

Flt ID: H011213	From: KPAE	To: KPAE
Flt No.: 02-16	Blk In: 0611Z	ATA: 0607Z
ETD: 2100Z	Blk Out: 0611Z 2201Z	ATD: 2209Z
ETE:	Blk Time: 8:10 (8.2)	Flt Time: 7:58 (8.0)
Sponsor Org: OAR	Program: IMPROVE 2	Purpose: FLT # 5

AOC Personnel

AC: TAGHART ✓	Sys Eng: ROLES ✓
CP: TENNESEN / TEBEEST ✓	Data Sys: McMILLAN ✓
Nav: ADLER ✓	Radar:
FE: FLOYD ✓	GPS/BT:
Avionics: ROGERS ✓	Cld Phys:
FD: LAMIANO ✓	

Participating Scientists/Visitors/AOC

Name (Last, First)	Activity on Aircraft	Affiliation
ROLES	PI	UW / TEBEEST
COLLE, B ✓	PI RADAR	SUNY
SHARP, T ✓	OBS	UW
WOODS, C ✓	OBS	UW
HAASE, A ✓	OBS	UW
WEINMAN, JV ✓	OBS	SEA / NWS

Proposed/Actual Mission/Remarks (Recco, Fixes, Storm, PENET, NHOP #)

T/O delayed due to bleed air problem on #1 engine... start valve replaced

Baldw1 2215Z 0234Z

DW2 2221Z
2323Z

2215Z
JW 704
LW 704

991,9

985

U.S. Dept. of Commerce/NOAA/Aircraft Operations Center					AOCWF2
Flt ID: H011213		Time Off: 2209Z		Time On: 0607Z	
	A/C (Take Off) 970.09	Wx Stn (Take Off)	A/C (Land)	Wx Stn (Land)	
Pressure	29.09	29.09	965.0	29.09	
	Number	Data Disposition/Date/Quality			
Slow/Fast Flt Lvl Tapes	2				
Radar Tapes	1				
Cloud Physics Tapes	1				
Video Tapes	1				
AXBT					
AXCP					
AXCTD					
Dropsondes					
Video					
	Forward	Left Side	Right Side	Down	Remarks
Time On					
Time Off					
Rate					
Remarks					

IMPROVE II

Flight #5 011213H

<u>Sensor or system</u>	<u>Number or Name</u>
INE	2
Accelerometer	2
Temperature Probe	1
Dew Point Probe	1 (Gen. Eastern)
Altitude (for vertical wind)	Pressure Alt.
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO2013.CON

Notes:

There were no time/data gaps.

The General Eastern dewpoint probe was balanced from 2212Z - 2216Z. The spike generated by this action was removed and patched over using DW3, the Buck Research dewpoint probe, as a reference.

There were numerous instances where the General Eastern dewpoint probe, DW1, was measuring too warm compared to ambient temperature. The following modifications to the data were done to minimize this occurrence. For the following time frames, DW1 was set equal to DW3, the Buck Research dewpoint probe: 013150Z - 013351Z and 022410Z - 024158Z.

For the following time frame, DW1 was modified with respect to DW3, the Buck Research dewpoint probe, using statistical analysis: 2321Z - 2323Z.

There were other instances of these phenomena occurring where it was decided that no modification of the data could be done.

The Johnson-Williams Liquid Water probe appeared to be iced-up from 0235Z - 0255Z.

All other instruments worked optimally during the flight.

	<u>Takeoff</u>	<u>Landing</u>
Aircraft static pressure	970.0mb	965.0mb
Corrected tower pressure	969.9mb	963.0mb

The aircraft INE positions were renavigated with respect to GPS.

SPECIAL NOTE!!! Locations 80, 81 and 82 of record five on the standard tape contain vertical ground, vertical air and vertical speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm.
It is recommended that these values be used for vertical wind analysis.

Flight Director: A. Barry Damiano, (813) 828-3310 ext. 3073

Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T _a	T _s	Press. Alt.	Geo. Alt.	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
223000	4705	12302	213	219	237	49	-14.1	-14.8	4693	4455	973.6	559.8	57.9	IN CLD RW-
224300	4611	12302	178	189	248	52	-13.1	-14.2	4719	4569	988.3	560.8	82.9	IN CLD RW-
230118	4501	12304	177	193	234	67	1.7	2.9	1960	1756	989.1	799.0	61.5	PT. A RW
231500	4418	12302	180	196	236	67	1.4	3.1	1963	1741	986.2	798.4	72.7	RW
232435	4349	12302	180	187	230	69	1.6	3.3	1963	1740	—	798.4	74.1	PT. F IN CLD
232833	4346	12237	79	86	235	67	-1.2	-1.4	2535	1732	928.4	743.3	62.8	PT. G RW-
233600	4418	12234	1	347	236	75	-1.7	-0.8	2538	1491	900.7	742.9	80.3	RW
234507	4459	12234	14	2	241	76	-1.7	-1.9	2555	1491	945.1	743.0	71.1	PT. B RW
234855	4502	12209	93	104	252	80	-6.6	-7.2	3466	2380	893.5	660.6	77.9	PT. C RW-
000000	4424	12205	179	199	255	82	-6.7	-6.9	3457	1732	819.0	661.0	66.0	RW-
000948	4349	12205	176	194	255	74	-7.1	-6.7	3530	2037	846.2	661.0	58.9	PT. H RW-
001340	4345	12140	84	85	257	76	-9.9	-10.2	4078	2689	855.5	610.3	80.4	PT. I IN CLD
002200	4418	12137	356	341	257	73	-8.8	-12.0	4080	2970	829.7	610.1	83.8	IN CLD
003101	4458	12137	358	348	259	57	-8.9	-13.3	4084	2970	878.9	610.2	77.2	PT. D IN CLD
003450	4503	12112	87	91	256	84	-4.6	-5.8	3158	2171	899.6	687.4	72.1	PT. E IN CLD
004800	4419	12108	181	198	260	74	-4.5	-5.3	3156	2121	892.7	687.0	80.6	IN CLD
005450	4353	12108	187	212	255	80	-2.4	-8.0	3207	1695	839.3	678.0	62.1	PT. J IN CLD
010340	4417	12131	331	318	260	69	-9.7	-12.1	4085	2997	887.3	609.9	81.7	PT. K IN CLD
012703	4347	12200	239	241	235	59	-0.4	.4	1990	1626	963.5	796.9	72.1	PT. F —
012830	MOD TURB													
013450	4418	12302	0	351	232	57	.7	-0.1	1986	1731	983.1	796.5	81.0	—
014358	4459	12301	5	354	238	61	.5	.9	1987	1769	988.2	796.7	79.8	PT. A —
014743	4505	12237	86	96	233	61	-1.5	-0.5	2269	1883	962.1	769.3	87.2	PT. B —
020200	4418	12233	188	199	231	62	-3.3	-2.7	2579	1310	878.7	739.5	74.9	—
021018	4351	12234	179	191	240	60	-2.4	-4.7	2579	1310	878.5	739.5	75.8	PT. G —
021440	4347	12209	84	91	246	78	-8.5	-7.6	3485	1776	823.0	659.4	71.0	PT. H —
022400	4427	12205	0	347	238	68	-9.7	-10.7	3485	1646	814.6	659.1	70.9	—
023047	4458	12205	1	351	241	64	-9.5	-6.9	3485	1646	814.6	659.0	64.3	PT. C
023445	4504	12139	106	118	245	67	-12.5	-10.0	4153	2456	829.6	604.6	71.0	PT. D
024800	4418	12137	180	194	245	62	-12.1	-15.6	4103	2872	873.9	608.7	64.6	—
025636	4346	12137	181	196	248	73	-12.1	-13.0	4109	2666	851.3	607.9	78.4	PT. I —
030358	4417	12132	356	342	248	66	-11.5	-16.4	4106	2993	885.3	607.9	79.6	PT. K
032559	4347	12300	265	265	250	35	-1.1	-0.7	1976	1645	997	797.3	83.4	PT. F —
034210	4459	12302	0	350	245	50	-1.2	-3.4	2106	1870	988.2	793.1	96.4	PT. A
035156	4503	12207	114	123	257	58	-9.7	-10.7	3492	2609	917.3	658.0	80.4	PT. C
041130	4348	12206	174	187	256	65	-10.8	-10.9	3492	1839	830.1	658.0	75.5	PT. H
042310	4433	12131	21	13	249	55	-13.9	-16.2	4114	2978	891.8	607.4	71.6	PT. Q

4:40 B → C → H → Q

NOAA • AOC • SED Flight Performance Log

Aircraft : N42RF

Project : IMPROVE 01

Mission : IMPROVE 01SED Crew: McMillan Ropes Rogers DamianoFlight ID : 011213HPre-Flight: 1730Take-Off: 2209

Landing: _____

System		Pre-Flight	In-Flight	Post-Flight		
N A V	INE #1	Aligned to :	STM			
	INE #2	Aligned to :	STM			
	GPS		STM		Lat	Long GS
R A D A R	Nose					
	L/F	R/T SN :			Mod Switch Off ?	MOR
	Tail	R&T SN : /			Mod Switch Off ?	MOR
	MARS Data System	DAT 7		Start: 2113 Stop: 0600	# DATs :	
P M S	2DG-C	Ch 1/64: /				
	2DG-P	Ch 1/64: /				
	FSSP	Ref VDC:				
	SEA Data System			Start: 2215 Stop: 0600	# DATs :	
T E M P		Cal High	Cal Low		Cal High	Cal Low
	Temp #2			STM		
	Temp #1			STM		
	Dewpoint #1			STM	✓	
	Dewpoint #2			STM	✓	
	Dewpoint #3			STM	✓	
P R E S S	Attack Angle (AP/DAP)		STM			
	Slip Angle (BP/DBP)		-0			
	Differential (PQ1/PQ2/PQ3/PQ4)		STM			
	Absolute (PS1/PS2)		STM			
	Radome Transducers Plugs(?)		STM			
	Cabin Transducer (Station 5)		STM			
F L T L V L	Apn-159	SN:	MOR		Off ? :	MOR
	Apn-232	SN:	MOR		Off ? :	MOR
	King Liquid Water		JR			
	J&W Liquid Water		JR			
	Down PRT-5 (SST)					
	Side PRT-5 (CO ²)					
	Up PRT-5 ✓ Shutter? ✓		MOR		Shutter? ✓	MOR
	RAMS Data System	DAT 3 CPU: A 6	STM	Start: 2156 Stop: 0612	Errors 8: 8	# DATs :
	F/D Laptop		STM			
	C.I. Printer			2156 0612		
ASDL Mission#		NA	Freq Time: Blk Time:			
M I S C	Exterior Walk Around					
	Video	N L R D	STM	Start: 2156 Stop: 0600	VHS / S-VHS	2 / 12
	FCU	-A-B-C	STM		UPS Off : ?	
U S E R					Accelerometers	
					#1 (2 G) :	
					#2 (2.5 G) :	
					#3 (3 G) :	
					#4 (3.5 G) :	

Please Note any Discrepancies

[illegible]

[illegible]

MS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
S	20K	220					192/7
S	6K 234						
O	11K	247					
S	11K 222						
O	8K	223					GPS BAD 0207Z 410K
O	13K 243						
O	6K	233					
O	10K 261						
S	510K	242					
35							
23							
10							

GPS BAD 02077 HRC01