

FLT ID: I950602	FM: OKC	TO: OKC
FLT NO: 95-046	BLK IN: 0311Z	ATA: 0305Z
ETD: 2000Z	BLK OUT: 1953Z	ATD: 2001Z
ETE:	BLK TIME: 7:18	FLT TIME: 7:04
SPONSOR ORG: NSSL	PROGRAM: VORTEX95	PURPOSE: PRE-CONVECTIVE NR AMARILLO

DAO PERSONNEL

AC KENNEDY	SYS ENG BARR
CP TENNESSEN / OMARA	DATA SYS McMILLAN
NAV STRONG	RADAR
FE BAST	BT/ODW
RADIO SANS SOUET	CLD PHYS
FD D. AMADIO	DOPPLER

PARTICIPATING SCIENTIST/VISITORS/DAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
WATSON	PI	NSSL
ZIEGLER	ASST. PI	
SHEPHERD	RADAR	
BUTCHER	OBS	STUDENTS
EDWARDS		
MACHAEEK		
ROBBINS		
HONDL		

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

Gerber LWC has .052 ghet at T/O

Worked storm near CLOVIS, NM

Ground teams spotted several large tornadoes.

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

FLT ID: D950602 TIME OFF: 2001Z TIME ON: 0305Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	<u>964.8</u>		<u>965.4</u>	

NO DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

1

FAST FLT LVL TAPES

1

RADAR TAPES

1

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 : 950602IPre-Flight: 1855ZTake-Off: 19:59:40Landing: 03:04:54

System				Pre-Flight	In-Flight	Post-Flight		
NAV	INE #1 1815Z Aligned to : 5			STMV	+9.2	-5.7	5	
	INE #2 1815Z Aligned to : 3			STMV	+6.9	-8.9	2	
	GPS		STMV	STMV	Lat	Long	GS	
RADAR	Nose		STMV	STMV				
	L/F	R/T SN : 124	JMB		Mod Switch Off ? STM			
	Tail	R&T SN : 201/202	JMB		Mod Switch Off ? STM			
	ASAU's & RCU		JMB					
	MARS Data System		JMB		# DATs : 1			
PMS	2DG-C	Ch 1/64: 1	JMB	STMV				
	2DG-P	Ch 1/64: 1	JMB	STMV				
	FSSP	Ref VDC:	JMB					
	SEA Data System		JMB	STMV	# DATs : 1			
TEMP		Cal High	Cal Low			Cal High	Cal Low	
	Temp #1	+30.6	-30.2	+30.2	+15.9	+30.9	-29.9	
	Temp #2	+30.5	-30.2	+30.4	+15.8	+30.7	-30.0	
	Temp #3 (Starboard)			+31.0	+16.2			
	Dewpoint #1			+17.9	+1.6			
	Dewpoint #2			+18.6	+1.9			
PRESS	Attack Angle (AP/DAP)		STMV	STMV				
	Slip Angle (BP/DBP)		STMV	STMV				
	Differential (PQ1/PQ2/PQ3)		STMV	STMV				
	Absolute (PS1/PS2)		STMV	STMV				
	Radome Transducers		Plugs Out ? JMB	STMV				
FLT	Apn-159	SN: 66-024	JMB	STMV				
	Apn-232	SN: 1699	JMB	STMV				
	King Liquid Water		N/A	N/A				
	J&W Liquid Water							
	Down PRT-5 (SST)		N/I	N/I	N/I			
LVL	Side PRT-5 (CO ²)		N/I	N/I	N/I			
	Up PRT-5		Open ? N/I	N/I	Closed ? N/I			
	RAMS Data System		STMV ①	STMV ②	# DATs : 2			
	Exterior Walk Around		JMB	N/A				
	Video	(N) (L) (R) D	STMV	STMV				
	FCU	-A-B-C-	STMV					
USER	Charge Probe		N/A	N/A	Accelerometers			
	Gerber Liquid Water		STMV		#1 (2 G) : 8149			
	Field Mills (L) (R) U (D)		STMV		#2 (2.5 G) : 6684			
	ETL Dual-Channel uWave Radiometer				#3 (3 G) : 5967			
	Eppl Radiometers (PSP / PIR)		STMV	STMV	#4 (3.5 G) : 2892			
	2 Meter Repeater / Duplexer		STMV	STMV				
	Cappiccuno Machine		N/A	N/A				

Please Note any Discrepancies

[illegible]

I950602

RENAV INE1

NO CAPS

210800, +1.5, +.9

220800, +3.6, +.8

230800, +5.9, +1.0

000800, +6.7, +.4

010800, +7.6, +.8

020800, 9.2, -3.5

030800, +9.2, -5.4

RA159=RA232

030330-030800

and 02000-2003Z patch routine

0012Z WZ check

36

33.5

92, 104



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 NSSC

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

SUBJECT: Hazard Duty Flight

The mission flown on AOC aircraft # N43RF on 6/2/95
has been declared hazardous. The following personnel from you
laboratory participated in this mission.

WATSON

ZIEGLER

SHEPHERD

~~WATSON~~

For purposes of computing allowable hazard duty time, the hazard
period during this mission was from 3 pm local time on
6/2/95 until 10 pm on 6/2/95.



I 950602

TIME	LAT	LONG	TRK	HD	WD	WS	PA	GA	FA	TD	SP	PS		PO
200500	3519	9747	273	270	222	25	1772	1470	16.9	9.7	—	812.0	TRW	66.8
201000	3519	9810	271	274	282	25	3070	2745	7.8	-1.8	—	695.6	TCU ALQDS	69.9
202000	3520	9855	273	274	270	23	3047	2753	7.6	-1.0	—	696.9	TCU ALQDS	67.8
202600	3523	9921	294	294	273	27	3045	2597	6.2	-1.3	—	696.6	TCU ALQDS	65.0
203500	3535	9958	291	292	287	23	3044	2401	8.0	-2.2	—	697.3	TCU ALQDS	64.0
204300	3543	10032	272	270	240	24	3038	2289	7.9	-1.6	—	697.5	CLD ALQDS	61.8
204700	3541	10049	252	250	213	29	3041	2206	8.1	1.2	—	697.7	CLD ALQDS	67.7
205300	3540	10017	280	276	187	22	3041	2255	8.7	2.4	—	697.4	CLR	66.3
205900	3544	10145	277	272	183	27	3038	2170	8.6	2.7	—	697.7	CLR	
210420	3545	10210	218	216	192	30	3040	1996	10.3	-3.9	—	697.8	CLR	66.5
211500	3514	10239	217	216	193	25	3034	1901	10.2	2.7	—	697.7	CLD BLW	65.2
212530	3446	10307	212	210	184	28	3071	1823	11.4	1.1	—	694.5	TCU	67.7
213700	3426	10327	266	262	170	22	2912	1663	12.9	8.6	—	708.6	TCU	67.1
214000	3419	10346	113	119	190	27	2909	1712	13.4	8.4	—	708.4	CLD LNE	63.2
214440					170	30	on	TURN						
214640	3413	10333	205	300	187	32	2917	1770	13.8	5.6	—	708.7	CLD LNE	66.7
215000	3422	10347			181	26			13.7	7.8	—			
215130	3422	10342	114	122	186	30	2913	1736	13.7	6.6	—	708.8	CLD LNE	62.0
			113	120	197	30	2925	1753	13.2	8.2				
215500			113	120	184	41								
215620	3417	10330	304	298	188	38	2903	1728	13.9	7.2	—	710.4	CLD LNE	71.9
			307	301	188	36								
220530	3430	10343	128	137	189	32	2956	1683	13.5	6.2	—	705.0	CLD LNE	67.1
221220	3423	10331	353	352	197	34	2958	1723	13.3	6.2	—	705.1	CLD LNE	66.2
221500	3435	10333	353	352	201	36	2728	1387	15.6	7.0	—	727.3	CLD LNE	63.8
			351	352	162	24			17.3	9.1				
221940	3446	10336	163	167	185	34	2324	940	19.5	8.2	—	763.4	CLD LNE	68.9
222100	3425	10327												
222900	3423	10329	353	353	198	33	2324	1049	20.5	6.8	—	763.1	CLD LNE	70.6
223715	3422	10328	149	155	193	35	2322	966	20.2	7.3	—	763.7	CLD LNE	67.1
224300	3427	10323	357	356	187	33	2350	1036	20.0	7.5	—	760.6	CLD LNE	65.9
224600	3440	10324	356	356	187	32	2354	947	18.4	10.5	—	760.3	CLD LNE	70.0
			181	181	173	32			18.1	10.7				
			180	182	190	32			19.6	8.8				
225310					198	32			20.7	6.9			CLD LNE	
225440	3432	10320	2	2	196	33	2359	1044	19.5	8.7	—	760.5	CLD LNE	73.4
225800	3446	10320	2	3	187	34	2356	987	18.3	10.4	—	760.1	CLD LNE	67.7
230000	3449	10317	179	181	190	38	2352	1001	18.1	10.8	—	760.3	CLD LNE	67.7
230320	3429	10317	181	182	187	31	2355	1000	19.3	8.9	—	760.0	CLD LNE	71.2
230620	3439	10319	10	11	184	40	2348	1002	19.4	8.8	—	760.7	CLD LNE	64.8
231110	3452	10313	181	182	198	40	2352	995	17.2	10.7	—	760.5	CLD LNE	72.3
			181	183	173	37			18.8	10.6	—		CLD LNE	
231620	3442	10315	1	1	183	41	2357	993	19.1	8.9	—	760.5	CLD LNE	64.1
231900	3454	10315	1	2	179	44	2354	955	17.2	11.0	—	760.6	CLD LNE	64.7
232200	3453	10312	183	182	177	44	2357	995	17.9	11.3	—	760.4	CLD LNE	65.6
232500	3443	10313	181	183	190	46	2360	1011	19.8	7.4	—	761.1	CLD LNE	69.8
			179	183	188	43	2356	1005	19.8	7.6	—	760.5	CLD LNE	63.0
233130	3429	10310	1	359	200	38	2362	1092	19.8	7.9	—	760.1	CLD LNE	65.8
233500	3445	10310	358	358	186	38	2354	1022	19.0	9.1	—	760.6	CLD LNE	68.9
233900	3451	10312	157	163	186	39	2353	1007	19.6	7.9	—	760.5	CLD LNE	64.7
234210	3442	10307	154	162	198	39	2357	1038	19.8	7.6	—	760.2	CLD LNE	70.4
	3430	10300	154	162	199	43			19.5	8.6	—		CLD LNE	
234900	3436	10255	352	352	176	36	2354	1146	18.5	10.3	—	759.8	CLD LNE	67
235100	3439	10257	352	351	176	43	2360	1099	17.7	11.1	—	760.9	CLD LNE	61

I950602

TIME	LAT	LONG	TRK	HD	WD	WS	PA	GA	TA	TD	SP	PS		PQ
233600	3445	10300	171	172	176	39	2356	1060	18.6	10.3	-	761.2	CLD LNE	71.5
			169	173	189	34			18.8	9.0	-			
000300	3420	10254	257	257	190	33	2358	1152	18.3	10.4	-	760.5	CLD LNE	67.1
			356	357	181	38			17.8	10.2	-	760.5		
000700	3449	10256	355	356	176	40	2357	1107	17.3	10.8	-	760.4	CLD LNE	68.4
001100	3456	10258	168	170	176	42	2355	1060	17.9	10.8	-	760.6	CLD LNE	73.6
001400	3446	10256	171	171	165	30	2355	1108	16.8	11.6	-	760.5	CLD LNE	70.9
001800	3430	10252	168	170	176	35	2354	1156	18.1	10.4	-	760.4	CLD LNE	68.0
002230	3426	10247	352	253	175	31	2362	1164	17.5	10.0	-	760.7	CLD LNE	67.0
002700	3446	10251	351	352	179	39	2359	1143	16.7	10.7	-	761.0	CLD LNE	71.2
003000	3446	10252	154	162	168	40	2357	1144	17.8	10.0	-	760.4	CLD LNE	71.0
003300	3437	10247	158	162	167	40	2355	1142	18.1	10.3	-	760.5	CLD LNE	68.8
003800	3431	10241	354	353	191	30	2353	1182	17.6	10.0	-	760.5	CLD LNE	66.0
004300	3444	10244	155	160	176	45	2355	1150	17.9	9.8	-	760.3	CLD LNE	63.5
004600	3435	10239	154	160	182	41		1168	17.2	10.3	-	760.5	CLD LNE	71.0
			155	160	179	38								
005100	3425	10235	352	351	184	41	2357	1217	17.7	7.8	-	760.5	CLD LNE	72.5
005400	3438	10238	352	351	183	37	2357		16.6	10.7	-	760.6	CLD LNE	69.9
005820	3430	10234	151	156	176	41	2356	1217	16.9	9.8	-	760.0	CLD LNE	70.7
			149	156	179	45			16.4	9.3	-		CLD LNE	66.9
010400	3424	10230	356	356	183	43	2355	1254	16.7	9.3	-	760.3	CLD LNE	73.6
	3436	10231	356	357	176	43			16.5	10.2	-	760.2	CLD LNE	
010900	3439	10230	181	181	175	41	2354	1204	16.4	10.4	-	760.1	CLD LNE	70.3
			180	180	172	43	2357	1229	16.7	9.3	-			
011400	3420	10227	1	3	186	36	2362	1219	16.7	9.4	-	760.8	CLD LNE	67.1
011830	3443	10230	180	179	156	41	2358	1212	15.9	10.8	-	760.5	CLD LNE	69.8
012100	3435	10229	180	179	167	39	2359	1201	16.2	10.7	-	760.4	CLD LNE	73.3
012500	3423	10229	179	178	170	27	2353	1245	18.0	5.8	-	760.2	CLD LNE	63.8
012700	3425	10226	359	2	173	34	2357	1245	16.9	7.8	-	760.1	CLD LNE	67.1
			358	3	156	33			15.5	11.2	-	760.6		
013200	3436	10223	155	182	171	34			15.6	11.0	-	760.3	CLD LNE	71.6
013440	3429	10224	185	182	178	36			16.5	7.3	-	760.4	CLD LNE	
014100	3431	10226	2	7	153	41	2357	1210	14.9	11.5	-	760.3	CLD LNE	65.8
014500	3444	10229	182	179	168	49	2354	1212	15.9	10.6	-	760.3	CLD LNE	60.3
014800	3434	10227	183	179	159	49	2357	1205	15.4	10.7	-	760.3	CLD LNE	69.4
015330	END OF MISSION													
015900	3356	10219	130	142	224	47	4061	3143	2.5	1.5	-	611.6	TCU	63.3
020300	3353	10157	91	100	235	60	4057	3196	3.6	-2.6	-	611.6	TCU	72.4
021700	3427	10053	59	63	213	32	3106	2527	11.1	-1.4	-	691.5	TRW	67.9
022400	3442	10023	58	64	202	26	3111	2677	9.5	-2.0	-	682.6	TRW	62.3
023400	3510	9943	26	24	234	29	3105	2622	10.8	-2.9	-	691.7	TRW	74.1
025200	3527	9812	65	68	213	18	2836	2535	11.9	-2.1	-	722.0	CLR	67.6

VORTEX95/ARM95

FLIGHT #23 I950602 (VORTEX, TORNADO PRODUCING STORMS NEAR CLOVIS, NM)

TYPE OF DATA -----	SENSOR OR OPTION -----
INE	1
Accelerometer	1
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.

INE1 was the lesser of two poor inertials with respect to groundspeeds. Groundspeed in the E/W direction was better compared to that from INE2 until the last two hours of the mission. The N/S groundspeed was comparable to that from INE2, meaning it was just OK. INE1 was the selected inertial in real time.

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	964.8mb	965.4mb
Corrected tower pressure	N/A	N/A

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

DATE : 6/2/95

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N43RF ON 0311Z BLOCKTIME
OFF 1953Z 7:18

SUBJECT: Hazardous Duty

PURPOSE OF FLIGHT: VORTEX95 PROJECT

Hazardous Duty Pay is required for flight made on 6/2/95
(DATE)

Request based on FLYING IN AND AROUND
THUNDERSTORMS

Personnel on board authorized Hazard Pay:

BAST	
DAMIANO	
BARR	
McMILLAN	
SANS SOUCI	

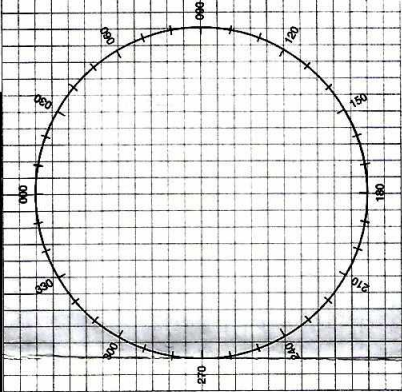
PILOT/FLIGHT DIRECTOR: A. Barry Damiano

APPROVED: _____ DISAPPROVED: _____

CHIEF, AOC FLIGHT OPERATIONS: _____

[illegible]

MISSION LOG	PAGE 1 OF 1
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1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

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:

MAYDAY, MAYDAY, MAYDAY

- POSITION _____ N / S _____

-AT _____ KTS TRUE/INDICATED

- WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD _____

- ASSISTANCE DESIRED

- PILOT INTENTIONS

[illegible]

20002, 2001

25095

[illegible]

INS PERFORMANCE		INS 1	INS 2
BEGIN ALIGN TIME		1815	1815
ALIGN STATUS (0-5)		5	3
END NAV TIME		0310	0310
START NAV TIME		1845	1845
DELTA T		8+5	8+5

TERMINAL ERRORS		
	INS 1	INS 2
DELTA LAT	+9.2	+6.9
DELTA LON	-57	-8.9
RGS	5	2
RADIAL ERROR	10	10.

[illegible]