

FLT ID: 1950517	FM: OKC	TO: OKC
FLT NO: 95-042	BLK IN: 0056Z	ATA: 0051Z
ETD: 1900Z	BLK OUT: 1838Z	ATD: 1844Z
ETE:	BLK TIME: 6:18	FLT TIME: 6:07
SPONSOR ORG: NSSC	PROGRAM: VORTEX95	PURPOSE: CONVECTION

OAO PERSONNEL
TULSA

AC KENNEDY ✓	SYS ENG Mc MILLAN
CP TENNESEN	DATA SYS BARR
NAV STRONG ✓	RADAR
FE BAST	BT/ODW
RADIO SANS SOULT	CLD PHYS
FD D AMIANO	DOPPLER

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
WATSON	PI	NSSL
ZIEGLER	ASST PI	
SHEPHERD	RADAR	
DOSWELL	OBS	NSSL
BUTCHER	OBS	
RICHTER	OBS	

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

Gerber LWC has a .035 offset at T/O
 .079 offset at 1855Z

Flew along 35N to find dryline
 98W - 96W

Climb at EDMOND TO AVOID 2007Z
 CLDS + Be ~~up~~ till tower
 WAITING FOR GROUND TEAMS TO
 GO FROM BRISTOW TO DRUMRIGHT, OK.

0054Z

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

FLT ID: I950517 TIME OFF: 1844Z TIME ON: 0051Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	951.9		951.8	

NO DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

FAST FLT LVL TAPES

RADAR TAPES

DOPPLER TAPES

ODW CASSETTES

HARD COPIES

PMS

AXBT

AXCP

ODW

PHOTOGRAPHY

	FWD	LS	RS	VERT	
ON					
OFF					
RATE					

REMARKS

700 MB

002 (LND)

850 MB

19.4

214/82

-102

NOAA • AOC • SED Flight Performance Log

22 March 95

Aircraft : N43RF

Project: VORTEX • ARM '95

Mission : VortexSED Crew: McMillan, BarrFlight ID : 950517IPre-Flight: 16:55Take-Off: 18:43:59Landing: 00:51:03

System			Pre-Flight	In-Flight	Post-Flight		
NAV	INE #1	Aligned to : 16:55	✓	STM ✓	- .6	+3	6
	INE #2	Aligned to : 16:55	✓	STM ✓	+5.1	-3.4	7
	GPS	16:55	✓	STM ✓	Lat	Long	GS
RADAR	Nose		✓	STM ✓			
	L/F	R/T SN : 124	✓		Mod Switch Off ?		✓
	Tail	R&T SN : 201 / 202	✓		Mod Switch Off ?		✓
	ASAU's & RCU		✓				
PMS	MARS Data System		✓		# DATs :	2	
	2DG-C	Ch 1/64: /	✓				
	2DG-P	Ch 1/64: /	✓				
	FSSP	Ref VDC:	✓				
TEMP	SEA Data System		✓	① STM ✓ ④ ⑤	# DATs :	1	
		Cal High	Cal Low		Cal High	Cal Low	
	Temp #1	+30.6	-30.2	+24.9	STM ✓	30.6	-30.1
PRESS	Temp #2	+30.3	-30.4	+24.7	STM ✓	30.4	-30.3
	Temp #3 (Starboard)		✓	STM ✓			
	Dewpoint #1		+19.3	③ STM ✓			
PERS	Dewpoint #2		✓	STM ✓			
	Attack Angle (AP/DAP)		STM ✓	STM ✓			
	Slip Angle (BP/DBP)		STM ✓	STM ✓			
	Differential (PQ1/PQ2/PQ3)		STM ✓	STM ✓			
FLTLVL	Absolute (PS1/PS2)		STM ✓	② STM ✓			
	Radome Transducers		Plugs Out? ①	STM ✓			
	Apn-159	SN: 66-024	✓	STM ✓			
LVL	Apn-232	SN: 1699	STM ✓	STM ✓			
	King Liquid Water		N/A	N/A			
	J&W Liquid Water		STM ✓				
LVL	Down PRT-5 (SST)		✓	STM ✓			
	Side PRT-5 (CO ²)		✓	STM ✓			
	Up PRT-5		Open? ①	STM ✓	Closed ?	STM ✓	
USE	RAMS Data System		STM ✓	STM ✓ ①	# DATs :	2	
	Exterior Walk Around		STM ✓				
	Video	① ② ③ ④	STM ✓	STM ✓			
USE	FCU	-A-B-C-	STM ✓	STM ✓			
	Charge Probe		N/A	N/A			
	Gerber Liquid Water		✓		Accelerometers		
USE	Field Mills	① ② ③ ④	✓		#1 (2 G) :	3149	
	ETL Dual-Channel uWave Radiometer		✓		#2 (2.5 G) :	6684	
	Epply Radiometers (PSP / PIR)		STM ✓		#3 (3 G) :	5967	
USE	2 Meter Repeater / Duplexer		STM ✓	STM ✓	#4 (3.5 G) :	2892	
	Cappiccuno Machine		N/A	N/A			

Please Note any Discrepancies

Item #	Zulu Time	Problem Description	Initials	A-23A #
①	1939	PMS Data System locked up. The reason for lock up was the DAT drive ate the tape. Restarted PMS System by writing data to the Hard drive, file name 950517I.DAT, and will give Tom Shepard floppys until we can fix the DAT drive	STM	/
②	1958	PS1 & PS2 3 Mb diff at 3070 meters PS1 369.6 PS2 372.2	STM	/
③	1958	Difference in TW's TW1 -1.4 TW2 0.	STM	/
④	2201	Ran out of Disk space on drive C of PMS Computer so we moved the data file to the D: drive	STM	/
⑤	2310	Ran out of Space on drive D: tried using DAT with out the "no file" Inf option. There hasn't been in data other than clear air updating anyway.	STM	/
⑥	2347Z	^{RCU BURST AND} DSP Dump errors TADAT Problems earlier with TIT in FAS would only TIT on Pos side of center Problem cleared itself. This time we got continuous error messages with ANT FAULT bit set on RCU, even though I placed unit in continuous, DSP thought it was in FAS. Stopped Processing. Pulled breakers on ASAV and Switthed AZ/EL Rings in Back. Reset ASAV and All Processes unit is operating at this time. Extreme heat Problem on P-3 AC is out to Luch. Equip. temp AS read by INTERNAL ADC +30.0 C (HOT)		Imp

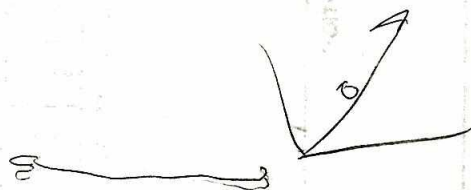
6

0010Z TAIL RDR IN FAS with SEC center 10°
Sec width 151°

will not scan past 0zero with go to 0zero
and +20. Switched NAV1 to NAV2 system

For some reason scanned between -20 and 0zero
Suddenly, it started working APPROX. 2min later
from -20 to +20. AIRCRAFT still HOT
No error messages on RCU or DSP STATUS

Stopped Ant movement pulled ASAU breakers
Swapped ASAU's continued on with problems



7

0000MSL ON SCREEN 12 is incorrect, need to find
out where the CALC for MSL is done to
see if it is correct.



TAIL

FAS

10° SEC CTR

150° SEC width ✓

RCU

FAS SBY AFC 0057

00

0-360 -20 to +20 150. W

DSP

TILT

Random #1's
ON INE#1 D+7777 more 90°
OR INE#2 D+744.8
(with INE'S Aligned to 5)
(with No NAV light)

TA RCU SELF TEST 4 FAIL 1

0L Drift = Elevation - Tilt
20° = 20°

TILT = Difference
between
Elevation
and Drift
ANGLE

Elev. (+) Drift
L = TILT

TARCU 211 ✓

EQUIPMENT MAINTENANCE DOCUMENT

WS FORM A-23A
(12-86)U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.
OFFICE OF AIRCRAFT OPERATIONS

1a. CONTROL NUMBER

00001182

OPERATOR INFORMATION SECTION

1. ZTIME OUTAGE		2. AIRCRAFT SYSTEM? ()		GROUND SYSTEM? ()		OPERATIONAL SYSTEM? ()		SYSTEM SPARE? ()		3. OPERATOR NAME	
MO	DY	YR	HOUR	N42RF ()	N43RF ()	OTHER ()					

4. OPERATORS DESCRIPTION OF FAULT (equipment, status, malfunction, etc.)

MAINTENANCE INFORMATION SECTION

5. EQUIPMENT DESCRIPTION	6. SERIAL NO.	7. PROP. NO.	8. REASON FOR OUTAGE () component failure () software () calibration	() power surge/loss () preventive maintenance () modification () other (specify below)
--------------------------	---------------	--------------	--	---

9. TECHNICIANS DESCRIPTION OF FAILURE/CORRECTIVE ACTION

10. REPAIR TIME & DATE COMPLETED	11. PARTS ORDERED? () yes () no	DATE ORDERED MO DY YR	DATE RECEIVED MO DY YR	12. DIAGS USED? () yes () no Specify Diag used in block 15.	DID DIAGS FIND DEFECTIVE LRU? () yes () no	13. TECHNICIAN NAME
HRS	MI	MO	DY	YR		

14. REPAIR PARTS INFORMATION (list all parts used, description, part no., schematic designator, etc.)

15. BRIEF TROUBLESHOOTING PROCEDURE DESCRIPTION

16. ELTECH INT.

17. APPROVED BY:

X



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 5/17/95 has been declared hazardous. The following personnel from your laboratory participated in this mission.

WATSON DOSWELL

ZIEGLER

SHEPHERD

For purposes of computing allowable hazard duty time, the hazard period during this mission was from 1:30 pm local time on 5/17/95 until 7:45 pm on 5/17/95.



VORTEX95/ARM95

FLIGHT #20 I950517 (VORTEX, Storms near Tulsa, OK)

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.

The King Liquid water probe was not operational.

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	951.9mb	951.8mb
Corrected tower pressure	N/A	N/A

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

I950517

Rever INE2

NO DATA GAPS

195400, ~~1.5, 1.2~~ 0.4, .2
205400, ~~0.5, 1.3~~ 2.5, -.4
215400, ~~1.5, 1.3~~ 2.2, -.7
225400, ~~1.3, 1.4~~ 2.4, -.8
235400, ~~1.2, 1.6~~ 5, -2.9
005400, ~~0.6, 1.3~~ 4.7, -3.3

PC spike (INE1)

20542

RA159=RA232

005030 - 0054

RA159 fix at 7/0

W7 deck 2106 - 2116
OK

94

99.5

34.5 37

I 950517

TIME	LAT	LOX	TRK	HD	WD	WS	PA	LA	TA	TP	SP	PS		P6
184600	3518	9742	279	279	254	18	1515	1080	18.5	13.6	—	840	TCU	66.0
185200	3518	9805	265	263	231	25	3185	2751	5.8	-5.7	—	685.0	SET CU	63.8
190000	3516	9840	266	260	220	46	3189	2724	5.5	-5.6	—	684.0	CLR	69.7
190600	3515	9905	267	259	217	52	3188	2659	4.4	-6.4	—	684.9	CLR	69.0
191600	3500	9838	91	95	223	27	703	156	28.1	-7	—	931.4	W & DRY LNE	64.9
192200	3500	9810	90	92	245	21	695	160	28.1	6.2	—	933.3	W & DRY LNE	67.0
192520	3500	9753	92	97	240	26			28.7	11.3	—	940.5		
192730	3500	9743	91	94	250	22			28.3	13.5	—	939.2	DRY LNE	
193400	3459	9715	93	76	230	15	631	158	27.3	19.7	—	939.7	DRY LNE	70.0
193820	3500	9656	89	94	210	18	615	179	26.0	20.8	—	942.3	TCU N	69.3
194130	3500	9641	89	96	197	22			26.0	20.6	—	945.8	TCU N	
195300	3514	9628	302	293	238	51	3331	3071	6.2	1.6	—	672.3	TCU W	64.3
195900	3525	9651	260	360	230	41	3332	3079	5.6	-4.7	—	672.0	TCU NW	71.7
200200	3534	9701	301	292	228	46	3326	3038	5.3	-3.1	—	672.1	TCU NW	68.3
200710	3542	9723	300	291	226	47	3353	3057	4.4	-1.4	—	670.6	TCU N	61.2
202120	3551	9745	144	173	220	65	5180	4670	-8.2	-19.1	—	526.5	ORBITING	65.8
202600	3556	9803	302	286	210	76	5157	4939	-5.7	-18.9	—	526.4	ORBITING	69.3
203100	3555	9749	131	146	215	63	5189	4968	-7.5	-18.9	—	526.4	ORBITING	63.7
203400	3551	9748	325	312	217	68	5190	4950	-7.3	-18.9	—	526.7	ORBITING	69.2
204100	3603	9757	125	140	209	69	5187	4947	-6.1	-18.8	—	526.6	ORBITING	70.9
204500	3555	9741	124	140	218	66	5190	4965	-7.5	-18.7	—	526.7	ORBITING	65.4
204900	3558	9747	318	304	215	73	5188	4926	-5.6	-18.8	—	526.9	ORBITING	65.3
205220	3607	9749	125	141	212	65	5189	4934	-7.3	-18.5	—	526.6	ORBITING	66.9
205700	start down to do doppler legs													
210630	3608	9745	103	110	236	37	1324	928	21.0	7.7	—	864.0	CLD LNE	74.0
211320	3602	9713	76	79	253	26	1170	783	21.5	18.5	—	879.1	CLD LNE	68.8
211620	3605	9708	71	75	216	23			21.2	17.9	—			
212000	3612	9646	250	247	205	22	1058	672	21.6	19.2	—	893.0	CLD LNE	69.6
212300	3609	9657	248	245	199	24	1055	646	22.7	17.9	—	893.2	CLD LNE	66.1
213000	3600	9700	51	53	227	33	1052	659	23.0	18.9	—	892.9	CLD LNE	71.5
			50	53	215	22			22.4	19.5	—			
					217	29								
213406	3611	9645	49	53	199	27								
213600	3616	9638	49	54	196	20	1057	679	21.3	18.6	—	893.1	CLD LNE	69.0
214000	3615	9636	230	226	190	27	930	559	22.4	20.0	—	906.4	CLD LNE	70.4
214230	3608	9646	231	227	190	27	930	578	23.4	19.7	—	906.4	CLD LNE	65.6
214600	3607	9649	53	58	194	22	926	506	23.7	19.7	—	906.9	CLD LNE	68.2
	3613	9640	51	58	190	28			23.1	19.5	—	906.6		
			51	58	161	24			22.4	19.4	—			
			51	58	121	23			21.6	19.6	—			
215500	3624	9619	227	222	170	29	849	468	22.1	20.4	—	914.3	CLD LNE	68.4
215700	3619	9625	227	223	183	24	809	518	22.7	19.7	—	908.6	CLD LNE	69.8
			226	222	187	34								
220240	3612	9635	53	59	192	32	849	565	23.0	20.5	—	904.6	CLD LNE	70.5
220500	3617	9626	53	59	182	30	819	553	22.2	20.1	—	910.6	CLD LNE	71.4
220900	3623	9615	230	227	177	24	893	542	22.3	20.1	—	910.9	CLD LNE	71.2
221300	3614	9628	231	228	189	23	888	490	24.1	17.0	—	910.7	CLD LNE	
221500	3612	9626	52	57	197	25	888	501	23.0	20.6	—	911.0	CLD LNE	70.8
221800					190	21	882	487						
222240	3624	9605	229	228	187	10	762	374	22.6	21.2	—	924.3	CLD LNE	68.2
222700	end low level legs (in TULSA airspace)													

I 950517

TIME	LAT	LONG	TRK	HD	WD	WS	PA	GA	TA	TD	SP	PS			PO
224700	3535	9610	138	152	231	55	3969	3775	2.3	-16.9	-	619	NEW	CLD	64.1
225430	3545	9550	16	82	233	55	3970	3703	3.6	-17.6	-	619.5	CLD	LNE	63.2
230000	3553	9532	255	248	218	47	3041	2856	7.0	1.7	-	697.4	CLD	LNE	76.6
230400	3548	9547	248	247	280	56	3036	2776	7.7	-2.1	-	698.2	CLD	LNE	60.8
230620	3546	9546	77	82	236	51	3038	2857	7.8	-2.8	-	697.7	CLD	LNE	67.2
231000	3550	9527	74	83	213	44	2379	2119	12.4	3.7	-	765.4	CLD	LNE	64.7
231220	3553	9524	257	251	217	47	2131	1941	13.9	10.3	-	782.5	CLD	LNE	72.4
232000	3549	9533	71	80	212	54	1275	1025	21.2	14.0	-	869.3	CLD	LNE	71.8
231300	3554	9516	72	80	215	45	1656	1443	17.5	12.8	-	823.5	CLD	LNE	63.1
232700	3557	9515	252	246	207	44	1467	1232	18.6	15.1	-	849.0	CLD	LNE	66.7
233400	3553	9535	71	80	198	40	865	578	22.4	19.8	-	912.6	CLD	LNE	70.9
			72	81	175	31			21.6	19.5	-	913.5			
233916	3559	9511			171	21			21.6	19.3	-				
234230	3557	9513	246	241	176	28			21.8	19.3	-				
	3558	9505	68	71	233	32			12.0	7.3	-				
235500	3610	9453	263	259	232	42			5.0	-2.0	-	679.0			
235700	3608	9501	258	255	231	34			10.1	6.0	-	746.9	CLD	LNE	66.2
000040	3559	9524	243	244	241	31	2608	2451	8.7	6.2	-	728.4	HOMEWARD		71.4
001400	3536	9538	152	166	244	52	3369	3194	3.4	-3.7	-	668.9			69.2
002700	3531	9624	267	260	227	57	3180	2909	3.5	-8.7	-	685.1	HAZE		70.9
003700	3532	9704	289	288	225	46	2111	1729	13.1	-4.6	-	785.4	HAZE		56.7

DATE : 5/17/95

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N43RF ON 0056Z BLOCKTIME
OFF 1838Z 6:18

SUBJECT: Hazardous Duty

PURPOSE OF FLIGHT: VORTEX95 PROJECT

Hazardous Duty Pay is required for flight made on 5/17/95
(DATE)

Request based on FLYING AROUND THUNDERSTORMS

Personnel on board authorized Hazard Pay:

<u>BOST</u>	_____
<u>DAMIANO</u>	_____
<u>SANS SOU CI</u>	_____
<u>BARR</u>	_____
<u>McMILLAN</u>	_____
_____	_____
_____	_____
_____	_____
_____	_____

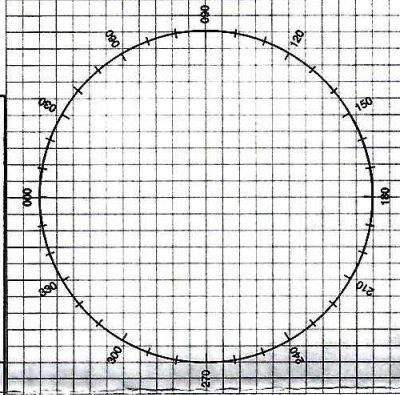
PILOT/FLIGHT DIRECTOR: A. Barry Damiano

APPROVED: _____ DISAPPROVED: _____

CHIEF, AOC FLIGHT OPERATIONS: _____

[illegible]

POSITION REPORT



6. NEXT POSITION

- PILOT INTENTIONS
- WE HAVE

[illegible]

