

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA22LA237

COCKPIT DISPLAY - RECORDED FLIGHT DATA

Specialist's Factual Report

October 5, 2022

A. ACCIDENT

Location: Lehighton, Pennsylvania
Date: May 9, 2022
Time: 1145 Eastern daylight time
Airplane: Diamond DA42, N988JA

B. COCKPIT DISPLAY - RECORDED FLIGHT DATA SPECIALIST

Specialist: Steven Smith
Mechanical Engineer (Recorder Specialist)
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

A cockpit display group was not convened.

The NTSB Vehicle Recorder Division received the following SD cards shown in Figure 1.



Figure 1. SD cards as received by the NTSB Vehicle Recorder Division.

1.0 Garmin G1000 Secure Digital Data Card Description

The Garmin G1000 Integrated Flight Deck is a collection of multiple avionics units which include flight displays, air data computers, attitude/heading reference system (AHRS), communications and other systems. A typical installation includes a primary flight display (PFD) and a multi-function display (MFD). Each display includes two secure digital (SD) card slots, an upper and a lower slot. The lower SD card slot is used by the system for software updates and various databases.¹

¹ Databases can include terrain data, obstacle data, SafeTaxi charts, flight charts and airport terrain databases

Depending on the display unit software, the aircraft can include a data logging feature. The data logging feature must be enabled by the aircraft operator. If the data logging feature is available and enabled, a SD card has to be installed in the upper slot of the MFD. Depending on the airframe and engine combination as many as 64 parameters can be stored at a rate of one sample per second (1Hz). According to the manufacturer of the display unit, one flight hour can be stored in approximately 2 megabytes (MB). The SD card typically used is 2 gigabyte (GB) in size and can store over 1,00 flight hours.

1.1 Garmin G1000 SD Data Card Data Description

Figure 2 shown below points to the location where each card was taken from after the accident. Of the three G1000 SD cards received, two of the cards only contained chart information, indicative of being in the lower slots of the Primary Flight Display (PFD) and the Multi-Functional Display (MFD). Therefore, these two cards do not contain any flight log data. Although the third SD card was mounted in the auxiliary port (upper slot) of the MFD, no flight log data was recorded on the card. Therefore, the NTSB Vehicle Recorder Division cannot provide any tabular data or figures from these SD cards.

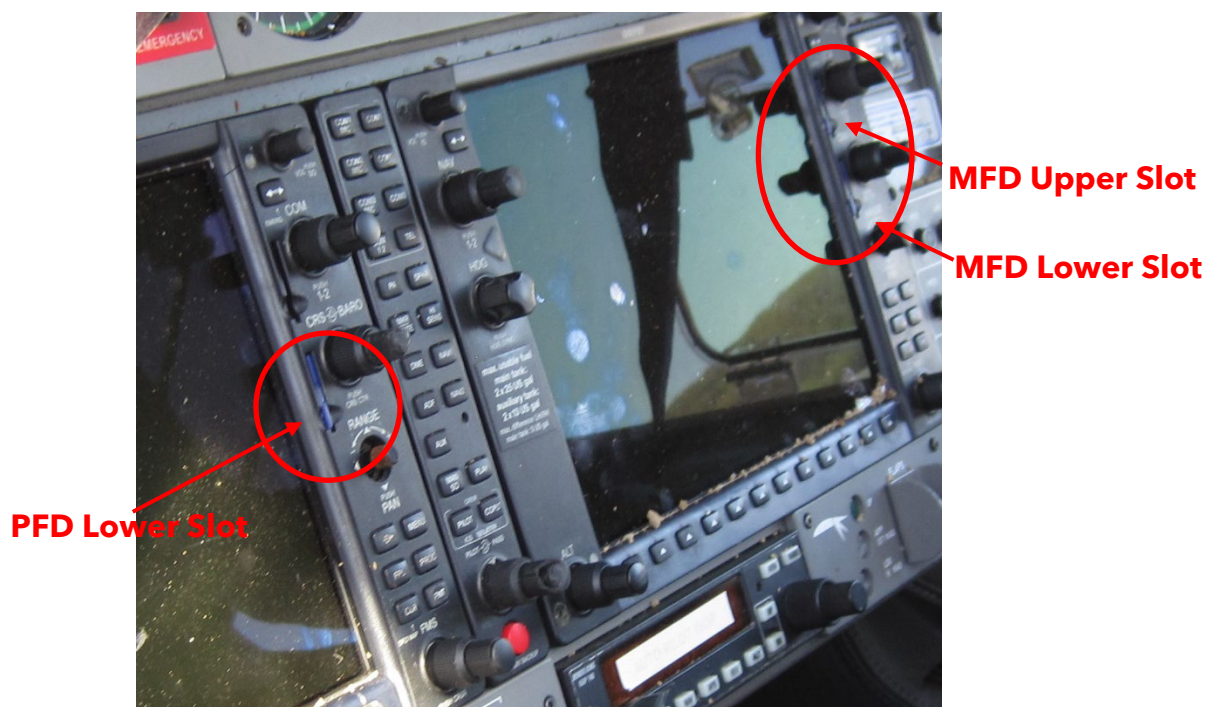


Figure 2. Garmin G1000 as evidenced by the FAA at the accident site.

Submitted by:

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