

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, D.C. 20594

May 17, 2021

Engine Data Monitor

Specialist's Factual Report
By W. Deven Chen

1. EVENT SUMMARY

Location: Langley, Washington
Date: November 11, 2020
Aircraft: Cessna 177B
Registration: N34633
Operator: Private
NTSB Number: WPR21FA045

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

On April 23, 2021, the National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following device:

Device Manufacturer/Model:	Insight G2 SD Memory Card
Serial Number:	20921 (Insight G2)

3.1. Insight G2 Description

The Insight G2 is an engine data monitor device. It is capable of monitoring engine parameters including, but not limited to, cylinder head temperature (CHT), exhaust gas temperature (EGT), and fuel flow information. Data is stored on a Secure Digital (SD) memory card installed in the front panel of the device.

3.2. Device Data Recovery

The SD memory card was received by the lab without the Insight G2 unit. It arrived in good condition as shown in Figure 1. The data were read out normally.



Figure 1: Insight G2 SD memory card as received.

3.3. Data Description

The SD memory card contained numerous sessions of flight recordings, from March 14, 2018 to November 11, 2020. The last flight recorded on November 11, 2020 was identified to be related to the accident flight. The recording was 2:18:55 long, from 12:46:14 to 15:05:09 device time. The data was sampled at 1 Hz. Table 1 describes data parameters provided by the Insight G2.

Table 1: Insight G2 Data Parameters.

Parameter Name	Parameter Description
Time	Device Time for recorded data point (HH:MM:SS)
FUEL FLOW (gph)	Fuel Flow rate in gallons per hour
FUEL USED (gallons)	Fuel Used in gallons
BUSS (volts)	Electric Bus Voltage in volts
OAT (deg F)	Outside Air Temperature in degrees Fahrenheit
CARB TEMP (deg F)	Carburetor Temperature in degrees Fahrenheit
EGT1-4 (deg F)	Exhaust Gas Temperature of cylinder # in degrees Fahrenheit
CHT1-4 (deg F)	Cylinder Head Temperature of cylinder # in degrees Fahrenheit

3.4. Plots and Corresponding Tabular Data

The following three figures contain data recorded on the Insight G2 on November 11, 2020. Figure 2 shows the data parameters plots for the entire flight. Figures 3 and 4 show data parameters plots for the last hour and last 10 minutes of the accident flight. All timestamps are shown as device time.

The corresponding tabular data used to create figures 2 through 4 are provided in electronic comma-delimited (.csv) format as Attachment 1 to this report.

Location, Date: Langley, WA, 11/11/20

NTSB No. WPR21FA045

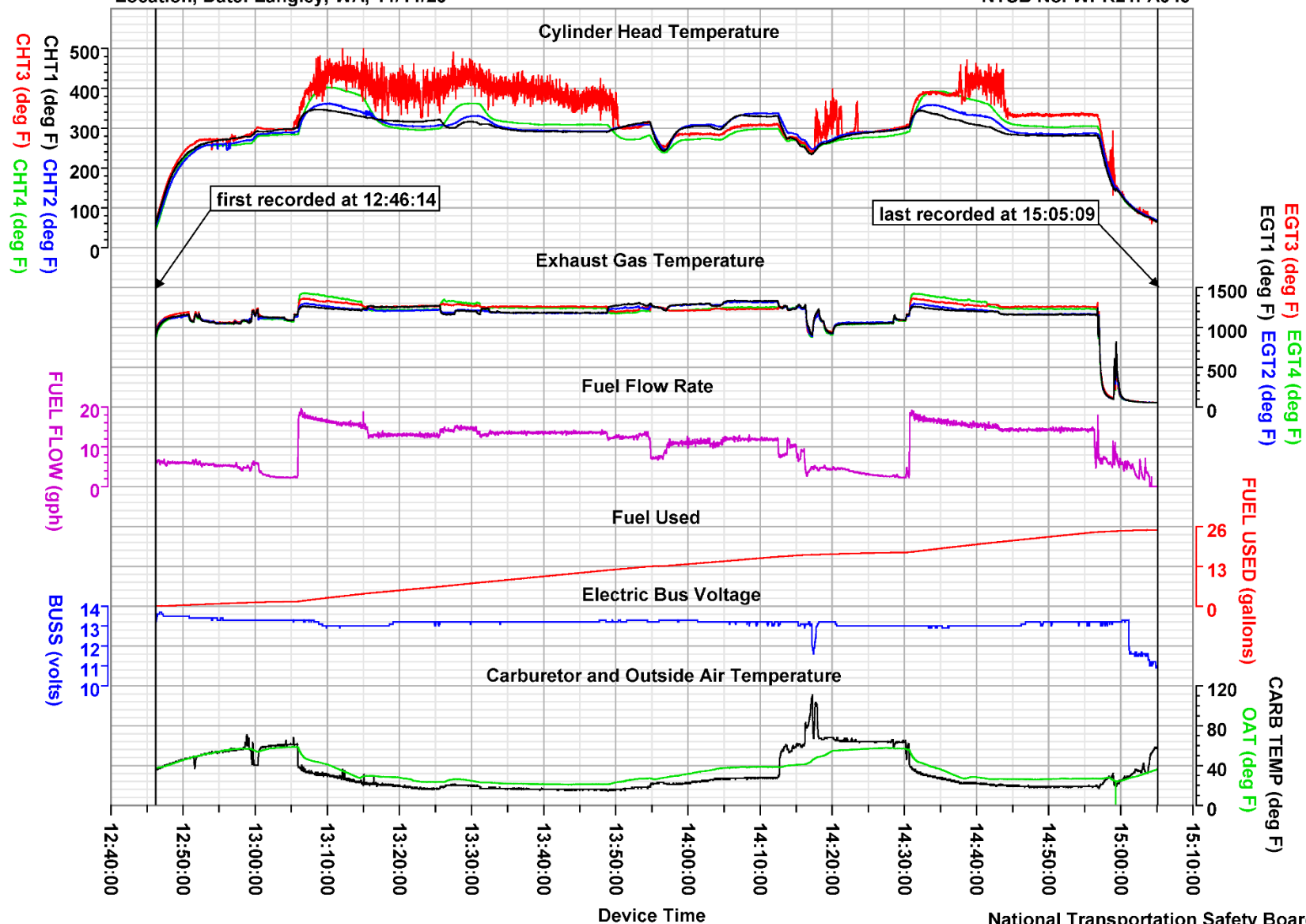


Figure 2: Plot of the data parameters of the entire accident flight.

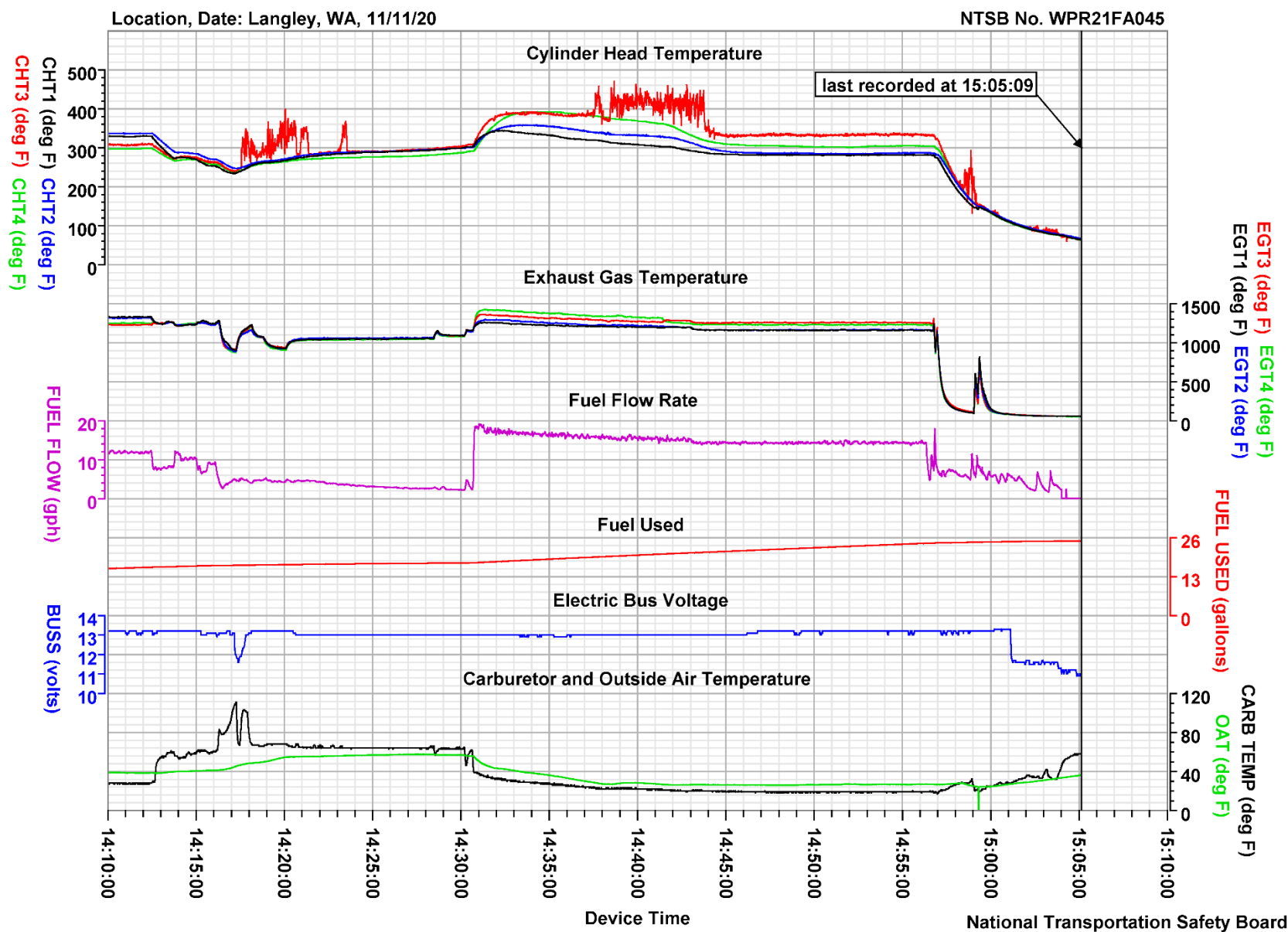


Figure 3: Plot of the data parameters of the last hour of the accident flight.

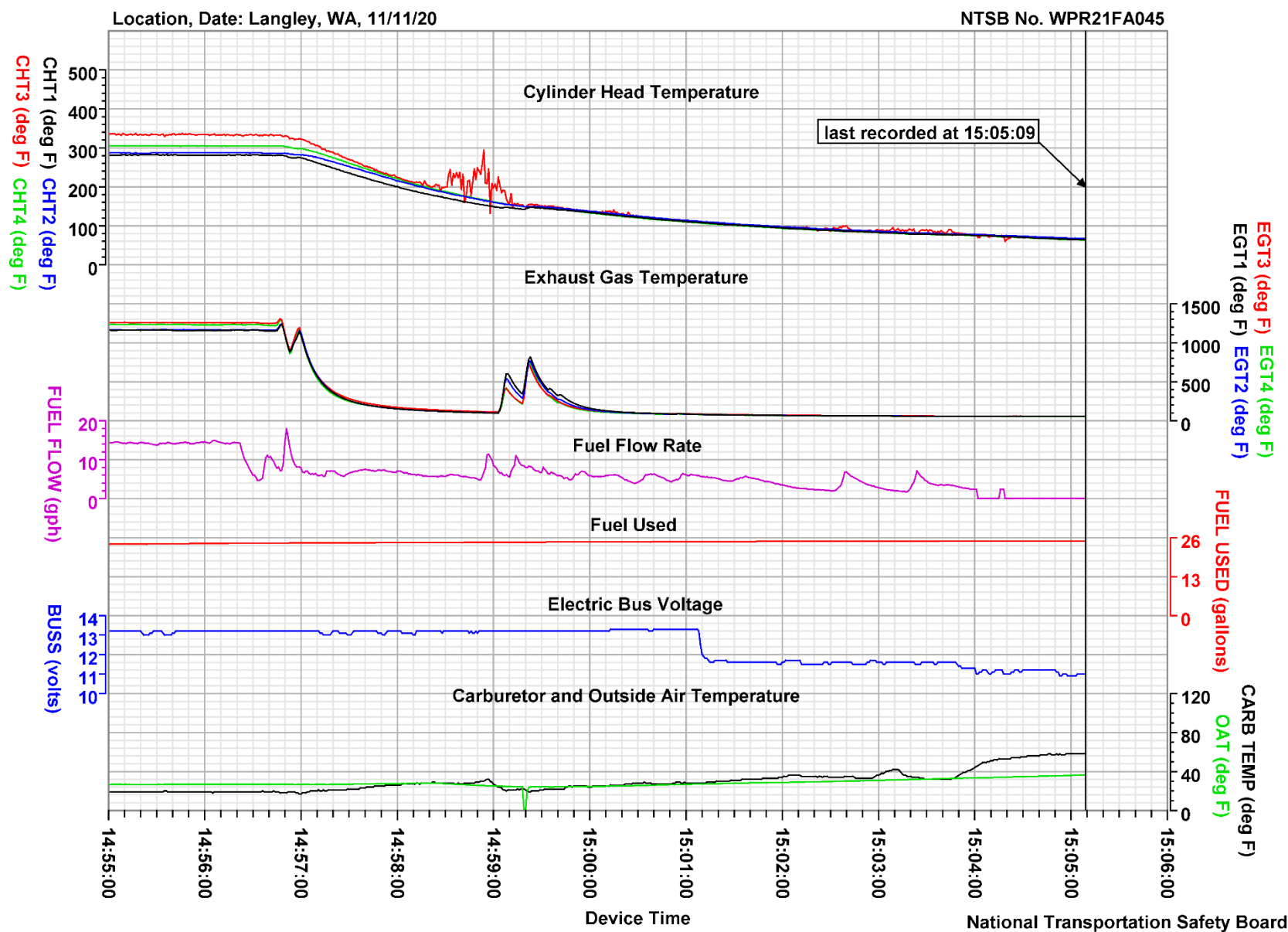


Figure 4: Plot of the data parameters of the last 10 minutes of the accident flight.