

# NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division  
Washington, D.C. 20594

June 13, 2013

## Global Positioning System Device - Addendum

### Specialist's Factual Report By Ben Hsu

#### 1. EVENT

Location: Chesterfield, New Jersey  
Date/Time: February 16, 2012 / 0800 EST  
Vehicle/ID: 2004 Mack CV713 / 1M2AG11C54M012315  
Operator: Herman's Trucking Inc.  
NTSB Number: HWY12MH007

#### 2. ADDENDUM

This addendum includes uncertainty estimates for the calculated average speeds reported in the original Global Positioning System Device Specialist's Factual Report.

The Garmin nüvi 1390 device does not record GPS precision. Therefore, an industry-typical error diameter of 15 meters (approximately 49.2 feet) was used to approximate the precision of the GPS data. The uncertainty of the speed calculations based on this approximation is summarized in Table 1.

| Date      | Time (UTC) | Latitude (deg) | Longitude (deg) | Time Interval (secs) | Distance Traveled (ft) | Average Speed (MPH) | Uncertainty +/- (MPH) |
|-----------|------------|----------------|-----------------|----------------------|------------------------|---------------------|-----------------------|
| 2/16/2012 | 13:14:59   | 40.134606      | -74.668713      |                      |                        |                     |                       |
|           |            |                |                 | 17                   | 1178                   | 47.3                | 2.0                   |
| 2/16/2012 | 13:15:16   | 40.132617      | -74.665385      |                      |                        |                     |                       |
|           |            |                |                 | 14                   | 1030                   | 50.2                | 2.4                   |
| 2/16/2012 | 13:15:30   | 40.130896      | -74.662456      |                      |                        |                     |                       |
|           |            |                |                 | 5                    | 345                    | 47.0                | 6.7                   |
| 2/16/2012 | 13:15:35   | 40.130315      | -74.66148       |                      |                        |                     |                       |
|           |            |                |                 | 1                    | 60                     | 49.8                | 33.5                  |
| 2/16/2012 | 13:15:36   | 40.130214      | -74.661311      |                      |                        |                     |                       |

**Table 1: GPS Data related to the accident**

Additionally, the last point reported at 13:15:36 is not considered to be a precise recording of the vehicle's position. After crossing the intersection between 13:15:30 and 13:15:35, the vehicle exited the roadway. The Garmin GPS device is not capable of recording positions outside the roadway, so this last position is not a precise recording of the vehicle's position.