

# **NATIONAL TRANSPORTATION SAFETY BOARD**

Vehicle Recorder Division

Washington, D.C. 20594

October 6, 2015

## **Global Positioning System Device**

### **Specialist's Factual Report**

**By Jane Foster**

#### **1. EVENT SUMMARY**

Location: Kersey, Colorado  
Date: February 11, 2015  
Aircraft: Lacourse Wheeler Express  
Registration: N564ER  
Operator: Private  
NTSB Number: CEN15FA141

On February 11, 2015, about 1433 mountain standard time, a Lacourse Wheeler Express, amateur built single-engine airplane, N564ER, was destroyed after impacting terrain during an off-airport forced landing near Kersey, Colorado. The two pilots were fatally injured. The airplane was registered to and operated by a private individual. Day visual meteorological conditions (VMC) prevailed at the time of the accident and a flight plan had not been filed for the 14 Code of Federal Regulations Part 91 personal flight. The airplane had recently departed Greeley Municipal Airport (GXY), Greeley, Colorado, and was destined for Front Range Airport (FTG), Watkins, Colorado.

#### **2. GROUP**

A group was not convened.

#### **3. DETAILS OF INVESTIGATION**

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following global positioning system (GPS) device:

|                            |                     |
|----------------------------|---------------------|
| Device Manufacturer/Model: | Lowrance AIRMAP 100 |
| Serial Number:             | 70051175            |

##### **3.1. Device Description**

The Lowrance AIRMAP 100 is a battery operated, hand-portable, 12-channel mapping GPS unit equipped with a 320 x 320 pixel 16-level grayscale LCD display, soft key controls, and support for custom maps and a Jeppesen Aviation database. The unit has the capability of performing E-6B calculations. A serial interface using NMEA 0183

communication protocols is mounted in the back of the GPS unit. The Lowrance AIRMAP 100 can store up to 750 waypoints, and up to 99 routes employing a sum-total of 1500 waypoints. The unit can also store 'trail' data composed of latitude-longitude and altitude data. Up to 3 individual trails, each composed of up to 3000 points, may be stored in the unit. Trail data is not date / time stamped. The AIRMAP 100 may be programmed to update trail data in one of two ways: by time, or by distance traveled. Updating by time may be set to record a new latitude/longitude point every 1 to 1,800 seconds. Updating by distance may be set to record a new latitude/longitude point whenever the distance traveled from the last update exceeds anywhere from 0.01 miles to 10.0 miles. All recorded data is stored internally in non-volatile<sup>1</sup> memory. The data may be downloaded to a PC running the appropriate software using the serial port built into the unit. The LCD display must be functional in order to access the menu structure and set up the unit for download.

### 3.2. Data Recovery

The Lowrance AIRMAP 100 appeared undamaged when received to the laboratory and was able to be powered on. The device was read out normally using laboratory software. Figure 1 and 2 show the front and back of the device as received.



Figure 1 : The front of the Lowrance AIRMAP 100 as received

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



**Figure 2 : The back of the Lowrance AIRMAP 100 as received**

### **3.3. Data Description**

The data extracted included one trail and 11 waypoints with no timing information stored. The accident flight was not recorded.