

DC-8 11/01/12 - 11/02/12

Aircraft: [DC-8 - AFRC](#) (See full schedule)

Flight Number: 130116

Payload Configuration: OIB Antarctic 2012

Nav Data Collected: Yes

Total Flight Time: 12 hours

Submitted by: Frank Cutler on 11/01/12

Flight Segments:

From:	SCCI	To:	SCCI
Start:	11/01/12 12:07 Z	Finish:	11/02/12 00:08 Z
Flight Time:	12 hours		
Log Number:	138003	PI:	Michael Studinger
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	<p>Depart SCCI at 1207Z. Perform calibration ramp pass to the SE and overfly targets at 1216Z at 1200 ft AGL. Climb to cruise altitudes of FL310 to FL350. Perform gravity data line starting at 1533Z and ending 1625Z at FL350. Descend to 1500ft AGL to cross first low altitude science waypoint at 1659Z. Continue to fly ground track pattern around glacier grounding line of Ronne and Support Force glaciers. Pass over final low altitude waypoint at 1956Z. Perform radar pitch maneuvers at 2000 ft AGL at 1810Z. High altitude ATM data collected during transit segments. Climb to FL400 for transit to Punta Arenas. Mission information Tweeted through NASA Headquarters during flight. Two Chilean teachers, a Chilean Journalist, Dinah Arnett from the US embassy in Chile joined our flight. Land SCCI at 0008Z.</p>		

Flight Hour Summary:

	138003
Flight Hours Approved in SOFRS	200
Total Used	215.7
Total Remaining	-15.7

138003 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/02/12	130101	Check	5	5	195	
10/03/12	130102	Check	3.2	8.2	191.8	
10/08/12 - 10/09/12	130103	Transit	10.7	18.9	181.1	
10/10/12	130104	Transit	3.2	22.1	177.9	
10/12/12	130105	Science	11.2	33.3	166.7	
10/13/12 - 10/14/12	130106	Science	10.9	44.2	155.8	
10/15/12	130107	Science	11.6	55.8	144.2	
10/16/12 - 10/17/12	130108	Science	11.8	67.6	132.4	
10/18/12	130109	Science	11.6	79.2	120.8	
10/19/12 - 10/20/12	130110	Science	10.2	89.4	110.6	
10/22/12	130111	Science	11.2	100.6	99.4	
10/23/12 - 10/24/12	130112	Science	11.3	111.9	88.1	
10/25/12	130113	Science	11.4	123.3	76.7	
10/27/12	130114	Science	11.4	134.7	65.3	
10/28/12 - 10/29/12	130115	Science	11.3	146	54	

11/01/12 - 11/02/12	130116	Science	12	158	42
11/02/12 - 11/03/12	130117	Science	10.6	168.6	31.4
11/04/12	130118	Science	11	179.6	20.4
11/06/12 - 11/07/12	130119	Science	9.4	189	11
11/07/12 - 11/08/12	130120	Science	11.5	200.5	-0.5
11/09/12	130121	Transit	3.3	203.8	-3.8
11/10/12 - 11/11/12	130122	Transit	11.6	215.4	-15.4
11/11/12	130123	Transit	0.3	215.7	-15.7

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

Related Science Report:

OIB - DC-8 11/01/12 Science Report

Mission: OIB

Mission Summary:

F12 Ronne Ice Shelf - Grounding Line East

Accomplishments

- Low-altitude survey (1,500 ft AGL) over the grounding line area of the Foundation Ice Stream and Support Force Glacier.
- Completed all planned survey lines, except for the last 50 nautical miles in order to have enough reserve fuel.
- Collected additional high altitude ATM and DMS data over sea ice in the Bellingshausen and Weddell Sea during transits as well as over the Antarctic Peninsula.
- Collected high-altitude gravity data over the Ronne Ice Shelf.
- Conducted pitch maneuvers for time stamp verification of snow and Ku-band radars.
- Conducted ramp pass (1,500 ft AGL) at Punta Arenas airport after takeoff for DMS, ATM, snow and Ku-band radar instrument calibration.
- ATM, MCoRDS, snow and Ku-band radars, gravimeter, and DMS were operated on the survey lines.
- Hosted a question and answer session on NASA_ICE Twitter on today's flight with 40 live "tweets".
- Satellite Tracks: none
- Repeat Mission: none

Science Data Report Summary

Instrument	Operated	Data Volume	Instrument Issues/Comments
ATM	yes	42 GB	None
DMS	yes	50 GB	None
Snow Radar	yes	350 GB	None. Altitude too low during ramp pass, but can be fixed.
Ku-band Radar	yes	350 GB	None. Altitude too low during ramp pass, but can be fixed.
MCoRDS	yes	800 GB	None
KT-19	yes	20 MB	None
Gravimeter	yes	1.2 GB	None
DC-8 On-board Data	yes	40 MB	None

Mission Report (Michael Studinger, Mission Scientist)

The weather conditions in the Weddell Sea forced us again to fly a land ice mission, but at least we were able to choose a high priority mission with regional high priority. Today's mission Ronne Grounding Line East marks the accomplishment of a major IceBridge milestone. Over the last 4 years we have flown a total of 8 dedicated missions to map the entire grounding line from the Getz Ice Shelf over the Antarctic Peninsula and into the Ronne Ice Shelf. We have surveyed 4374 nautical miles, or 8100 km of grounding line, which is a remarkable accomplishment.

We spend considerable time in the weather office this morning to understand the weather situation, in particular a system causing clouds in the survey area. After comparing different models and satellite imagery we convinced ourselves that the clouds would be high enough for us to work below the cloud layer. The weather in the area was perfect. We had to skip the last 50 nautical miles of the planned low altitude survey in order to have enough reserve fuel for the way home.

At the end of the line on the Ronne Ice Shelf we flew over an old seismic survey site that will help to tie the bathymetry estimates from gravity data to the depth estimates from seismic measurements. We also collected high-altitude gravity data en-route to the area. We collected an additional 2.7 hours of high-altitude data with ATM and DMS over sea ice in the Bellingshausen and Weddell Sea on the transits with beautiful and rare views of the Antarctica Peninsula.

We flew a ramp pass at Punta Arenas airport at 1,500 ft AGL after takeoff to ensure data collection during daylight for DMS and ATM instrument calibration.

We hosted a question and answer session on NASA_ICE Twitter during today's flight with help from NASA Headquarters PAO. We had two school teachers and a reporter from Punta Arenas with us and two people from the US Embassy in Santiago as part of our education and outreach activities.

ATM data collection	Time (UTC)	Hours
Begin low altitude data collection	16:49	
End low altitude data collection	19:52	3.2
Various high altitude segments		2.7
Total		5.9

Images:

Trajectory map of today's science mission



[Read more](#)

The DC-8 on the ramp in Punta Arenas getting ready for science



[Read more](#)

An IL-76 parked on taxiway "Echo" in Punta Arenas



[Read more](#)

View of the Ellsworth Mountains during today's mission



[Read more](#)

Submitted by: Michael Studinger on 11/02/12

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