

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA23FA317

GLOBAL POSITIONING SYSTEM DEVICE

Specialist's Factual Report

October 17, 2023

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A. ACCIDENT

Location: Springfield, Ohio
Date: July 29, 2023
Time: 1206 eastern daylight time (EDT)
1606 coordinated universal time (UTC)
Helicopter: Bell 206-L4, N652HA

B. GLOBAL POSITIONING SYSTEM DEVICE SPECIALIST

Specialist: Gerald Kawamoto
Recorder Specialist
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

A group was not convened. The NTSB Vehicle Recorder Division received the following device:

Recorder Manufacturer/Model: AG-NAV Guia Platinum
Part Number: AAP771-J
Recorder Serial Number: 771200017

1.0 Device Description

The AG-NAV Guia Platinum is a GPS navigation system designed for aerial agricultural application. The device features an 8.4-inch touch screen display and is capable of handling precise on/off spray at various rates within defined spray areas. Non-volatile memory from flights is recorded to an internal hard drive.¹ Data can be exported via USB ports on the device and is processed using the manufacturer's software (NavviewW) for presentation in applications such as Google Earth, which can show flight paths and spray areas from recorded flights.

1.1 Data Recovery

The device sustained damage to its display, as shown in figure 1. The device was otherwise in good condition and powered on normally, however, the touch screen was non-functional. Data from the hard drive were recovered utilizing procedures outlined by the manufacturer.

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



Figure 1. Front and back of the device as received.

1.2 Recording Description

The accident flight started at 15:51:42.4 UTC and ended at 16:06:26.8 UTC on July 29, 2023. The final recorded data point was approximately 0.4 nautical miles west of the reported wreckage location. The accident event may not have been captured due to data buffering on the device.

1.3 Parameters Provided

Table 1 describes data parameters provided by the device. Date, Time, Latitude, Longitude, and GPS Altitude are recorded by the device. Groundspeed and Track are derived from the recorded parameters.

Table 1. Data Parameters.

Parameter Name	Parameter Description
Date	Date for recorded data point (MM/DD/YYYY)
Time	Time (UTC) for recorded data point (HH:MM:SS)
Latitude	Recorded Latitude (degrees)
Longitude	Recorded Longitude (degrees)
Altft	Recorded GPS Altitude (feet)
gndspd	Average derived groundspeed (knots)
HEAD	Average derived true course (degrees)
SPRY	Spray On (1) / Spray Off (0)

D. FIGURES AND TABULAR DATA

Figures 2 through 4 are graphical overlays generated using Google Earth showing the accident flight. Weather and lighting conditions in Google Earth are not necessarily the weather and lighting conditions present at the time of the recording.

Figure 2 is an overview of the entire accident flight from 15:51:42.4 UTC and ended at 16:06:26.8 UTC.

Figure 3 is an overview of the spray area and the reported wreckage location.

Figure 4 is an overview of the spray area. Areas with Spray On are marked with magenta cross-hatches.

Figure 5 is a graphical overlay of the spray area generated by the manufacturer's software, NavviewW. Areas with Spray On are marked with magenta cross-hatches.

Figure 6 is a plot of parameters for the entire accident flight. The time shown is 15:51:00 to 16:07:00 UTC.

The corresponding tabular data used to create figures 2 through 6 are provided in electronic comma-separated value (CSV) format as attachment 1 to this report.

Submitted by:

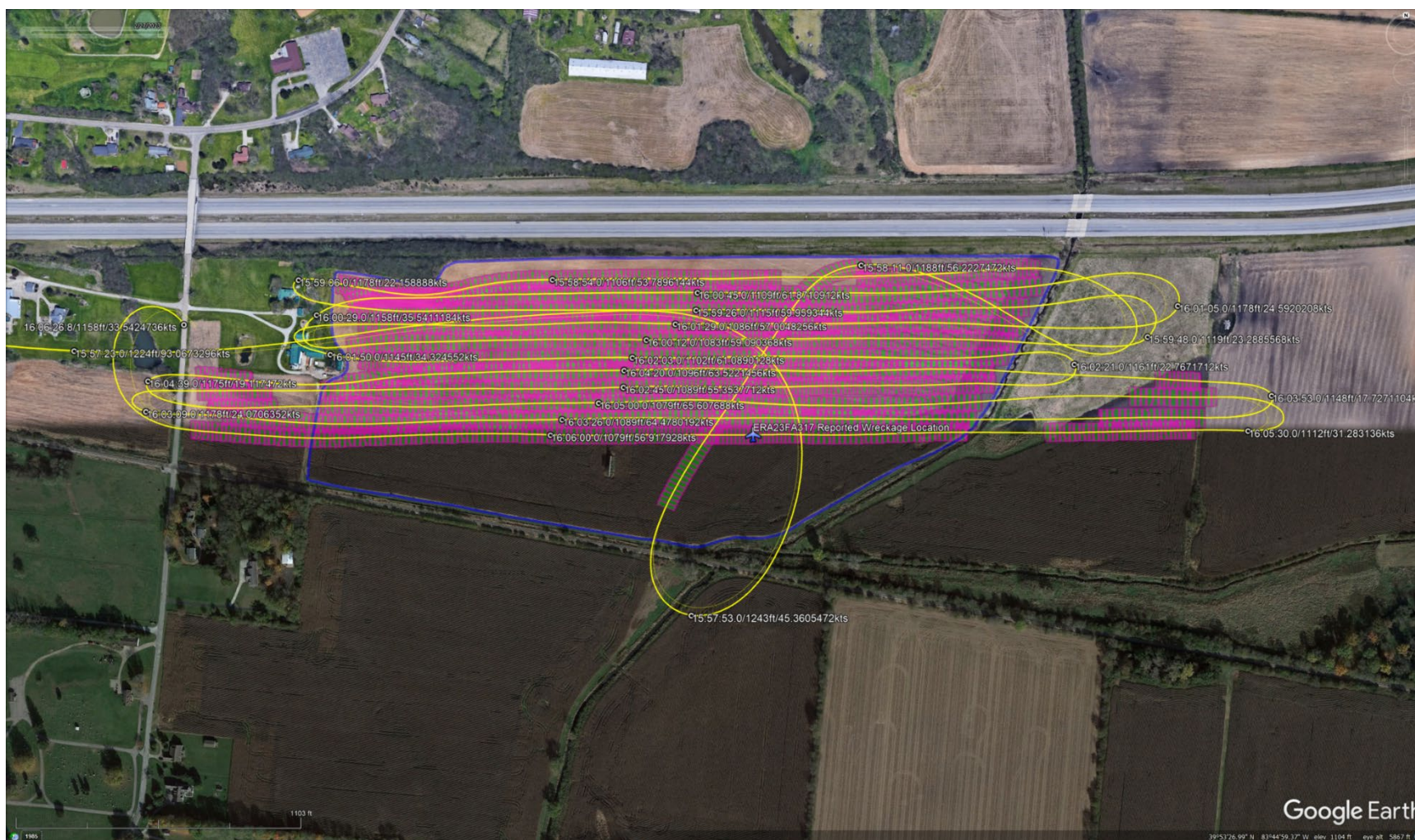
Gerald Kawamoto
Recorder Specialist



Figure 2. Google Earth overlay of the entire accident flight.



Figure 3. Google Earth overlay showing the spray area and the reported wreckage location.



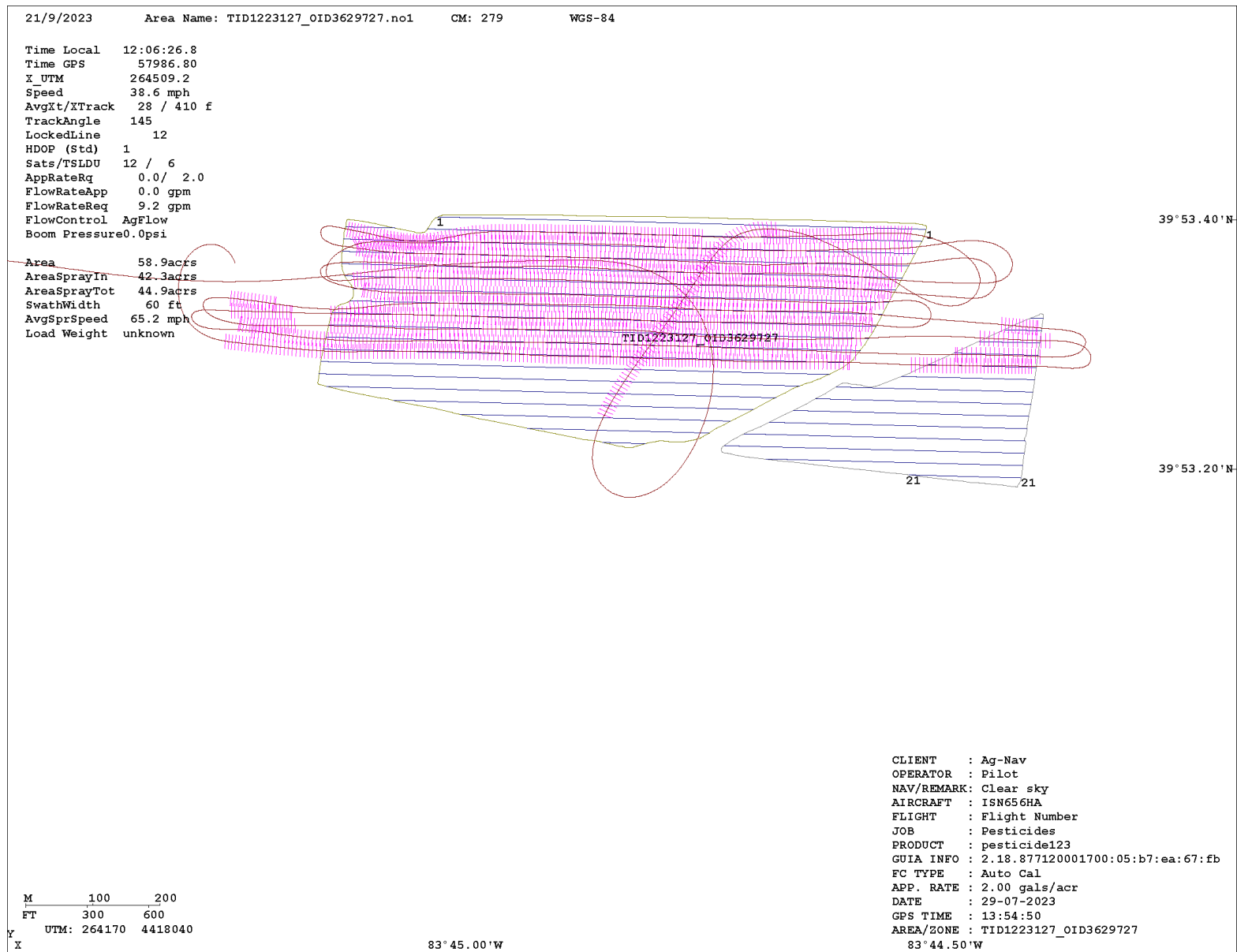


Figure 5. Plot of spray area generated by Navview.

Location, Date: Springfield, Ohio, 07/29/23

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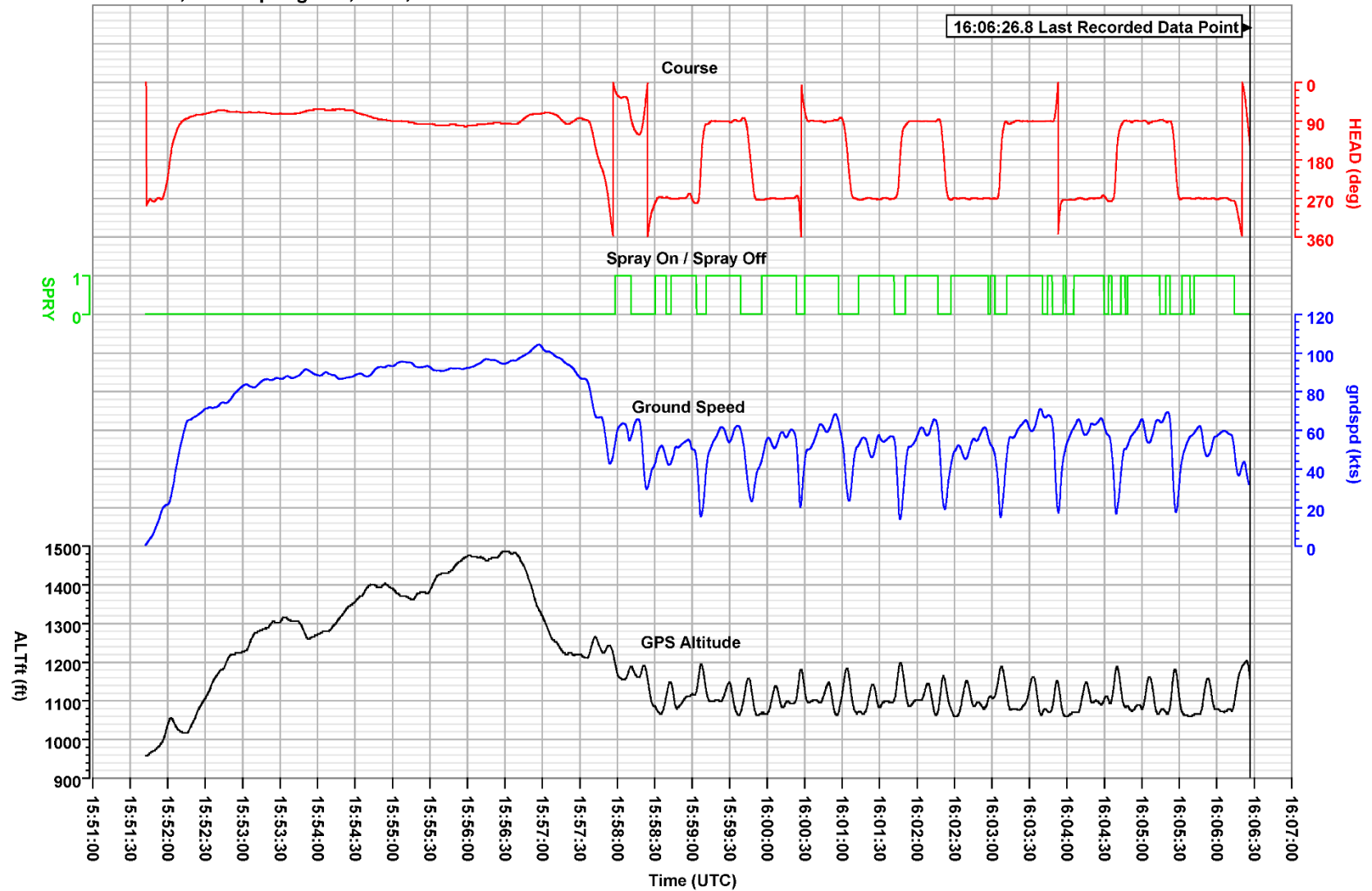


Figure 6. Plot of parameters for the entire accident flight.