

# NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division

Washington, D.C. 20594

January 23, 2017

## Agricultural Aerial Guidance System

Specialist's Factual Report  
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### 1. EVENT

Location: Wilmot, Arkansas  
Date: August 1, 2015  
Aircraft: Air Tractor AT-602  
Registration: N6007N  
Operator: Baylee Company  
NTSB Number: CEN15FA331

On August 1, 2015, about 0700 central daylight time (CDT), an Air Tractor AT-602 airplane, N6007N, sustained substantial damage when it impacted the ground under unknown circumstances in Wilmot, Arkansas. The commercial rated pilot was fatally injured. The airplane was registered to Baylee Company and operated under the provisions of 14 *Code of Federal Regulations* Part 137 as an agricultural flight. Visual meteorological conditions prevailed for the flight and no flight plan had been filed. The flight originated at Lake Village Municipal Airport (M32), Lake Village, Arkansas.

### 2. DETAILS OF INVESTIGATION

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

Device: Hemisphere Intellistar CPU  
Device Serial Number: 1006-10846-0017

#### 2.1. Hemisphere Intellistar CPU Device Description

The Hemisphere Intellistar CPU is an aerial guidance system used for agricultural spraying applications. In addition to assisting an agricultural spray operator plan spray operations, the unit is capable of measuring various parameters, including global positioning system (GPS) three-dimensional position, time, and spray-related parameters. The unit displays real-time guidance information to the pilot and records historical information to internal memory. Historical information may be downloaded and processed using manufacturer provided software.

### 2.1.1. Hemisphere Intellistar CPU Data Recovery

Upon arrival at the Vehicle Recorder Division, an exterior examination revealed the unit had sustained minor damage, yet information was extracted normally using the manufacturer's software.

### 2.1.2. Hemisphere Intellistar CPU Data Description

Data from the accident flight was extracted in engineering units from the device, recorded on August 1, 2015, between 6:46 CDT and 6:54 CDT. Table 1 lists parameters verified and used in this report. Note the spray parameter was not used in this report because it never showed a change of state (always indicating no spray).

**Table 1. Parameters used in this report.**

Parameter	Description
Time (CDT)	Recorded Time, CDT
Alt-gps (ft)	GPS altitude, feet
Date	Date, CDT
Hdg (deg)	Heading, degrees (not determined true or magnetic)
Lat (deg)	Latitude, degrees
Lon (deg)	Longitude, degrees
Speed-knots (kts)	Groundspeed, knots

## 3. OVERLAYS AND SUMMARY DATA

The graphical overlays generated in this report were generated using Google Earth. Weather conditions in Google Earth are not necessarily representative of weather conditions at the time of the accident.

Figures 1 through 3 show satellite overlays of the recorded flight track, highlighting the takeoff, enroute portion, and end of recording, respectively. Figure 4 shows a plot of groundspeed, heading, and altitude. Collectively, these four figures show:

- At about 0646 CDT, the aircraft departed the M32 airport to the south, initially climbing to about 1,000 feet MSL, and proceeding south.
- Enroute the aircraft descended to about 500 feet MSL and turned southwest about 0651 CDT.
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- At about 0653 CDT, the aircraft began to climb to about 1,000 feet, and begin to perform a 270 degree turn over a grouping of trees, towards the northwest. Towards the end of this turn, the altitude decreased and then began to increase again as the aircraft turned left.

The recording ended at 0654:24 CDT. According to the recorder manufacturer, if power is removed from the recorder, up to 6-seconds of data may be lost.

Tabular data used to generate these figures are included as attachment 1. This attachment is provided in electronic comma-delimited (.CSV) format.

Figure 1. Start of recording.



Figure 2. Enroute portion of recording.



Figure 3. End of recording.



Figure 4. Plot of accident flight.

