| | | |
|---|---|---|
| FLT ID: 961017H1 | FM: MCF | TO: MCF |
| FLT NO: 97-04 | BLK IN: 1344 | ATA: 1335 |
| ETD: 0330 | BLK OUT: 0333 | ATD: 0343 |
| ETE: 9.5 | BLK TIME: 10:11 (10.2) | FLT TIME: 9:52 (9.9) |
| SPONSOR ORG: NHC | PROGRAM: RECCO | PURPOSE: LILI |

OAO PERSONNEL

| | |
|---|---|
| AC Kennaly P. ✓ | SYS ENG Roles J. ✓ |
| CP Kenul ✓ | DATA SYS McMillan, S. ✓ |
| NAV Kozak, S. ✓ | ~~RADAR~~ Hall D. ✓ |
| FE Torrey, R. ✓ | ~~BT/ODW~~ McNamara, R. ✓ |
| RADIO Sang, Souci D. ✓ | CLD PHYS |
| FD Parrish, J. ✓ | DOPPLER |

PARTICIPATING SCIENTIST/VISITORS/OAO

| LAST, FIRST NAME | ACTIVITY ON A/C | AFFILIATION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

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

Ego 18.8 84.5 ~~[illegible]~~ NOAA2 0412A LILI CTR BAK

6 0624Z 18°48'N, 83°44'W. 990 mb (989 splash).

6 0800Z 19°04'N, 83°39'W 988 mb 80 kts wind NE side

6 0934Z 19°17'N, 83°33'W 988 mb

6 1111Z 19°31'N, 83°27'W 988 mb 68 kts NE side

27 OBS XMTD VIA ASDL. 4 HURRICANE PENETRATIONS.

Long block of LF, TA rad down time in middle of flight.

68/5.3

Pk 1014

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

FLT ID: TIME OFF: TIME ON:

| | A/C T/O | WX STN | A/C LAND | WX STN |
|---|---|---|---|---|
| PRESSURE | | | | |

| | NO | DATA DISPOSITION/DATE/QUALITY |
|---|---|---|
| 1/SEC FLT LVL TAPES | | |
| FAST FLT LVL TAPES | | |
| RADAR TAPES | | |
| DOPPLER TAPES | | |
| ODW CASSETTES | | |
| HARD COPIES | | |
| | | |
| | | |
| AXBT | | |
| AXCP | | |
| ODW | | |
| | | |

PHOTOGRAPHY

| | FWD | LS | RS | VERT | |
|---|---|---|---|---|---|
| ON | | | | | |
| OFF | | | | | |
| RATE | | | | | |

REMARKS

072131 Bad Posit LAT 18.792 A.306
-80.124 -82.370

072121
072140
Bad Block length 220 Found.

072751
072800
Bad Block of length 10. Found.

NOAA FORM 59-4
(2-72)

# 961017H T.S. LILI RECCO

| Time | LAT | LON | TK | WD | WS | BA | GA | TA | TD | SP | PS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0333 | 2750.9 | 8229.6 | | | | -3 | | 23.8 | 19.8 | | 1013.7 | |
| 034630 | 2741 | 8234.4 | 190 | 100 | 18 | 1126 | 1188 | | | | | |
| 035315 | 2721.5 | 8251.1 | 230 | 127 | 8.2 | 3257 | 3462 | 7.7 | -1.1 | 1013.0 | 667 | ↑ |
| 0404 | 2652.7 | 8327.4 | | | | | | | | | | |
| 045930 | 2351 | 8624 | 164 | 298 | 6.7 | 5500 | 5807 | -4.7 | -24.6 | 1008.1 | 505.2 | |
| 050830 | 2308.6 | 8611.6 | 165 | 334 | 5.0 | 5499 | 5806 | -4.3 | -20.3 | 1005.3 | 505.1 | |
| 0525 | 2153.5 | 8547.4 | 164 | 47 | 9.0 | 5498 | 5804 | -3.6 | -16.9 | 1005.3 | 505.3 | |
| 0536 | ↓ to 1.5K | | | | | | | | | | | |
| 0552 | | | | | | | | | | | | |
| 0602 | 1929 | 8443 | 137 | 40 | 17 | 514 | — | 23.4 | 21.9 | — | 952.8 | Inbound |
| 0624 | 1848 | 8344 | | | | 684 | | 24.5 | 23.2 | 990 | | S 10kt 0634 |
| 063645 | 1818 | 8312 | 134 | 212 | 35 | 531 | 492 | 23.0 | 22.0 | 1006 | 951 | SE OF CENTER |
| 064915 | 1746 | 8239 | 135 | 146 | 29 | 529 | 510 | 23.3 | 23.9 | 1008 | 951 | |
| 070045 | 1752 | 8221 | 0 | 197 | 34.8 | 517 | 501 | 23.4 | 22.6 | 1008 | 952 | 27.5 |
| 0714 | 1849 | 8221 | 359 | 169 | 37 | 517 | 492 | 24.2 | 20.9 | 1007.3 | 952.8 | |
| 072815 | 1950.4 | 8221.5 | 359 | 167 | 45 | 519 | 494 | 23.6 | 22.6 | 1007.4 | 952.5 | |
| 0731 | Turned | | | | | | | | | | | |
| 0749 | 1931 | 8312 | 228 | 140 | 32 | 519 | 472 | 23.8 | 22.5 | 1004.5 | 952.3 | |
| 0800 | 1904 | 8339 | | | | | | | | 988 | | S |
| 082030 | 1812.2 | 8435.2 | 226 | 305 | 16.6 | 582 | 550 | 23.1 | 23.3 | 1006.5 | 945.5 | |
| 0827 | Turned E | | | | | | | | | | | |
| 0846 | 1753.6 | 8334.9 | 90 | 231 | 31 | 582 | 557 | 23.5 | 23.0 | 1006.5 | 945.6 | |
| 0904 | Turn to NW | | | | | | | | | | | |
| 0908 | 1804.4 | 8226 | 315 | 203 | 41 | 582 | 564 | 22.3 | 22.2 | 1007.8 | 945.2 | |
| 0934 | 1917 | 8333 | | | | 715 | | 25.0 | 22.5 | 988 | | S |
| 0947 | 1954.5 | 8409.3 | 336 | 56 | 11 | 588 | 545 | 22.8 | 21.5 | 1005.1 | 944.8 | NW OF CENTER |
| 1003 | Turn to S | | | | | | | | | | | |
| 100630 | 2026.5 | 8455.1 | 181 | 49 | 16.8 | 558 | 525 | 23.5 | 20.9 | 1006.1 | 948.1 | Going S |
| 102215 | 1924.2 | 8454.5 | 179 | 344 | 16.2 | 558 | 521 | 23.7 | 21.7 | 1005.7 | 948.1 | 27.5 |
| 103630 | 1827.9 | 8454.0 | 178 | 304 | 13.8 | 557 | 529 | 23.7 | 21.9 | 1006.8 | 947.7 | 27.8 |
| 1048 | 1825.6 | 8432.8 | 45 | 275 | 23.1 | 559 | 528 | 23.8 | 21.3 | 1006.2 | 948.1 | 27.8 |
| 1111 | 1931 | 8327 | | | | | | 25.5 | 23.0 | 988 | | S |
| 111650 | 1944 | 8312 | ↑ to 23K | | | | | | | | | |
| 114230 | 2011 | 8508 | 284 | 0 | 7.4 | 7034 | 7436 | -11.6 | -28.7 | 995.8 | 407.8 | -23K PA |
| 121215 | 2224 | 8557 | 335 | 287 | 10.4 | 7034 | 7439 | -10.6 | -47.0 | 994.3 | 408.6 | |
| 122530 | 2327.1 | 8617.3 | 346 | 288 | 10.4 | 7034 | 7444 | -12.2 | -47.4 | 994.1 | 408.6 | |
| 124045 | 2434 | 8600 | 44 | 289 | 13.5 | 7035 | 7446 | -13.5 | -48.3 | 1003.0 | 408.6 | |
| 130015 | 2548.6 | 8539.2 | 44 | 266 | 23 | 7034 | 7437 | -13.5 | -48.1 | 1002.9 | 408.6 | |
| 131615 | ↓ to land | | | | | | | | | | | |
| 132530 | 2727.5 | 8255.0 | 42 | 218 | 9.1 | 3719 | 3896 | 4.3 | -11.5 | 1013.6 | 649.9 | ↓ |
| 1344 | 2751 | 8230.9 | | | | 2 | | 24.2 | 22.9 | | 1013.1 | 15K |

NOAA FORM 59-4
(2-72)

# 9607101 H. BEATHA RECCO

CON
5:30
7:00
8:00

| Time | LAT | LON | TK | WD | WS | BA | GA | TM | TD | SP | BS | RD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0339 | 27 51 | 82 30 | | | | -7 | | 25.3 | 23.8 | | 1014.1 | | BUL |
| 040615 | 27 35 | 28 26 | 113 | | | | | | | | | | |
| 042515 | 27 00 | 79 58 | 118 | 76 | 11.6 | 5196 | 5491 | -2.6 | -12.7 | 1008.2 | 526.2 | 24.4 | |
| 0448 | 26 28 | 78 10 | 96 | 60 | 23.3 | 5192 | 5478 | -3.6 | -18.9 | 1009.3 | 526.5 | | |
| 050030 | 26 19.9 | 77 04 | | | | | | | | | | | |
| 0515 | 26 13 | 76 02 | ↓ | to | 5K | | | | | | | | |
| 0522 | 26 07 | 75 34 | 138 | 54 | 40 | 1526 | 1567 | 17.4 | 16.3 | 1009.1 | 843.6 | -5K | |
| 0558 | 24 29 | 73 59 | | | | 1520 | | 24.0 | 20.0 | 970 | | | S |
| 0631 | 23 31 | 72 39 | 354 | 191 | 58 | 1519 | 1541 | 17.3 | 14.4 | 1006.6 | 843.7 | | |
| 070515 | 25 41 | 73 21 | 288 | 182 | 82 | 1511 | 1485 | 17.2 | 17.7 | 1001.3 | 844.8 | Inbound Fm NE | |
| 0726 | 24 47 | 74 18 | | | | | | | | 970 | | | S |
| 074445 | 23 52 | 75 20 | 227 | 331 | 36 | 1517 | 1499 | 17.6 | 16.8 | 1002.1 | 843.8 | | |
| 075730 | 23 27.6 | 75 12 | 89 | 292 | 53.0 | 1520 | 1517 | 17.1 | 16.8 | 1008.7 | 843.7 | | |
| 0811 | 23 32.5 | 74 02.1 | 81 | 247 | 43 | 1521 | 1508 | 17.6 | 18.4 | 1002.2 | 843.7 | | |
| 0821 | 23 46 | 73 12 | 2 | 211 | 54 | 1520 | 1527 | 17.4 | 17.0 | 1004.7 | 843.7 | | |
| 083545 | 24 30 | 73 58 | 318 | 205 | 65 | 1517 | 1417 | 20.2 | 19.0 | 990.7 | 848.8 | | |
| 0848 | 25 04 | 74 37 | | | | 1518 | | 23.0 | 20.0 | 969 | | | S |
| 091430 | 26 17 | 76 02 | 317 | 64 | 48 | 1520 | 1546 | 17.4 | 15.2 | 1007.1 | 843.7 | Turn SW PT. | |
| 0928 | 25 22 | 76 12 | 183 | 14 | 47 | 1521 | 1512 | 18.7 | 15.6 | 1002.4 | 843.3 | | |
| 094045 | 24 23 | 76 14 | 168 | 330 | 48 | 1525 | 1528 | 17.8 | 16.9 | 1004.2 | 842.3 | | |
| 0945 | 24 05 | 76 08 | Turn to NE | | | inbound | | | | | | | |
| 1011 | 25 12 | 74 58 | | | | | | 23.0 | 20.5 | | 968 | | S |
| 110215 | 26 37 | 75 25 | 275 | 84 | 76 | 1519 | 1520 | 17.6 | 17.8 | 1004.4 | 843.2 | | |
| 1120 | 26 40 | 76 43 | 92 | | | | | | | | | | |
| 1122 | 26 40 | 76 36 | 92 | 38 | 42 | 1526 | 1566 | 17.0 | 17.6 | 1008.7 | 843.0 | | |
| 1154 | 25 22 | 75 12 | | | | | | 23.0 | 20.0 | | 968 | | S |
| 121115 | 25 22.1 | 76 13 | 271 | 4 | 58.9 | 1517 | 1489 | 17.7 | 18.6 | 1000.0 | 844.4 | W of Eye | |
| 121830 | 25 24 | 76 44 | ↑ | to | return | MCF | | | | | | | |
| 1246 | 26 16.7 | 78 50 | 296 | 15 | 18 | 6122 | 6464 | -8.8 | -19.7 | 1006.6 | 464.0 | LAST OB | |
| 1300 | 26 49.7 | 8003.6 | 298 | 30 | 6.3 | 6122 | 6458 | -7.6 | -23.6 | 1003.0 | 463.9 | | |
| 1311 | 27 14.6 | 8103 | 297 | 56 | 11 | 6121 | 6459 | -7.8 | -23.3 | 1004.1 | 464 | | |
| 1323 | 27 28.0 | 8205.0 | 302 | 12 | 4.3 | 3347 | 3500 | 7.2 | -6.8 | 1004.9 | 670.7 | ↓ to MCF | |
| 1343 | 27 51 | 82 29.6 | | | | -4 | | 32.8 | 25.4 | | 1013.8 | BUL | |

# 961017H N42RF H. LILI RECCO

| Sensor or system | Number or Name |
|---|---|
| INE | 1 |
| Accelerometer | 1 |
| Temperature Probe | 1 |
| Dew Point Probe | 1 |
| Altimeter | APN-159 |
| Altitude change option (for vertical winds) | RA |
| Static Pressure | Rosemount Fuselage |
| Dynamic Pressure | Rosemount Fuselage |
| Time Source | Micro 99 |
| Constants File | CO2965.CON |

Notes:

INE 1 positions were corrected periodically with good GPS positions. No corrections were made to groundspeeds.

Removed bad APN-159 radar altitude values near landing and replaced them with APN-232 data. Removed and patched another substantial period of APN-159 data spikes, between 0553Z-061330Z, using offset APN-232 values when necessary.

4 recco fixes were made during this flight, at approximately 0624Z, 0800Z, 0934Z, and 1111Z.

There was a substantial period of down time for the aircraft radar system during the middle of this flight.

Special note. Locations 80, 81 and 82 of the Type 5 record on the Standard Tape contain vertical groundspeed, vertical airspeed and vertical wind, respectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

Jack Parrish, Flight Director

```
TITLE (MAX 21 CHARACTERS) -- EX  HURRICANE PAINE
H. LILI RECCO #1
YYMMDDL  FLT I.D.
961017H1
HHMMSS START TIME    -99999 DEFAULT TO START OF DATA FOR PRINTOUT ONLY
033301
HHMMSS END TIME      999999 DEFAULT TO END OF DATA FOR PRINTOUT ONLY
134400
HHMMSS TAKE OFF TIME
034300
* NUMBER OF TAPES (I2) ...FOR STANDARD TAPE OUTPUT ONLY
01
* -------LOGICAL UNIT OF INPUT DATA (I1)  5, 8 OR 9 FOR TAPE DRIVE
1
* -------LOGICAL UNIT OF OUTPUT TAPE DRIVE (I1) [FOR STANDARD TAPE ONLY]
9
* -------LOGICAL UNIT OF PRINTER (I1)
6
* -------DATE OF PROGRAM (MMDDY)
06094
* -------STATIC PRESSURE PROBE (I1)
* 1 = PSW (WINGTIP)
* 2 = PSF (CO-PILOT/FUSELAGE)
* 3 = FUTURE USE
2
* -------DYNAMIC PRESSURE PROBE (I1)
* 0 = PQW(WINGTIP)
* 1 = PQF1 (FUSELAGE 1281)
* 2 = PQF2 (FUSELAGE 1221)
* 3 =FUTURE US
1
* ---------INE SELECTION  (I1)
* 1 = INE 1
* 2 = INE 2
1
* ---------ACCELEROMETER (I1) - USUALLY THE SAME AS YOUR INE SELECTION
1
* --------- TOTAL TEMPERATURE PROBE (I1) [1 OR 2]
1
* --------- DEWPOINT TEMPERATURE PROBE (I1) [1 OR 2]
1
* ---------ALTIMETER OPTION (I1) - FOR VERTICAL WIND COMPUTATION
* 0 = PRESSURE ALTITUDE (OVER LAND)
* 1 = RADAR ALTITUDE APN-159 (OVER WATER)
* 2 = RADAR ALTITUDE APN-232 (OVER WATER)
1
* ---------PRINTOUT RATE  SECONDS (I2)
30
* ---------WINDSPEED/DIRECTION RUNNING AVERAGE TIME, SECONDS (I2)
10                                  ! FOR STANDARD TAPE OUTPUT ONLY
* ---------TIME OPTION (I1)
* 1 = MICRO 29
* 2 = TIME BASED GENERATOR #1
* 3 = TIME BASED GENEATOR #2
1
* ---------NAME OF CONSTANTS FILE EX CO3863.CON
CO2965.CON
*****************************************************************
```

961017 H1 H. LILI RECCO
Renav IDE1

| | | | | | | |
|---|---|---|---|---|---|---|
| 034300 | 0.0 | − | +0.1 | 51.4 | 30.8 | |
| 043000 | 0.9 | − | +0.3 | 33.5 | 01.7 | |
| 052000 | 0.8 | + | −0.1 | 15.6 | 54.5 | |
| 061000 | 1.2 | − | +0.6 | 04.8 | 24.3 | |
| 070000 | 1.6 | | +0.5 | 49.5 | 21.2 | |
| 075000 | 1.7 | − | +1.3 | 28.3 | 14.9 | |
| 084000 | 2.3 | | +1.1 | 53.6 | 00.8 | |
| 093000 | 1.3 | − | +1.7 | 04.9 | 29.1 | |
| 102030 | 2.3 | | +2.2 | X 31.4 | 54.6 | (9) |
| 111000 | 0.4 | − | +2.3 | 26.4 | 31.3 | |
| 120000 | 0.7 | | +2.8 | 28.7 | 37.1 | |
| 125000 | −0.7 | − | +4.0 | 08.9 | 22.4 | |
| (13) 134400 | −2.7 | | +2.6 | 51.1 | 30.9 | |

```
*
*     NAME OF FILE IS CO2965.CON - DATE 100496 - CONSTANTS FOR N42RF
*                          HURRICANE 1996
*
*     COEFFS. FROM 10/24/95 CAL FLT.....JRP 02/15/96
**********************************************************************
**              REPLACED DOWN RADIOMETER (SST) SENSOR   3 SEP 1993
**              REPLACED TOTAL TEMP #2 (TT2) SENSOR   12 NOV 1993
**              REPLACED TOTAL TEMP #1 (TT1) SENSOR   15 NOV 1993
**              NEW ATTACK ANGLE (AA) AND SLIP ANGLE (SA) SLOPE AND INTS
**              FROM 941014 CAL FLT
**              REPLACED DEWPOINTER (DW1) 14 SEP 1994
**              CALIBRATED EG&G DEWPOINTER 14 SEP 1994
**             New cals tt1,tt2,rd,tt3 inserted 11/3/95 jrp
**             REPLACED HEAD SENSOR FOR DW1...ABD 11/06/95
**             NEW CALS TT3, RS (CO2 RAD), 04 OCT 1996
**********************************************************************
*             NEW FORMAT FOR STAPE PROGRAM
*             LABELS ENDING IN 0 ARE INTERCEPTS
*             LABELS ENDING IN 1 ARE SLOPES
*             LABELS ENDING IN A AND B COMPUTE PCAL
*             LABELS ENDING IN C COMPUTE QCAL
*             LABELS ENDING IN OF ARE DYNAMIC OFFSETS
*
* PSW  wingtip static pres    CAL DATE 031496  RSMNT SN 164
01    PSW0= +00247.42280
02    PSW1= +00080.04780
*                             CAL FLT 062091
03    PSWA= -00001.18355
04    PSWB= +00000.04835
05    PSWOF=+00000.00000
* PQW  wingtip dynamic pres   CAL DATE 031496  RSMNT 1281   S/N 164
06    PQW0= +00000.03080
07    PQW1= +00016.50200
*                            CAL FLT 062091
08    PQWC= +00000.98523
* TT1  FWD total temp 1       CAL DATE  031496    SN A7775/AMP#152
09    TT1A0=+00000.11950                                  -00000.53620
10    TT1A1=+00006.96520                                  +00012.13790
*                        BALLOON FLY BY  081888
11    T1CAL=+00001.00000
12    T1OFF=-00000.00000
* TT2  AFT total temp 2       CAL DATE  031496    SN 58172
13    TT2A0=-00000.02020                                -00000.28620
14    TT2A1=+00012.07330                                +00012.21780
*                        BALLOON FLY BY  081888
15    T2CAL=+00001.00000
16    T2OFF=-00000.00000
* DW1  dewpoint sensor 1       CAL DATE 031496 GEN EASTERN 1201
17    DW1A0=-00017.69440                S/N 52724 with sensor SN 93602
18    DW1A1=+00011.04170
19    DW1OF=+00000.00000
* DW2  dewpoint sensor 2      CAL DATE 031496   AOC#2  S/N 1664   Replaces
20    DW2A0=-00000.51650                                         s/n 842
21    DW2A1=+00009.05820
22    DW2OF=+00000.00000
* AP   attack pressure        CAL DATE 031496   S/N  823
23    APA0= -00000.03010
24    APA1= +00006.88370
```

```
* DAP  dynamic attack pres    CAL DATE 031496    S/N  832
25     DAPA0=+00000.14960
26     DAPA1=+00017.21200
* BP   sideslip pressure      CAL DATE 031496    S/N  844
27     BPA0= -00000.22110
28     BPA1= +00006.88300
* DBP  dynamic slip pres      CAL DATE 031496    S/N  833
29     DBPA0=-00001.45930
30     DBPA1=+00017.22820
* RD     down radiometer (SST)    CAL DATE 081296    S/N 648
31     RDA0= +00003.73240
32     RDA1= +00009.90940
33     RDA2= -00000.56770
34     RDA3= +00000.04240
* RS     side radiometer (CO2)    CAL DATE 101096    S/N 650   (-29C TO +34C)
35     RSA0= +00009.87360
36     RSA1= +00007.30480
37     RSA2= -00000.16000
38     RSA3= +00000.01410
* RU     up-looking radiometer    CAL DATE 061296    S/N  588
39     RUA0= +00005.19580
40     RUA1= +00008.92940
41     RUA2= -00000.42220
42     RUA3= +00000.02770
* PSF  co-pilot/fuselage static pres     CAL DATE 031496  S/N 165
43     PSFA0=+00249.64830
44     PSFA1=+00079.96340
*                        CAL FLT 062091
45     PSFA =-00000.58472
46     PSFB =-00000.00887
47     PSFOF=+00000.00000
* PQF1  co-pilot/fuselage dynamic pres(1281)  CAL DATE 031496    S/N 165
48     PQF10=+00000.75980
49     PQF11=+00016.52290
*
50     PQF1C=+00001.02825
* PQF2  co-pilot/fuselage dynamic pres(1221)  CAL DATE 031496    S/N 286
51     PQF20=+00000.12040
52     PQF21=+00034.51560
*                               CAL FLT 070792
53     PQF2C=+00001.02865
* AA  attack angle              CAL DATE 102495    RACE TRACKS
54     AAA0= +00002.13455                                    00002.11958
55     AAA1= +00005.90816                                    00006.20613
* SA  slip angle                CAL DATE 102495    YAW MANEUVER
56     SAA0= +00000.30000                                    000.23
57     SAA1= +00006.92980                                    00007.23097
*************************************************************************
***** THE FOLLOWING COEFFICIENTS ARE FOR THE
***** RADOME GUST PROBE SENSORS
*************************************************************************
* RAP   radome attack pres      CAL DATE 031496    S/N  845 REP 131
58     RAP0= +00000.00830
59     RAP1= +00006.88490
* RBP  RADOME SLIP pres         CAL DATE 031496    S/N  284
60     RBP0= +00000.05610
61     RBP1= +00007.47960
* RPQ  RADOME DYNAMIC pres      CAL DATE 031496    S/N  658
62     RPQ0= -00000.18740
63     RPQ1= +00034.50470
```

```
* RTP  RADOME TOTAL Pres          CAL DATE 031496   S/N 227   REPLACES S/N 260
64     RTP0= +00003.65180
65     RTP1= +00206.71860
* RTT3 RADOME TOTAL TEMP 3      ?CAL DATE 081296   S/N 3092   w/ AMP #123
66     RTT30=-00000.01520                                    Housing S/N 12625
67     RTT31=+00004.99080
* RTT4 RADOME TOTAL TEMP 4
68     RTT40=+00000.16070
69     RTT41=+00012.21500
* RTT5 RADOME TOTAL TEMP 5
70     RTT50=-00000.20660
71     RTT51=+00016.99984
* RDW3 RADOME DEWPOINT        CAL DATE 081296  EG&G 137  S/N 392
72     DW3R0=-00049.55270                      w/ Sensor S/N 901
73     DW3R1=+00019.92910
*****************************************************************************
```

DATE : 18 Oct 96

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N42RF ON 1344Z BLOCKTIME OFF 0333Z 10.2

SUBJECT: Hazardous Duty

PURPOSE OF FLIGHT: Hurricane Lili Recco

Hazardous Duty Pay is required for flight made on 17 Oct 96 (DATE)

Request based on penetration of hurricane convective rainbands

Personnel on board authorized Hazard Pay:

Torrey, A.
Sans Souci, D.
Parrish, J.
Roles, J.
McMillan, S.
Offutt, D.
McNamara, R.

PILOT/FLIGHT DIRECTOR: John R Lamb

APPROVED: ✓ DISAPPROVED: _____

CHIEF, AOC FLIGHT OPERATIONS: Gary A VanLandingham

| DATE | SCHEDULED FIX TIME | AIRCRAFT NUMBER | ARWO |
|---|---|---|---|
| 17 OCT 96 | 06Z | N42AF | Parrish |

MANOP HEADING (PRECEDENCE IMMEDIATE)

MISSION IDENTIFIER AND OBSERVATION NUMBER
NOAA2 0412A LILI

(ABBREVIATED) (DETAILED) VORTEX DATA MESSAGE

| | | | |
|---|---|---|---|
| A | 17/ 0624 | Z | DATE AND TIME OF FIX |
| B | 18 DEG 48 MIN (N) S | | LATITUDE OF VORTEX FIX * |
| | 83 DEG 44 MIN E (W) | | LONGITUDE OF VORTEX FIX * |
| C | NA MB NA | M | MINIMUM HEIGHT AT STANDARD LEVEL |
| D | NA | KT | ESTIMATE OF MAXIMUM SURFACE WIND OBSERVED |
| E | NA DEG NA | NM | BEARING AND RANGE FROM CENTER OF MAXIMUM SURFACE WIND |
| F | 10 DEG 43 | KT | MAXIMUM FLIGHT LEVEL WIND NEAR CENTER |
| G | 280 DEG 10 | NM | BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND |
| H | EXTRAP 990 | MB | MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM WITHIN 1500 FT OF SEA SURFACE |
| I | 23.5C/ 513 | M | MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE |
| J | 24.5C/ 690 | M | MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE |
| K | 23.0C/ 28.0 | C | DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE |
| L | OPEN NW | | EYE CHARACTER: Closed wall, poorly defined, open SW, etc. |
| M | C12 | | EYE SHAPE/ORIENTATION/DIAMETER. Code eye shape as: C – Circular; CO – Concentric; E – Elliptical. Transmit orientation of major axis in tens of degrees, i.e., 01–010 to 190; 17–170 to 350. Transmit diameter in nautical miles. *Examples:* C8–Circular eye 8 miles in diameter. E09/15/5 – Elliptical eye, major axis 090–270, length of major axis 15 NM, length of minor axis 5NM. CO8–14 – Concentric eye, diameter inner eye 8 NM, outer eye 14 NM. |
| N | 18 DEG 48 MIN (N) S | | CONFIRMATION OF FIX: Coordinates and Time * |
| | 83 DEG 44 MIN E (W) | | |
| | 0624 | Z | |
| O | 1,2,3,4,7 1 | | FIX DETERMINED BY/FIX LEVEL FIX DETERMINED BY: 1 – Penetration; 2 – Radar; 3 – Wind; 4 – Pressure; 5 – Temperature. FIX LEVEL (Indicate surface center if visible; indicate both surface and flight level centers only when same): 0 – Surface; 1 – 1500 ft; 8 – 850 mb; 7 – 700 mb; 5 – 500 mb; 4 – 400 mb; 3 – 300 mb; 2 – 200 mb; 9 – Other. |
| P | 2 / 3 | NM | NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY |
| Q | | | REMARKS |

SUR PRESS EXTRAP FM 1500 FT.
WELL DEFINED RAD EYEWALL E SIDE.

*INSTRUCTIONS:* Items A through G (and H when extrapolated) are transmitted from the aircraft immediately following the fix. The remainder of the message is transmitted as soon as available for scheduled fixes and at the ARWO's discretion for unscheduled (intermediate) fixes.

* CHECK SUM REQUIRED IN WESTPAC.

| DATE | SCHEDULED FIX TIME | AIRCRAFT NUMBER | ARWO |
|---|---|---|---|
| 17 Oct 96 | — | 042 AF | Parrish |

MANOP HEADING (PRECEDENCE IMMEDIATE)

MISSION IDENTIFIER AND OBSERVATION NUMBER
NOAA2 0412A LILI

(ABBREVIATED) (DETAILED) VORTEX DATA MESSAGE

| | | | |
|---|---|---|---|
| A | 17/0800 | Z | DATE AND TIME OF FIX |
| B | 19 DEG 04 MIN (N) S | | LATITUDE OF VORTEX FIX * |
| | 83 DEG 39 MIN E (W) | | LONGITUDE OF VORTEX FIX * |
| C | NA MB NA | M | MINIMUM HEIGHT AT STANDARD LEVEL |
| D | NA | KT | ESTIMATE OF MAXIMUM SURFACE WIND OBSERVED |
| E | NA DEG NA | NM | BEARING AND RANGE FROM CENTER OF MAXIMUM SURFACE WIND |
| F | 120 DEG 80 | KT | MAXIMUM FLIGHT LEVEL WIND NEAR CENTER |
| G | 055 DEG 10 | NM | BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND |
| H | EXTRAP 989 | MB | MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM WITHIN 1500 FT OF SEA SURFACE |
| I | C/ | M | MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE |
| J | C/ | M | MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE |
| K | C/ | C | DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE |
| L | | | EYE CHARACTER: Closed wall, poorly defined, open SW, etc. |
| M | | | EYE SHAPE/ORIENTATION/DIAMETER. Code eye shape as: C – Circular; CO – Concentric; E – Elliptical. Transmit orientation of major axis in tens of degrees, i.e., 01–010 to 190; 17–170 to 350. Transmit diameter in nautical miles. *Examples:* C8–Circular eye 8 miles in diameter. E09/15/5 – Elliptical eye, major axis 090–270, length of major axis 15 NM, length of minor axis 5NM. CO8–14 – Concentric eye, diameter inner eye 8 NM, outer eye 14 NM. |
| N | DEG MIN N S | | CONFIRMATION OF FIX: Coordinates and Time * |
| | DEG MIN E W | | |
| | Z | | |
| O | / | | FIX DETERMINED BY/FIX LEVEL FIX DETERMINED BY: 1 – Penetration; 2 – Radar; 3 – Wind; 4 – Pressure; 5 – Temperature. FIX LEVEL (Indicate surface center if visible; indicate both surface and flight level centers only when same): 0 – Surface; 1 – 1500 ft; 8 – 850 mb; 7 – 700 mb; 5 – 500 mb; 4 – 400 mb; 3 – 300 mb; 2 – 200 mb; 9 – Other. |
| P | / | NM | NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY |
| Q | | | REMARKS |

SUR PRESS EXTRAP FM 1500 FT.
PEAK ~~SUR~~ FLT LVL WIND ITEMS F & G AT 0758Z.
GOOD RADAR EYEWALL NE SIDE.
RAPID WIND DROPOFF IN EYE NE SIDE.

*INSTRUCTIONS:* Items A through G (and H when extrapolated) are transmitted from the aircraft immediately following the fix. The remainder of the message is transmitted as soon as available for scheduled fixes and at the ARWO's discretion for unscheduled (intermediate) fixes. * CHECK SUM REQUIRED IN WESTPAC.

AWS FORM JAN 77 82 PREVIOUS EDITION IS OBSOLETE. ABBREVIATED/DETAILED VORTEX DATA MESSAGE

67-07065

| DATE | SCHEDULED FIX TIME | AIRCRAFT NUMBER | ARWO |
|---|---|---|---|
| 10/17/96 | — | N42RF | Parrish |

MANOP HEADING (PRECEDENCE IMMEDIATE)

MISSION IDENTIFIER AND OBSERVATION NUMBER
NOAA2 0412A 2121

(ABBREVIATED) (DETAILED) VORTEX DATA MESSAGE

| | | | |
|---|---|---|---|
| A | 17/0934 Z | | DATE AND TIME OF FIX |
| B | 19 DEG 17 MIN (N) S | | LATITUDE OF VORTEX FIX • |
| | 83 DEG 33 MIN E (W) | | LONGITUDE OF VORTEX FIX • |
| C | NA MB | NA M | MINIMUM HEIGHT AT STANDARD LEVEL |
| D | NA | KT | ESTIMATE OF MAXIMUM SURFACE WIND OBSERVED |
| E | NA DEG | NA NM | BEARING AND RANGE FROM CENTER OF MAXIMUM SURFACE WIND |
| F | 250 DEG | 67 KT | MAXIMUM FLIGHT LEVEL WIND NEAR CENTER |
| G | 140 DEG | 12 NM | BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND |
| H | EXTRAP | 988 MB | MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM WITHIN 1500 FT OF SEA SURFACE |
| I | 23.0 C/ | 580 M | MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE |
| J | 25.0 C/ | 715 M | MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE |
| K | 22.0 C/ | 27.5 C | DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE |
| L | OPEN NW | | EYE CHARACTER: Closed wall, poorly defined, open SW, etc. |
| M | C 14 | | EYE SHAPE/ORIENTATION/DIAMETER. Code eye shape as: C – Circular; CO – Concentric; E – Elliptical. Transmit orientation of major axis in tens of degrees, i.e., 01–010 to 190; 17–170 to 350. Transmit diameter in nautical miles. *Examples:* C8–Circular eye 8 miles in diameter. E09/15/5 – Elliptical eye, major axis 090–270, length of major axis 15 NM, length of minor axis 5NM. CO8–14 – Concentric eye, diameter inner eye 8 NM, outer eye 14 NM. |
| N | 19 DEG 17 MIN (N) S | | CONFIRMATION OF FIX: Coordinates and Time • |
| | 83 DEG 33 MIN E (W) | | |
| | 0934 Z | | |
| O | 1,2,3,4,5/ 1 | | FIX DETERMINED BY/FIX LEVEL FIX DETERMINED BY: 1 – Penetration; 2 – Radar; 3 – Wind; 4 – Pressure; 5 – Temperature. FIX LEVEL (Indicate surface center if visible; indicate both surface and flight level centers only when same): 0 – Surface; 1 – 1500 ft; 8 – 850 mb; 7 – 700 mb; 5 – 500 mb; 4 – 400 mb; 3 – 300 mb; 2 – 200 mb; 9 – Other. |
| P | 2 / 3 | NM | NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY |

Q REMARKS

SUR PRESS EXTRAP FM 1500 FEET.
STRONGEST RADAR EYEWALL E SIDE.
PEAK FLT LVL WIND 80 KNOTS NE EYEWALL AT 0758Z.

*INSTRUCTIONS:* Items A through G (and H when extrapolated) are transmitted from the aircraft immediately following the fix. The remainder of the message is transmitted as soon as available for scheduled fixes and at the ARWO's discretion for unscheduled (intermediate) fixes. • CHECK SUM REQUIRED IN WESTPAC.

AWS FORM JAN 77 82 PREVIOUS EDITION IS OBSOLETE. ABBREVIATED/DETAILED VORTEX DATA MESSAGE

67-07065

| DATE | SCHEDULED FIX TIME | AIRCRAFT NUMBER | ARWO |
|---|---|---|---|
| 10/17/96 | 12Z | N42RF | Parrish |

MANOP HEADING (PRECEDENCE IMMEDIATE)

MISSION IDENTIFIER AND OBSERVATION NUMBER
NOAA2 0412A LILI

(ABBREVIATED) (DETAILED) VORTEX DATA MESSAGE

| | | | |
|---|---|---|---|
| A | 17/ 1111 | Z | DATE AND TIME OF FIX |
| B | 19 DEG 31 MIN (N) S | | LATITUDE OF VORTEX FIX * |
| | 83 DEG 27 MIN E (W) | | LONGITUDE OF VORTEX FIX * |
| C | NA MB NA | M | MINIMUM HEIGHT AT STANDARD LEVEL |
| D | NA | KT | ESTIMATE OF MAXIMUM SURFACE WIND OBSERVED |
| E | NA DEG NA | NM | BEARING AND RANGE FROM CENTER OF MAXIMUM SURFACE WIND |
| F | 315 DEG 52 | KT | MAXIMUM FLIGHT LEVEL WIND NEAR CENTER |
| G | 220 DEG 8 | NM | BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND |
| H | EXTRAP 988 | MB | MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM WITHIN 1500 FT OF SEA SURFACE |
| I | 23.5C/ 666 | M | MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE |
| J | 25.5C/ 670 | M | MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE |
| K | 23.0C/ 28.0 | C | DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE |
| L | OPEN NW | | EYE CHARACTER: Closed wall, poorly defined, open SW, etc. |
| M | C15 | | EYE SHAPE/ORIENTATION/DIAMETER. Code eye shape as: C – Circular; CO – Concentric; E – Elliptical. Transmit orientation of major axis in tens of degrees, i.e., 01–010 to 190; 17–170 to 350. Transmit diameter in nautical miles. *Examples:* C8–Circular eye 8 miles in diameter. E09/15/5 – Elliptical eye, major axis 090–270, length of major axis 15 NM, length of minor axis 5NM. CO8–14 – Concentric eye, diameter inner eye 8 NM, outer eye 14 NM. |
| N | 19 DEG 31 MIN (N) S | | CONFIRMATION OF FIX: Coordinates and Time * |
| | 83 DEG 27 MIN E (W) | | |
| | 1111 | Z | |
| O | 1,2,3,4,5/ 1 | | FIX DETERMINED BY/FIX LEVEL FIX DETERMINED BY: 1 – Penetration; 2 – Radar; 3 – Wind; 4 – Pressure; 5 – Temperature. FIX LEVEL (Indicate surface center if visible; indicate both surface and flight level centers only when same): 0 – Surface; 1 – 1500 ft; 8 – 850 mb; 7 – 700 mb; 5 – 500 mb; 4 – 400 mb; 3 – 300 mb; 2 – 200 mb; 9 – Other. |
| P | 2 / 4 | NM | NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY |

Q REMARKS

SUR PRESS EXTRAP FM 1500 FT.
PEAK WIND 130 DEG/68 KNOTS AT 045 DEG/7 NM AT 1114 Z.
MOD TURB IN NE EYEWALL.

*INSTRUCTIONS:* Items A through G (and H when extrapolated) are transmitted from the aircraft immediately following the fix. The remainder of the message is transmitted as soon as available for scheduled fixes and at the ARWO's discretion for unscheduled (intermediate) fixes. * CHECK SUM REQUIRED IN WESTPAC.

| CLEARANCES | | | |
|---|---|---|---|
| FREQ | ALT | HDG | OTHER |
| | | | GPSDN |
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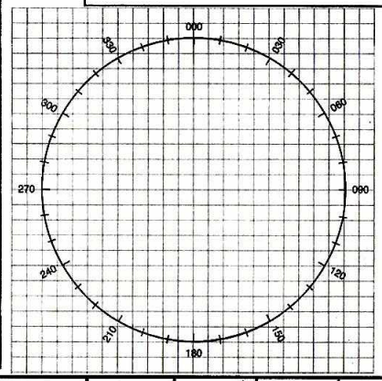
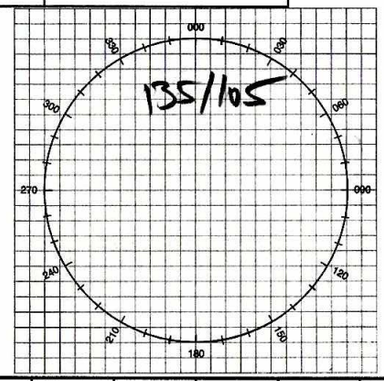
**MISSION LOG** PAGE ___ OF ___




**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0328 | V | 2750.9N 8229.6W | 〃 | | 〃 | | | | | | | | | | | | | | | | EMG/checks |
| 0333 | | | | | | | | | | | | | | | | | | | | | Stand By 22 |
| 0348 | | | | | | | | | | | | | | | | | | | | | Taxi MCF |
| 0406 | G | 2145.0N 8336.5W | 2644.8N 8336.0W | +1.4 +1 | 2645.0N 8336.6W | +1.2 +1 | | | 230 | 8L | 228 | 252 | 239 | 9 | 181 | 258 | | | | | Level 025 |
| 0526 | G | 2140.4N 8543.5W | 2139.3N 8543.3W | +1.1 +1.2 | 3139.5N 8543.3W | +1.9 +1.2 | | | 163 | 1R | 164 | 290 | 034 | 9 | 18K | 284 | | | | | Pos 4 |
| 0624 | G | 1848.1N 8344.3 | 1847.0N 8344.9W | +1.1 -.6 | 1846.4N 8345.2W | +1.5 -.9 | | | 145 | 1L | 135 | 233 | 233 | 50 | 1,500 | 229 | | | | | ∫ LiL |
| 0800 | G | 1902.4N 8338.6W | 1900.9N 8340.1W | +1.3 -1.3 | 1854.7N 8339.9W | +2.5 -1.1 | | | | | | | 0 | 0 | 1500 | 225 | | | | | ∫ LiL |
| 0934 | G | 1917.6N 8333.5W | 1916.4N 8335.2W | +1.2 -1.7 | 1913.5N 8334.1W | +4.1 -1.6 | | | 350 | 0 | 350 | 226 | 0 | 0 | 1,500 | 226 | | | | | ∫ LiL |
| 1111 | G | 1930.8N 8327.0W | 1930.4N 8329.3W | +.4 -2.3 | 1924.9N 8329.2W | +5.9 -2.2 | | | 044 | 0 | 044 | 222 | 250 | 1 | 1,500 | 282 | | | | | ∫ LiL |
| 1235 | G | 2413.9N 8623.1W | 2414.4N 8626.2W | -.5 -3.1 | 2405.5N 8625.6W | +5.4 -2.5 | | | 046 | 1E | 047 | 310 | 300 | 14 | 230 | 305 | | | | | Post |
| 1335 | | Land | Taxi | | | | | | | | | | | | | | | | | | |
| 1345 | V | 2750.9N 8229.6W | 2753.9N 8233.5W | -3.0 -3.9 | 2746.9N 8232.0W | +4.0 -3.4 | | | | | | | | | | | | | | | Checks |
| | | | | | | | | | | | | | | | | | | | | | |
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