

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division

Washington, D.C. 20594

June 5, 2017

Global Positioning System Device

Specialist's Factual Report

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1. EVENT SUMMARY

Location: Iliamna, Alaska
Date: August 08, 2016
Aircraft: DeHavilland DHC-2
Registration: N95RC
Operator: Rapids Camp Lodge, Inc.
NTSB Number: ANC16LA054

On August 8, about 1651 Alaskan Daylight time, a float-equipped DeHavilland DHC-2 (Beaver) airplane, N95RC, sustained substantial damage when it impacted terrain during takeoff from Crosswind Lake, located about 30 miles south of Iliamna, Alaska. Of the seven people on board, the commercial pilot and three passengers sustained serious injuries, and three passengers sustained minor injuries. The airplane was registered to, and operated by Rapids Camp Lodge, Inc., King Salmon, Alaska, as a visual flight rules (VFR) other work-use flight, under the provisions of Title 14 *Code of Federal Regulations* (CFR) Part 91. Visual meteorological conditions prevailed at the time of the accident. The flight was originating at the time of the accident and was destined to King Salmon.

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following global positioning system (GPS) device:

Device Manufacturer/Model: Garmin Aera 500
Serial Number: 1QM003670

3.1. Device Description

The Garmin Aera 500 is a portable GPS unit designed for both automotive and aviation environments. It is capable of storing a detailed tracklog – including latitude, longitude, date,

time, GPS altitude, and groundspeed information – within the unit whenever the receiver has a lock on the GPS navigation signal. All recorded data is stored in non-volatile memory. Communication to the device is provided by a built-in USB port.

3.2. Data Recovery

The device was undamaged. Figure 1 is a photo of the device as received. The device was downloaded normally via a PC using the manufacturer's software.



Figure 1. Photo of Garmin Aera 500.

3.3. Data Description

The data extracted included 39 tracklogs from July 13, 2016,¹ through August 10, 2016.² The event flight was recorded as the 27th tracklog and started at 00:29:57 UTC and ended at 00:48:11 UTC on August 9, 2016.

3.4. Parameters Provided

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

¹ All dates and times are referenced to Coordinated Universal Time (UTC).

² The session recorded on August 10, 2016 appears to be a result of a power on of the unit. No flight data was recorded on August 10, 2016.

Table 1: GPS 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)
GPS Alt	Recorded GPS Altitude (feet)
Groundspeed	Average derived groundspeed (knots)
Track	Average derived true course (degrees)

3.5. OVERLAYS AND TABULAR DATA

Figure 2 is a graphical overlay generated using Google Earth for the event flight. The weather and lighting conditions in Google Earth are not necessarily the weather and lighting conditions present at the time of the recording.

The first track point was recorded at 00:29:57 UTC as the aircraft was shown in the water on the east side of the lake. By 00:40:44 UTC, the aircraft had turned toward a southwest track and began a takeoff run over the water. By 00:41:09 UTC, the aircraft had reached the midpoint of the lake and the groundspeed was 40 knots. By 00:41:18 UTC, the aircraft had crossed the lake's western shore and was near terrain at a recorded of 49 knots. At 00:41:51, the groundspeed was 0 knots. At 00:48:11 UTC, the last track point was recorded associated with the event flight.

It was unclear from the GPS data if the aircraft ever became airborne during its takeoff roll.

Figure 3 is a graphical overlay generated using Google Earth zoomed in on the last portion of the event.

Tabular data used to generate figures 2 and 3 are included as Attachment 1. This attachment is provided in electronic comma-delimited (.CSV) format.



Figure 2. Google Earth overlay showing all the track points recorded for the event flight.

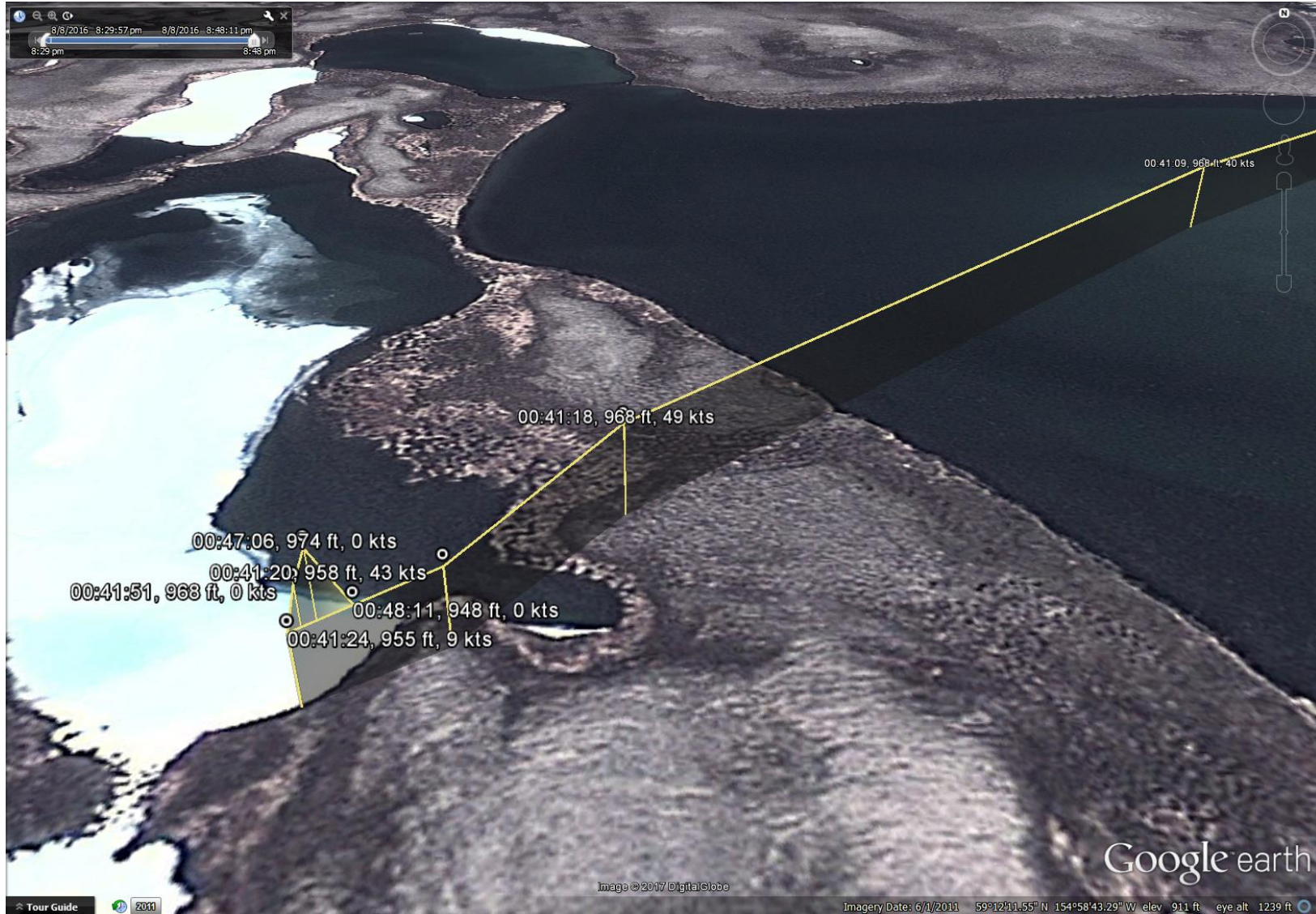


Figure 3. Google Earth overlay showing the last portion of the event flight.