

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

November 2, 2018

Non-Volatile Memory Device Report

Specialist's Factual Report
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1. EVENT SUMMARY

Location: Bowie, Arizona
Date: October 19, 2017
Aircraft: Lancair Legacy
Registration: N259L
Operator: Private
NTSB Number: WPR18FA011

On October 19, 2017, about 0830 mountain standard time, a Peterson Lancair Legacy 2000, N259L, departed controlled flight and collided with desert terrain near Bowie, Arizona. The pilot/builder was operating the airplane under the provisions of 14 Code of Federal Regulations Part 91. The commercial pilot, the sole occupant, sustained fatal injuries; the airplane was substantially damaged. The personal cross-country flight departed from Eagle Roost Airpark, Aguila, Arizona about 0710 with a planned destination of Garner Field, Uvalde, Texas. Visual meteorological conditions prevailed, and it is not known if the pilot had filed a flight plan.

2. GROUP

A group was not convened.

3. Details of Device Investigation

The NTSB Vehicle Recorder Division received the following device:

Device: Garmin aera 796
Device Serial Number: 2CY007893

The device was found substantially damaged as shown in Figure 1 and Figure 2. The chip containing the unit's non-volatile memory (NVM¹) was identified. The NVM chip was removed from the board. The chip was found to be in good condition after removal and was restored to working condition, so data could be extracted. The chip read out normally using an adapter socket appropriate for the type and model of chip. The read out resulted in a binary file which was converted to engineering units using laboratory software.

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

3.1. Garmin aera 796 Device Description

The Garmin aera 796 is a battery-powered portable touch screen display and GPS receiver with a 7-inch diagonal high-resolution LCD display screen. The unit can store date, route-of-flight, and flight-time information for up to 50 flights. A flight record is triggered when groundspeed exceeds 30 knots and altitude exceeds 250 feet and ends when groundspeed drops below 30 knots for 10 minutes or more. A detailed track log – including latitude, longitude, date, time, and GPS altitude information for an unspecified number of points – is stored within the unit whenever the receiver has a lock on the GPS navigation signal. Position is updated within the track log as a function of time or distance moved, depending on how the unit has been configured. Once the current track log memory becomes full, new information either overwrites the oldest information or recording stops, depending on how the unit is configured. The current track log can be saved to long-term memory and 15 saved track logs can be maintained in addition to the current track log. Track log storage may be activated or de-activated at user discretion. All recorded data is stored in non-volatile memory.

3.2. GPS Data Description

While the device did have a number of tracks, routes, and waypoints saved, it did not record a track log for the accident flight or any other recent flights. No data pertaining to the accident flight was recovered.



Figure 1. Garmin 796 recovered from aircraft.



Figure 2. Garmin 796 recovered from aircraft.