U.S. Dept. of Commerce / NOAA / Aircraft Operations Center — AOC Wf1

Flt ID: 020513H	From: KMRY	To: KMRY
Flt No: 02-53	Blk In: 0146	ATA: 0141
ETD: 1830	Blk Out: 1826	ATD: 1838
ETE: 6+30	Blk Time: 7.3	Flt Time: 7.1
Sponsor Org: NOAA/AL	Program: ITCT 2K2	Purpose: LA BASIN IOP 9

AOC Personnel

AC:	TENNESEN, D ✓	Sys Eng:	DELGADO, J ✓
CP:	HALVERSON, H / SILAH, M ✓	Data Sys:	
Nav:	NEWMAN, C ✓	Radar:	
FE:	BAST, G	GPS/BT:	
FD:	SHEPHERD, T ✓	Cld Phys:	
Avionics:	ROGERS, M ✓		

Participating Scientists / Visitors / AOC

Name (Last, First)	Activity on Aircraft	Affiliation
HÜBLER, G ✓	PI	NOAA/CIRES
RYERSON, T ✓	Co-PI	NOAA
HUEY, G ✓	↓	GA. TECH
SULLIVAN, A ✓	↓	GA. TECH
BROCK, C ✓	↓	NOAA/CIRES
WARNEKE, C ✓	↓	↓
ALVAREZ, R ✓	↓	↓
TRAINER, M ✓	↓	NOAA

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

NO DPI on flight

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

AOCWF2

Flt ID: 0205134	Time Off: 1838	Time On: 0141

	A/C (Take Off)	Wx Station (Take Off)	A/C (Land)	Wx Station (Land)
Pressure	1016.3	30.20	1014.0	30.14

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

Video

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

Remarks

ITCT
2k2

Flight #10 020513H

Sensor or system	Number or Name
INE	2
Accelerometer	2
Total Temperature Probe	1
Dew Point Probe	3
Altitude (for vertical wind)	Radar Altitude APN-159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO2022.CON

Notes:
Takeoff: 1838Z
Land: 0141Z

There was a time gap from 185151 - 185210.

The radar altimeter (APN-159) was replaced by the APN-232 due to spiking during takeoff (183501 - 184300) and landing (012030 - 014400).

Dewpointer #3 was replaced by Dewpointer #2 from 001624 to 011923 due to Dewpointer #3 going in to a rapid oscillation mode during the time period. The dewpointers were trending the same during the time period. An offset of 0.0 °C was applied to Dewpointer #2.

Special Note This flight was post processed two times. It was discovered during the initial processing that the dynamic slip pressure (DBP) was running approximately 20 mb higher than the dynamic fuselage pressure (PQF1). The difference between the two dynamic pressures should be in the range of approximately 5 - 7 mb. It should be noted that both the dynamic slip pressure and dynamic attack pressure have no redundancy as do the other sensors on the aircraft. Standard files (*.std) are 020513H.DBP.std (no correction) and 020513H.PQF1.std (modified).

The first run was performed with no correction to DBP. The resulting horizontal winds were quite reasonable and most were fairly light. The vertical winds were also reasonable in magnitude. The second run was made with a substitution of the PQF1 for DBP with a +5.8 mb offset. The comparison of the winds from both runs showed that in many cases the winds were not affected at all, i.e., in the several random spot checks made, both wind direction and speed were identical from both runs. When differences did occur, the directions were only off by 2-3 degrees and the speeds were off by approximately 0.2 - 0.3 ms^{-1}.

The value of 5.8 mb used for the offset of PQF1 was achieved by randomly selecting 6 flights from the ITCT 2k2 project and then randomly selecting 4 or 5 times from each flight. The difference between the dynamic slip pressure and the dynamic fuselage pressure was derived. Statistically: n=26, mean=5.8, var=.8, s.d.=.9, max=7.4, min=4.2.

	Takeoff	Landing
Aircraft static pressure	1016.3	1014.0
Corrected tower pressure	1022.7	1020.7

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 resectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

Flight Director: Tom Shepherd, (813) 828-3310 ext. 3053

Flight ID: 0205134

U.S. Dept. of Commerce/NOAA/Aircraft Operations Center — Form 11-9

Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T_a	T_d	Press. Alt.	Geo. Alt.	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
190430	3536	12047	133	138	281	27.8	2.9	-5.6	3327	3223	987.5	672.5	76.8	11000 PA
192540	3427	11924	136	139	295	26.2	3.8	-4.0	3325	3210	994.4	672.6	75.3	11000 PA Approaching LA
194025	3336	11829	140	141	319	27.2	2.9	-10.3	3178	3680	1018.9	658.8	71.7	
194145	3331	11824	Spiral descent to 300' at PT2											
195228	3331	11824	320	318	287	16.2	16.7	-0.5	76	84	1014.2	1004.4	47.8	170 IAS
195845	3339	11816	P3 Turn to P4											
200255	3350	11816	P4 Turn to P5											
200420	3352	11812	89	90	252	8.3	25.3	2.9	446	448	1011.1	960.9	44.2	GLAD I don't Breath This
201135	3352	11745	P5	Turn to P6										
201710	3357	11726	67	66	270	13.0	27.6	-3.5	701	493	984.2	932.3	45.0	2300 PA
202250	3403	11707	Near P6 spiral up to ~ 11500'											
203415	3400	11711	Touched 11500 now spiral down											
204400	3407	11713	270	271	283	11.7	28.0	-5.1	792	481	973.7	921.9	40.4	Hdg to P7
205520	3407	11750	268	269	278	8.9	25.1	-6.6	759	581	988.6	925.1	41.6	
210030	3407	11807	P7	turn to P8										
210530	3357	11756	P8	Turn to P9										
210640	3357	11753	86	88	243	11.3	23.9	-0.9	835	601	985.6	916.6	41.6	
211540	3408	11806	277	276	232	7.8	26.1	-4.0	638	417	986.3	938.4	42.1	Hdg to P11
212530	3414	11837	P11	Turning to P12 and climb to 7500 PA										
213000	3415	11819	90	90	343	7.7	14.1	-8.8	2283	1854	947.0	767.3	68.6	7500 PA
214415	3415	11712	88	87	286	4.5	3.8	-9.4	3513	2096	838.4	657.1	69.4	11500 PA
214715	3415	11656	P12	Hdg to P13										
215440	3345	11656	P13	Turn to P14										
220425	3349	11735	359	000	17	3.8	19.7	-14.2	1682	1501	984.8	827.3	63.4	
221140	3408	11733	Spiral descent to 1500 Then level up											
222230	3426	11737	P15	Turn to P16 @ 1500 AGL										
222500	3424	11729	106	105	293	16.5	21.4	-9.0	1678	532	878.3	826.2	39.0	1500 AGL
223810	3426	11737	P15	R90 L270 to return to P16										
224250	3424	11732	106	105	307	14.0	9.3	-12.4	2884	1747	876.7	711.9	68.2	~5500 AGL
224700	3420	11712	P16	turn to P17 and climb to 11500										
225120	3408	11655	130	129	24	8.5	4.1	-10.9	3523	1001	736.9	655.1	63.6	11500 AGL
230240	3351	11631	322	321	321	10.7	33.6	-8.2	538	347				Low pass Palm Springs
233650	3332	11734	265	269	336	16.3	6.3	-16.8	3206	3235	992.4	683.0	68.9	10500 PA
234800	3330	11823	Spiral descent											
235400	3330	11808	090	089	275	26.7	25.8	-3.3	309	304	1011.1	976.7	67.6	1000'
000300	3330	11819	285	285	270	19.8	16.2	-2.5	97	88	1012.0	1001.5	71.6	300'

Flight ID: 020513H

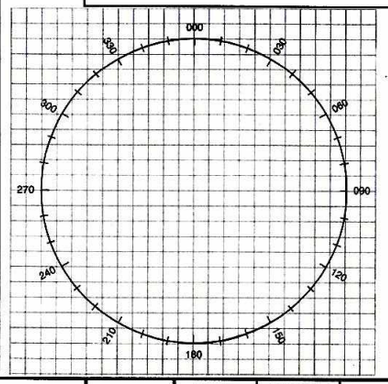
U.S. Dept. of Commerce/NOAA/Aircraft Operations Center — Form A16-8

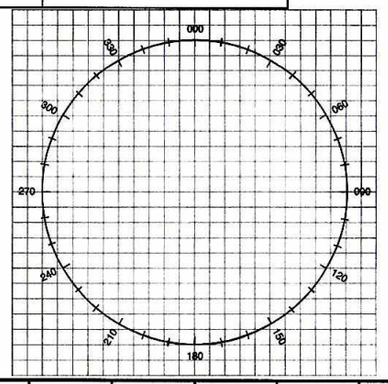
Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T_s	T_d	Press. Alt.	Geo. Alt.	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
003100	3433	11951	305	300	255	33.3	-18.4	-40.2	6336	6289	986.4	447.9	56.5	FL 218 & climbing
004440	3517	12038	318	312	261	36.5	-31.1	-46.9	7635	7760	1009.5	375.2	67.9	FL 250
005245	3545	12109	317	312	267	35.1	-31.1	-50.9	7634	7240	955.6	375.2	68.8	
010800	3639	12203	328	321	261	39.4	-31.1	-49.7	7634	7911	1033.0	375.3	63.9	FL 250 NEAR SHOEY
011000	3648	12208	Spiral @ SHOEY											
013050	3648	12200	67	80	307	37.7	10.5	-0.7	46	82	1017.8	1007.4	67.9	300'
013310	3648	12150	END Science.											

CLEARANCES			
FREQ	ALT	HDG	OTHER

MISSION LOG

PAGE ___ OF ___





POSITION REPORT
1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

EMERGENCY MESSAGE

TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:

UHF/VOICE	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA _____, NOAA _____, NOAA _____

- POSITION _____ N / S
  _____ E / W AT _____Z
- HEADING _____ TRUE/MAG
- AT _____ KTS TRUE/INDICATED
- FLIGHT LEVEL OR ALTITUDE _____
- WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD
- NATURE OF EMERGENCY
- ASSISTANCE DESIRED
- PILOT INTENTIONS
- WE HAVE _____ ENDURANCE REMAINING

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
1826																					50.8 TAXI 3020.
1838																					TOFF 50.1
1913	Δ	3507.9 12012.9	3507.0 12013.0	+.9 -.1	3508.0 12012.6	-.1 +.3	124	15E	139	3L	136	272	290	21	11.0	253					45.7
2131	Δ	3415.0 11814.9	3411.7 11815.8	+3.3 -.7	3416.0 11815.0	-1.0 -1	076	14E	090	1R	091	233	001	6	7.5	230					34.0
2305	Δ	3354.3 11625.7	3350.3 11628.1		3356.2 11625.2							229	022	6	↗	224					
0021	Δ	3412.1 11912.7	3407.6 11915.3	+4.5 -3.6	3414.8 11912.3	-2.7 +.4	290	13E	303	3R	306	237	246	25	16.5	256					19.2
0025	Δ	3648.9 12206.5	3644.8 12209.6	+4.1 -3.1	3651.6 12206.5	+2.7 0															
0141																					LAND
0146											13.8K										CHOCK
						5100 lbs/hr															

020513H

TT # 1
TD # 3
INE/AZI # 2

T.O. 1858
LAND 0141

Time gaps
~~185149 - 185203~~
185151 - 185210

Sub DP 2 for DP 3
~~~~
~~001624 - 011923~~
PDSF
~ 2215 - 2216, 2255, 2258 - 2300
OK OK OK

Sub APN 232 for APN 159
183501 - 184300 T.O

~~01330~~
012030 - 014400 LAND

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PH020513PQF1.DAT → DBP = PQF1 + 5.8 ⇒ STD. TAPE 020513H2
PH020513[illegible].DAT → DBP = DBP ⇒ STD. TAPE 020513H1

0.2678
0.2713

Reruns (over)
~~~~

INE 2

1)	184500	0.1	0.0	36	35.6	121 58.2
	191000	-0.1	0.1	35	17.9	120 24.8
	195500	-0.3	-0.4	33	30.9	118 25.5
	203500	-0.7	0.0	34	2.2	117 10.6
5)	212000	-0.5	-0.3	34	11.4	118 19.9
	220500	-1.3	+0.3	33	50.5	117 34.7
	225000	-1.6	0.1	34	11.4	117 0.6
	233500	-1.1	0.3	33	32.9	117 25.9
	001500	-2.4	0.0	33	53.6	118 53.8
	010000	-1.7	0.6	36	9.4	121 36.6
10)	014400	-3.3	1.1	36	35.4	121 51.1
11)						

Bob Shaw
Flight Integration
New Port, News

Date	Time	PQSF-PQF
4/25	1914	5.6
	2210	4.7
		~~3.8~~
	2430	5.8
	1800	6.3
5/2	1800	6.4
	1900	5.5
	2100	6.7
	2200	5.0
5/6	1900	6.6
	2000	7.4
	2100	6.2
	2200	4.9
	2300	5.5
5/11	1900	6.6
	2000	5.0
	22	5.7
	23	7.3
5/15	19	4.7
	21	4.8
	22	4.2
	23	4.6
5/19	19	7.0
	21	6.9
	22	5.7
	23	6.2
	24	6.0

26 / 151.3

$n = 26$ $\bar{X} = 5.8$

$\sigma = .9$ var .8

7.4 Max

4.2 min