

|                          |                           |                                  |
|--------------------------|---------------------------|----------------------------------|
| FLT ID: <u>I950417</u>   | FM: <u>OKC</u>            | TO: <u>OKC</u>                   |
| FLT NO: <u>95-025</u>    | BLK IN: <u>0101</u>       | ATA: <u>0053Z</u>                |
| ETD: <u>1800Z</u>        | BLK OUT: <u>1806Z</u>     | ATD: <u>1818Z</u>                |
| ETE: <u>11</u>           | BLK TIME: <u>6:55</u>     | FLT TIME: <u>6:35</u>            |
| SPONSOR ORG: <u>NSSL</u> | PROGRAM: <u>VORTEX 95</u> | PURPOSE: <u>CONVECTIVE LINES</u> |

## OAO PERSONNEL

|                          |                                |
|--------------------------|--------------------------------|
| AC <u>KENNEDY</u> ✓      | SYS ENG <u>LYNCH</u>           |
| CP <u>TENNESEN</u> ✓     | DATA SYS <u>PRADAS-BERGNES</u> |
| NAV <u>RATHBUN</u> ✓     | RADAR                          |
| FE <u>MOORE</u>          | BT/ODW <u>MENAMARA</u>         |
| RADIO <u>SANS SOUICI</u> | CLD PHYS                       |
| FD <u>DAMIANO</u> ✓      | DOPPLER                        |

## PARTICIPATING SCIENTIST/VISITORS/OAO

| LAST, FIRST NAME    | ACTIVITY ON A/C | AFFILIATION                      |
|---------------------|-----------------|----------------------------------|
| <u>WATSON</u>       | <u>PI</u>       | <u>NSSL</u>                      |
| <u>ZIEGLER</u>      | <u>ASST. PI</u> | <u>S</u>                         |
| <u>SHEPHERD</u>     | <u>RADAR</u>    | <u>S</u>                         |
| <u>FEDOR</u>        | <u>PRECIP</u>   | <u>NCAR</u>                      |
| <u>IRISOV</u>       | <u>OBS</u>      | <u><del>NCAR</del> U of Col.</u> |
| <u>HUTCHINSON</u> ✓ | <u>MEDIA</u>    | <u>DAILY OKLA.</u>               |
| <u>PARRISH</u> ✓    | <u>??</u>       | <u>AOC</u>                       |

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

1901Z SMALL WND SHFT

## U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.2 DROWF2 FILE

FLT ID: *I950417* TIME OFF: *1818Z* TIME ON: *0053Z*

|          |              |        |              |        |
|----------|--------------|--------|--------------|--------|
|          | A/C T/O      | WX STN | A/C LAND     | WX STN |
| PRESSURE | <i>959.3</i> |        | <i>952.6</i> |        |

## NO DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

*1*

FAST FLT LVL TAPES

*1*

RADAR TAPES

*6*

DOPPLER TAPES

ODW CASSETTES

HARD COPIES

*pms**1*

AXB

XCP

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 #3

SED Crew: LYNCH, JEPD, BRADAS, MCNAMARA

Flight ID : 950417J

Pre-Flight: 1400Z

Take-Off: 1817Z

Landing: 0053Z

| System |                                    |                         | Pre-Flight      | In-Flight       | Post-Flight                                             |                                              |                   |
|--------|------------------------------------|-------------------------|-----------------|-----------------|---------------------------------------------------------|----------------------------------------------|-------------------|
| NAV    | INE #1                             | Aligned to : <u>S</u>   | TL              |                 | 14.7                                                    | -1.6                                         | 4                 |
|        | INE #2                             | Aligned to : <u>D</u>   | TL              |                 | -1.4                                                    | -1.8                                         | 3                 |
|        | GPS                                |                         | TL              |                 | Lat                                                     | Long                                         | GS                |
| RADAR  | Nose                               |                         | RJM             |                 |                                                         |                                              |                   |
|        | L/F                                | R/T SN :                | TL              |                 | Mod Switch Off ? <input checked="" type="checkbox"/> TL |                                              |                   |
|        | Tail                               | R&T SN : <u>2011201</u> | TL              |                 | Mod Switch Off ? <input checked="" type="checkbox"/> TL |                                              |                   |
|        | ASAU's & RCU                       |                         | TL              |                 |                                                         |                                              |                   |
|        | MARS Data System                   |                         | TL              |                 | # DATs : <u>6</u>                                       |                                              |                   |
| PMS    | 2DG-C                              | Ch 1/64: <u>1</u>       | JCPB            |                 |                                                         |                                              |                   |
|        | 2DG-P                              | Ch 1/64: <u>1</u>       | JCPB            |                 |                                                         |                                              |                   |
|        | FSSP                               | Ref VDC:                | JCPB            |                 |                                                         |                                              |                   |
|        | SEA Data System                    |                         | JCPB            |                 |                                                         |                                              | # DATs : <u>1</u> |
| TEMP   |                                    | Cal High                | Cal Low         |                 |                                                         | Cal High                                     | Cal Low           |
|        | Temp #1                            | <u>30.7</u>             | <u>-30.3</u>    | <u>14.6</u>     |                                                         | <u>30.7</u>                                  | <u>-30.2</u>      |
|        | Temp #2                            | <u>30.6</u>             | <u>-30.5</u>    | <u>14.5</u>     |                                                         | <u>30.6</u>                                  | <u>-30.4</u>      |
|        | Temp #3                            | (Starboard)             |                 | <u>14.5</u>     |                                                         |                                              |                   |
|        | Dewpoint #1                        |                         |                 | <u>10.9 RJM</u> |                                                         |                                              |                   |
|        | Dewpoint #2                        |                         |                 | <u>12.2 RJM</u> |                                                         |                                              |                   |
| PERS   | Attack Angle (AP/DAP)              |                         | RJM             |                 |                                                         |                                              |                   |
|        | Slip Angle (BP/DBP)                |                         | RJM             |                 |                                                         |                                              |                   |
|        | Differential (PQ1/PQ2/PQ3)         |                         | RJM             |                 |                                                         |                                              |                   |
|        | Absolute (PS1/PS2)                 |                         | RJM             |                 |                                                         |                                              |                   |
|        | Radome Transducers                 |                         | Plugs Out ? RJM |                 |                                                         |                                              |                   |
| FLTLVL | Apn-159                            | SN: <u>SW-2</u>         | JCPB            |                 |                                                         |                                              |                   |
|        | Apn-232                            | SN: <u>1699</u>         | RJM             |                 |                                                         |                                              |                   |
|        | King Liquid Water                  |                         | RJM             |                 |                                                         |                                              |                   |
|        | J&W Liquid Water                   |                         | RJM             |                 |                                                         |                                              |                   |
|        | Down PRT-5 (SST)                   |                         | RJM             |                 |                                                         |                                              |                   |
|        | Side PRT-5 (CO <sup>2</sup> )      |                         | RJM             |                 |                                                         |                                              |                   |
|        | Up PRT-5                           |                         | Open ? RJM      |                 |                                                         | Closed ? <input checked="" type="checkbox"/> |                   |
|        | RAMS Data System                   |                         | JCPB            |                 |                                                         | # DATs : <u>2</u>                            |                   |
| USERR  | Exterior Walk Around               |                         | RJM / PCPB      |                 |                                                         |                                              |                   |
|        | Video                              | <u>(N) (D) (B) D</u>    | JCPB            |                 |                                                         |                                              |                   |
|        | FCU                                |                         |                 |                 |                                                         |                                              |                   |
| USERR  | Charge Probe                       |                         | NU              |                 | Accelerometers                                          |                                              |                   |
|        | Gerber Liquid Water <u>1.7/0.9</u> |                         | RJM             |                 | #1 (2 G) :                                              | <u>8148</u>                                  |                   |
|        | Field Mills : L R U D              |                         | RJM             |                 | #2 (2.5 G) :                                            | <u>6684</u>                                  |                   |
|        | ETL Dual-Channel uWave Radiometer  |                         |                 |                 | #3 (3 G) :                                              | <u>5967</u>                                  |                   |
|        | Emphy Radiometers (PSP / PIR)      |                         | RJM             |                 | #4 (3.5 G) :                                            | <u>2892</u>                                  |                   |
|        | 2 Meter Repeater / Duplexer        |                         | ✓ TL            |                 |                                                         |                                              |                   |
|        | Cappiccuno Machine                 |                         |                 |                 |                                                         |                                              |                   |

Please Note any Discrepancies

[illegible]

# VORTEX95/ARM95

FLIGHT #03 I950417 (VORTEX, TORNADO PRODUCING STORMS NEAR SPS, TX)

| TYPE OF DATA                                   | SENSOR OR OPTION   |
|------------------------------------------------|--------------------|
| INE                                            | 2                  |
| Accelerometer                                  | 2                  |
| Temperature probe                              | 1                  |
| Altitude change option<br>(for vertical winds) | PA                 |
| Static pressure                                | Rosemount fuselage |
| Dynamic pressure                               | Rosemount fuselage |
| Time source                                    | Micro 99           |
| Constants file                                 | CO3953.CON         |

## Notes:

There was one time/data gap:

181531Z - 181600Z

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 | 959.3mb | 952.6mb |
| Corrected tower pressure | N/A     | N/A     |

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



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 4/17/95 has been declared hazardous. The following personnel from your laboratory participated in this mission.

WATSON

ZIEGLER

SHEPHERD

For purposes of computing allowable hazard duty time, the hazard period during this mission was from 1 pm local time on 4/17/95 until 8 pm on 4/17/95.



I950417

| TIME   | LAT                                           | LONG  | TRK | HD  | WD  | WS  | PA   | LA   | TA   | TD    | SP | PS    | RW        | PQ   |
|--------|-----------------------------------------------|-------|-----|-----|-----|-----|------|------|------|-------|----|-------|-----------|------|
| 182100 | 3526                                          | 9743  | 183 | 181 | 180 | 43  | 1621 | 1193 | 14.3 | 15.1  | -  | 834.3 | RW        | 76.1 |
| 183100 | 3457                                          | 9754  | 228 | 226 | 206 | 46  | 3130 | 2834 | 7.9  | -2.5  | -  | 690.6 | CLD TOPS  | 69.0 |
| 184600 | 3415                                          | 9826  | 206 | 209 | 223 | 44  | 3138 | 2880 | 7.9  | -10.8 | -  | 687.0 | CLD BLW   | 66.8 |
| 185600 | 3337                                          | 9855  | 264 | 260 | 223 | 34  | 3165 | 2869 | 6.5  | -12.0 | -  | 686.5 | CLD BLW   | 70.3 |
| 191500 | 3334                                          | 9957  | 161 | 171 | 231 | 40  | 3142 | 2708 | 6.4  | 1.3   | -  | 687.7 | CLD BLW   | 66.5 |
| 192720 | 3353                                          | 9955  | 45  | 47  | 220 | 40  | 3137 | 2712 | 6.3  | -12.3 | -  | 688.2 | CLD LNE   | 63.1 |
| 193000 | 3354                                          | 9952  | 228 | 227 | 218 | 42  | 3139 | 2733 | 5.8  | -4.6  | -  | 688.7 | CLD LNE   | 63.5 |
| 193720 | 3343                                          | 10001 | 46  | 47  | 222 | 41  | 3141 | 2649 | 7.1  | -3.6  | -  | 688.9 | CLD LNE   | 66.4 |
| 194600 | DESCENT SOUNDING                              |       |     |     |     |     |      |      |      |       |    |       |           |      |
| 195100 | Level at 5KMSL                                |       |     |     |     |     |      |      |      |       |    |       |           |      |
| 195450 | 3415                                          | 9912  | 223 | 222 | 131 | 15  | 638  | 159  | 24.8 | 19.6  | -  | 938.5 | AT-500AGL | 65.2 |
| 195850 | end descent sounding                          |       |     |     |     |     |      |      |      |       |    |       |           |      |
| 200400 | Roll at 7.5K feet MSL due to MOA restrictions |       |     |     |     |     |      |      |      |       |    |       |           |      |
| 202000 | 3352                                          | 9929  | 193 | 198 | 229 | 32  | 2843 | 2472 | 8.6  | 2.9   | -  | 715.4 | CLDS      | 64.5 |
| 203740 | 3336                                          | 9904  | 52  | 53  | 225 | 41  | 2844 | 2477 | 8.2  | 3.4   | -  | 715.2 | CLD LNE   | 65.4 |
| 205000 | 3336                                          | 9906  | 49  | 55  | 181 | 25  | 1348 | 895  | 20.6 | 14.9  | -  | 861.7 | CLD LNE   | 73.2 |
| 205400 | 3346                                          | 9951  | 50  | 55  | 183 | 23  | 1348 | 952  | 19.4 | 16.1  | -  | 861.4 | CLD LNE   | 67.6 |
| 205800 | 3351                                          | 9847  | 225 | 221 | 164 | 22  | 1160 | 773  | 20.5 | 17.5  | -  | 881.4 | CLD LNE   | 70.2 |
| 210220 | 3346                                          | 9851  | 46  | 52  | 169 | 27  | 1161 | 740  | 21.0 | 16.9  | -  | 881.7 | CLD LNE   | 66.3 |
| 210800 | 3354                                          | 9844  | 233 | 228 | 166 | 23  | 1158 | 772  | 21.2 | 15.8  | -  | 881.6 | CLD LNE   | 69.5 |
| 211400 | 3345                                          | 9905  | 289 | 281 | 168 | 25  | 1160 | 748  | 23.1 | 14.9  | -  | 881.5 | CLD LNE   | 62.2 |
| 212310 | 3359                                          | 9920  | 77  | 84  | 193 | 30  | 1159 | 703  | 23.5 | 14.2  | -  | 881.8 | CLD LNE   | 76.5 |
| 213300 | 3355                                          | 9926  | 264 | 260 | 208 | 25  | 1135 | 654  | 24.1 | 14.9  | -  | 884.7 | CLD LNE   | 66.8 |
| 214520 | 3357                                          | 9921  | 86  | 92  | 197 | 19  | 1134 | 666  | 23.8 | 14.9  | -  | 884.4 | CLD LNE   | 64.8 |
| 215600 | 3402                                          | 9846  | 247 | 237 | 161 | 40  | 1132 | 693  | 21.3 | 17.2  | -  | 884.2 | CLD LNE   | 70.2 |
| 220300 | 3358                                          | 9853  | 67  | 76  | 181 | 38  | 1131 | 704  | 22.0 | 16.9  | -  | 884.3 | CLD LNE   | 66.9 |
| 221000 | 3409                                          | 9830  | 245 | 236 | 143 | 34  | 1132 | 700  | 19.8 | 18.1  | -  | 884.2 | CLD LNE   | 66.1 |
| 221600 | 3401                                          | 9852  | 244 | 236 | 178 | 35  | 1133 | 705  | 23.2 | 15.8  | -  | 884.0 | CLD LNE   | 63.9 |
| 221910 | 2404                                          | 9847  | 76  | 085 | 184 | 35  | 1133 | 712  | 21.8 | 16.7  | -  | 884.4 | CLD LNE   | 72.6 |
| 222600 | 3409                                          | 9823  | 253 | 242 | 156 | 46  | 1133 | 725  | 19.8 | 17.7  | -  | 884.4 | CLD LNE   | 70.6 |
| 223100 | 3403                                          | 9843  | 252 | 243 | 180 | 39  | 1133 | 708  | 21.8 | 16.9  | -  | 884.0 | CLD LNE   | 66.2 |
| 223400 | 3407                                          | 9828  | 73  | 83  | 189 | 37  | 1130 | 714  | 21.0 | 17.5  | -  | 884.0 | CLD LNE   | 69.3 |
| 224000 | 3411                                          | 9822  | 259 | 245 | 175 | 55  | 1132 | 716  | 20.0 | 17.5  | -  | 884.4 | CLD LNE   | 70.5 |
| 224400 | 3408                                          | 9832  | 72  | 83  | 186 | 42  | 1132 | 713  | 21.4 | 17.1  | -  | 884.0 | CLD LNE   | 63.5 |
| 225100 | 3414                                          | 9811  | 258 | 246 | 154 | 53  | 978  | 585  | 20.5 | 18.1  | -  | 901.1 | CLD LNE   | 70.5 |
| 225600 | 3410                                          | 9823  | 72  | 82  | 181 | 41  | 978  | 587  | 21.8 | 17.6  | -  | 901.2 | CLD LNE   | 70.0 |
| 225920 | 3414                                          | 9809  | 68  | 82  | 161 | 43  | 978  | 539  | 20.1 | 17.9  | -  | 900.8 | CLD LNE   | 69.9 |
| 230400 | 3417                                          | 9756  | 255 | 247 | 150 | 338 | 979  | 580  | 20.7 | 16.7  | -  | 901.1 | CLD LNE   | 65.3 |
| 230700 | 3415                                          | 9809  | 253 | 240 | 175 | 48  | 980  | 577  | 20.9 | 17.9  | -  | 900.4 | CLD LNE   | 68.5 |
| 231020 | 3411                                          | 9815  | 72  | 82  | 175 | 37  | 979  | 579  | 21.6 | 17.6  | -  | 901.3 | CLD LNE   | 70.0 |
| 231340 | 3415                                          | 9801  | 69  | 83  | 167 | 50  | 976  | 560  | 20.4 | 17.6  | -  | 900.9 | CLD LNE   | 65.6 |
| 231800 | 3417                                          | 9753  | 254 | 242 | 160 | 44  | 978  | 542  | 20.0 | 17.7  | -  | 901.2 | CLD LNE   | 65.6 |
| 232300 | 3412                                          | 9807  | 71  | 82  | 176 | 37  | 907  | 411  | 22.6 | 18.3  | -  | 920.0 | CLD LNE   | 57.9 |
| 232730 | 3418                                          | 9749  | 68  | 81  | 160 | 44  | 812  | 420  | 21.2 | 18.3  | -  | 919.8 | CLD LNE   | 67.0 |
| 233210 | 3421                                          | 9736  | 254 | 246 | 145 | 39  | 811  | 377  | 20.2 | 18.4  | -  | 920.0 | CLD LNE   | 68.1 |
| 233500 | 3418                                          | 9748  | 254 | 243 | 163 | 43  | 788  | 417  | 21.7 | 18.1  | -  | 920.8 | CLD LNE   | 66.6 |
| 234130 | 3413                                          | 1805  | 92  | 83  | 173 | 38  | 799  | 409  | 22.9 | 17.9  | -  | 920.9 | CLD LNE   | 67.8 |
| 234700 | 3419                                          | 9742  | 72  | 83  | 169 | 40  | 798  | 395  | 20.9 | 18.4  | -  | 921.0 | CLD LNE   | 70.4 |
| 235500 | 3421                                          | 9729  | 257 | 246 | 168 | 41  | 707  | 368  | 20.5 | 18.2  | -  | 921.3 | CLD LNE   | 59.6 |
| 000000 | 3418                                          | 9739  | 72  | 82  | 166 | 38  | 797  | 404  | 20.9 | 18.4  | -  | 920.9 | CLD LNE   | 69.2 |
| 000730 | 3424                                          | 9714  | 262 | 252 | 160 | 43  | 795  | 308  | 20.2 | 18.2  | -  | 920.8 | CLD LNE   | 64.4 |
| 001100 | 3422                                          | 9730  | 262 | 252 | 172 | 42  | 800  | 392  | 20.8 | 18.2  | -  | 920.9 | CLD LNE   | 67.8 |

U.S. GOVERNMENT PRINTING OFFICE: 1980-765 012 1110

DATE : 4/17/95

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N43RF ON 01018 BLOCKTIME

SUBJECT: Hazardous Duty OFF 1806Z 6:55

PURPOSE OF FLIGHT: VORTEX 95 PROJECT

Hazardous Duty Pay is required for flight made on 4/17/95  
(DATE)

Request based on FLYING AROUND THUNDERSTORMS  
PRODUCING TORNADOES

Personnel on board authorized Hazard Pay:

MOORE

DAMIANO

LYNCH

PRADAS-BIERGUES

MCMANARA

SANS SOUCI

PARRISH

PILOT/FLIGHT DIRECTOR: A. Barry Damiano

APPROVED: \_\_\_\_\_

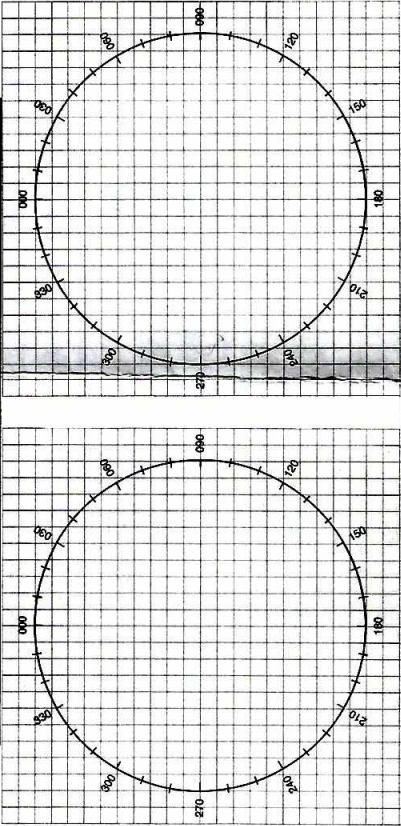
DISAPPROVED: \_\_\_\_\_

CHIEF, AOC FLIGHT OPERATIONS: \_\_\_\_\_

| CLEARANCES |     |     |                             |
|------------|-----|-----|-----------------------------|
| FREQ       | ALT | HDG | OTHER                       |
|            |     |     | RJ V17 LAWTON               |
|            |     |     | 073 V77 WATO                |
|            |     |     | AF SK 100 TIO               |
|            |     |     | H 310 124.6 <del>5432</del> |
|            |     |     | 5232                        |
|            |     |     |                             |
|            |     |     |                             |
|            |     |     |                             |

MISSION LOG

PAGE 1 OF 1



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                     | VAR<br>+E==> | TH  | DR<br>+R==> | TRK | GS  | WD  | WS | ALT  | TAS | NEXT PT | DIST | TIME | ETA | REMARKS           |
|------|----------|--------------------------------------|--------------------------------------|---------------------------|--------------------------------------|---------------------------|--------------|-----|-------------|-----|-----|-----|----|------|-----|---------|------|------|-----|-------------------|
| 1802 |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     | ENGINE START      |
| 1806 |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     | TAKE              |
| 1817 |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     | TAKEOFF           |
| 1931 | GPS      | 8351.4<br>9954.6<br>3408.7<br>9936.3 | 3349.6<br>9954.6<br>3407.9<br>9936.2 | +1.8<br>0<br>+1.8<br>+1.1 | 3349.6<br>9954.3<br>3407.2<br>9936.3 | +1.8<br>+1.3<br>+1.5<br>0 |              | 227 | 1R          | 228 | 105 | 223 | 41 | 10K  | 234 |         |      |      |     | CELL NEAR GUTHRIE |
| 2014 |          | 3337.8<br>9903.8                     | 3333.7<br>9904.2                     | +4.1<br>-1.4              | 3334.8<br>9904.1                     | +3.6<br>-1.3              |              | 183 | 5L          | 178 | 204 | 225 | 29 | 7.5K | 223 |         |      |      |     |                   |
| 2050 |          | 3354.9<br>9914.8                     | 3353.2<br>9914.3                     | +1.7<br>+1.5              | 3352.7<br>9915.1                     | +2.2<br>-1.3              |              | 056 | 6L          | 050 | 240 | 165 | 28 | 4K   | 223 |         |      |      |     |                   |
| 2124 |          | 3403.6<br>9844.6                     | 3358.7<br>9845.5                     | +4.9<br>-1.9              | 3400.1<br>9845.5                     | +3.5<br>-1.9              |              | 083 | 13L         | 070 | 234 | 169 | 53 | 3.5K | 229 |         |      |      |     |                   |
| 2213 |          | 3409.3<br>9825.6                     | 3406.6<br>9825.6                     | +2.7<br>+2.0              | 3406.9<br>9826.6                     | +2.4<br>-1.0              |              | 237 | 6R          | 243 | 196 | 190 | 29 | 3.5K | 212 |         |      |      |     |                   |
| 2255 |          | 3421.1<br>9727.8                     | 3416.5<br>9728.2                     | +4.6<br>-1.4              | 3420.1<br>9729.3                     | +1.0<br>-1.5              |              | 081 | 13L         | 068 | 215 | 166 | 49 | 2.2K | 215 |         |      |      |     | LAND              |
| 0002 |          | 3523.9<br>9735.4                     | 3519.2<br>9737.0                     | +4.7<br>-1.6              | 3524.3<br>9737.2                     | -1.4<br>-1.8              |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |
| 0003 |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |
|      |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |
|      |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |
|      |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |
|      |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |
|      |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |
|      |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |
|      |          |                                      |                                      |                           |                                      |                           |              |     |             |     |     |     |    |      |     |         |      |      |     |                   |