

FLT ID: I950608	FM: OKC	TO: OKC
FLT NO: 95-048	BLK IN: 0302	ATA: 0253Z
ETD: 1830Z	BLK OUT: 1829Z	ATD: 1836Z
ETE:	BLK TIME: 8:33	FLT TIME: 8:17
SPONSOR ORG: NSSL	PROGRAM: VORTEX95	PURPOSE: PRE-CONVECTIVE NR GAVE OK

DAO PERSONNEL

AC KENNEDY	SYS ENG BARR
CP TENNESEN / OMARA	DATA SYS McMILLAN
NAV STRONL	RADAR
FE BAST	BT/ODW
RADIO SANS SOULT	CLD PHYS
FD DAMIANO	DEPPLER PARRISH

PARTICIPATING SCIENTIST/VISITORS/DAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
31 WATSON	PI	NSSL
ZIEGLER	ASST PI	
SHEPHERD	RADAR	
TRAPP	RADAR	
FRANCIS	OBS	STUDENT
WINDLER	OBS	STUDENT
BRAND	MEDIA	MOVIE CREW
47 MANIS	MEDIA	MOVIE CREW

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP #)

GERBER LWC has 049 offset at T/O.

IN CLD 1813830Z

DRY LINE WORK FROM 1911Z

Problem with TH 36°N 36°N

at 1900Z; NOT 101°35'W 100°W

WORKING AT CELL LOCATION

204900Z RADARS UP

2125Z ELECTRA DEPARTS BECAUSE OF INJURIES ONBOARD

U.S. DEPT. COMM./NOAA/ORA - DATA SECTION WORK FORM NO.2 OROWF2 FILE

FLT ID: *T950608* TIME OFF: *1836Z* TIME ON: *0253Z*

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	<i>963.0</i>		<i>965.0</i>	

NO DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

1

FAST FLT LVL TAPES

1

RADAR TAPES

2

DOPPLER TAPES

ODW CASSETTES

HARD COPIES

*PMS**1*

AXBT

AXCP

ODW

PHOTOGRAPHY

	FWD	LS	RS	VERT	
ON					
OFF					
RATE					

REMARKS

NOAA • AOC • SED Flight Performance Log

22 March 95

Aircraft : N43RF

Project: VORTEX • ARM '95

Mission : VORTEX '95SED Crew: BARR, McMillanFlight ID : 950608.IPre-Flight: 1700ZTake-Off: 18:36:00Landing: 02:53:20

System				Pre-Flight	In-Flight	Post-Flight			
NAV	INE #1 1645Z	Aligned to :					-8.5	+10.1	1
	INE #2 1645Z	Aligned to :					-6.0	+9.2	4
	GPS 1645Z						Lat	Long	GS
RADAR	Nose				JMB				
	L/F	R/T SN :	124		JMB		Mod Switch Off ? STM		
	Tail	R&T SN :	201/200		JMB		Mod Switch Off ? STM		
	ASAU's & RCU				JMB				
	MARS Data System				JMB		# DATs : 2		
PMS	2DG-C	Ch 1/64:	/		JMB				
	2DG-P	Ch 1/64:	/		JMB				
	FSSP	Ref VDC:			JMB				
	SEA Data System				JMB	STM	# DATs : 2		
TEMP		Cal High	Cal Low	//////////			Cal High	Cal Low	
	Temp #1	+30.6	-30.2	JMB+30.7	STM ✓		+31.0	-29.9	
	Temp #2	30.5	-30.1	JMB+30.7	STM ✓		+30.9	-30.0	
	Temp #3 (Starboard)				STM ✓ +31.4	STM ✓			
	Dewpoint #1				STM+22.4	STM ✓			
	Dewpoint #2				STM+23.4	STM ✓			
PRESS	Attack Angle (AP/DAP)				STM ✓	STM ✓			
	Slip Angle (BP/DBP)				① STM ✓	② STM ✓			
	Differential (PQ1/PQ2/PQ3)				STM ✓	STM ✓			
	Absolute (PS1/PS2)				STM ✓	STM ✓	③		
	Radome Transducers	Plugs Out ? JMB			STM ✓				
FLTL	Apn-159	SN:	66-024		JMB	STM ✓			
	Apn-232	SN:	1699		JMB	STM ✓			
	King Liquid Water				N/A	N/A			
	J&W Liquid Water					STM ✓			
	Down PRT-5 (SST)				STM ✓	STM ✓			
	Side PRT-5 (CO ²)				N/I	N/I			
	Up PRT-5	Open ? N/I			N/I		Closed ? N/A		
LVLL	RAMS Data System				STM ✓	STM ✓	# DATs : 2		
	Exterior Walk Around					N/A			
	Video	① ② ③ D			STM ✓	STM ✓			
	FCU	-A-B-C-			STM ✓	STM ✓			
	Charge Probe				N/A	N/A	Accelerometers		
USER	Gerber Liquid Water				STM ✓		#1 (2 G) : 8149		
	Field Mills	① ② U ③			STM ✓	STM ✓	#2 (2.5 G) : 6684		
	ETL Dual-Channel uWave Radiometer						#3 (3 G) : 5967		
	Epplly Radiometers (PSP / PIR)				STM	④ STM	#4 (3.5 G) : 2892		
	2 Meter Repeater / Duplexer				STM	STM ✓			
	Cappiccuno Machine				N/A	N/A			

- ① 1800 BPI is high on ground. -2.0 STM.
- ② 1834 BBI look alot better .4 - .0 STM.
- ③ 1841 3MB difference in PS1 / PS2 STM.
- ④ 1850 Down Py3 volts doesnt seem to follow others STM.

I950608

TIME	LAT	LONG	TRK	HD	WD	WS	PA	GA	TA	TD	SP	PS		
183700	3521	9739	233	232	181	20	740	355	25.0	22.0	—	925.0	CLDS	63.0
184400	3518	9806	222	271	217	18	2767	2430	16.1	-3	—	712.0	ARV CLD	70.1
185300	3519	9851	274	271	205	21	3081	2796	13.5	-6.8	—	693.8	ARV CLD	68.8
190000	3532	9919	307	302	200	30	3242	2827	11.7	-6.0	—	680.5	ARV CLD	66.2
190400	start descent for dryline work													
190830	3554	9953	308	505	168	18	849	198	27.2	19.8	—	914.0	STRT DRYLINE	72.6
191200	3600	10007	272	268	174	20	967	153	26.7	19.7	—	902.7	Wet Soot	65.6
191500	3600	10021	268	264	160	17	976	165	27.2	19.7	—	900.9	Wet Soot	69.7
191900	3600	10039	270	267	154	17	926	154	28.9	19.1	—	905.4	Wet Soot	64.6
192300	3559	10058	269	266	158	10	1018	147	28.9	16.5	—	898.2	Wet Soot	68.6
192600	3559	10111	272	269	142	15	1102	163	28.3	16.7	—	885.4	" "	57.8
192900	3559	10124	270	269	193	7	1191	174	27.6	13.3	—	876.6	" "	67.9
192940	WIND S HFX													
193700	3609	10132	52	59	164	24	2575	1675	14.3	7.0	—	OUTFLOW BOUNDARY		
195420	3626	10039	302	294	206	42	3916	3192	5.2	-10.1	—	CO TOWARD CELL		67.5
195810	3628	10045	77	86	207	43	3911	3193	5.6	-10.6	—	AT CELL		67.4
			71	81	191	47			4.4	-3.9	—	AT CELL NO TA		59.3
200500	3632	10020	254	245	195	50	3909	3245	4.6	-5.2	—	623.5	NO TA	66.8
			267	257	201	54			4.7	-7.0	—	CLD LNE		
200900	3631	10038	266	258	207	47	3916	3202	5.1	-8.9	—	623.4	CLD LNE	64.4
201220	3628	10041	86	97	207	43	3911	3195	5.6	-10.6	—	623.8	CLD LNE	62.3
			86	97	205	49			5.0	-9.1	—	CLD LNE		74.4
201830	3628	10015	281	271	204	50	3908	3314	5.1	-8.6	—	623.9	CLD LNE	65.4
202130	3630	10029	279	269	206	48	3907	3219	5.0	-8.6	—	623.9	CLD LNE	67.5
202600	3628	10035	81	91	200	40	3908	3210	5.2	-10.3	—	623.8	NO TA	64.1
202800	3629	10023	81	91	205	45	3910	3252	5.0	-8.2	—	624.0	NO TA	67.5
203200	3630	10017	287	277	203	49	3907	3272	5.0	-7.6	—	623.9	NO TA	
203400	3630	10022	83	93	205	45	3908	3278	5.0	-7.8	—	623.9	NO TA/LF	66.6
204130	3630	10004	286	276	205	47	3908	3300	4.9	-6.7	—	623.8	NO TA/LF	62.7
			286	276	204	48			4.8	-6.1	—	624.0	NO TA/LF	64.0
204700	3631	10012	76	85	205	42	3909	3313	4.9	-7.2	—	624.0	NO TA/LF	60.8
			75	84	199	44	3905	3330	4.5	-5.0	—	623.9		
205820	3632	10014	275	270	164	26	1258	505	24.7	18.9	—	870.9	CLD LNE	69.9
			270	273	150	20								
210500	3635	10034	94	96	127	18	1256	387	24.7	18.6	—	871.1	CLD LNE	63.3
			93	97	143	15								
211000	3634	10011	90	97	158	25	1261	517	24.4	19.1	—	871.2	CLD LNE	67.0
211300	3633	10008	272	267	158	27	1259	511	24.7	18.3	—	870.9	CLD LNE	67.2
211600	3633	10021	271	268	151	18	1258	410	24.8	18.3	—	870.9	CLD LNE	71.5
212100	3634	10018	97	102	149	12	1253	472	24.6	18.7	—	871.4	CLD LNE	66.3
212300	3633	10010	75	102	166	21	1256	490	24.9	17.4	—	871.1	CLD LNE	68.8
212800	3631	9959	278	272	167	27	1258	491	24.6	18.5	—	871.1	CLD LNE	66.8
213500	3631	10016	80	86	167	20	1257	511	24.7	18.5	—	871.2	CLD LNE	69.8
			76	86	172	32								
214100	3633	9958	278	270	180	21	1258	542	24.6	18.5	—	871.0	CLD LNE	67.5
214600	3632	10013	84	89	151	17	1257	483	24.7	18.6	—	871.8	CLD LNE	67.8
			83	90	159	21								
215200	broke off from cl line													
220800	3545	9946	237	233	202	43	4474	4035	0.4	-10.9	—	579.2	Looking	67.0
221500	3525	9957	207	208	206	43	4472	4030	0.5	-11.1	—	579.3	Looking	68.7
221800	3515	10005	216	217	213	45	4472	4019	1.0	-11.7	—	579.4	Looking	74.4
222700	3455	10035	237	231	201	50	4472	3941	0.6	-10.3	—	579.4	CLD LNE	71.4
223600	3454	10031	38	46	140	31	1389	648	24.4	20.9	—	857.2	NEW cell	75.8
224030	3459	10029	268	261	146	34	1390	667	24.5	20.8	—	857.1	CLD LNE	64.5
224800	3458	10054	270	262	149	33	1399	547	25.2	19.6	—	856.7		
224800	3458	10054	81	91	120	38	1398	558	25.8	19.3	—	857.4	CLD LNE	73.5

I950608

TIME	LAT	LONG	TRK	HD	WD	WS	PA	LA	TA	TD	SP	PS			PC
			80	92	160	40			25.4	19.9	-				
225200	3500	10037	80	91	150	43	1393	647	24.8	20.8	-	856.8	CLD LNE	70.5	
225500	3500	10034	276	266	160	45	1392	659	25.0	20.6	-	856.9	CLD LNE	68.7	
			276	267	162	45			24.6	21.1	-	857.1			
230000	3500	10051	81	93	182	40	1392	597	26.5	18.9	-	856.8	CLD LNE	64.5	
			80	93	170	45			25.4	20.3	-		CLD LNE		
230400	3503	10038	80	92	158	44	1389	644	24.7	20.9	-	857.0	CLD LNE	67.2	
	3502	10040	273	262	167	45	1390	584	25.2	20.9	-	856.9	CLD LNE	70.4	
			270	261	174	40			26.5	18.8	-				
231200	3502	10047	74	87	173	45	1391	601	25.0	21.1	-	856.6	CLD LNE	71.0	
232100	3506	10004	85	97	200	47	2815	2307	15.3	1.5	-	712.2	TOWER	60.4	
232500	3512	9953	262	253	203	56	2928	2417	15.3	-7.0	-	707.6	TOWER WK	60.3	
233000	3504	10010	241	235	209	58	3355	2896	10.0	-0.3	-	656.3	TOWER	57.9	
234000	3506	10045	75	85	160	33	1404	567	25.5	20.8	-	855.4	CLD LNE	70.0	
			74	86	151	47			24.4	20.8	-				
234630	3511	10025	280	271	149	51	1416	598	24.4	20.7	-	854.3	CLD LNE	66.9	
235100	3513	10039	79	92	158	45	1413	519	25.1	20.1	-	854.1	CLD LNE	62.2	
			79	91	143	48					-				
	3516	10021	82	91	130	50	1417		24.3	19.7	-				
235700	3515	10023	279	272	137	51	1420	612	23.2	20.7	-	855.0	CLD LNE	67.9	
000000	3517	10039	272	264	152	42			25.1	20.3	-	854.4	CLD LNE	67.6	
000130	3516	10037	83	93	148	38	1415	543	24.6	20.8	-	854.2	CLD LNE	73.6	
000500	3517	10022	82	93	136	48	1415	639	23.9	20.5	-	854.3	CLD LNE	65.7	
000700	3517	10025	279	272	148	43	1416	583	23.9	20.7	-	854.3	CLD LNE	71.4	
001000	3517	10034	86	96	139	40	1414	545	23.1	21.1	-	854.3	CLD LNE	68.0	
	3518	10020	86	100	140	67			24.7	20.5	-				
001600	3517	10019	282	273	148	58	1343	570	24.4	20.5	-	860.5	CLD LNE	78.3	
002100	3518	10035	81	93	157	43	1337	475	24.3	21.3	-	862.5	CLD LNE	67.0	
002500	3519	10018	77	93	151	62	1244	503	25.4	20.4	-	872.9	CLD LNE	89.2	
					156	56					-				
003200	3514	10023	282	271	164	54	1237	432	25.7	20.6	-	872.4	CLD LNE	66.9	
003500	3517	10038	78	96	216	58	2481	1724	17.7	8.0	-	745.2	CLD LNE	66.8	
004100	3516	10032	283	270	214	61	2649	1579	16.3	7.0	-	733.1	CLD LNE	62.4	
004500			282	271	217	54			14.7	6.1	-				
004820	3525	10054	84	94	227	59	4241	3562	1.0	-7.6	-	590.8	TOWER	58.4	
005720	3527	10000	84	98	205	66	4471	4000	0.2	-10.9	-	579.5	CLD LNE	70.5	
010000	3524	9959	279	267	209	63	4468	3978	0.2	-11.0	-	579.7	CLD LNE	73.2	
010500	3527	10020	277	266	22	63	4468	3858	0.4	-10.9	-	579.7	CLD LNE	63.0	
010900	3526	10027	89	99	223	55	4469	3877	0.2	-10.7	-	579.6	CLD LNE	63.7	
011700	3524	9947	277	267	201	47	3884	3884	6.1	-10.8	-	625.9	CLD LNE	65.4	
012000	3527	10000	278	268	210	52	3884	3509	5.8	-8.6	-	625.8	CLD LNE	74.3	
012400	3531	10011	87	93	235	42	3887	3321	5.0	-4.0	-	626.0	CLD LNE	71.6	
012700	3532	9952	81	92	201	47	3882	3332	6.1	-9.0	-	625.9	CLD LNE	65.2	
013000	3532	9950	271	261	204	52	3884	3298	6.0	-9.3	-	625.9	CLD LNE	65.5	
013800	3530	10005	80	87	226	49	3882	3319	5.6	-7.5	-	626.0	CLD LNE	67.2	
014300	3533	9942	282	271	201	55	3882	3393	6.0	-10.2	-	625.8	CLD LNE	66.5	
014600	3535	9955	279	267	215	66	3882	3270	5.8	-9.7	-	625.8	CLD LNE	67.3	
015200	3534	10005	75	83	226	66	3896	3293	5.3	-8.0	-	624.7	CLD LNE	66.0	
015500	3538	9948	74	83	217	57	3323	2786	11.5	-6.1	-	677.5	CLD LNE	67.9	
020000	3541	9931	260	252	209	53	3263	2793	12.0	-7.9	-	677.9	CLD LNE	66.2	
020500	3538	9953	260	252	224	66	3266	2676	11.0	-2.2	-	677.7	CLD LNE	71.7	
021000	3534	10009	50	87	238	63	3267	2619	10.9	-2.3	-	678.0	CLD LNE	67.1	
021530	broke off to head home														
023200	3524	9846	90	97	207	29	3066	2712	13.5	-3.3	-	695.2	-		67.2

I950608

NO DATA GAPS

~~USE~~ RENAV DNE 2

195700, -1.4, 0

205700, -3.1, .8

215700, -5.2, 2.6

225700, -5.6, 3.9

235700, -7, 3.4

005700, -7.7, 5.5

015700, -7.3, 8.1

025700, -6.1, 8.8

~~00 025230~~

RA159 = RA232

025230 - 025700

0024 wt clear



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Rockville, MD 20852-3019

OFFICE OF NOAA CORPS OPERATIONS

Aircraft Operations Center
P.O. Box 6829
Tampa, Florida 33608-0829

MEMORANDUM FOR: DR. ROBERT MADDOX, DIRECTOR NSSL

FROM: CAPT George C. Player III, NOAA
Acting Director, Aircraft Operations Center

SUBJECT: Hazard Duty Flight

The mission flown on AOC aircraft # N43RF on 6/8/95
has been declared hazardous. The following personnel from you
laboratory participated in this mission.

WATSON TRAPP
ZIEGLER
SHEPHERD

For purposes of computing allowable hazard duty time, the hazard
period during this mission was from 1:30 pm local time on
6/8/95 until 10 pm on 6/8/95.



VORTEX95/ARM95

FLIGHT #25 I950608 (VORTEX, TORNADO PRODUCING STORMS NEAR WHEELER, TX)
A MEMORABLE DAY IN THE ANNALS OF VORTEX HISTORY

TYPE OF DATA	SENSOR OR OPTION
INE	2
Accelerometer	2
Temperature probe	1
Altitude change option (for vertical winds)	PA
Static pressure	Rosemount fuselage
Dynamic pressure	Rosemount fuselage
Time source	Micro 99
Constants file	CO3956.CON

Notes:

There were no time/data gaps.

There was no side radiometer (RS) or uplooking radiometer (RU) available for this flight.

INE2 was the better of the two inertials with respect to groundspeeds in both the E/W and N/S directions.

INE1 was the selected inertial in real time so there will be differences in wind direction and wind speed if one compares the real time printout to this carefully analyzed DAT output.

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.

	Takeoff	Landing
Aircraft static pressure	963.0mb	965.0mb
Corrected tower pressure	N/A	N/A

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

DATE : 6/8/95

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N43RF ON 0302Z BLOCKTIME

SUBJECT: Hazardous Duty OFF 1829Z 8:33

PURPOSE OF FLIGHT: VORTEX95 PROJECT

Hazardous Duty Pay is required for flight made on 6/8/95
(DATE)

Request based on FLYING AROUND THUNDERSTORMS
PRODUCING TORNADOES

Personnel on board authorized Hazard Pay:

<u>BAST</u>	_____
<u>DAMIANO</u>	_____
<u>BARR</u>	_____
<u>McMILLAN</u>	_____
<u>SANS SOUCI</u>	_____
<u>PARRISH</u>	_____
_____	_____
_____	_____
_____	_____

PILOT/FLIGHT DIRECTOR: A. Barry Damiano

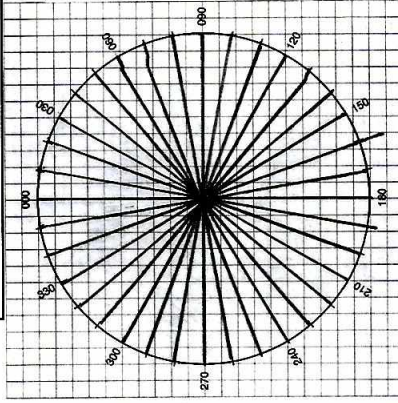
APPROVED: _____ DISAPPROVED: _____

CHIEF, AOC FLIGHT OPERATIONS: _____

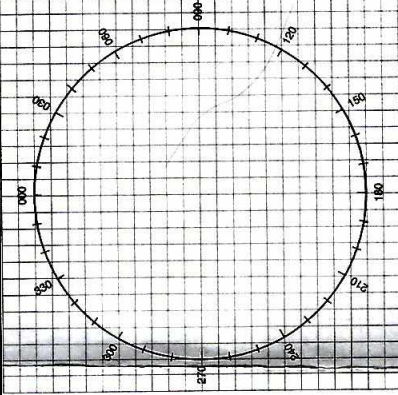
CLEARANCES

[illegible]

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 _____

- 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 DESIR
ET INTENTIONS

- PILOT INTENTIONS
- WE HAVE
ENDURANCE REMAINING

[illegible]

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION

MISSION

N438F

95-48

VORTEX

WP

LAT / LON

RTE

MH

VAR

TH

DR

TRK

GS

WD

WS

ALT

TAS

LEG / TOT DIST

LEG / TOT TIME

PROP ETA

ATA

REMARKS

1

35-20.7

DA

269

230

100

126

2

37-02.7

DA

329

220

121

132

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100-58.3

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99

100

FLIGHT DIRECTOR

AIRCRAFT COMMANDER

NAVIGATOR

SCHEDULED / ACTUAL TAKEOFF Z

DATE OF TAKEOFF

DAMIANO

KENNEDY

STRONG

1830

1886

8 JUN 95

INS PERFORMANCE

INS 1

INS 2

BEGIN ALIGN TIME

ALIGN STATUS (0-5)

END NAV TIME

START NAV TIME

DELTA T

1645

5

0300

1810

8+10

1645

0

0300

1810

8+10

TERMINAL ERRORS

INS 1

INS 2

DELTA LAT

DELTA LON

RGS

RADIAL ERROR

-8.5

+10.1

1

1210

-6.0

+9.2

4

10

REMARKS