Photo courtesy of Dave Moore; King's College, London

University of Wyoming
WWDC 2008

Wyoming Water Development Commision (Experiment)

February 1 2008 - March 31 2008

Coincient with WAICO08

- Contacts
- KingAir (UWKA) Data
- Radar (WCR) Data
- Lidar (WCL) Data
- Radiometer (GVR) Data
- Plot of Flight Hours

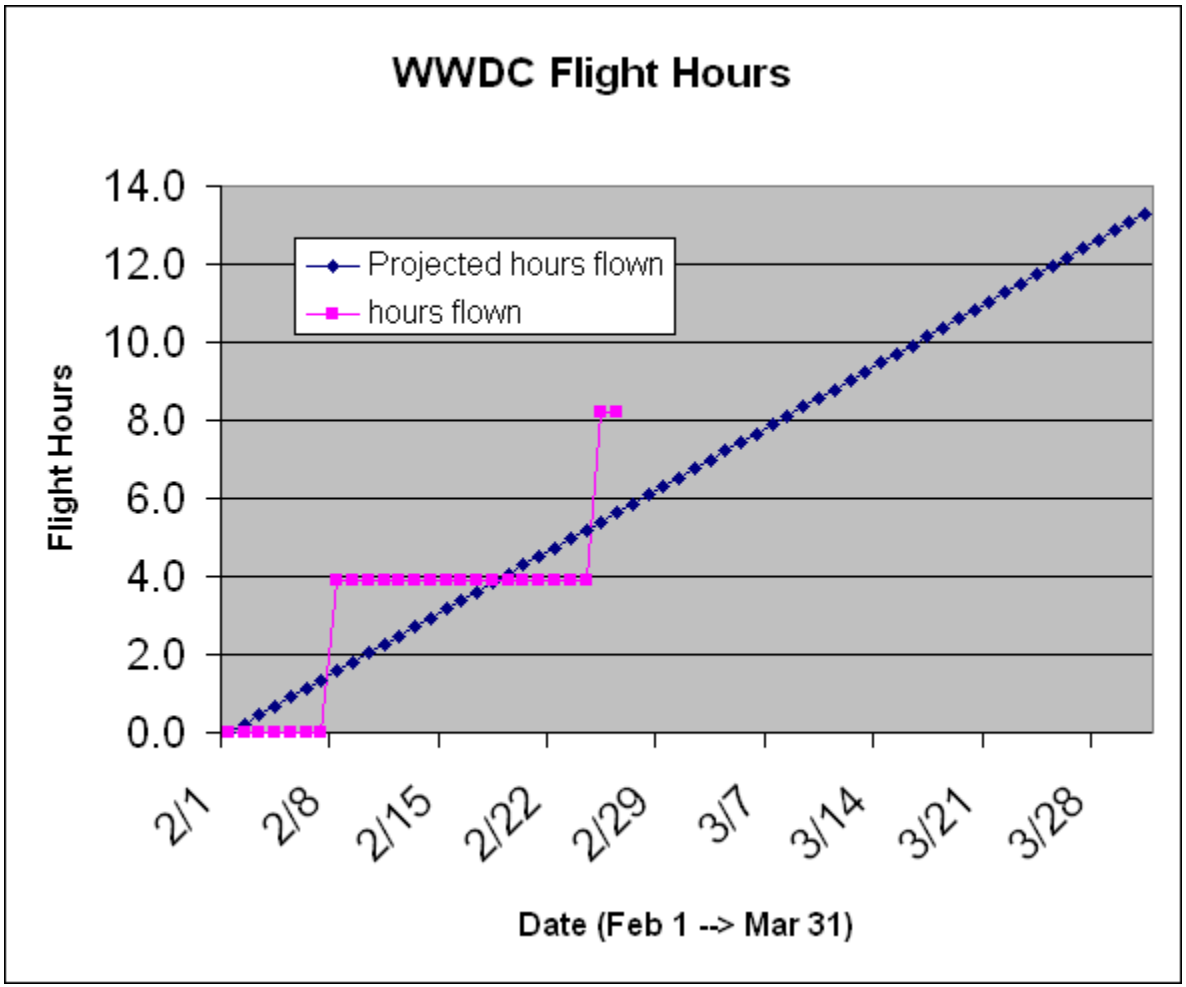
UWKA Deployment Status Calendar (KAOS), psswd'd

UWKA Web Page

Note: torque values are incorrect for the entire project.

Date	Flight # (*.kml)	Status	Times (UTC)	Hours	Notes
July 22, 2008		Reprocessed with boom pressure corrections. Files tagged wwdc08_qc2			
Research Flights					
25 Feb	RF02	Four full patterns over the Snowy Range, all at 14 kft; GVR reset frequently in snow.	1957 - 00:08	4.3	LO flight notes
11 Feb	RF01	Four full patterns over the Snowy Range, all at 14 kft; GVR not working for flight; no other known problems	1935 - 2320	3.9	BG flight notes
Test Flights					

Total Flight Hours	8.2 of 13.3, 5.1 remain


WWDC Flight Hours
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Flight Hours
Projected hours flown
hours flown
2/1
2/8
2/15
2/22
2/29
3/7
3/14
3/21
3/28
Date (Feb 1 --> Mar 31)

WWDC Flight Notes (RF02)

25 February 2008, 1957-0008 UTC

Larry Oolman

Crew:
T. Drew
Q. Miao
L. Oolman

Notes:
Four full patterns over the Snowy Range, all at 14,000 feet.
GVR reset frequently, especially in ice.

Flight Legs:

Start	Finish	FltLev	Temp	Trk	WndDir	WndSpd	Comments
			C	degT	degT	knot	
20:07:15	20:20:49	140	-17.8	307	307	22.8	Along wind leg
20:21:56	20:27:30	140	-18.5	159	290	23.1	Transition to box
20:29:38	20:36:50	140	-17.3	40	305	25.0	Line 1
20:38:09	20:45:36	140	-18.2	220	298	26.4	New files; line 2
20:46:51	20:53:44	140	-18.4	40	293	24.4	Line 3
20:55:02	21:02:20	140	-18.6	220	291	24.3	Line 4
21:03:41	21:10:28	140	-18.3	41	292	22.2	Line 5
21:13:48	21:20:54	140	-17.5	220	303	28.7	New files; line 1
21:22:11	21:28:52	140	-18.5	40	290	26.6	Line 2
21:30:53	21:37:33	140	-18.7	220	286	25.1	Line 3
21:38:47	21:45:17	140	-18.7	40	282	23.8	New WCR file; line 4
21:46:34	21:53:50	140	-18.7	220	285	23.0	Line 5
21:54:47	21:59:25	140	-18.6	350	280	20.5	Transition to upwind
22:01:45	22:11:09	140	-17.6	127	294	23.4	Along wind leg
22:12:08	22:18:18	140	-17.2	268	294	24.7	New WCR & WCL files
22:20:15	22:27:18	140	-18.1	40	287	29.9	Line 1
22:28:40	22:36:12	140	-18.3	220	290	30.7	Line 2
22:38:45	22:44:09	140	-18.4	40	286	28.1	Line 3; GVR froze - restarted GVR-GUI-1
22:45:36	22:53:01	140	-18.3	221	288	29.2	New WCR file; line 4

22:54:26	23:00:50	140	-18.0	40	283	28.2	Line 5
23:03:56	23:11:41	140	-17.6	221	292	34.0	New WCR & WCL files; line 1
23:13:34	23:19:40	140	-18.0	40	291	31.5	Line 2
23:21:12	23:28:19	140	-18.3	221	294	31.0	Line 3
23:29:44	23:36:24	140	-18.3	41	297	30.3	New WCR file; line 4
23:37:43	23:44:54	140	-18.1	220	307	28.2	Line 5
23:52:58	00:02:15	140	-17.4	127	308	29.6	Along wind leg

WWDC Cloud Seeding Signature Flight 1: 2008/02/11

Flight scientist report

Bart Geerts

Summary

This was a good flight. It snowed continuously over the Snowy Range during our 4-hour flight. The clouds were about 3 km deep on average, according to the WCR. The highest tops were near 7 km MSL, the lowest tops near 4 km MSL, and there were few breaks in the clouds. Flight-level (14 kft or ~4.4 km MSL) temperature was about -19°C, and the flight-level winds were from the WNW. A band of heavy snowfall affected the area during the 2nd half of the flight, and had cleared the area as we completed the last flight leg. We completed two sequences of 5 cross-wind legs (shown in blue in Fig. 1) by precisely 21:30 UTC, when the AgI generators were turned on, and did two more 5-leg sequences during seed operations. We started and ended the flight with an along-wind cross-mountain leg, labeled NW-SE in Fig. 1. All instruments operated very well during the flight, including the WCR (radar) and WCL (lidar), except the G-band water vapor radiometer (GVR), which was dead during most of the flight. A radiosonde was released from near Saratoga at or shortly before 21:30 UTC.

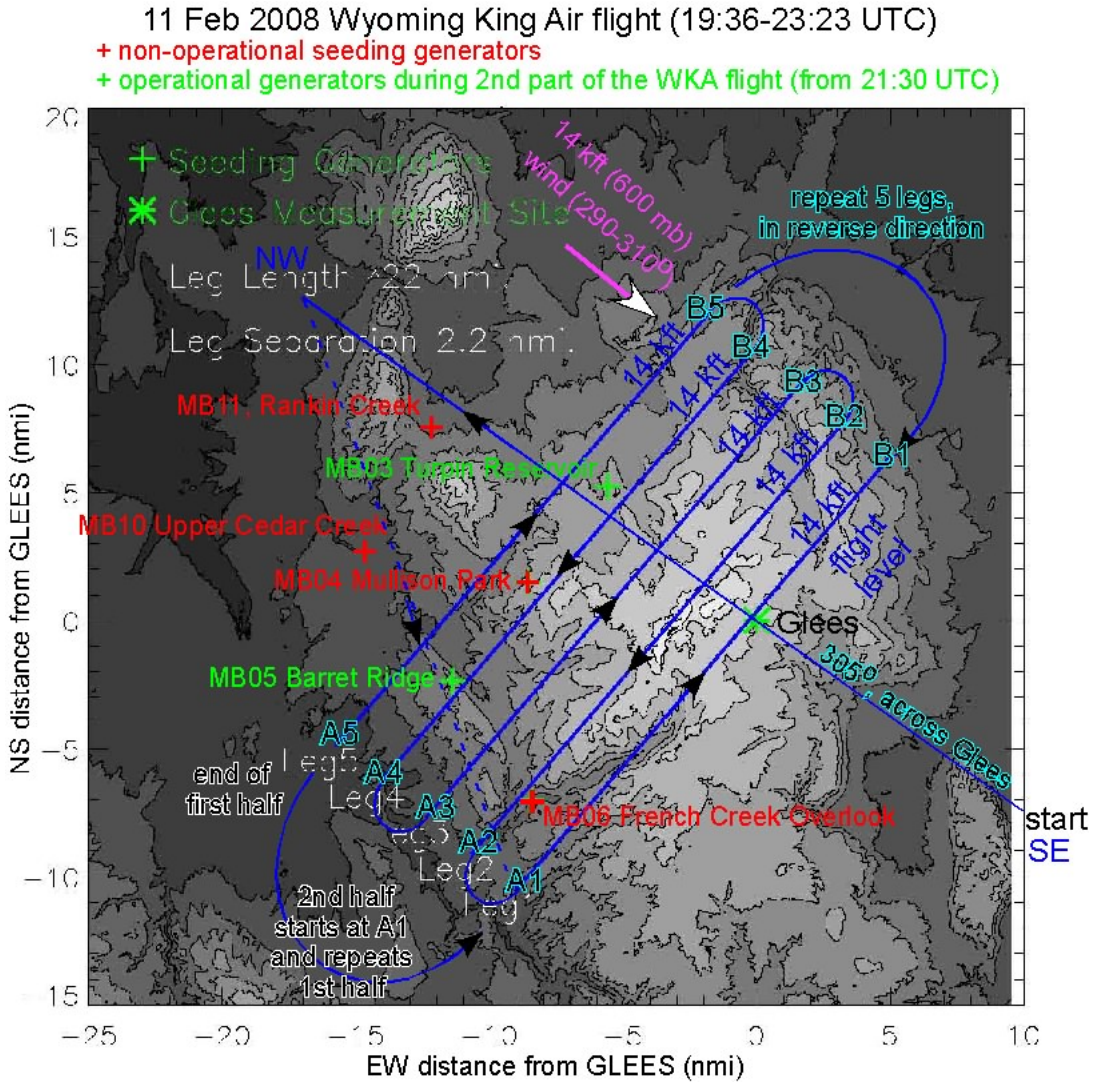


Fig. 1: Flight pattern. Angles are relative to true (geographic) north. The pattern shown here covers the first half of the flight (no seeding). The 2nd half was identical, starting at A1, and ending with a NW-SE leg. Flight level was 14 kft (~600 mb) along all legs. Flight-level winds were a bit more westerly than desired (~290-310 instead of 305), and NAM & RT-FDDA model output suggests that lower-level winds were even more westerly.

Table 1 The times (hhmm, UTC) of the 22 flight legs. Pls refer to Fig 1 for the flight leg labels.

leg	seeding?	start time	end time
SE-NW	no	1941	1955
A1-B1	no	2002	2010
B2-A2	no	2012	2019
A3-B3	no	2021	2028
B4-A4	no	2030	2037
A5-B5	no	2039	2046
B1-A1	no	2049	2056
A2-B2	no	2058	2105
B3-A3	no	2107	2113
A4-B4	no	2116	2122
B5-A5	no	2124	2131
A1-B1	yes	2134	2141
B2-A2	yes	2143	2149
A3-B3	yes	2151	2157
B4-A4	yes	2159	2205
A5-B5	yes	2207	2213
B1-A1	yes	2216	2223
A2-B2	yes	2125	2132
B3-A3	yes	2133	2240
A4-B4	yes	2242	2248
B5-A5	yes	2250	2257
NW-SE	yes	2305	2314