

DC-8 10/19/12 - 10/20/12

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

Flight Number: 130110

Payload Configuration: OIB Antarctic 2012

Nav Data Collected: Yes

Total Flight Time: 10.2 hours

Submitted by: Frank Cutler on 10/20/12

Flight Segments:

From:	SCCI	To:	SCCI
Start:	10/19/12 14:00 Z	Finish:	10/20/12 00:13 Z
Flight Time:	10.2 hours		
Log Number:	138003	PI:	Michael Studinger
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	Depart SCCI at 1400Z. Perform calibration ramp pass to the SE and overfly targets at 1208Z at 2000 ft AGL. Climb to cruise altitude of FL310. Descend to alt block of 1000ft to 800ft AGL to cross first science waypoint at 1732Z. Perform radar pitch maneuvers at 3000 ft at 1810Z. Continue to fly six course lines in saw tooth ground track pattern from roughly west to east over Bellingshausen sea ice at 1500 ft. Pass over final waypoint at 2156Z. High altitude ATM data collected during transit segments. Climb to FL350 to FL400 block for transit to Punta Arenas. Xchat with school children in class rooms across USA during mission. Land SCCI at 0013Z.		

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 10/19/12 Science Report

Mission: OIB

Mission Summary:

F06 Bellingshausen Sea 02

Accomplishments

- Low-altitude survey (1,500 ft AGL) over sea ice in the Bellingshausen Sea.
- Completed all planned survey lines.
- ATM, snow and Ku-band radars, gravimeter, and DMS were operated on the survey lines.
- Collected additional ATM and DMS high-altitude data over sea ice in the Bellingshausen Sea on transit home until we reached the edge of the sea ice extend.
- Conducted pitch maneuvers for time stamp verification of snow and Ku-band radars.
- Conducted one ramp pass (2,000 ft AGL) at Punta Arenas airport after takeoff for DMS, ATM, snow and Ku-band radar instrument calibration.
- Hosted a question and answer session on x-chat during the flight with 11 students and 1 teacher.
- Satellite Tracks: all data lines are along Envisat ground tracks. Orbit numbers are unknown.
- Repeat Mission: none

Science Data Report Summary

Instrument	Operated	Data Volume	Instrument Issues/Comments
ATM	yes	46 GB	None
DMS	yes	83 GB	None
Snow Radar	yes	415 GB	None
Ku-band Radar	yes	415 GB	None
MCoRDS	no	N/A	MCoRDS not operated due to sea ice mission
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)

Today, both the AMPS model and the GFS model indicated good conditions for the Bellingshausen Sea area. We didn't have good satellite imagery before making a decision but after studying the situation carefully felt confident that we could fly a successful mission over the Bellingshausen Sea. Figure 2 show the AMPS model that we downloaded before takeoff. The model shows a large system that is moving over the Bellingshausen

Sea from the Amundsen Sea. We decided to fly the western part first. When we descended into the survey area around 17:10 Z there was dense cloud cover from high elevation down to the surface. It was obvious that the system had moved faster than predicted. Nevertheless, ATM only lost 5 minutes of data on the western most line. The rest of the day we had perfect weather over the entire area. We collected high-altitude data with ATM and DMS on the way home until we reached the edge of the sea ice.

The Bellingshausen Sea is a challenging area in terms of good weather and also in terms of getting a reliable weather forecast. WE have completed the two sea ice missions that have been planned.

The known wildlife colonies in the survey area were at safe distance from the flight path of the DC-8.

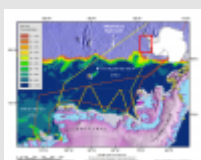
After takeoff we did a ramp pass at 2,000 ft over the field at Punta Arenas airport for DMS and ATM instrument calibration.

We hosted another very successful question and answer session on x-chat during the flight with 11 students and 1 teacher.

ATM laser altimetry data collection	Time (UTC)	Hours
Begin high altitude data collection		
Begin low altitude data collection	17:28	
End low altitude data collection	21:57	
End high altitude data collections	22:31	
Total		5.0

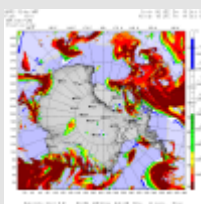
Images:

Today's DC-8 trajectory over the Bellingshausen Sea



[Read more](#)

AMPS model forecast



[Read more](#)

Submitted by: Michael Studinger on 10/20/12

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