Science Flight Report
Operation IceBridge Arctic 2010

Flight: **05**
Mission: **LVIS Northwest**

Flight Report Summary

Aircraft	**DC-8 (N817NA)**
Flight Number	100207
Flight Request	108013
Date	Monday, March 29, 2010 (Z), Day of Year 088
Purpose of Flight	Operation IceBridge Mission LVIS Northwest
Take off time	11:35:29 Zulu from Thule Air Base (BGTL)
Landing time	18:28:55 Zulu at Thule Air Base (BGTL)
Flight Hours	7.0
Aircraft Status	Airworthy
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	• High-altitude survey (35,000 ft AGL) of northwest Greenland coastal areas. • LVIS, POS/AV, DMS, and MCoRDS were operated on the survey lines. • Gravimeter was in operation throughout the entire flight. • ATM, Ku-band and snow radar were not operated on this flight due to the high-altitude mission. • Completed all of the survey lines as planned, except for some minor shortcuts between crosslines. • Conducted one pass over the runway at Thule Air Base at 20,000 ft AGL for LVIS instrument calibration. • Conducted calibration maneuvers over the sea ice for LVIS.
Geographic Keywords	Northwest Greenland, Hayes Halvø, Thule, Steenstrups Gletscher, Upernavik, Baffin Bay, Hovgård Kystland, Kjer Gletscher, Sverdrup Gletscher, Nansen Gletscher, Dietrichson Gletscher, Camp Century
ICESat Tracks	Many short ice sat tracks
Repeat Mission	No

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	☒	☒	☒	N/A	None
MCoRDS	☑	☒	☒	2.4 TB	None
Snow Radar	☒	☒	☒	N/A	None
Ku-band Radar	☒	☒	☒	N/A	None
LVIS	☑	☒	☑	43.4 GB	None
DMS	☑	☑	☑	22 GB	None
POS/AV (510 + 610)	☑	☑	☑	2 GB	None
Gravimeter	☑	☑	☑	80 MB	None
DC-8 Onboard Data	☑	☑	☑	25 MB	None

Mission Report (Michael Studinger, Mission Scientist)

Today's flight is a high-altitude mission (35,000 ft and higher) of 5 transects, spaced 10 km apart, beginning north of Thule over the Hayes Halvø and extending down to Upernavik along the northwest coast of Greenland. Icy conditions on the taxiway have caused a 30 minute delay in takeoff after the first takeoff run at 11:04:50 had to be aborted at the request of the tower. The delay required a shortening of the mission plan that had already been too long (8.2 h) to be accommodated during regular opening hours of the airfield. The crosslines were shortened in order to accommodate a runway pass and land at Thule Air Base before the closure of the airfield at 4pm local. Other than that all survey lines have been completed as planned.

The weather in the survey area was very good as we had expected from the forecast.

Individual instrument reports from experimenters on board the aircraft:

ATM: The ATM systems were not operated on this flight due to the high-altitude mission but were in stand-by mode during the flight.

MCoRDS: The MCoRDS system worked well and collected 2.4 TB of data, almost the entire flight. The system had to be restarted once without incident because of a minor issue with the serial GPS data.

Snow and Ku-band radar: The systems were not operated on this flight due to the high-altitude mission.

Gravimeter: System worked normally. No problems.

DMS: DMS worked well.

LVIS: LVIS system worked well. No issues.

POS/AV: Systems worked well. No issues.

DC-8 on board data: System worked well.

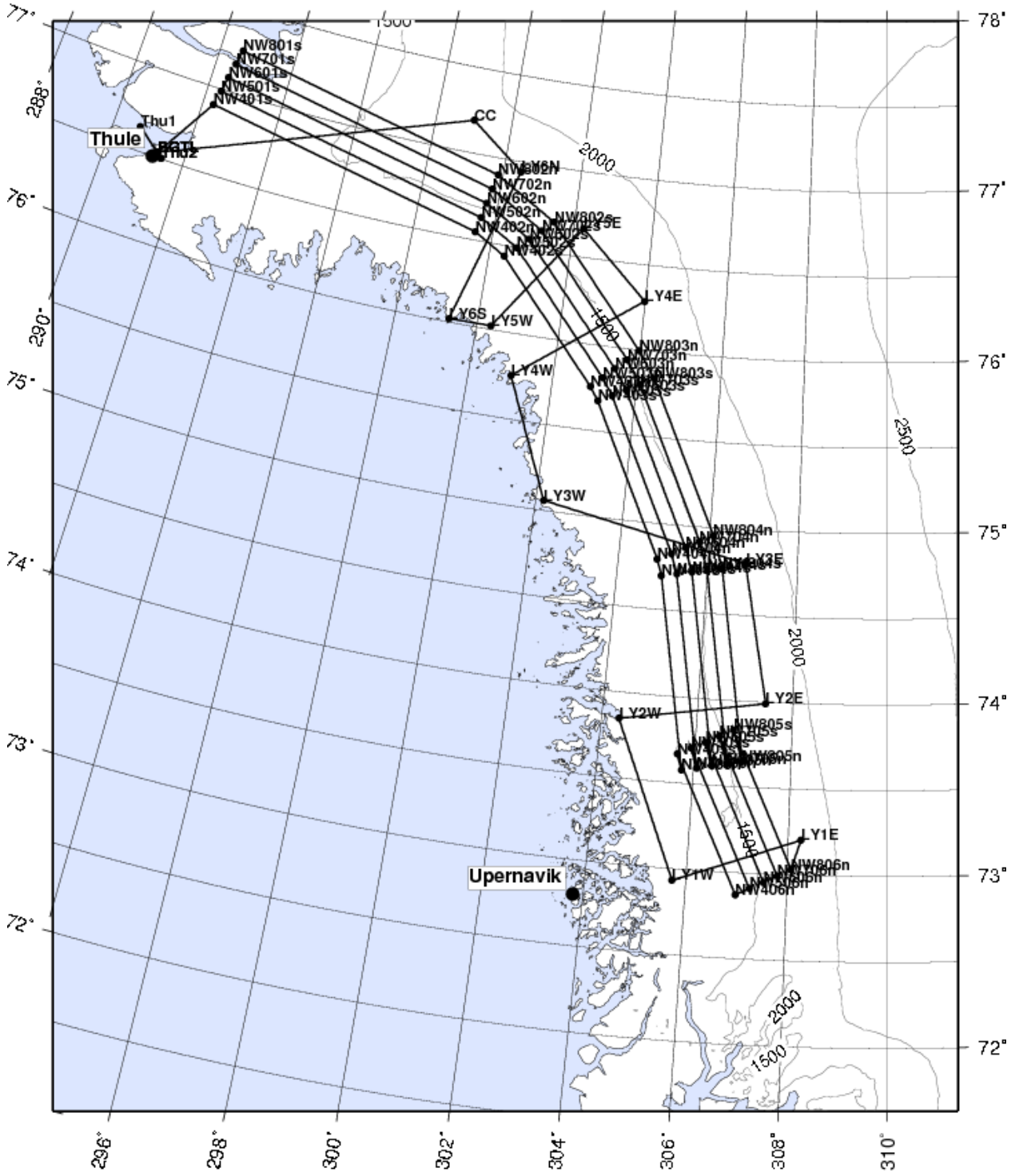

Figure 1: Waypoints and survey area of Flight 05 from John Sonntag.