

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

April 26, 2017

Electronic Devices

Specialist's Factual Report
By Bill Tuccio, Ph.D.

1. EVENT SUMMARY

Location: Ephraim, Wisconsin
Date: September 18, 2016
Aircraft: Cessna 182T
Registration: N2012F
Operator: Keller Aviation LLC
NTSB Number: CEN16FA373

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following devices:

Device Manufacturer/Model:	Garmin G1000 Display
Serial Number:	Unknown
Quantity:	2

Device Manufacturer/Model:	Appareo Stratus PRX V2
Serial Number:	228297
Quantity:	1

3.1. Device Descriptions

The Garmin G1000 display is a glass panel display/interface device with control inputs (knobs, buttons) on the perimeter. The device has slots for SD cards, which, when installed, record parametric flight data.

The Stratus PRX V2 is a portable Global Positioning System, Automatic Dependent Surveillance-Broadcast receiver, and attitude/heading reference system. The device interfaces with other devices to display position, weather, aircraft attitude, and traffic information. When enabled, the device can record 20 hours of parametric data.

3.2. Device Conditions

Upon arrival at the Vehicle Recorder Laboratory, an examination revealed the Garmin G1000 devices had sustained significant impact and heat damage, as shown in figures 1 and 2. SD Cards were found in each of the G1000s (figures 3 and 4); however, they were destroyed by heat damage.

Figure 1. Garmin G1000 (1 of 2).



Figure 2. Garmin G1000 (2 of 2).



Figure 3. SD Cards from G1000 (1 of 2).



Figure 4. SD Cards from G1000 (2 of 2).



The Stratus PRX V2 did not exhibit any impact or heat damage, as shown in figure 5. When power was applied to the device, it would not start. The internal board was removed and placed in a working Stratus PRX V2, and the unit started normally.

Figure 5. Front and Back of Stratus PRX V2.



3.3. Data Description

While the Garmin G1000 devices are capable of storing data on SD cards, the extent of the damage precluded any data recovery.

While the Stratus PRX V2 is capable of storing data in non-volatile memory,¹ the logging feature was turned off and there were no historical data logs.

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