

# NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division  
Washington, D.C. 20594

August 10, 2018

## Electronic Devices

### Specialist's Factual Report By Ben Hsu

#### 1. EVENT

Location: Williston, Florida  
Date: April 15, 2017  
Aircraft/ID: Cessna 170  
Registration: N4244V  
Operator: Private  
NTSB Number: ERA17FA155

#### 2. EVENT SUMMARY

On April 15, 2017, about 1523 eastern daylight time, a Cessna 170, N4244V, impacted terrain shortly after departure from Williston Municipal Airport (X60), Williston, Florida. The commercial pilot and three passengers were fatally injured. The airplane was destroyed. Visual meteorological conditions prevailed, and no flight plan was filed for the planned flight to Inverness Airport (INF), Inverness, Florida. The airplane was owned and operated by the commercial pilot as a personal flight in accordance with the provisions of 14 *Code of Federal Regulations* Part 91.

#### 3. DETAILS OF DEVICE INVESTIGATION

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

Device: Appareo Stratus 2S  
Device Serial Number: 010865

Device: Yaesu Spirit GPS Radio  
Device Serial Number: 5K250360

Figure 1 shows the condition of the Appareo device as it arrived in the laboratory. The device exhibited no substantial damage. Power was applied using normal methods, but the device was unresponsive. The device's internal memory component was removed, imaged, and decoded using laboratory hardware and software.

Figure 2 shows the condition of the Yaesu device as it arrived in the laboratory. The device exhibited no substantial damage. The device is capable of recording a GPS log,

however, the feature was deactivated by the user. Figure 3 shows the relevant setting on the device.

### **3.1. Device Description**

The Appareo Stratus 2S is a battery-operated ADS-B receiver with Global Positioning System (GPS) capability designed to interface with an iPad, iPhone, or iPod Touch running the ForeFlight Mobile application via Wi-Fi. The Stratus uses ADS-B to provide access to NEXRAD radar, METARs, TAFs, NOTAMs and other FAA products via the ForeFlight application installed on a mobile device. The Stratus supports limited reception and display of ADS-B traffic information. Certain models include a complete Attitude Heading Reference System (AHRS) that permits supplemental attitude information on the connected mobile device.

Stratus PRX V2 units with firmware version 1.6 and later can record up to 20 hours of flight data at a rate of 5 samples per second. The records consist of the following parameters:

- GPS 3-D position
- Altitude
- Groundspeed
- AHRS Pitch, Roll and Yaw
- AHRS 3-D accelerations
- Heading
- Ground Track

### **3.2. Data Description**

Data extracted from the device ranged from October 27, 2016 to April 15, 2017. The last 10 minutes of data recorded on April 15, 2017, capturing the aircraft taxi and take-off, are included in this report. All dates and times in this report are presented in Coordinated Universal Time (UTC).

Figure 4 is a Google Earth overlay of the recorded data. The weather and lighting conditions in Google Earth are not necessarily the weather and lighting conditions present at the time of the recording.

Figure 5 is an overlay showing a detailed view of the end of the same dataset.

Figure 6 is a plot of data parameters recorded by the device.

Attachment 1 is the tabular data corresponding to the last 10 minutes of data recorded. The attachment is provided in electronic comma-separated value (CSV) format.

**Figure 1. Photo of Appareo Stratus 2S**



**Figure 2. Photo of Yaesu Spirit GPS**



Figure 3. Yaesu Spirit GPS menu showing showing "Logger" function set to "OFF"



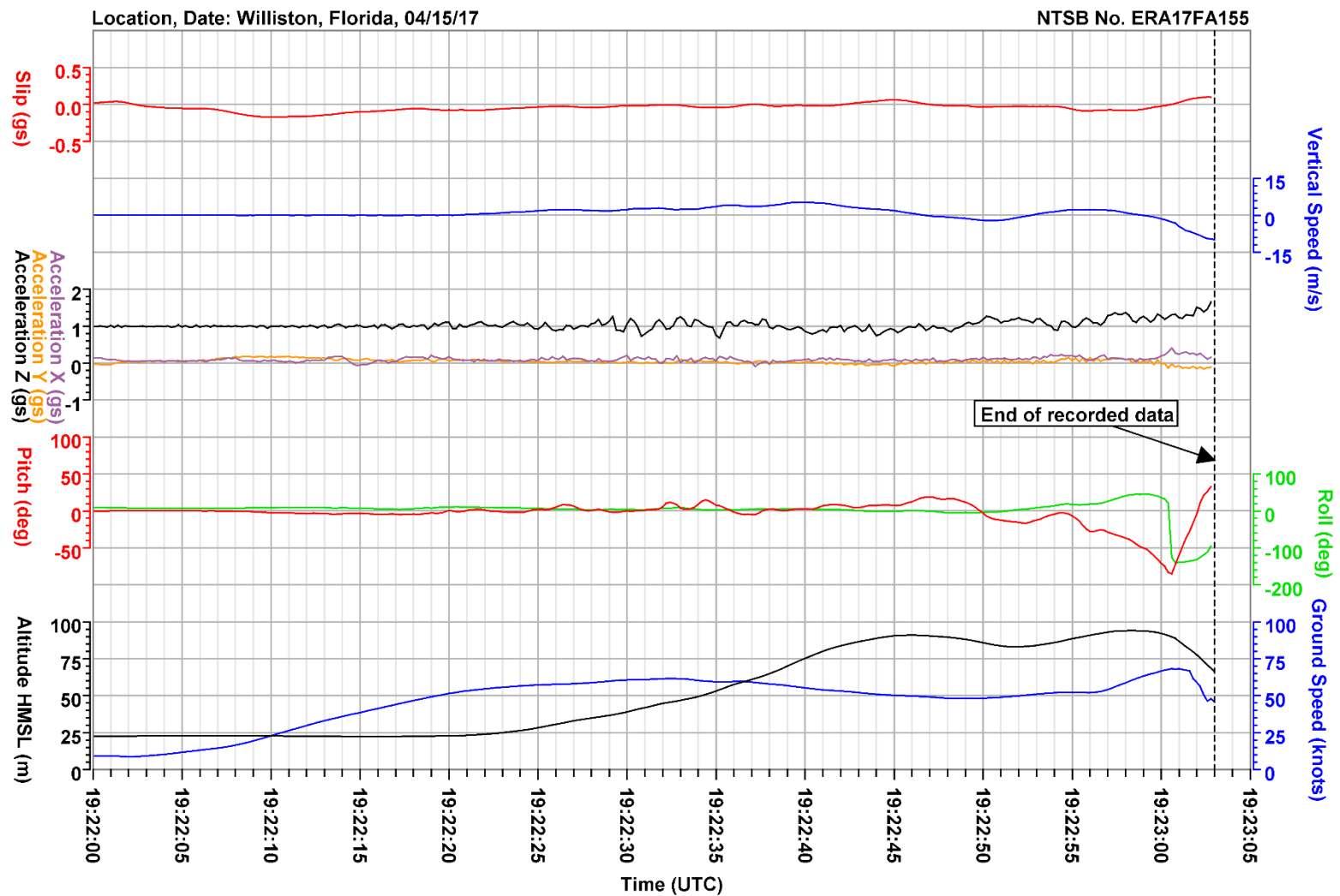
Figure 4. GPS overlay of last 10 minutes of recorded data



Figure 5. Detailed view of end of recorded data



Figure 6. Plot of parameters recorded  
Private, Cessna 170, N4244V



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National Transportation Safety Board