

Flt ID: H011218	From: KPAE	To: KPAE
Flt No.: 02-19	Blk In: 0156Z	ATA: 0151Z
ETD: 1700Z	Blk Out: 1646Z	ATD: 1657Z
ETE:	Blk Time: 9:10 (9.2)	Flt Time: 8:54 (8.9)
Sponsor Org: OAR	Program: IMPROVE 2	Purpose: FLT #9

AOC Personnel

AC: TAGGART	Sys Eng: ROLES ✓
CP: TENNESEN / TEBEEST	Data Sys: McMILLAN ✓
Nav: ADLER ✓	Radar:
FE: BAST	GPS/BT:
Avionics: ROVERS ✓	Cld Phys:
FD: DAMIANO ✓	

Participating Scientists/Visitors/AOC

Name (Last, First)	Activity on Aircraft	Affiliation
BOND, N ✓	PI	
SMULL, B ✓	RADAR	
STEED, R ✓	RADAR	
NASH, J ✓	OBS	
FIELDS, J ✓	OBS	

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

Do Gorge Pass first then proceed to pt A.
 1704Z BalDW1
 1714Z BalDW3

Data sys down
 @ 215

Went to PT. P at 22Z
 to deice aircraft at 5K

T→S→R

1002-0

1009.5

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AOCWF2

Flt ID: 14011218 Time Off: 1657Z Time On: 0151Z

	A/C (Take Off)	Wx Stn (Take Off)	A/C (Land)	Wx Stn (Land)
Pressure	984.6	29.7069	988.6	29.81

	Number	Data Disposition/Date/Quality
Slow/Fast Flt Lvl Tapes	4	
Radar Tapes	2	
Cloud Physics Tapes	2	
Video Tapes	1	
AXBT		
AXCP		
AXCTD		
Dropsondes		

	Video				Remarks
	Forward	Left Side	Right Side	Down	
Time On					
Time Off					
Rate					

Remarks

4410 12223

IMPROVE II

Flight #8 011218H

<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 two time/data gaps: 220131Z - 220330Z and 220431Z - 220710Z.

During the time gap, the data from several derived parameters, including the vertical wind, WZ, were erroneous.

The dynamic attack pressure, DAP, iced-up during the period 1953Z - 2004Z. The erroneous data was removed and replaced using the following with values from the fuselage dynamic pressure, PQF1,

$$DAP = PQF1 - .5$$

The dynamic slip pressure, DBP, iced-up during the period 171241Z - 174245Z. The erroneous data was removed and replaced with values from the fuselage dynamic pressure, PQF1, using the following equation:

$$DBP = PQF1 + 6.5$$

During the same time, the differential slip pressure, BP, appeared to have operated properly and its output seemed reasonable and acceptable.

The data from these two sources could have some impact on the horizontal and vertical wind derivations.

The General Eastern dewpoint probe was balanced from 1702Z - 1705Z. 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 frame, DW1 was set equal to DW3, the Buck Research dewpoint probe: 232811Z - 232917Z. For the following time frame, DW1 was set equal to DW2, the EdgeTech dewpoint probe: 012133Z - 012447Z.

For the following time frames, DW1 was modified with respect to DW3, the Buck Research dewpoint probe, using statistical analysis: 1813Z - 1817Z, 1817Z - 1819Z, 1855Z - 1858Z, 2017Z - 2019Z, 2111Z - 2113Z, and 2215Z - 2217Z.

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 2050Z - 2155Z.

All other instruments worked optimally during the flight.

	<u>Takeoff</u>	<u>Landing</u>
Aircraft static pressure	984.6mb	988.6mb
Corrected tower pressure	980.0mb	987.5mb

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 _c	Press. Alt.	Geo. Alt.	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
171500	4705	12251	194	200	215	52	-21.3	-25.8	4634	4417	999.8	567.2	73.4	CLR BTN CLD
173600	4603	12130	135	144	230	37	-19.6	-20.1	15K	PA				IN CLD
174250	4558	12123	255	250	210	35	-7.1	-7.1	2500	1716	926.3	746.9	72.1	PT. T RW-
174700	4556	12143	257	251	214	43	-7.4	-6.8	2500	1447	891.7	746.8	76.6	INCLD RW
175525	4549	12220	248	242	225	59	-7.4	-6.7	2500	1447	891.7	746.7	76.0	PT. S RW-
180200	4530	12224	186	196	231	47	-3.9	-7.7	2195	1996	993.0	775.9	68.3	IN/OUT CLD
180600	4518	12224												PT. R IN/OUT CLD
181600	4501	12302	203	208	239	43	-14.3	-35.9	3688	3547	1005.4	641.7	70.3	PT. A CLR
182200	4440	12302	182	197	239	75	-14.9	-18.4	3642	3529	1002.5	641.6	73.7	ENTN CLD
183720	4346	12302	182	195	252	49	-13.7	-14.8	3695	3235	968.8	644.6	70.3	PT. F RW
185145	4425	12151	58	59	236	75	-24.7	-25.9	5364	3811	852.1	514.1	74.2	PT. N CLR
190100	4415	12214	242	242	235	52	-21.6	-22.6	4785	3811	918.0	556.2	65.9	IN CLD
190450	4409	12229	242	243	242	60	-20.5	-21.2	4620	3985	946.4	569.0	69.2	PT. P IN/OUT CLD
191205	4426	12150	59	61	236	63	-20.3	-21.2	4612	3046	850.0			PT. N IN CLD
191600	4422	12155	249	248	240	62	-19.1	-19.6	4363	3058	875.1	588.3	81.0	IN CLD
192225	4410	12223	239	241	242	62	-15.0	-16.8	3882	3085	937.0	629.2	69.1	PT. P CLD
193120	4430	12141	58	59	241	62	-15.2	-17.0	3842	2423	860.9	629.5	73.1	PT. N IN CLD
193600	4426	12147	249	248	240	63	-13.7	-14.4	3550	2060	850.7	655.1	79.2	RW
194540	4410	12223	239	241	245	61	-10.9	-13.7	3077	2213	923.7	694.5	75.6	PT. P IN/OUT CLD
195410	4430	12139	70	78	233	61	-11.1	-11.4	3074	1566	845.5	695.0	69.2	PT. N RW
200600	4416	12213	241	240	239	49	-7.0	-7.2	2450	1720	933.5	757.5	73.0	IN CLD
200900	4411	12224			244	49	-7.3	-7.0	2453	1695	913.5	751.7	77.3	PT. P
201955	4349	12300	241	242	231	40	-3.1	-3.0	1831	1474	978.5	812.1	90.8	PT. F RW-
202800	4420	12301	0	351	246	48	-3.0	-5.8	1825	1674	1000.4	812.5	78.6	IN/OUT CLD
203735	4459	12302	14	7	246	47	-3.6	-5.7	1845			812.7	86.5	PT. A IN/OUT CLD
204125	4501	12337	90	95	252	50	-6.6	-14.4	2469	2082	964.0	750.1	79.3	PT. B IN/OUT CLD
205500	4415	12233	185	193	243	36	-8.0	-8.6	2461	1542	913.0	750.0	71.3	RW
210300	4346	12234	180	191	245	44	-6.7	-7.3	2460	1708		750.7	65.3	PT. G IN/OUT CLD
211300	4407	12230	55	55	240	69	-27.4	-30.1	5375	4717		513.5	72.9	CLR
211950	4427	12249	60	62	241	68	-24.8	-24.3	4910	3395		546.9	73.9	PT. N ICE
213200	4412	12229	245	214	237	51	-20.4	-20.5	4318	3737		591.2	73.9	PT. P ICE
214000	4425	12252	86	54	242	54	-21.4	-21.0	4320	2544		591.3	70.1	PT. N ICE
215155	4410	12227	240	244	259	47	-11.5	-13.7						PT. P ICE
222000	4411	12229	60	59	248	49	-17.2	-17.1	3651	2828		644.8	72.4	IN CLD
222750	4431	12140	59	57	250	62	-15.9	-22.2	3652	2626		644.6	63.9	IN/OUT CLD
223300	4424	12149	243	247	258	56	-16.1	-15.3	3512	2005		657.2	76.0	IN CLD
224125	4410	12223	240	244	255	43	-12.6	-14.5	3056	2232		695.7	66.7	PT. N IN/OUT CLD
225200	4434	12129	62	61	252	52	-13.1	-25.2	3360	2480		670.1	74.2	PT. Q

SW

17.5 at SWPT 25WPT

TAS → R

NE 4425 12150

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Form 4 (2-50)

Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T _a	T _s	Press. Alt.	Geo. Alt.	Slc Press.	Press. Slc	Dyn. Press	Remarks
230200	4421	12158	240	243	251	46	-12.4	-16.3	3103	2062	902.9	693.6	79.9	IN/OUT CLD
231030	4406	12233	254	255	245	30	-12.3	-12.3	3079	2062	—	693.2	84.3	PT. P
232000	4422	12324												PT. P
232400	4427	12317	91	95	247	36	-23.6	-25.8	4575	4400	—	571.5	77.4	ADV CLD
233335	4426	12206	99	101	245	54	-23.3	-23.1	4572	3284	—	576.8	67.1	PT. N IN CLD
235055	4422	12325	269	266	232	31	-18.0	-22.0	3831	3290	—	629.9	69.3	PT. P ^{CLR} BTN CLD
235700	4427	12258	89	94	242	40	-18.2	-18.3	3818	3402	—	631.1	70.9	ENTN CLD
000705	4427	12150	91	94	259	55	-18.1	-20.1	3822	2437	—	630.7	74.9	PT. N THN CLD
001700	4423	12228	269	267	252	30	-15.2	-17.8	3414	3106	—	665.1	79.8	THN CLD
002430	4424	12307	285	281	241	37	-12.8	-17.7	3077	2914	—	694.7	85.3	CLR (TURN)
003745	4426	12149	93	97	257	49	-13.0	-12.9	3071	1535	—	694.7	69.0	IN CLD
004600	4423	12221	269	267	254	36	-10.5	-11.4	2679	2022	—	731.1	81.2	BTN CLD
005200	4423	12250	270	267	249	28	-2.7	-2.2	1517	1237	—	842.7	88.2	PT. M CLD
010200	4506	12258	355	350	238	36	-26.2	-37.1	4871	4708	—	549.6	118.7	ADV CLD

NOAA • AOC • SED Flight Performance Log

Aircraft : N42RF

Project : IMPROVE 01

Mission : IMPROVE

SED Crew:

McMillan, Rogers, Roler, DaminoFlight ID : 011218H

Pre-Flight:

1500 Z

Take-Off:

1656

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		STM				
	L/F	R/T SN :	STM				Mod Switch Off ?
	Tail	R&T SN : /	STM				Mod Switch Off ?
	MARS Data System DAT		STM	Start: 1703 Stop: 0136			# DATs :
P M S	2DG-C	Ch 1/64: /					
	2DG-P	Ch 1/64: /					
	FSSP	Ref VDC:		Time 2 2156 0152			
	SEA Data System			Start: 1708 Stop: 2156			# 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)		STM				
	Differential (PQ1/PQ2/PQ3/PQ4)		STM				
	Absolute (PS1/PS2)		STM				
	Radome Transducers Plugs ?						
	Cabin Transducer (Station 5)		STM				
F L T L V L	Apn-159	SN: 1108					Off ? :
	Apn-232	SN: 1797					Off ? :
	King Liquid Water		JR				
	J&W Liquid Water		JR				
	Down PRT-5 (SST)		STM				
	Side PRT-5 (CO ²)		STM				
	Up PRT-5 Shutter?		JR				Shutter?
	RAMS Data System DAT	CPU : A	HER	Start: 1650 Stop: 0156			Errors 8: 9: # DATs :
	F/D Laptop		STM				
	C.I. Printer		STM				
ASDL Mission#		NA	Freq Time: Blk Time:				
M I S C	Exterior Walk Around		JR				
	Video	L R D		Start: 1701 Stop: 0152			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) :

① Heavy Iceing JW and nose sensors frozen solid at 2143
 2152 ② Precip - constant high mark, no response for reset and on power cycle
 Bypassed PWR to DAS and Precip came back 2155

Please Note any Discrepancies

[illegible]

Flt ID: H011220	From: KPAAE	To: KMCF
Flt No.: 02-19	Blk In: 2316	ATA: 2308Z
ETD: 1600Z	Blk Out: 1559Z	ATD: 1607Z
ETE:	Blk Time: 7:17 (7.3)	Flt Time: 7:01 (7.0)
Sponsor Org: OAR	Program: IMPROVE 2	Purpose: Ferry to MacDill AFB

AOC Personnel

AC: TAGGART	Sys Eng: ROLES
CP: TENNESEN / TEBEEST	Data Sys: McMILLAN
Nav: ADLER	Radar:
FE: BAST / FLOYD	GPS/BT:
Avionics: ROGERS	Cld Phys:
FD: DAMIANO	

Participating Scientists/Visitors/AOC

Name (Last, First)	Activity on Aircraft	Affiliation
TORREY		AOC

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

U.S. Dept. of Commerce/NOAA/Aircraft Operations Center

AOCWF-2

Flt ID: 14011220	Time Off: 1607z	Time On: 2308z		
	A/C (Take Off)	Wx Stn (Take Off)	A/C (Land)	Wx Stn (Land)
Pressure	987.4	29.84	1021.2	30.17

	Number	Data Disposition/Date/Quality
Slow/Fast Flt Lvl Tapes		
Radar Tapes		
Cloud Physics Tapes		
Video Tapes		
AXBT		
AXCP		
AXCTD		
Dropsondes		

	Forward	Left Side	Right Side	Down	Remarks
Time On					
Time Off					
Rate					

Remarks

21547

15832

3
1

21097

330/7

7 CLK

17

7 30.16

2345

23

1131.50 M4

