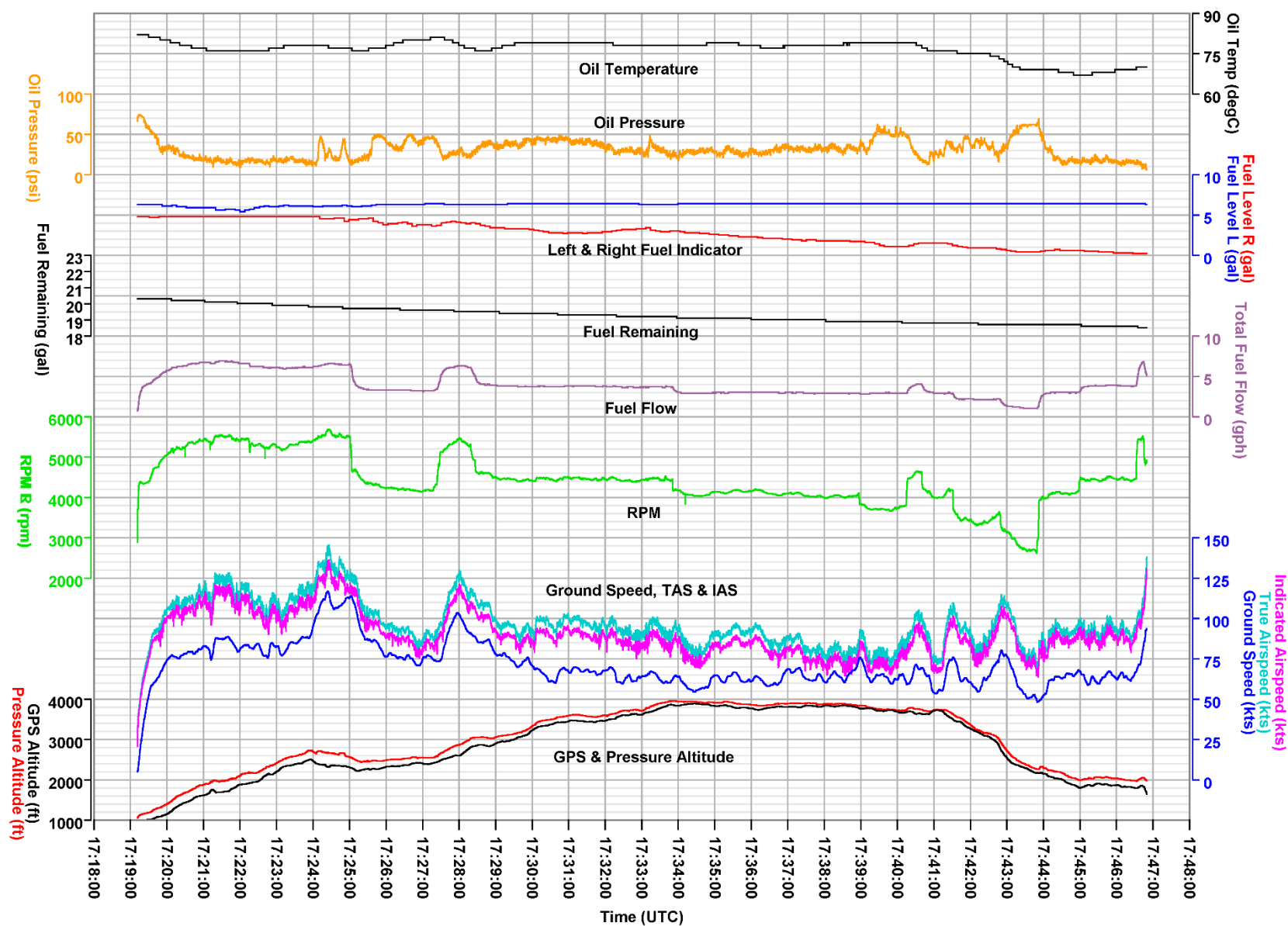


Figure 6. Plot of engine parameters for the accident flight.

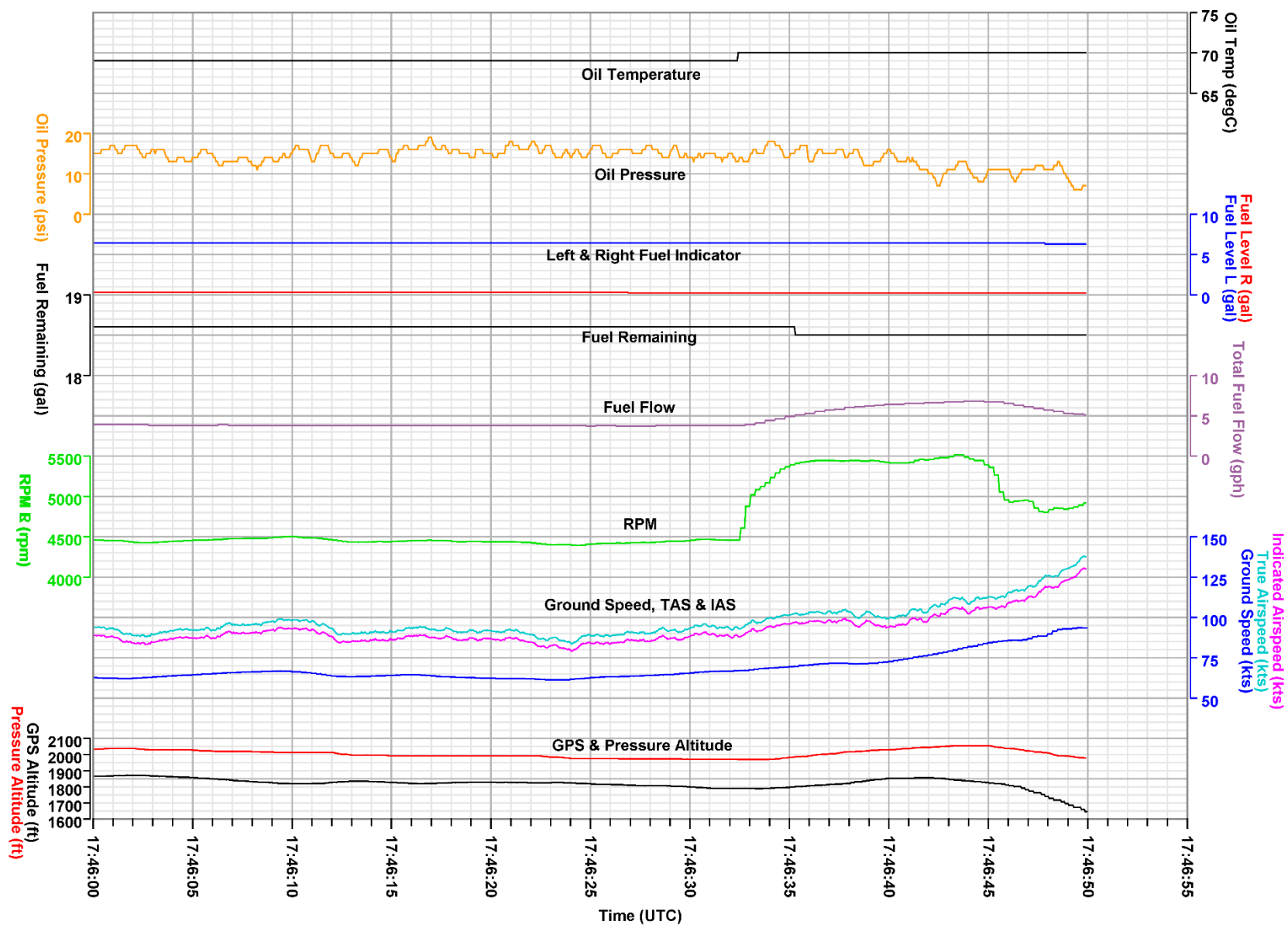


Figure 7. Plot of engine parameters at the end of the accident flight.

APPENDIX A. VERIFIED AND PROVIDED PARAMETERS

This appendix describes the parameters provided and verified in this report. Not all parameters provided were validated by the recorder specialist. Table 1 lists the Dynon parameters.

Table 1. Verified and provided parameters.

Parameter Name (unit)	Parameter Description (unit)
Vertical Accel (g)	Vertical Acceleration (g)
Lateral Accel (g)	Lateral Acceleration (g)
Indicated Airspeed (kts)	Indicated Airspeed (knots)
True Airspeed (kts)	True Airspeed (knots)
Pressure Altitude (ft)	Pressure Altitude (feet)
GPS Altitude (ft)	GPS Altitude (feet)
Total Fuel Flow (gph)	Engine Fuel Flow (gallons per hour)
Fuel Remaining (gal)	Fuel Remaining (gallons)
Fuel Level L & R (gal)	Left and Right Fuel Indicator (gallons)
Oil Pressure (psi)	Oil Pressure (pounds per square inch)
Oil Temp (degC)	Oil Temperature (degrees Celsius)
RPM (rpm)	Engine Revolutions Per Minute
Ground Speed (kts)	Ground Speed (knots)
Magnetic Heading (deg)	Magnetic Heading (degrees)
Latitude (deg)	Latitude (degrees)
Longitude (deg)	Longitude (degrees)
Pitch (deg)	Pitch (degrees)
Roll (deg)	Roll (degrees)
GPS Date & Time	MM/DD/YYYY HH:MM:SS
Ground Track (deg)	Average Derived Ground Track (degrees)
Vertical Speed (fpm)	Vertical Speed (feet per minute)