

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ANC25LA017

ENGINE DATA MONITOR

Specialist's Factual Report

August 5, 2025

TABLE OF CONTENTS

A. ACCIDENT.....	3
B. ENGINE DATA MONITOR SPECIALIST.....	3
C. DETAILS OF THE INVESTIGATION	3
1.0 Electronics International MUX-8A Description	3
1.1 Electronics International MUX-8A Data Recovery	4
1.2 Electronics International MUX-8A Data Description	4
1.3 Electronics International MUX-8A Time Correlation	5
D. FIGURES AND TABULAR DATA.....	5

A. ACCIDENT

Location: Anchorage, Alaska
Date: February 2, 2025
Time: 1354 Alaska standard time (AKST)
2254 coordinated universal time (UTC)
Airplane: Cessna 182F, private operator, N3206U

B. ENGINE DATA MONITOR SPECIALIST

Specialist: Tatum Butler
Aerospace Engineer – 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 device:

Recorder Manufacturer/Model:	Electronics International MUX-8A
Recorder Serial Number:	99741

1.0 Electronics International MUX-8A Description

The Electronics International MUX-8A is a data recorder designed to receive and record data from transducers produced by Electronics International, such as the UBG-16 engine bar graph display. The MUX-8A is also capable of recording data from third-party instruments such as GPS receivers.

Data is recorded in non-volatile serial FLASH memory.¹ Recorded data for each flight is date and time stamped and subsequently stored in a comma-delimited format. The MUX-8A can be set up to record a new data point for each supported parameter in one-, three-, or six-minute intervals. It can also be set to record in a high data-rate "Burst Mode" (usually every five to six seconds). The unit can retain between 300 and 600 hours of data at 6-minute intervals depending on the number of parameters recorded. Data may be downloaded to a standard PC running Windows using a proprietary program called DRS-1 Download which is produced by the manufacturer.

¹ Non-volatile – electronic memory that does not require power to retain data. Additionally, a micro-SD card is a non-volatile memory card format.

According to the manufacturer, recorded data have the following features: (a) each value is recorded as transmitted by the source device, dropping any decimal point; (b) in the case of the UBG-16 source device, the value transmitted is the value displayed on the device; and (c) no record descriptor (i.e. metadata) is recorded on the MUX-8A. As such, the record descriptor must be known from the installation configuration or inferred by reviewing the recorded values.

1.1 Electronics International MUX-8A Data Recovery

The device was in good condition and the device label was missing, as shown in figure 1. The serial number was identified from the operating manual associated with this device. The data were downloaded using the manufacturer's software.



Figure 1. Top view of the Electronics International MUX-8A as received.

1.2 Electronics International MUX-8A Data Description

The MUX-8A recording contained sessions between September 13, 2021, and February 2, 2025. The event flight was the last flight of the recording, and its duration was approximately 3 hours at a rate of 1 sample per minute.

The engineering units used for the data contained in this report were confirmed by the manufacturer of the device. The parameters included are exhaust gas temperature (EGT) and cylinder head temperature (CHT) for cylinders 1 through 6 in degrees Fahrenheit, as well as engine revolutions per minute (RPM).

1.3 Electronics International MUX-8A Time Correlation

Data recorded by the MUX-8A is based on the unit's internal timing device. The internal timing device records elapsed seconds relative to an arbitrary starting point. During the download process, the DRS-1 software uses the downloading computer's clock to offset the MUX-8A's arbitrary elapsed seconds into local time, thereby assigning each record a date and time stamp.

The date and time stamp for the MUX-8A data was extracted after verifying the downloading computer's clock was accurately set to a reference time of eastern daylight time. The recorded time was then offset 5 hours to reflect AKST. Given uncertainties of the DRS-1 download software and the MUX-8A internal timing device, times are expressed as "Device Time AKST."

D. FIGURES AND TABULAR DATA

Figure 2 contains data recorded during the event on February 2, 2025, from 10:56:00 to 13:56:02 AKST.

Figure 3 contains the last 7 points of data recorded during the event on February 2, 2025, from 13:50:00 to 13:56:02 AKST.

The data reflected a normal takeoff and cruise until 13:53:06 when the EGTs briefly spiked and then began to drop along with CHTs. Engine RPM decreased to 0 degrees Fahrenheit, and the last data is recorded at 13:56:02 AKST.

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

Submitted by:

Tatum Butler
Aerospace Engineer - Recorder Specialist

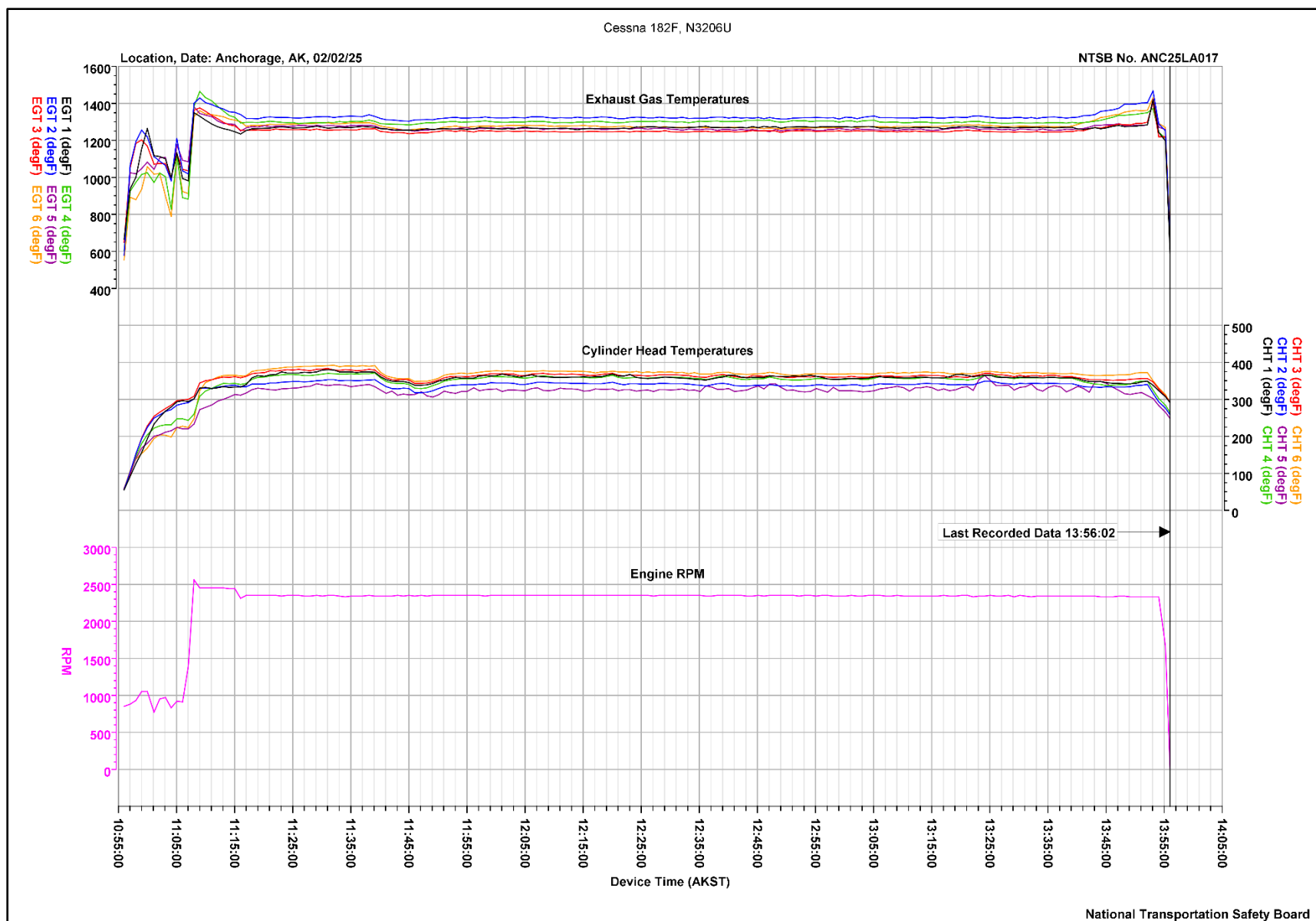


Figure 2. Plot of the MUX-8A data from February 2, 2025.

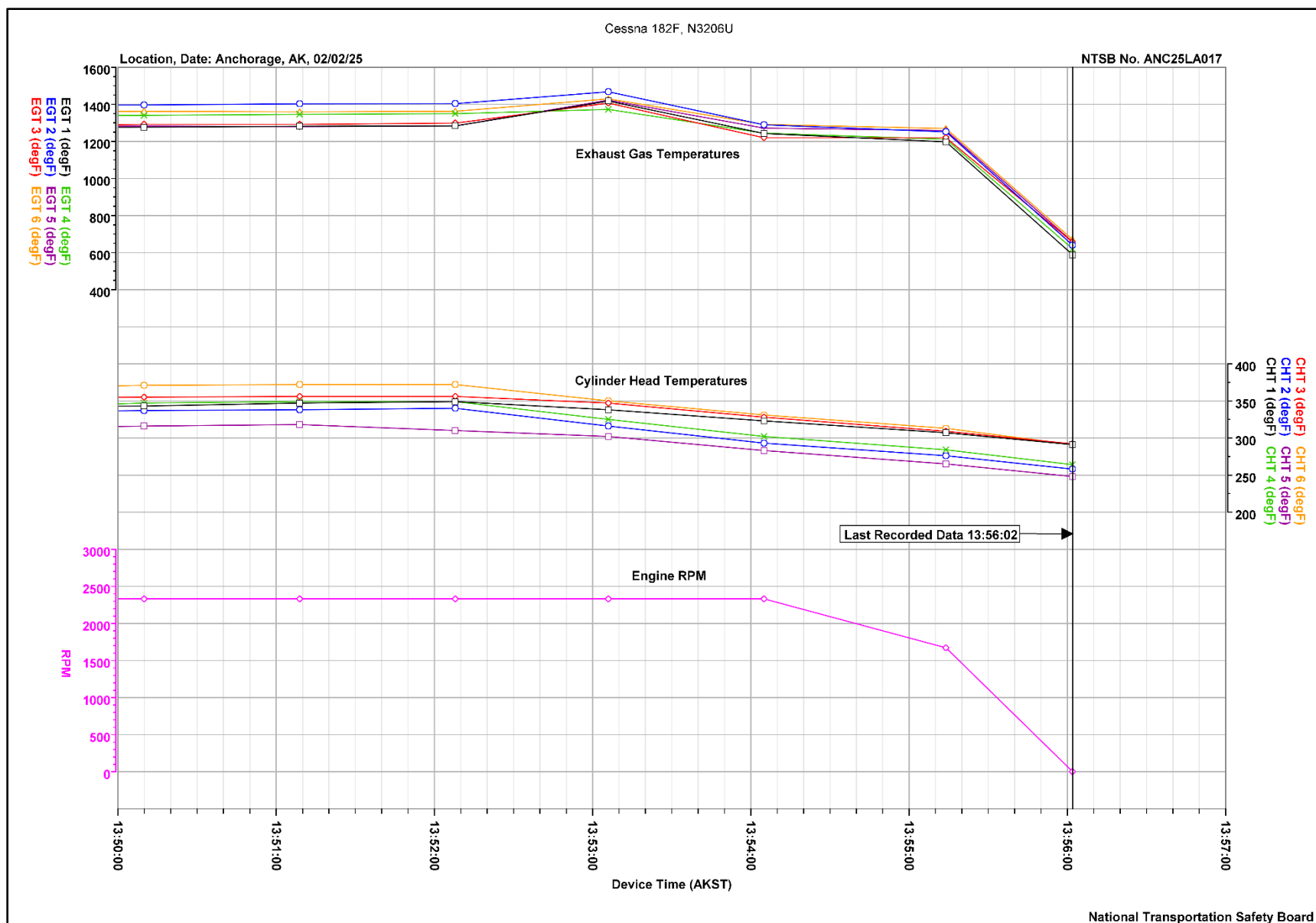


Figure 3. Plot of the last 7 points of MUX-8A data from February 2, 2025.