

# National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA23FA024

## **NAVIGATION DEVICE**

Specialist's Factual Report

February 24, 2023

## **A. ACCIDENT**

Location: Marietta, Ohio  
Date: October 18, 2022  
Time: 0709 eastern daylight time (EDT)  
Airplane: Beech E90, N515GK

## **B. NAVIGATION DEVICE SPECIALIST**

Specialist: W. Deven Chen  
Electrical Engineer - Recorder Specialist  
National Transportation Safety Board (NTSB)

## **C. DETAILS OF THE INVESTIGATION**

A recorder group was not convened. The NTSB Vehicle Recorder Division received the following cockpit display:

Device Manufacturer/Model:	Garmin GTN 750
Device serial Number:	unknown

### **1.0 Device Description**

The Garmin GTN 750 is a panel-mounted GPS receiver featuring a 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 display 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 purchased electronic databases 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 750 also includes a TSO approved airborne VHF communications transceiver and TSO approved airborne VOR/Localizer and Glideslope receivers. The unit contains an internal SD card, which can be accessed through the slot in the right side of the unit. If the unit is equipped with a firmware v6.50 or later, the internal SD card will store a limited set of flight data information.

## 1.1 Data Recovery

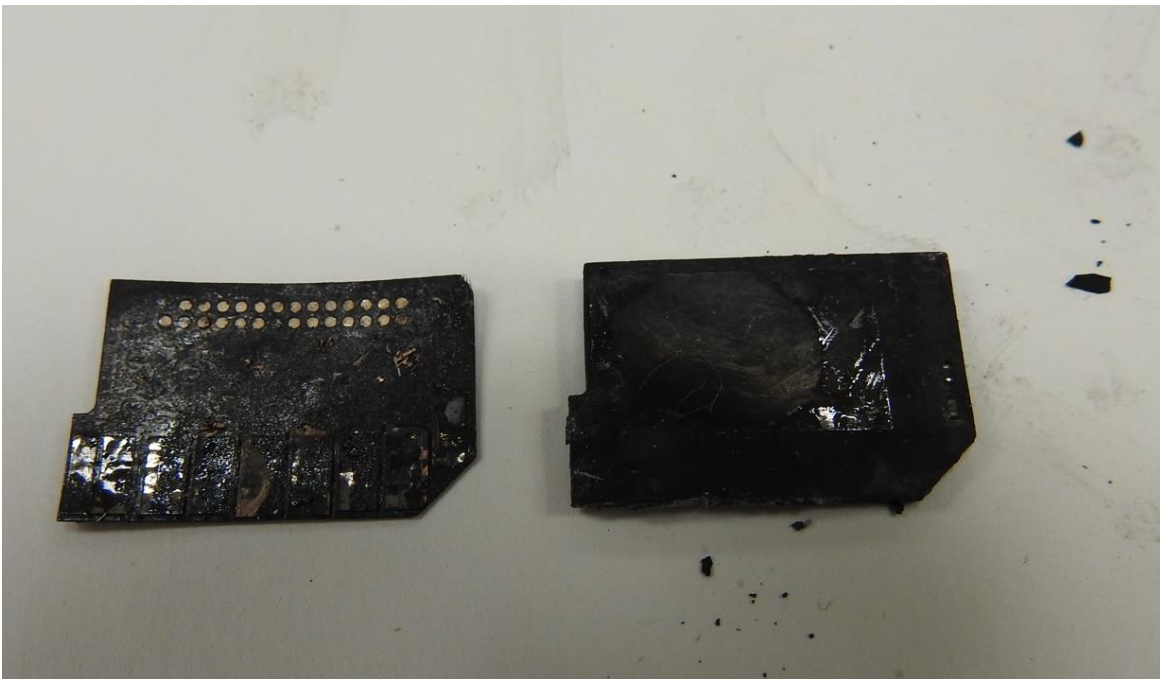
Upon arrival at the Vehicle Recorder Division, the Garmin GTN 750 exhibited severe impact and fire damage, as shown in figure 1. The unit's internal circuit boards were fire damaged, as shown in figure 2. A SD card's internal chip, which had been broken down into two pieces, was located. This device is shown in figure 3. The two pieces of the SD card had sustained severe fire damage. The extent of the damage precluded normal and advanced recovery procedures and additional attempts were unsuccessful in yielding usable data. Therefore, no data pertinent to the accident were recovered.



**Figure 1.** The Garmin GTN 750 as received, the main body on the left and the screen on the right.



**Figure 2.** A view of the internal circuit boards of the Garmin GTN 750.



**Figure 3.** A fire damaged SD card's internal chip which was broken down into two pieces.