

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA23FA330

GLOBAL POSITIONING SYSTEM (GPS) DEVICE

Specialist's Factual Report

October 25, 2023

A. ACCIDENT

Location: Junction City, Georgia
Date: August 10, 2023
Time: 1005 eastern daylight time (EDT)
Airplane: Cessna P210N, ToddAir Inc, N210JT

B. GLOBAL POSITIONING SYSTEM (GPS) DEVICE SPECIALIST

Specialist: Steven Smith
Mechanical Engineer (Recorder Specialist)
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

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

Recorder Manufacturer/Model: Garmin GTN 750Xi
Part Number: Unknown
Recorder Serial Number: Unknown

1.0 Garmin GTN 750Xi Description

The Garmin GTN 750Xi is a panel-mounted GPS receiver featuring an 834 x 986-pixel, 6.9-inch color liquid crystal (LCD) display. It has a GPS/SBAS engine and is TSO-C146c certified for primary domestic, oceanic, and remote navigation including en route, terminal, and non-precision approaches, and approaches with vertical guidance, such as LPV and LNA/VNAV. The unit can simultaneously give aviators vital approach information and weather and traffic data in relation to their position on a large, color moving map display. Its color moving map features a built-in database that shows cities, highways, railroads, rivers, lakes, and coastlines. The unit has a slot on the front for a Jeppesen database containing all airports, VORs, NDBs, intersections, FSSs, approaches, DPs/STARs, and SUA information. A flight plan composed of multiple waypoints, including user-defined waypoints, can be programmed in the unit. The GTN 750Xi also includes a TSO approved airborne VHF communications transceiver and TSO approved airborne VOR/localizer and glideslope receivers. The unit contains an internal secure digital (SD) card storing flight log data, which can be accessed through the slot in the right side of the unit. If the unit does not contain the internal SD card, the unit may contain an embedded MultiMediaCard (eMMC) chip on the main board, which contains the flight logs.

1.1 Garmin GTN 750Xi Data Recovery

The NTSB Vehicle Recorder Laboratory received a damaged display screen from the Garmin GTN 750Xi, as shown in figure 1. The Garmin GTN 750Xi display contained an SD card in good condition, as shown in figure 2. Data were downloaded using the manufacturer's procedure and it was determined to contain only chart information and no data pertinent to the accident were recorded. The accident aircraft was substantially damaged, and the remaining portion of the Garmin GTN 750Xi avionics box containing the flight data was unable to be located in the wreckage, as shown in figure 3.



Figure 1. Garmin GTN 750Xi display screen as received at the NTSB Vehicle Recorder Laboratory.



Figure 2. Undamaged Garmin Flight Stream 510 SD card containing no flight data.



Figure 3. Photo taken from the accident showing the damaged cockpit where the Garmin GTN 750Xi avionics box is housed.

Submitted by:

Steven Smith
Mechanical Engineer (Recorder Specialist)