



Flight Report

Operation Ice Bridge Spring 2012

UAF Alaska Flight No 6
Mission Plan: St. Elias Range

Flight Report Summary

Aircraft	DHC-3 Otter
Flight Number	DHC3-6
Flight Request	12M014
Flight Hours	6.9
Take off time	18:39 Z from Ultima Thule
Landing time	01:40 Z at Ultima Thule (with fuel stop at Yakutat)
Date	March 22, 2012
Purpose of Flight	LiDAR and radar surveys of glaciers within the St. Elias Range, Alaska.
Aircraft Status	Airworthy.
Sensor Status	operational.
Significant Issues	none.
Accomplishments	<ul style="list-style-type: none"> • Radar bed mapping of Tana, Bagley, Bering, Yahtse, Malaspina and Seward Glaciers • LiDAR centerline profiles and cross profiles of Tana, Bagley, Bering, Yahtse, Malaspina and Seward Glaciers. • Conducted one pass over runway at Yakutat airport for LiDAR instrument calibration.

Science Data Report Summary

This mission performed LiDAR surveys and radar bed mapping of glaciers within the St. Elias Range, Alaska.

Geographic keywords: (St Elias Range, Alaska)

Repeat Mission: yes

Instrument	Instrument Operational		Data Volume	Instrument Issues
	Target area	Entire Flight		
UAF LiDAR	Yes	YES	1.8 GB	None
GPS	Yes	YES	50 MB	None
IMU	Yes	Yes	1 GB	None
JPL Warm Ice Sounding Explorer (WISE) radar	yes	Just over the glaciers	18 GB	None

Mission Log (Chris Larsen)

Weather conditions were great, light winds with minimal low lying clouds on the glaciers. The morning was cold, with -25° F temperatures at the start. The flight began up the Tana Glacier to the divide with the Bagley Ice Valley, then down the Bering Glacier to Vitus Lake. Bed returns from the radar were sparse over the upper reaches, but very clear on the lower reaches of both glaciers. After repeating this line for radar quality control, we began a series of cross sections on the Bagley Ice Valley. From there we tried again to sound the Yahtse Glacier in Icy Bay, and then transited while sounding across the lower Malaspina piedmont lobe enroute to Yakutat. After a fuel stop in Yakutat, we began a long centerline profile of the Malaspina leading up to the Seward Ice Valley. While bed returns were clear over the lower Malaspina, the deep and likely wet ice of the upper reaches proved difficult to sound. We then returned to our remote base of operations at Ultima Thule.

Individual instruments on board the aircraft:

LiDAR: The UAF LiDAR system worked well.

GPS: System worked normally. No problems.

Warm Ice Sounding Explorer (WISE) radar: System worked great.

IMU: System worked well. No issues.

DMS: System worked well. No issues.

