**NATIONAL TRANSPORTATION SAFETY BOARD**
Vehicle Recorder Division
Washington, D.C. 20594

December 20, 2010

# Global Positioning System Data File

**Specialist's Factual Report**
**By Ben Xu**

## 1. EVENT

Location:          Aleknagik, AK
Date/Time:          08/09/2010 / 1442 ADT
Aircraft/ID:          de Havilland Canada DHC-3T / N455A
Operator:          General Communication Incorporated (GCI)
NTSB Number:  ANC10MA068

## 2. DETAILS OF DEVICE INVESTIGATION

The Safety Board's Vehicle Recorder Division received a data file downloaded from an unknown Global Positioning System (GPS) device. The device was installed in a privately owned and operated Lake 250 (N58RD) that was involved in the search for the wreckage of the accident aircraft (N455A).

### 2.1. GPS Data File Description

The file provided was in the Garmin GPS Database (GDB) format and supported by Garmin's Mapsource software. GDB is a proprietary file format capable of storing waypoints, routes, and tracks. GDB files can be created using Mapsource after downloading data from a compatible GPS device.

### 2.2. GPS Data Description

The data provided included five sessions from August 9, 2010[1] through August 10, 2010. The private pilot who provided the GPS data file indicated that the last two recorded sessions on August 10, 2010 beginning at 03:10:48 UTC and 04:16:12 UTC were recorded during the search for the wreckage of N455A. These two sessions are included in this report.

### 2.3. Parameters Provided

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

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[1] All dates and times are referenced to Coordinated Universal Time (UTC) unless otherwise specified.

| 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 Altitude (feet) |
| Groundspeed | Average groundspeed between current and previous data point (knots) |
| Course | Average course between current and previous data point (degrees) |

**Table 1: GPS Data Parameters**

## 3. OVERLAYS AND TABULAR DATA

Graphical overlays were generated using Google Earth for the two sessions of interest.

Figure 1 depicts the flight on August 10, 2010 beginning at 03:10:48 UTC. At approximately 03:42 UTC, N58RD reaches the vicinity of the wreckage and circles the area until approximately 03:53 UTC.

Figure 2 depicts the flight on August 10, 2010 beginning at 04:16:12 UTC.

The tabular data corresponding to Figures 1 and 2 are included as Attachments 1 and 2 respectively. This attachment is provided in electronic comma-delimited (.CSV) format.
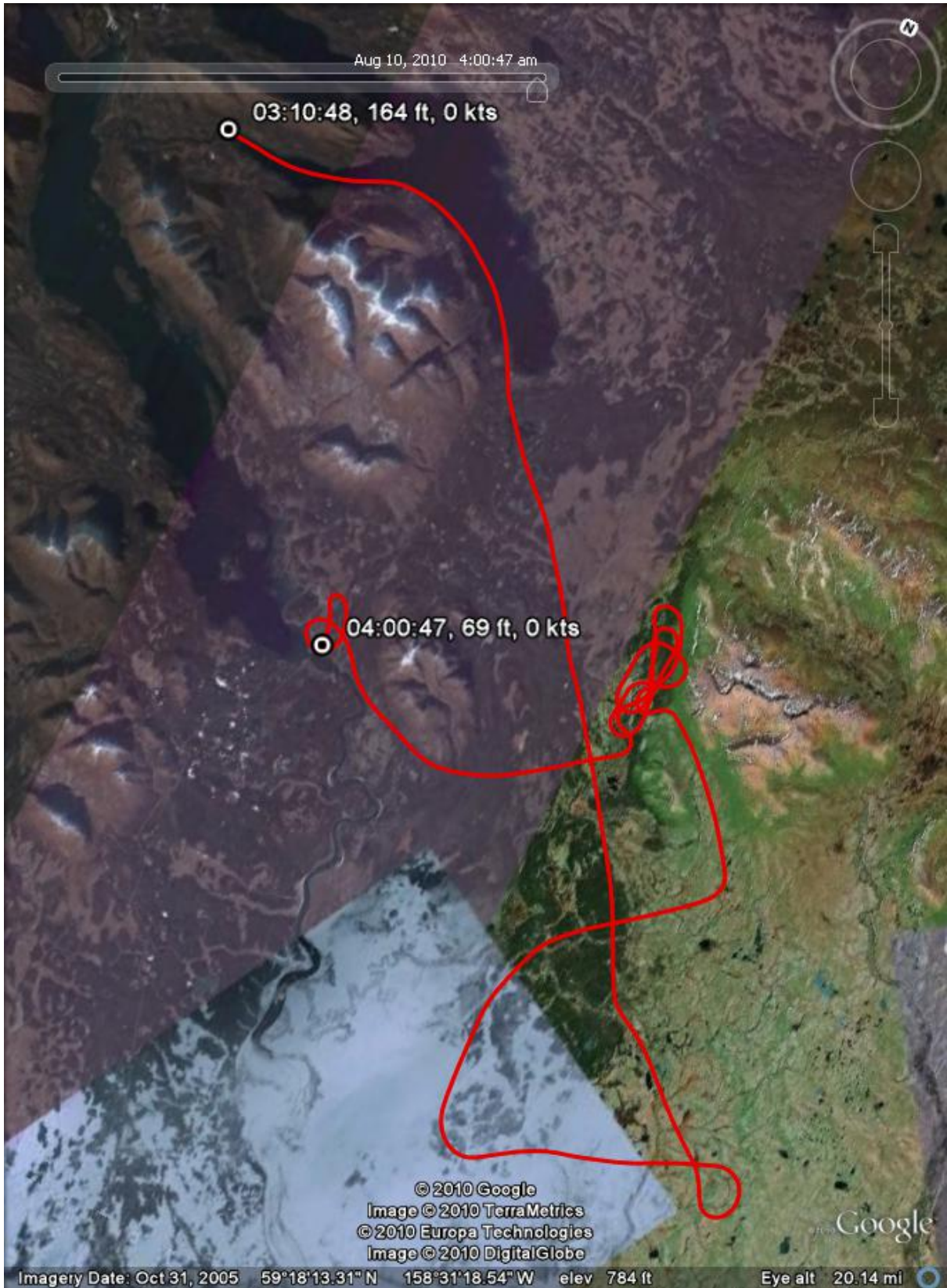
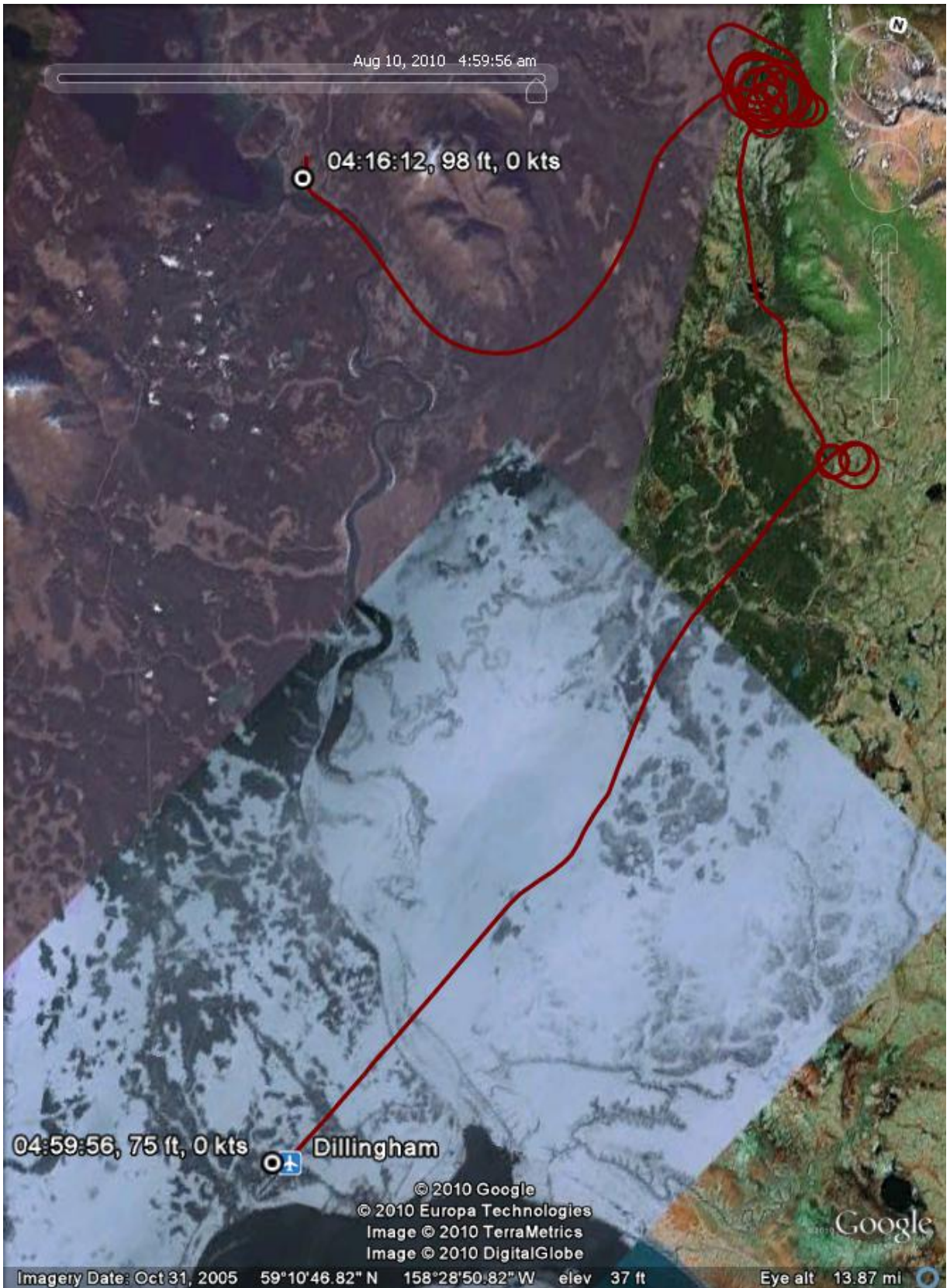**Figure 1: Flight on August 10, 2010 beginning at 03:10:48 UTC**

**Figure 2: Flight on August 10, 2010 beginning at 04:16:12 UTC**