

Science Flight Report

Operation Ice Bridge May 2011



UAF Alaska Flight No 1
Mission Plan: Stikine Icefield

Flight Report Summary

Aircraft	DHC-3 Otter
Flight Number	UAF-1
Flight Request	UAF
Flight Hours	7.0
Take off time	08:00:00.00 Z from Ultima Thule Outfitters Lodge
Landing time	16:00:00.00 Z at Petersburg
Date	Sunday, May 15 2011, Day of Year 135
Purpose of Flight	LiDAR surveys of glaciers within the Stikine Icefield, SE Alaska.
Aircraft Status	Airworthy.
Sensor Status	operational.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none"> • LiDAR profiles of Stikine Icefield, including the LeConte, Baird, Dawes, Triumph and Flood Glaciers. • Conducted one pass over runway at Petersburg airport for LiDAR instrument calibration.
Planned Events	<ul style="list-style-type: none"> • Tomorrow we plan to complete the surveys of the Stikine Icefield.

Science Data Report Summary

This mission performed LiDAR surveys of glaciers the Stikine Icefield, including the LeConte, Baird, Dawes, Triumph and Flood Glaciers.

LiDAR data were collected at a height of 500-650 meters above the glacier surface, and mapped a 0.5 km wide swath along the centerline of the glaciers. This swath map consists of measurements from individual laser shot points on a roughly 1 meter by 1 meter grid. The individual point measurements of the glacier surface latitude, longitude and elevation have an accuracy of approximately ± 10 cm.

Geographic keywords: (SE Alaska)

Repeat Mission: yes (2010, 2009, 2000, 1995)

Instrument	Instrument Operational		Data Volume for days 136+137	Instrument Issues
	Target area	Entire Flight		
UAF LiDAR	Yes	No	~2.5 GB in raw binary format	None
GPS	Yes	Yes	~900 MB in raw binary format	None
IMU	Yes	Yes	~500 MB in raw binary format	None

Mission Log (Chris Larsen)

Today's mission is LiDAR surveys of glaciers the Stikine Icefield, including the LeConte, Baird, Dawes, Triumph and Flood Glaciers. The weather was perfect throughout the entire day. The flight was ended in Petersburg, for an overnight rest and refuel. Weather and forecast checks in the evening held promise for continued excellent weather. We plan to complete the survey flights over the Stikine Icefield tomorrow.

Individual instruments on board the aircraft:

LiDAR: The UAF LiDAR systems worked well.

GPS: System worked normally. No problems.

IMU: System worked well. No issues.

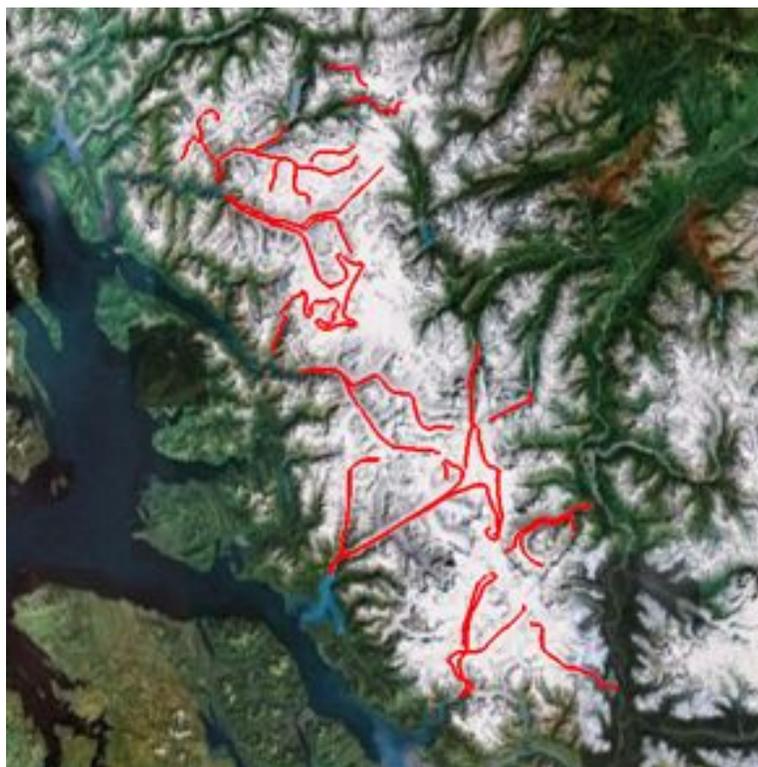


Figure 1: LiDAR ground tracks over Stikine Icefield for days 135+136 (May 15-16, 2011).



Figure 2: Setting up temporary GPS basestation for local kinematic control.



Figure 3: Dawes Glacier tidewater terminus.