
Preliminary Science Flight Report

Operation IceBridge Antarctica 2011



Flight: F09
Mission: Alexander Island 1

Flight Report Summary

Aircraft	DC-8 (N817NA)
Flight Number	120113
Flight Request	128008
Date	Monday, October 24, 2011 (Z), Day of Year 297
Purpose of Flight	Operation IceBridge Mission Alexander Island 1
Take off time	12:03:37 Zulu from Punta Arenas (SCCI)
Landing time	22:41:45 Zulu at Punta Arenas (SCCI)
Flight Hours	10.7 Hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	<ul style="list-style-type: none">• Low-altitude survey (1,500 ft AGL) Alexander Island and George VI Sound. Completed entire mission as planned.• ATM, MCoRDS, snow and Ku-band radars, gravimeter, and DMS were operated on the survey lines.• Conducted two ramp passes (2000 ft AGL) at Punta Arenas airport for ATM and DMS instrument calibration.
Geographic Keywords	Wilkins Ice Shelf, Alexander Island, George VI Ice Shelf, Antarctica
ICESat Tracks	0212,0293,0412,1313.
Repeat Mission	2008.

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	52 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.4 TB	Hard disk failure.
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	280 GB	Hard disk failure.
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	280 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	71 GB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.4 GB	None
DC-8 Onboard Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	40 MB	None

Mission Report (Michael Studinger, Mission Scientist)

This flight is partially a repeat of a portion of a 2008 NASA/CECS flight, and partially made up of new lines. The repeated portion is from the 30 October 2008 NASA/CECS flight, and incorporates several lines over the disintegrating Wilkins Ice Shelf. We augmented these lines by adding four new ICESat tracks over the Wilkins as well. In addition, we interlace the northern George VI lines over the George VI Ice Shelf to improve the spatial resolution of the gravimeter-based bathymetric mapping of this area.

The weather was perfect over Alexander Island. The George VI Sound was covered in heavy clouds that were not in the forecast. Luckily, this was a gravity line and we were able to collect data with the main instrument. We only recovered 30% of ATM and DMS data over the George VI Sound. We got 100% over the Alexander Island survey lines.

Known wildlife colonies in the survey area were at safe distance to the flight path of the DC-8.

Individual instrument reports from experimenters on board the aircraft:

ATM: The ATM lasers worked well and collected good data along the entire survey line except for clouds over the George VI Sound.

MCoRDS: The MCoRDS worked well. There was a 17 minute outage due to a disk crash. We lost an additional 7 minutes to troubleshooting of increased noise in the system.

Snow and Ku-band radar: The snow and Ku-band radars worked well. A hard disk failure on the snow radar required a reboot, which resulted in a 5 minute data loss.

Gravimeter: Worked well. No issues.

DMS: DMS worked well. No issues.

DC-8 on board data: System worked well.

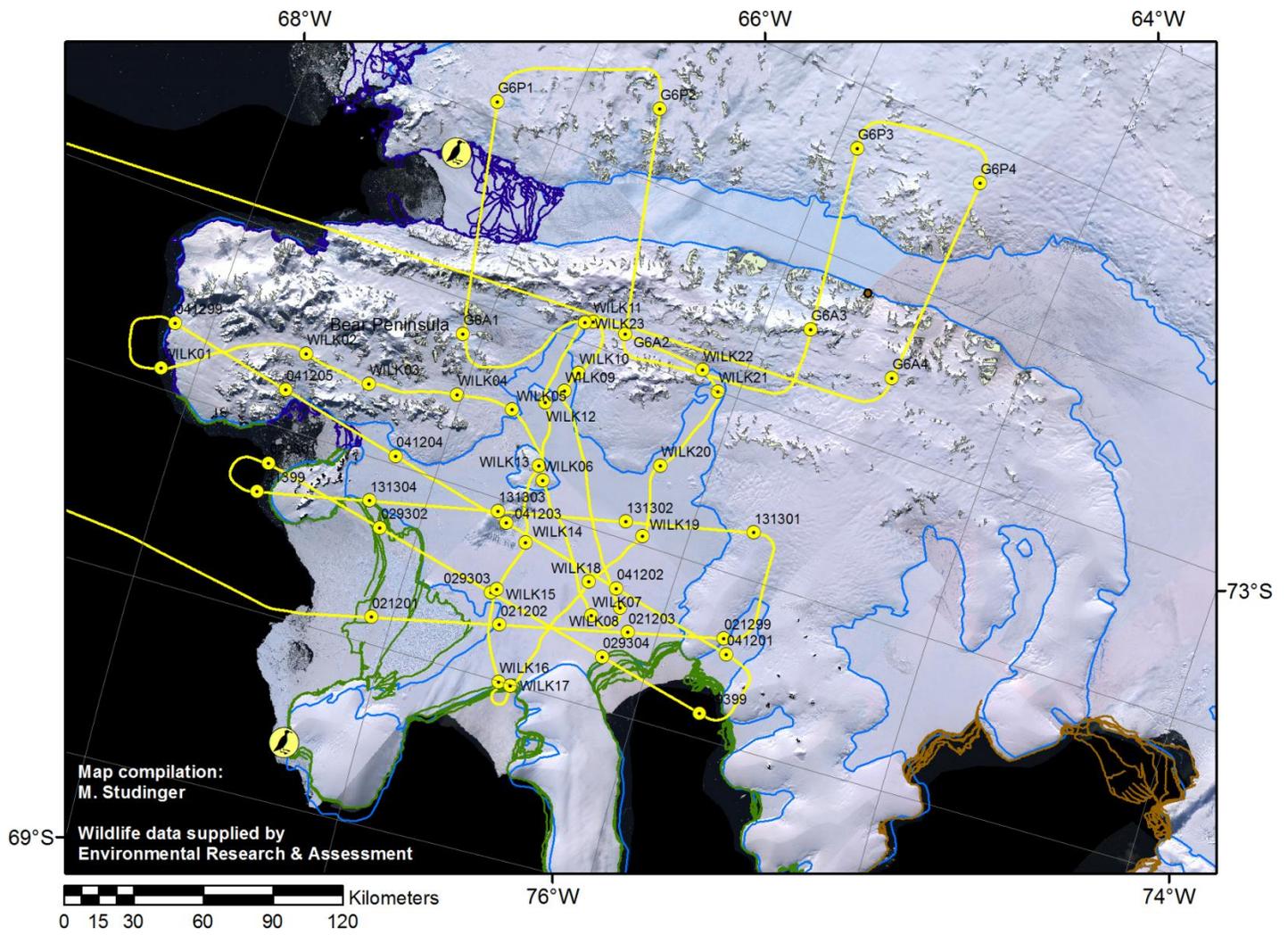


Figure 1: DC-8 trajectory over the Wilkins Ice Shelf and Alexander Island. Background image is LIMA mosaic.