National Transportation Safety Board
Office of Research and Engineering
Washington, DC 20594

WPR22FA151

ADASD ENGINE MONITOR

Specialist's Factual Report

December 30, 2022

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A. ACCIDENT

Location: Heyburn, ID
Date: 04/13/2022
Time: 0832 mountain daylight time (MDT)
Airplane: Cessna 208B, Gem Air, N928JP

B. ADASD ENGINE MONITOR SPECIALIST

Specialist: David Case
Computer Engineer / Vehicle Recorder Specialist
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

An ADASd Engine Monitor group was not convened.

The NTSB Vehicle Recorder Division received the following engine data monitor (EDM):

Recorder Manufacturer/Model:	Pratt & Whitney Canada ADASd
Part Number:	DAAS-A-010-1
Recorder Serial Number:	0785

1.0 ADASd Description

The ADASd is an engine monitoring system that can record data from an ARINC 429 data bus, and several analog sensors. Data is recorded at 2 samples per second, and includes turbine engine instrumentation, airspeed, altitude, date, time, voltages for the main electrical bus and clock battery, and the state of two switches used to control the device.

1.1 ADASd Data Recovery

The ADASd was damaged in the event. The extent of the damage is shown in figures 1 and 2. The extraction of the memory module is shown in figure 3. After the external case was removed, it was determined that the circuit board was bent near the non-volatile memory chips during the accident.

The circuit board was taken to the manufacturer's facility, and the logs were extracted using the manufacturer's equipment.

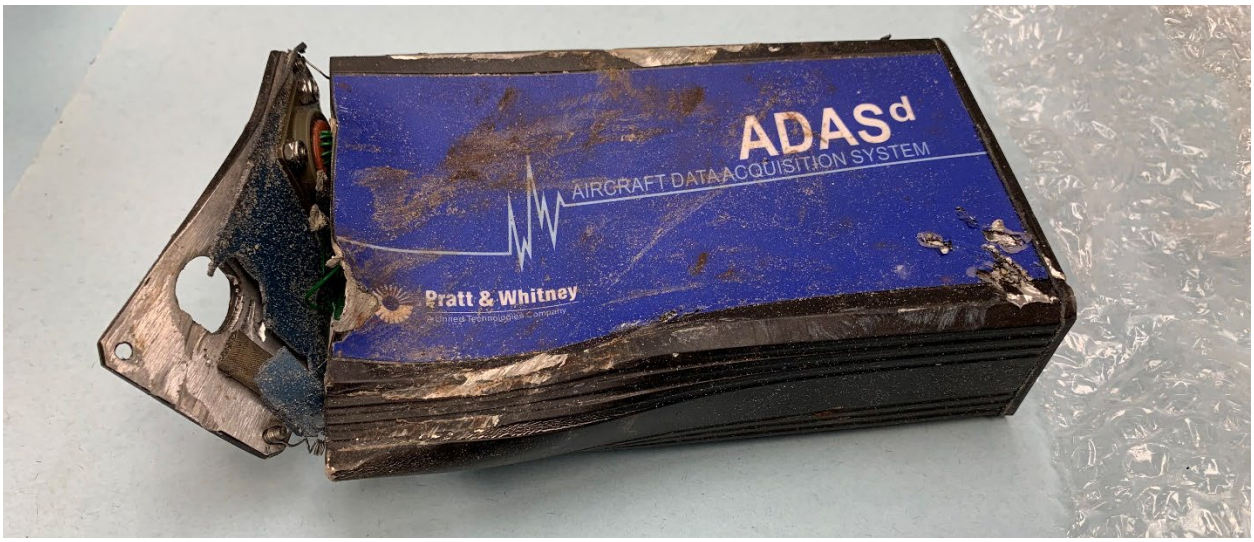

Figure 1. Recorder as received

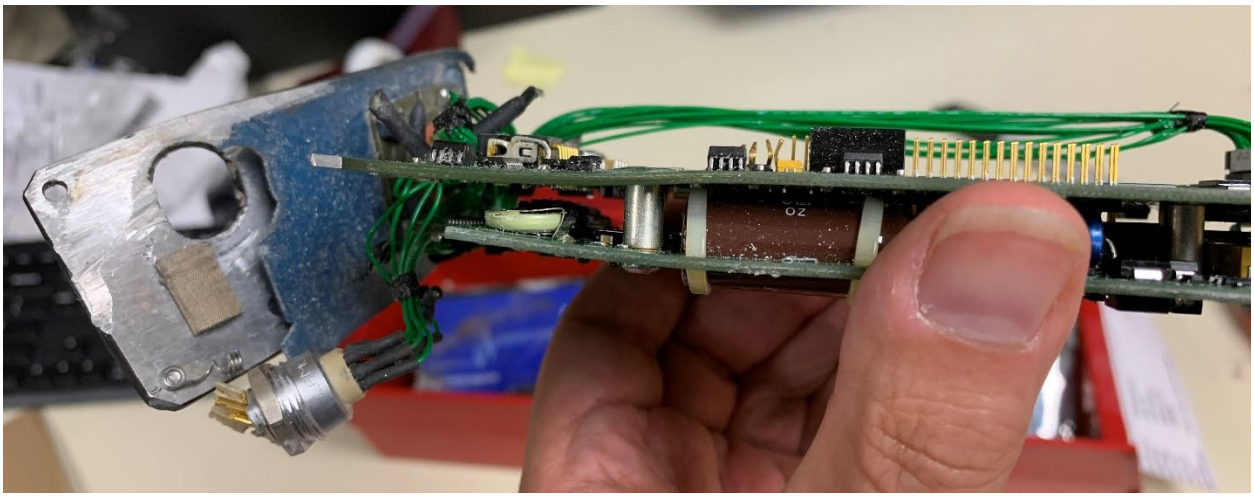

Figure 2. Bent circuit board near non-volatile memory chips

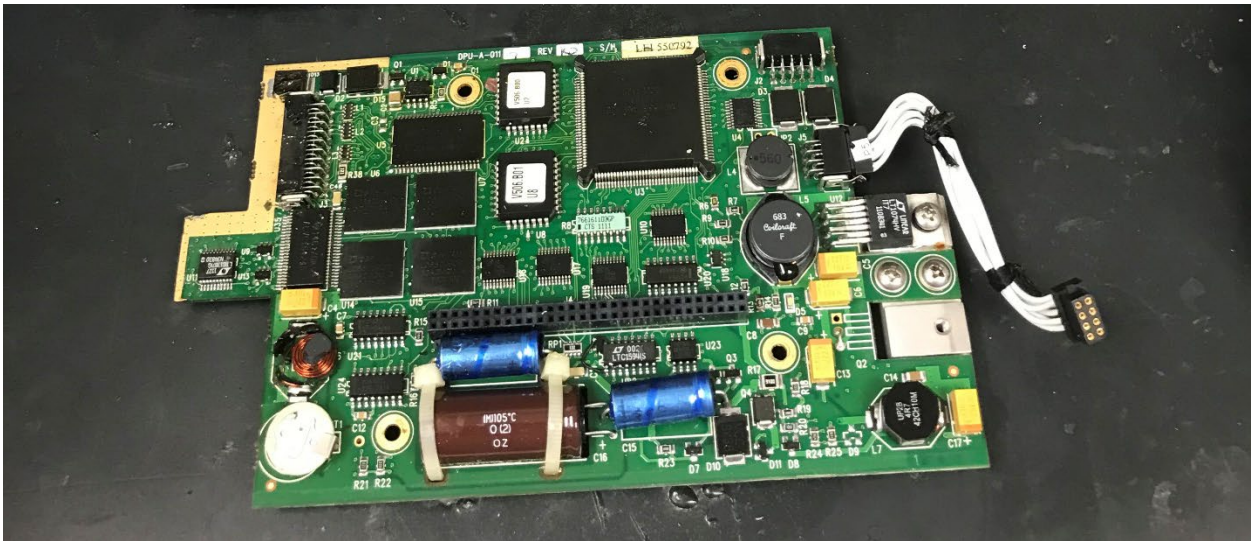

Figure 3. Circuit board after removal from case and disassembly.

1.2 ADASd Recording Description

The data extracted included information from November 6, 2018 through November 13, 2018. The event occurred on April 13, 2022. There were no data pertinent to the event recorded on the device.

The current time logged by the engine monitor was set by the user, And then maintained by a battery-supplied clock circuit. It is possible that this time was set incorrectly by the user, but the last flight recorded shows evidence conducive with a normal landing, taxiing, and shutdown. This last flight is followed by two brief logging sessions recorded the same day, shortly after the normal shutdown. These sessions do not appear to record any engine data; only data for time, internal board temperature, aircraft bus voltage, internal battery voltage, and the state of two switches for controlling the device.

Submitted by:

David L. Case
Computer Engineer / Vehicle Recorder Specialist