

FLT ID: 010907I	FM: MMBT	TO: MMBT
FLT NO: 01-048	BLK IN: 2008	ATA: 2004Z
ETD: 14Z	DLK OUT: 1401Z	RTD: 1410Z
ETE: 20Z	BLK TIME: 6:07 6.1	FLT TIME: 5:54 5.9
SPONSOR ORG: NOAA	PROGRAM: EPIC	PURPOSE: MISSION #3. 95W SHADOW

OAO PERSONNEL

AC KENUL, P	SYS ENG GOLDSTEIN, A ✓
CP TEBEEST, R ✓ / HALVERSON, H ✓	DATA SYS SMITH, J ✓
NAV ADLER, J ✓	RADAR
FE WADE, S ✓ / FLOYD, D	BT/ODW
RADIO SANS SAUCE, D ✓	CLD PHYS
FD C2724K, S ✓	DOPPLER

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
RAYMOND, D ✓	PI	N.M. TECH
FUCHS, Z ✓	SCIENTIST	"
CARILLO, C ✓	RADAR	"
ZHU, H ✓	SCIENTIST	U OF MUNICH

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

C-130 T/O 1348Z

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.2 OAOWF2

FLT ID: 010907I

TIME OFF: 1410Z

TIME ON: 2004Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	996.4	29.94	994.4	29.91

NO

DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

2

FAST FLT LVL TAPES

2

RADAR TAPES

1

DOPPLER TAPES

ODW CASSETTES

HARD COPIES

2

1

Flipping of 30 selected Parameters

AXDT

AXCP

ODW

PHOTOGRAPHY

	FWD	LS	RS	VERT
ON				
OFF				
RATE				

REMARKS

Flight ID: 010907 I

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

Form 413-50

TIME	LAT	Lon	TK	HD	TA	TD	WD	WS	PA	GA	PS	SP	REMARKS
141440	1536	9609											W CLOUD / PRECIP
142930	1438	9554	165	167	15.8	14.3	101	1.4	1817	1911	813.3	1013.4	W CLEAN
150640	1205	9516	180	181	17.2	10.9	22	7.5	1818	1922	813.0	1013.6	
155703	819	9516	181	182	14.1	13.8	18	3.5	1813	1918	813.6	1014.0	
164500	448	9516	180	179	15.2	13.3	25	16.5	1831	1930	811.8	1013.6	
165545	400	9516			14.0	13.0	33	21.5	1835	1932	811.3	1014.2	TURN PT
171700	509	9517	0	1	15.4	14.0	4	4.9	1830	1930	811.9	1013.8	W FOOT CLR
172440	542	9516					85	13.7					THIN LINE SHEAR
175000	725	9516	1	4	16.5	13.2	59	7.5	1828	1930	812.1	1013.3	
180307	819	9516	359	0	16.2	13.8	358	7.2	1828	1928	812.0	1013.2	
180355	822	9516											SMALL CELL
182900	1005	9516	0	2	16.2	13.5	20	7.3	1826	1925	812.2	1013.2	SMALL CELLS
185045	1134	9516	0	1	17.3	11.4	317	1.2	1827	1923	812.0	1011.9	
185510	1153	9516											SMALL CELL
190200	1220	9522											FEW CELLS
192600	1353	9546	344	344	18.6	10.1	291	4.5	1824	1915	812.5	1010.7	

0109071

1410 - 2004

1416 - 1956

FMA 1407 - 2007

~~AZI-7 OUT 1923:30-1923:42~~

AVZ

DWZ

INEI

TTI

ROLL2 PITCH2 SPIKE 1443:30-1444:30, 1802-1802:30 ✓

ROLL1 PITCH1 SPIKE 2005-2005:30 X

RA-159 SPIKE & TAKEOFF REPLACEMENT 1232 BEG-1411:32 X

" SPIKE 1946:30-1947 X

CLANNING REPLACE W/232 2003:34-END X

TTZ DRAPOTS IN PRECIP ✓

PSF/PSW PROBS AT LANDING

PSW & PAR, PSF, PSW SPIKES W/PITCH

DWI OSCILLATING THROUGH MOST OF FLIGHT ✓

LAT 3m GPS SPIKES 1420:30-1421, 1426:30-1427:30(2), 1433:30-1434, 1441-1442,
1444-1445:30(2), 1456-1457, 1507-1507:30, 1513-1513:30, 1532:30-1533,
✓ 1536-1536:30(2), 1541:30-1542(2), 1547:30-1548, 1609-1609:30,
1621:30-1622, 1624:30-1625, 1638-1639, 1643:30-1644, 1656-1656:30,
1659-1659:30, 1701-1702, 1729-1730:30(3), 1743-1744:30(2),
1747:30-1749(3), 1756:30-1757:30, 1814-1814:30(2), 1823:30-1824:30(2),
1841:30-1842, 1844-1844:30, 1857:30-1858:30, 1859:30-1900:30,
1904-1904:30, 1909-1909:30, 1919:30-1921(3), 1938:30-1940(3),
1947:30-1948, 1959-2000,

CON 3m GPS SPIKES 1426:30-1427, 1426:30-1427:30(2), 1433:30-1434, 1441-1442,
✓ 1444-1445:30(2), 1456-1457, 1656-1656:30, 1911:30-1912:30,
1858-1858:30, 1900-1900:30, 1904-1904:30, 1909-1909:30,
1920-1921(3), 1938:30-1940(3), 1947:30-1948, 1956-1956:30,
1959-2000,

MSL 3m GPS 1430-1431, 1503:30-1504, 1505:30-1506:30, 1519:30-1520,
1533:30-1534:30, 1602:30-1610, 1611-1614:30, 1624-1625,
1657:30-1659, 1701:30-1702:30, 1710-1710:30, 1739:30-1741,
1759-1800, 1801-1804, 1811:30-1812:30, 1858-1858:30, 1859:30-1900

M3L3MCP5 CONT

1918.30 - 1919.30, 1959-1959.30,

RENAN

143300	0.0, -0.1	14 24.8	-95.50.6
151800	0.4, -0.5	11 14.5	-95 16.1
161100	0.6, -0.8	7 17.3	-95 16.1
171000	2.2, -1.0	4 40.8	-95 16.0
180400	1.5, -0.5	8 22.5	-95 16.1
185800	1.6, -0.5	12 4.3	-95 17.1
193800	1.9, 0.0	14 39.9	-95 58.3
200900	1.7, -0.2	15 46.4	-96 15.4

Friday Flight (P-3)

Bring floppy

Release forms

Satellite picture

Water

Huachuco (dep. 9 AM)

6000 ft all the way

12N, 95.3W

Souls on board

D. Raymond	NMTech
C. Lopez	NMTech
Z. Fuchs	NMTech
* Hong Yan	U. Munich

no dropsondes

safety briefing
Standard radar
entire flight

4N, 95.3W

Quadratic fit

$$f = a + b(x - x_n) + c(x - x_n)^2$$

$$x = x_n, f = f_n \Rightarrow \boxed{a_n = f_n}$$

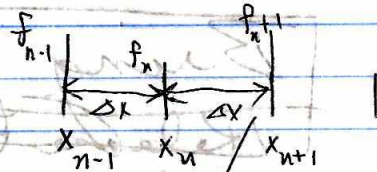
$$f_{n+1} = f_n + b \Delta x + c \Delta x^2$$

$$f_{n-1} = f_n - b \Delta x + c \Delta x^2$$

add

$$f_{n+1} + f_{n-1} = 2f_n + 2c \Delta x^2$$

$$\Rightarrow c_n = \frac{f_{n+1} + f_{n-1} - 2f_n}{2 \Delta x^2}$$



subtract

$$f_{n+1} - f_{n-1} = 2b \Delta x$$

$$\Rightarrow b_n = \frac{f_{n+1} - f_{n-1}}{2 \Delta x}$$

Cubic fit - linearly interpolate quadratic fit

$$\alpha_n = (x - x_n) / \Delta x \quad \beta_n = 1 - \alpha_n = \frac{x_{n+1} - x}{\Delta x}$$

$$f = (1 - \alpha) \left[a_n + b_n(x - x_n) + c_n(x - x_n)^2 \right] + \alpha \left[a_{n+1} + b_{n+1}(x - x_{n+1}) + c_{n+1}(x - x_{n+1})^2 \right]$$

$$\alpha = \frac{x - x_n}{\Delta x}$$

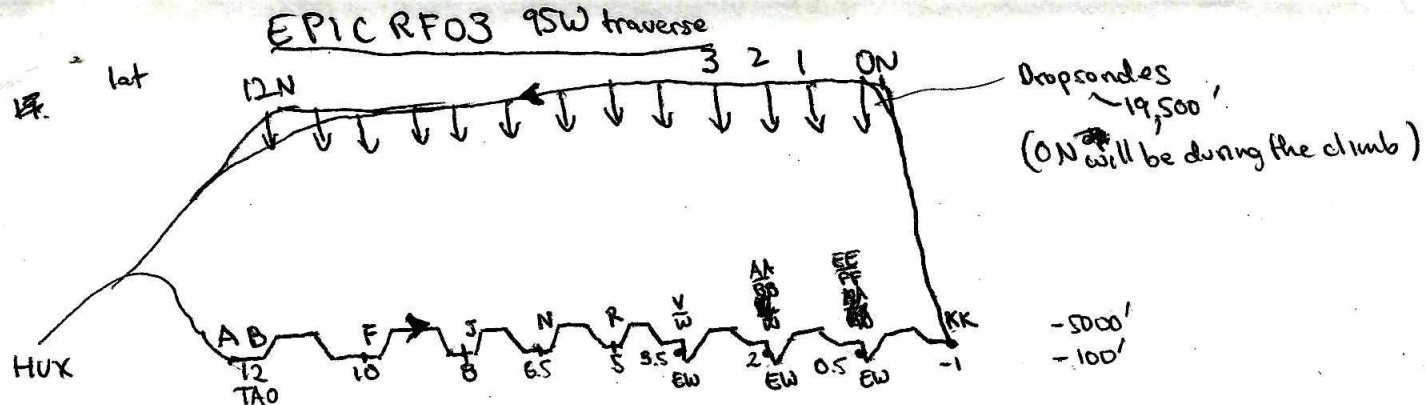
$$f = \frac{(x - x_n)}{\Delta x} \left[f_{n+1} + \frac{(f_{n+2} - f_n)}{2 \Delta x} (x - x_{n+1}) + \frac{(f_{n+2} + f_n - 2f_{n+1})}{2 \Delta x^2} (x - x_{n+1})^2 \right]$$

$$- \frac{(x - x_{n+1})}{\Delta x} \left[f_n + \frac{(f_{n+1} + f_{n-1})}{2 \Delta x} (x - x_n) + \frac{(f_{n+1} + f_{n-1} - 2f_n)}{2 \Delta x^2} (x - x_n)^2 \right]$$

$$f = \alpha_n \left[f_{n+1} + \frac{1}{2} (f_{n+2} - f_n) \beta_n + \frac{1}{2} (f_{n+2} + f_n - 2f_{n+1}) \beta_n^2 \right]$$

$$+ \beta_n \left[f_n + \frac{1}{2} (f_{n+1} - f_{n-1}) \alpha_n + \frac{1}{2} (f_{n+1} + f_{n-1} - 2f_n) \alpha_n^2 \right]$$

$$\frac{f_{n+1} - f_n}{\Delta x} \alpha_n + \frac{f_{n+2} - f_n}{2 \Delta x^2} \alpha_n^2$$



lidar up until ascent from 1N, down thereafter.

TAKEOFF Start Points

A	12.363	94.938
B	12.039	94.938
C	11.661	94.938
D	11.039	94.938
E	10.661	94.938
F	9.958	94.884
G	9.580	94.884
H	8.958	94.884
I	8.580	94.884
J	7.994	94.942
K	7.616	94.942
L	7.238	94.942
M	6.860	94.942
N	6.519	94.894
O	6.141	94.894
P	5.763	94.894

Level at 100'

Ascent at 700'/min to 5000'

Level at 5000'

Descent at 700'/min to 100'

Level at 100'

Ascent to 5000'

Level at 5000'

Descent to 100'

Level at 100'

Climb at 700'/min
5000'

Descent at 700'/min
100'

Ascent at 700'/min
5000'

Descent to 100'

Start Pts.

Q	5.385	94.894	100'
R	5.044	94.847	Ascent
S	4.666	94.793	5000'
T	4.288	94.739	Descent
U	3.910	94.685	100'
V	3.633	94.631	100' (E-W leg)
W	3.633	94.992	Ascent
X	3.255	95.026	5000'
Y	2.877	95.060	Descent
Z	2.499	95.094	100'
AA	2.042	95.128	100' (E-W)
BB	2.042	95.398	Ascent
CC	1.664	95.245	5000'
DD	1.286	95.092	Descent
EE	0.908	94.939	100'
FF	0.500	94.784	100' (E-W)
GG	0.500	95.054	Ascent
HH	0.122	95.041	5000'
II	-0.256	95.028	Descent
JJ	-0.634	95.015	100'
KK	-1.00	95.00	Climb @ 1000'/min

Drops at whole ° Lat, 95° W

to 19.5 K'
Heading North
along 95° W

2/17/81 68

**U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
AIRCRAFT OPERATIONS CENTER**