

## PROJECT 10073 RECORD CARD

|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. DATE<br>26 June 1963                                                                                                                                                                                                                                                                   | 2. LOCATION<br>Texarkana, Texas                                                                                                                                                                       |                                                                                                                                                                                                                                                                                             | 12. CONCLUSIONS<br><input checked="" type="checkbox"/> Was Balloon<br><input type="checkbox"/> Probably Balloon<br><input type="checkbox"/> Possibly Balloon<br><br><input type="checkbox"/> Was Aircraft<br><input type="checkbox"/> Probably Aircraft<br><input type="checkbox"/> Possibly Aircraft<br><br><input type="checkbox"/> Was Astronomical<br><input type="checkbox"/> Probably Astronomical<br><input type="checkbox"/> Possibly Astronomical<br><br><input type="checkbox"/> Other _____<br><input type="checkbox"/> Insufficient Data for Evaluation<br><input type="checkbox"/> Unknown |
| 3. DATE-TIME GROUP<br>Local _____<br>GMT 27/0245Z                                                                                                                                                                                                                                         | 4. TYPE OF OBSERVATION<br><input checked="" type="checkbox"/> Ground-Visual <input type="checkbox"/> Ground-Radar<br><input type="checkbox"/> Air-Visual <input type="checkbox"/> Air-Intercept Radar |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 5. PHOTOS<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No                                                                                                                                                                                                       | 6. SOURCE<br>Civilian                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. LENGTH OF OBSERVATION<br>30 minutes                                                                                                                                                                                                                                                    | 8. NUMBER OF OBJECTS<br>two                                                                                                                                                                           | 9. COURSE<br>Variable                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 10. BRIEF SUMMARY OF SIGHTING<br>Two objects in trail, round, with a color of white to orange observed very high in the NW. Initial observation at 45 deg elevation due North. Objects changed course and faded in the North after a half hour observation. Observation at night (1045PM) |                                                                                                                                                                                                       | 11. COMMENTS<br>Description of objects conform with Balloon observations. Duration of sighting consistent with analysis as Balloon. Wind data indicates variable winds at upper altitudes. Direction of flight varied. Nothing presented indicates that this was not a balloon observation. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



|      |    |       |      |       |       |    |     |      |
|------|----|-------|------|-------|-------|----|-----|------|
| 3510 | 19 | 5880  | 63.5 | 2900  | 50.7  | 19 | 12  | 4.6  |
| 5495 | 20 | 6200  | 63.5 | 3100  | 46.6  | 20 | 3   | 4.6  |
| 3690 | 21 | 6500  | 63.3 | 2700  | 43.3  | 21 | 3   | 4.4  |
| 5755 | 22 | 6810  | 63.0 | 3500  | 40.7  | 22 | 357 | 4.5  |
| 3870 | 23 | 7110  | 62.5 | 3700  | 37.2  | 23 |     |      |
| 6025 | 24 |       | 61.3 |       | 34.7  | 24 | 359 | 7.0  |
| 4050 | 25 | 7750  | 60.2 | 4400  | 20.4  | 25 |     |      |
| 6295 | 26 |       | 58.9 |       | 25.0  | 26 | 346 | 11.6 |
| 4230 | 27 | 8410  | 56.6 | 5500  | 20.0  | 27 |     |      |
| 6565 | 28 |       | 54.8 |       | 15.7  | 28 | 341 | 13.0 |
| 4410 | 29 | 9080  | 53.2 | 6800  | 11.9  | 29 |     |      |
| 6915 | 30 |       | 51.7 |       | 9.2   | 30 | 345 | 10.0 |
| 4550 | 31 | 9760  | 50.7 | 7900  | 7.6   | 31 |     |      |
| 7105 | 32 |       | 50.1 |       | 5.4   | 32 | 325 | 10.5 |
| 4770 | 33 | 10450 | 49.7 | 8900  | 2.3   | 33 |     |      |
| 7375 | 34 |       | 49.2 |       | 359.3 | 34 | 312 | 11.0 |
| 4950 | 35 | 11100 | 48.6 | 9800  | 356.4 | 35 |     |      |
| 7645 | 36 |       | 47.8 |       | 351.7 | 36 | 318 | 12.0 |
| 5130 | 37 | 11810 | 47.2 | 11000 | 351.5 | 37 |     |      |
| 7915 | 38 |       | 46.7 |       | 349.3 | 38 | 313 | 12.0 |
| 5310 | 39 | 12580 | 45.7 | 12200 | 347.2 | 39 |     |      |
| 8185 | 40 |       | 45.2 |       | 346.1 | 40 | 376 | 11.0 |
| 5490 | 41 | 13300 | 44.5 | 13500 | 346.0 | 41 |     |      |
| 8455 | 42 | 12780 | 43.5 | 14500 | 347.0 | 42 | 8   | 15.0 |
| 5670 | 43 | 14180 | 42.7 | 15300 | 348.6 | 43 |     |      |
| 8730 | 44 | 14600 | 42.2 | 16000 | 350.0 | 44 | 13  | 13.2 |
| 9005 | 45 |       | 41.7 |       | 350.5 | 45 |     |      |
| 6030 | 46 | 15380 | 41.3 | 17400 | 351.8 | 46 | 31  | 13.0 |
| 9285 | 47 |       | 41.2 |       | 354.7 | 47 |     |      |
| 6210 | 48 | 16280 | 41.2 | 18500 | 356.2 | 48 | 42  | 10.5 |
| 9565 | 49 |       | 41.3 |       | 356.3 | 49 |     |      |
| 6390 | 50 | 17160 | 41.6 | 19200 | 357.8 | 50 | 34  | 7.0  |
| 9850 |    |       |      |       |       |    |     |      |

|      |     |       |      |
|------|-----|-------|------|
| 90   | 104 | 12140 | 21.1 |
| 95   | 179 | 13070 | 40.2 |
| 100  | 155 | 13920 | 42.5 |
| 105  | 134 | 14500 | 44.4 |
| 110  | 114 | 15780 | 46.7 |
| 115  | 96  | 16840 | 49.1 |
| 120  | 84  | 17940 | 51.8 |
| 125  | 64  | 19370 | 54.9 |
| 130  | 50  | 20890 | 58.7 |
| 135  | 37  | 22800 | 62.7 |
| 140  | 24  | 25600 |      |
| 139A | 25  | 25360 | 68.0 |

Punched Card Data

| Altitude          | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude          | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|--------------|-------------------|---------------------|----------------|
| Card No. 1        |                     |                | 15           | Card No. 2        |                     |                |
| Type of equipment | 8                   |                | 16           | Type of equipment | 8                   |                |
| etc.              | 130                 | 2              | 17-21        | 7                 | 357                 | 5              |
| 150 m.            | 120                 | 4              | 22-26        | 8                 | 350                 | 10             |
| 300 m.            | 110                 | 5              | 27-31        | 9                 | 341                 | 12             |
| 0.5               | 111                 | 5              | 32-36        | 10                | 331                 | 10             |
| 1.0               | 115                 | 3              | 37-41        | 11                | 313                 | 11             |
| 1.5               | 35                  | 1              | 42-46        | 12                | 915                 | 12             |
| 2.0               | 348                 | 2              | 47-51        | 13                | 336                 | 11             |
| 2.5               | 10                  | 4              | 52-56        | 14                | 10                  | 15             |
| 3                 | 10                  | 5              | 57-61        | 15                | 20                  | 13             |
| 4                 | 85                  | 1              | 62-66        | 16                | 39                  | 11             |
| 5                 | 57                  | 3              | 67-71        | 17                | 36                  | 8              |
| 6                 | 15                  | 5              | 72-76        | 18                | 45                  | 7              |

Maximum Wind Speed Data

|                                                          |  |  |
|----------------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)              |  |  |
| Alt. of maximum wind speed (m.)                          |  |  |
| Max. wind speed (m.p.s.) and dir. (degrees)              |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind           |  |  |
| Enter check if additional levels appear on reverse side. |  |  |

Coded Data for Transmission

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SMV   | 06920 | 1110  | 2111  | 1107  | 11003 | 0102  | 03404 | 3605  | 00107 |
| 0209  | 03609 | 20106 | 11006 | 0606  | 00410 | 00109 | 03610 | 53615 | 03422 |
| 53221 | 03123 | 53628 | 00225 | 60414 | 00515 | 00921 | 00823 | 30825 |       |
|       |       |       |       | 60    |       |       |       |       |       |

Atch 2



Identification: SHREVEPORT, LOUISIANA  
 Greater Shreveport Municipal Airport  
 Lat. 32°28'N Long. 93°49'W  
 Local Standard Time, 90th Meridian  
 31 of Station, 79M, RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
 WEATHER BUREAU

WINDS-ALOFT COMPUTATION SHEET  
 (LAND STATION FORM)  
 WBAN-20

|                    | Year | Month | Day | Time |
|--------------------|------|-------|-----|------|
| Actual time        | 1963 | JUN   | 25  | 2330 |
| Scheduled (G.M.T.) | 1963 | JUN   | 26  | 0530 |
| Ascension No.      | 707  |       |     |      |

| Slant range (m.) (yds.) | Pibal ht. above sfc. (m.) | Minute | Rawin ht. above surface (m.) | Elevation angle° |          | Distance from observation point (m.) | Azimuth angle ° | Minute | Wind               |                |
|-------------------------|---------------------------|--------|------------------------------|------------------|----------|--------------------------------------|-----------------|--------|--------------------|----------------|
|                         | 100-gram                  |        |                              | Observed         | Smoothed |                                      |                 |        | Direction° 360°= N | Speed (m.p.s.) |
|                         | 14570                     | 51     |                              | 41.9             |          |                                      | 358.6           | 51     |                    |                |
|                         | 14860                     | 52     | 17960                        | 41.9             |          | 19900                                | 359.3           | 52     | 46                 | 7.7            |
|                         | 15145                     | 53     |                              | 42.3             |          |                                      | 0.1             | 53     |                    |                |
|                         | 15425                     | 54     | 18880                        | 42.7             |          | 20400                                | 1.7             | 54     | 67                 | 9.2            |
|                         | 15705                     | 55     |                              | 43.1             |          |                                      | 3.2             | 55     |                    |                |
|                         | 15985                     | 56     | 19750                        | 43.3             |          | 20800                                | 5.0             | 56     | 77                 | 12.5           |
|                         | 16265                     | 57     |                              | 43.6             |          |                                      | 7.4             | 57     |                    |                |
|                         | 16545                     | 58     | 20550                        | 43.8             |          | 21300                                | 9.3             | 58     | 85                 | 13.0           |
|                         | 16825                     | 59     |                              | 44.0             |          |                                      | 11.5            | 59     |                    |                |
|                         | 17105                     | 60     | 21340                        | 44.4             |          | 21600                                | 13.3            | 60     | 87                 | 10.7           |
|                         | 17385                     | 61     |                              | 44.9             |          |                                      | 14.9            | 61     |                    |                |
|                         | 17670                     | 62     | 22400                        | 45.3             |          | 22100                                | 16.5            | 62     | 83                 | 11.0           |
|                         | 17950                     | 63     |                              | 45.7             |          |                                      | 18.2            | 63     |                    |                |
|                         | 18235                     | 64     | 23400                        | 45.9             |          | 22600                                | 19.5            | 64     | 84                 | 10.8           |
|                         | 18515                     | 65     |                              | 45.9             |          |                                      | 21.1            | 65     |                    |                |
|                         | 18795                     | 66     | 24310                        | 46.1             |          | 23200                                | 22.6            | 66     | 82                 | 12.0           |
|                         | 19080                     | 67     |                              | 46.3             |          |                                      | 24.5            | 67     |                    |                |
|                         | 19360                     | 68     | 25280                        | 46.2             |          | 24100                                | 25.7            | 68     | 80                 | 13.0           |
|                         | 19645                     | 69     |                              |                  |          |                                      |                 | 69     |                    |                |
|                         | 19925                     | 70     |                              |                  |          |                                      |                 | 70     |                    |                |
|                         | 20210                     | 71     |                              |                  |          |                                      |                 | 71     |                    |                |
|                         | 20490                     | 72     |                              |                  |          |                                      |                 | 72     |                    |                |
|                         | 20775                     | 73     |                              |                  |          |                                      |                 | 73     |                    |                |
|                         | 21055                     | 74     |                              |                  |          |                                      |                 | 74     |                    |                |
|                         | 21340                     | 75     |                              |                  |          |                                      |                 | 75     |                    |                |
|                         | 21620                     | 76     |                              |                  |          |                                      |                 | 76     |                    |                |
|                         | 21905                     | 77     |                              |                  |          |                                      |                 | 77     |                    |                |
|                         | 22185                     | 78     |                              |                  |          |                                      |                 | 78     |                    |                |
|                         | 22470                     | 79     |                              |                  |          |                                      |                 | 79     |                    |                |
|                         | 22750                     | 80     |                              |                  |          |                                      |                 | 80     |                    |                |
|                         | 23040                     | 81     |                              |                  |          |                                      |                 | 81     |                    |                |
|                         | 23320                     | 82     |                              |                  |          |                                      |                 | 82     |                    |                |
|                         | 23600                     | 83     |                              |                  |          |                                      |                 | 83     |                    |                |
|                         | 23880                     | 84     |                              |                  |          |                                      |                 | 84     |                    |                |

| Wind Speed (m.p.s.) | Direction° 360°= N | Minute | Azimuth angle ° | Distance from observation point (m.) | Elevation angle° | Rawin ht. above surface (m.) | Slant range (m.) (yds.) |
|---------------------|--------------------|--------|-----------------|--------------------------------------|------------------|------------------------------|-------------------------|
|                     |                    |        |                 |                                      |                  |                              |                         |
|                     |                    | 106    |                 |                                      |                  |                              |                         |
|                     |                    | 107    |                 |                                      |                  |                              |                         |
|                     |                    | 108    |                 |                                      |                  |                              |                         |
|                     |                    | 109    |                 |                                      |                  |                              |                         |
|                     |                    | 110    |                 |                                      |                  |                              |                         |
|                     |                    | 111    |                 |                                      |                  |                              |                         |
|                     |                    | 112    |                 |                                      |                  |                              |                         |
|                     |                    | 113    |                 |                                      |                  |                              |                         |
|                     |                    | 114    |                 |                                      |                  |                              |                         |
|                     |                    | 115    |                 |                                      |                  |                              |                         |

Punched Card Data

| Altitude | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude | Direction (degrees) | Speed (m.p.s.) |
|----------|---------------------|----------------|--------------|----------|---------------------|----------------|
|----------|---------------------|----------------|--------------|----------|---------------------|----------------|

\*Stamp the following:  
 1. Name of Station  
 2. Lat. or long.  
 3. Local Standard time, meridian  
 4. El. of S.  
 5. Method obs., e rawins rawin,  
 6. Type of equip., WBRT, GMD-1A, GMD-1, SCR-65 theodo

\*Altitude in km.,







## Identification

SHREVEPORT, LOUISIANA

Greater Shreveport Municipal Airport

Lat. 32°48'N Long. 95°49'W

Local Standard Time, 90th Meridian

El. of Station, 79M, RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

## WINDS-ALOFT COMPUTATION SHEET

(LAND STATION FORM)

WBAN-20

Year Month Day Time

Actual time  
th mer. 1963 JUN 28 0530  
Scheduled (G.M.T.) 1963 JUN 28 1130

Ascension No. 708

Type of balloon 1200 G-RAM

Orientation, 360° = South

| Slant range (m.) (yds.) | Pibal ht. above sfc. (m.) | Minute | Rawin ht. above surface (m.) | Elevation angle° |          | Distance from observation point (m.) | Azimuth angle ° | Minute | Wind                 |                | Rawinsonde Time-Altitude Data |                |                       |                     |
|-------------------------|---------------------------|--------|------------------------------|------------------|----------|--------------------------------------|-----------------|--------|----------------------|----------------|-------------------------------|----------------|-----------------------|---------------------|
|                         |                           |        |                              | Observed         | Smoothed |                                      |                 |        | Direction° 360° = N. | Speed (m.p.s.) | Contact                       | Pressure (mb.) | Altitude (m., m.s.l.) | Elapsed time (min.) |
|                         | 216                       | 1      | 250                          | 81.6             |          | 0                                    | 345.1           | 1      |                      | 0.0            | 4.9                           | 1010           | 79                    | 0.0                 |
|                         | 350                       | 2      | 540                          | 85.9             |          | 0                                    | 344.4           | 2      |                      | 0.0            | 5                             | 1009           | 90                    | 0.2                 |
|                         | 414                       | 3      | 820                          | 85.4             |          | 0                                    | 315.9           | 3      |                      | 0.0            | 10                            | 938            | 720                   | 2.8                 |
|                         | 612                       | 4      | 1100                         | 83.3             |          | 100                                  | 355.4           | 4      | 22                   | 1.5            | 15                            | 874            | 1330                  | 4.9                 |
|                         | 801                       | 5      | 1340                         | 79.9             |          | 200                                  | 18.9            | 5      | 25                   | 3.7            | 20                            | 812            | 1960                  | 7.2                 |
|                         | 990                       | 6      | 1610                         | 74.1             |          | 450                                  | 24.7            | 6      | 23                   | 4.5            | 25                            | 748            | 2640                  | 9.5                 |
|                         | 1170                      | 7      | 1880                         | 68.0             |          | 750                                  | 21.3            | 7      | 14                   | 5.4            | 30                            | 691            | 3300                  | 11.8                |
|                         | 1350                      | 8      | 2150                         | 63.2             |          | 1100                                 | 18.5            | 8      | 11                   | 4.6            | 35                            | 636            | 3990                  | 14.0                |
|                         | 1530                      | 9      | 2450                         | 61.0             |          | 1300                                 | 17.1            | 9      | 11                   | 3.2            | 40                            | 584            | 4660                  | 16.4                |
|                         | 1710                      | 10     | 2770                         | 60.8             |          | 1500                                 | 16.8            | 10     | 13                   | 3.2            | 45                            | 534            | 5340                  | 18.6                |
|                         | 1890                      | 11     | 3030                         | 60.9             |          | 1700                                 | 15.3            | 11     | 1                    | 3.5            | 50                            | 486            | 6040                  | 21.0                |
|                         | 2070                      | 12     | 3340                         | 60.2             |          | 1900                                 | 13.3            | 12     | 3                    | 4.2            | 55                            | 442            | 6770                  | 23.6                |
|                         | 2250                      | 13     | 3630                         | 59.7             |          | 2200                                 | 12.7            | 13     | 18                   | 3.3            | 60                            | 400            | 7350                  | 26.3                |
|                         | 2430                      | 14     | 3930                         | 60.1             |          | 2300                                 | 14.1            | 14     | 37                   | 1.9            | 65                            | 360            | 8300                  | 29.2                |
|                         | 2610                      | 15     | 4230                         | 60.1             |          | 2400                                 | 14.8            | 15     | 36                   | 2.6            | 70                            | 323            | 9080                  | 31.9                |
|                         | 2790                      | 16     | 4530                         | 60.1             |          | 2600                                 | 16.9            | 16     | 27                   | 3.3            | 75                            | 287            | 9900                  | 34.6                |
|                         | 2970                      | 17     | 4800                         | 59.9             |          | 2800                                 | 16.7            | 17     | 2                    | 3.3            | 80                            | 256            | 10690                 | 37.6                |
|                         | 3150                      | 18     | 5100                         | 59.5             |          | 3000                                 | 15.1            | 18     | 349                  | 3.7            | 85                            | 225            | 11510                 | 40.5                |
|                         | 3330                      | 19     | 5450                         | 59.5             |          | 3200                                 | 12.9            | 19     | 348                  | 3.7            | 90                            | 197            | 12360                 | 43.3                |
|                         | 3510                      | 20     | 5730                         | 58.9             |          | 3400                                 | 11.6            | 20     | 355                  | 5.2            | 95                            | 172            | 13230                 | 46.2                |
|                         | 3690                      | 21     | 5990                         | 57.8             |          | 3800                                 | 10.1            | 21     | 3                    | 6.8            | 100                           | 149            | 14140                 | 49.1                |
|                         | 3870                      | 22     | 6250                         | 56.6             |          | 4200                                 | 9.9             | 22     | 358                  | 5.1            | 105                           | 127            | 15100                 | 52.1                |
|                         | 4050                      | 23     | 6560                         | 56.2             |          | 4400                                 | 8.5             | 23     | 354                  | 5.1            | 110                           | 108            | 16090                 | 55.3                |
|                         | 4230                      | 24     | 6830                         | 54.7             |          | 4800                                 | 7.9             | 24     | 360                  | 6.7            | 115                           | 90             | 17200                 | 58.9                |
|                         | 4410                      | 25     | 7040                         | 53.5             |          | 5200                                 | 7.3             | 25     |                      |                | 120                           | 73             | 18480                 | 62.6                |
|                         | 4590                      | 26     |                              | 52.5             |          |                                      | 6.5             | 26     | 342                  | 7.3            | 125                           | 58             | 19930                 | 66.9                |
|                         | 4770                      | 27     | 7560                         | 51.5             |          | 6000                                 | 3.6             | 27     |                      |                | 130                           | 44             | 21670                 | 71.9                |
|                         | 4950                      | 28     |                              | 49.9             |          |                                      | 0.3             | 28     | 329                  | 10.8           | 135                           | 30             | 24130                 | 78.4                |
|                         | 5130                      | 29     | 8160                         | 48.9             |          | 7100                                 | 357.9           | 29     |                      |                | 140                           |                |                       |                     |
|                         | 5310                      | 30     |                              | 47.9             |          |                                      | 356.3           | 30     | 341                  | 8.6            |                               |                |                       |                     |
|                         | 5490                      | 31     | 8750                         | 47.0             |          | 8100                                 | 355.6           | 31     |                      |                | 41.8                          | 17.0           | 27933                 | 86.8                |
|                         | 5670                      | 32     |                              | 46.4             |          |                                      | 354.4           | 32     | 342                  | 8.8            |                               |                |                       |                     |
|                         | 5850                      | 33     | 9320                         | 45.5             |          | 9100                                 | 353.9           | 33     |                      |                |                               |                |                       |                     |
|                         | 6030                      | 34     |                              | 44.8             |          |                                      | 352.6           | 34     | 331                  | 9.5            |                               |                |                       |                     |
|                         | 6210                      | 35     | 9910                         | 43.9             |          | 10200                                | 351.4           | 35     |                      |                |                               |                |                       |                     |

## Punched Card Data

| Altitude | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude | Direction (degrees) | Speed (m.p.s.) |
|----------|---------------------|----------------|--------------|----------|---------------------|----------------|
|----------|---------------------|----------------|--------------|----------|---------------------|----------------|



on  
m.  
f.  
l.  
Verlier D. C. CORRECTOR

|      |    |       |      |       |       |    |     |      |
|------|----|-------|------|-------|-------|----|-----|------|
| 3870 | 21 | 5990  | 57.8 | 3800  | 10.1  | 21 | 3   | 6.8  |
| 6025 | 22 | 6250  | 56.6 | 4200  | 9.9   | 22 | 358 | 5.1  |
| 4050 | 23 | 6560  | 56.2 | 4400  | 8.5   | 23 | 354 | 5.1  |
| 6295 | 24 | 6830  | 54.7 | 4800  | 7.9   | 24 | 360 | 6.7  |
| 4230 | 25 | 7040  | 53.5 | 5200  | 7.3   | 25 |     |      |
| 6565 | 26 |       | 52.5 |       | 6.5   | 26 | 342 | 7.3  |
| 4410 | 27 | 7560  | 51.5 | 6000  | 3.6   | 27 |     |      |
| 6815 | 28 |       | 49.9 |       | 0.3   | 28 | 329 | 10.8 |
| 4590 | 29 | 8160  | 48.9 | 7100  | 357.9 | 29 |     |      |
| 7105 | 30 |       | 47.9 |       | 356.3 | 30 | 341 | 8.6  |
| 4770 | 31 | 8750  | 47.0 | 8100  | 355.6 | 31 |     |      |
| 7375 | 32 |       | 46.4 |       | 354.4 | 32 | 342 | 8.8  |
| 4950 | 33 | 9320  | 45.5 | 9100  | 353.9 | 33 |     |      |
| 7645 | 34 |       | 44.8 |       | 352.6 | 34 | 331 | 9.5  |
| 5130 | 35 | 9910  | 43.9 | 10200 | 351.4 | 35 |     |      |
| 7915 | 36 |       | 42.7 |       | 349.5 | 36 | 326 | 12.0 |
| 5310 | 37 | 10470 | 42.2 | 11500 | 348.2 | 37 |     |      |
| 8185 | 38 |       | 41.4 |       | 346.8 | 38 | 330 | 13.2 |
| 5490 | 39 | 11030 | 40.3 | 13000 | 346.2 | 39 |     |      |
| 8455 | 40 |       | 39.4 |       | 345.5 | 40 | 333 | 12.8 |
| 5670 | 41 | 11610 | 38.6 | 14500 | 344.8 | 41 |     |      |
| 8730 | 42 |       | 37.8 |       | 344.6 | 42 | 339 | 11.0 |
| 5850 | 43 | 12200 | 37.4 | 15800 | 344.6 | 43 |     |      |
| 9005 | 44 |       | 37.2 |       | 345.1 | 44 | 360 | 11.5 |
| 6030 | 45 | 12850 | 36.7 | 17200 | 345.9 | 45 |     |      |
| 9285 | 46 |       | 36.1 |       | 346.9 | 46 | 6   | 14.2 |
| 6210 | 47 | 13450 | 35.4 | 18800 | 347.8 | 47 |     |      |
| 9565 | 48 | 13770 | 34.8 | 19700 | 348.5 | 48 | 4   | 16.1 |
| 6390 | 49 | 14060 | 34.1 | 20700 | 349.3 | 49 |     |      |
| 9850 | 50 | 14340 | 33.9 | 21200 | 350.2 | 50 | 7   | 14.5 |

Coded Data for Transmission

|       |       |       |       |       |       |       |        |       |       |
|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| SHV   | 12980 | 0000  | 20000 | 0000  | 0204  | 0208  | 0210   | 0109  | 0106  |
| 2106  | 03607 | 20206 | 0305  | 0106  | 03507 | 03612 | 033513 | 53318 | 03417 |
| 53325 | 03522 | 50131 | 03623 | 00524 | 99997 | 01019 | 00925  | 50931 | 00925 |
|       |       |       |       |       |       |       |        |       |       |
|       |       |       |       |       |       |       |        |       |       |

|      |      |       |      |
|------|------|-------|------|
| 100  | 144  | 14140 | 49.1 |
| 105  | 127  | 15100 | 52.1 |
| 110  | 108  | 16090 | 55.3 |
| 115  | 90   | 17200 | 58.9 |
| 120  | 73   | 18480 | 62.6 |
| 125  | 58   | 19930 | 66.9 |
| 130  | 44   | 21670 | 71.9 |
| 135  | 30   | 24130 | 78.4 |
| 140  |      |       |      |
| 41.8 | 17.0 | 27933 | 86.8 |

Punched Card Data

| Altitude          | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude          | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|--------------|-------------------|---------------------|----------------|
| Card No. 1        |                     |                | 15           | Card No. 2        |                     |                |
| Type of equipment | 8                   |                | 16           | Type of equipment | 8                   |                |
| etc.              | 360                 | 2              | 17-21        | 7                 | 356                 | 7              |
| 150 m.            | 000                 | 00             | 22-26        | 8                 | 328                 | 11             |
| 300 m.            | 000                 | 00             | 27-31        | 9                 | 341                 | 9              |
| 0.5               | 000                 | 00             | 32-36        | 10                | 328                 | 11             |
| 1.0               | 000                 | 00             | 37-41        | 11                | 332                 | 13             |
| 1.5               | 25                  | 4              | 42-46        | 12                | 339                 | 11             |
| 2.0               | 13                  | 5              | 47-51        | 13                | 340                 | 17             |
| 2.5               | 11                  | 3              | 52-56        | 14                | 330                 | 25             |
| 3                 | 3                   | 3              | 57-61        | 15                | 4                   | 13             |
| 4                 | 35                  | 2              | 62-66        | 16                | 11                  | 10             |
| 5                 | 352                 | 3              | 67-71        | 17                | 24                  | 11             |
| 6                 | 2                   | 7              | 72-76        | 18                | 47                  | 11             |

Maximum Wind Speed Data

|                                                          |  |  |
|----------------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)              |  |  |
| Alt. of maximum wind speed (m.)                          |  |  |
| Max. wind speed (m.p.s.) and dir. (degrees)              |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind           |  |  |
| Enter check if additional levels appear on reverse side. |  |  |



|                        | Year | Month | Day | Time |
|------------------------|------|-------|-----|------|
| Actual time<br>th mer. | 1963 | JUN   | 26  | 0530 |
| Scheduled<br>(G.M.T.)  | 1963 | JUN   | 26  | 1130 |
| Ascension No. 208      |      |       |     |      |

2

| Slant<br>range<br>(m.) (yds.) | Height<br>above<br>surface (m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Wind<br>Direction°<br>360° = N | Wind Speed<br>(m.p.h.) |
|-------------------------------|---------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------------------------------|------------------------|
| min                           |                                 | Observed         | Smoothed |                                               |                       |                                |                        |
| 106                           |                                 |                  |          |                                               |                       |                                |                        |
| 107                           |                                 |                  |          |                                               |                       |                                |                        |
| 108                           |                                 |                  |          |                                               |                       |                                |                        |
| 109                           |                                 |                  |          |                                               |                       |                                |                        |
| 110                           |                                 |                  |          |                                               |                       |                                |                        |
| 111                           |                                 |                  |          |                                               |                       |                                |                        |
| 112                           |                                 |                  |          |                                               |                       |                                |                        |
| 113                           |                                 |                  |          |                                               |                       |                                |                        |
| 114                           |                                 |                  |          |                                               |                       |                                |                        |
| 115                           |                                 |                  |          |                                               |                       |                                |                        |

6. Type of  
equip.,  
WBRT-  
GMD-1A  
GMD-1,  
SCR-65  
theodol

\* Altitude  
in km., 1000 m.

### Punched Card Data

| Latitude | Direction<br>(degrees) | Speed<br>(m.p.s.) | Card<br>columns | Latitude | Direction<br>(degrees) | Speed<br>(m.p.s.) |
|----------|------------------------|-------------------|-----------------|----------|------------------------|-------------------|
|----------|------------------------|-------------------|-----------------|----------|------------------------|-------------------|







Identification

SHREVEPORT, LOUISIANA

Gretna Shreveport Municipal Airport

Lat. 32°28'N Long. 93°49'W

Local Standard Time, 90th Meridian

Elev. of Station, 79M. RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

## WINDS-ALOFT COMPUTATION SHEET

(LAND STATION FORM)

WBAN-20

|                    | Year | Month | Day | Time |
|--------------------|------|-------|-----|------|
| Actual time        | 1968 | JUN   | 28  | 1130 |
| Scheduled (G.M.T.) | 1968 | JUN   | 28  | 1730 |
| Ascension No.      | 709  |       |     |      |

Type of balloon 600 GRAH

Orientation, 360° = South

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.)<br><div>30<br/>60<br/>90<br/>120<br/>150<br/>180<br/>210<br/>240<br/>270<br/>300<br/>330<br/>360<br/>390<br/>420<br/>450<br/>480<br/>510<br/>540<br/>570<br/>600<br/>630<br/>660<br/>690<br/>720<br/>750<br/>780<br/>810<br/>840<br/>870<br/>900<br/>930<br/>960<br/>990<br/>1020<br/>1050<br/>1080<br/>1110<br/>1140<br/>1170<br/>1200<br/>1230<br/>1260<br/>1290<br/>1320<br/>1350<br/>1380<br/>1410<br/>1440<br/>1470<br/>1500<br/>1530<br/>1560<br/>1590<br/>1620<br/>1650<br/>1680<br/>1710<br/>1740<br/>1770<br/>1800<br/>1830<br/>1860<br/>1890<br/>1920<br/>1950<br/>1980<br/>2010<br/>2040<br/>2070<br/>2100<br/>2130<br/>2160<br/>2190<br/>2220<br/>2250<br/>2280<br/>2310<br/>2340<br/>2370<br/>2400<br/>2430<br/>2460<br/>2490<br/>2520<br/>2550<br/>2580<br/>2610<br/>2640<br/>2670<br/>2700<br/>2730<br/>2760<br/>2790<br/>2820<br/>2850<br/>2880<br/>2910<br/>2940<br/>2970<br/>3000</div> | Minute | Rawin<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                    |                   |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|-------------------------|-------------------|
|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                       | Observed         | Smoothed |                                               |                       |        | Direction°<br>360° = N. | Speed<br>(m.p.s.) |
|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 216                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1      | 300                                   | 81.3             |          | 0                                             | 275.2                 | 1      |                         | 0.0               |
|                               | 350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 414                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2      | 590                                   | 88.1             |          | 0                                             | 289.7                 | 2      |                         | 0.0               |
|                               | 670                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 612                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3      | 850                                   | 84.7             |          | 100                                           | 57.3                  | 3      | 92                      | 1.8               |
|                               | 980                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 801                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4      | 1130                                  | 77.1             |          | 250                                           | 94.1                  | 4      | 101                     | 2.5               |
|                               | 1285                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 990                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5      | 1400                                  | 73.5             |          | 400                                           | 90.3                  | 5      | 86                      | 3.2               |
|                               | 1585                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 1170                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 6      | 1660                                  | 68.1             |          | 650                                           | 87.7                  | 6      | 83                      | 3.5               |
|                               | 1880                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 1350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 7      | 1930                                  | 69.6             |          | 700                                           | 85.6                  | 7      | 56                      | 2.2               |
|                               | 2170                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 1530                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 8      | 2220                                  | 68.4             |          | 900                                           | 77.7                  | 8      | 47                      | 2.9               |
|                               | 2455                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 1710                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 9      | 2460                                  | 68.3             |          | 1000                                          | 72.8                  | 9      | 56                      | 1.7               |
|                               | 2740                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 1890                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10     | 2720                                  | 68.6             |          | 1100                                          | 73.6                  | 10     | 15                      | 1.4               |
|                               | 3020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 2070                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 11     | 3000                                  | 70.4             |          | 1100                                          | 64.5                  | 11     | 338                     | 2.3               |
|                               | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 2250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 12     | 3300                                  | 70.8             |          | 1100                                          | 58.6                  | 12     | 348                     | 2.4               |
|                               | 3580                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 2430                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 13     | 3600                                  | 71.6             |          | 1200                                          | 50.6                  | 13     | 353                     | 3.0               |
|                               | 3855                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 2610                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 14     | 3870                                  | 71.3             |          | 1300                                          | 44.2                  | 14     | 16                      | 2.0               |
|                               | 4130                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 2790                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 15     | 4130                                  | 70.5             |          | 1400                                          | 44.6                  | 15     | 41                      | 3.2               |
|                               | 4405                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 2970                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 16     | 4430                                  | 68.4             |          | 1700                                          | 44.8                  | 16     | 43                      | 4.9               |
|                               | 4675                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 3150                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 17     | 4720                                  | 66.4             |          | 2000                                          | 44.2                  | 17     | 38                      | 5.8               |
|                               | 4945                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 3330                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 18     | 5000                                  | 64.7             |          | 2400                                          | 42.8                  | 18     | 27                      | 5.9               |
|                               | 5215                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 3510                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 19     | 5330                                  | 62.7             |          | 2700                                          | 39.6                  | 19     | 18                      | 6.2               |
|                               | 5485                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 3690                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20     | 5700                                  | 61.6             |          | 3100                                          | 36.8                  | 20     | 6                       | 5.9               |
|                               | 5755                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 3870                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 21     | 6030                                  | 60.9             |          | 3300                                          | 32.3                  | 21     | 357                     | 7.1               |
|                               | 6025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 4050                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 22     | 6360                                  | 59.1             |          | 3800                                          | 28.6                  | 22     | 2                       | 8.4               |
|                               | 6295                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 4230                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 23     | 6700                                  | 57.9             |          | 4200                                          | 25.6                  | 23     |                         |                   |
|                               | 6565                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 4410                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 24     |                                       | 56.8             |          |                                               | 22.6                  | 24     | 348                     | 7.2               |
|                               | 6835                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 4590                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 25     | 7350                                  | 55.9             |          | 4900                                          | 19.5                  | 25     |                         |                   |
|                               | 7105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 4770                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 26     |                                       | 54.7             |          |                                               | 15.8                  | 26     | 353                     | 7.3               |
|                               | 7375                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 4950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 27     | 7970                                  | 54.5             |          | 5700                                          | 15.4                  | 27     |                         |                   |
|                               | 7645                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 5130                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 28     |                                       | 53.7             |          |                                               | 11.9                  | 28     | 332                     | 10.1              |
|                               | 7915                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 5310                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 29     | 8600                                  | 52.6             |          | 6600                                          | 8.2                   | 29     |                         |                   |
|                               | 8185                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 5490                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 30     |                                       | 51.8             |          |                                               | 3.9                   | 30     | 320                     | 10.4              |
|                               | 8455                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 5670                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 31     | 9220                                  | 51.0             |          | 7500                                          | 1.2                   | 31     |                         |                   |
|                               | 8730                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 5850                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 32     |                                       | 50.0             |          |                                               | 358.3                 | 32     | 322                     | 12.6              |
|                               | 9005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 6030                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 33     | 9900                                  | 48.6             |          | 8700                                          | 355.0                 | 33     |                         |                   |
|                               | 9285                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 6210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 34     |                                       | 46.0             |          |                                               | 353.9                 | 34     | 337                     | 13.8              |
|                               | 9565                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |
|                               | 6390                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 35     | 10550                                 | 45.5             |          | 10300                                         | 357.2                 | 35     |                         |                   |
|                               | 9850                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                       |                  |          |                                               |                       |        |                         |                   |

## Rawinsonde Time-Altitude Data

| Contact | Pressure (mb.) | Altitude (m., m.s.l.)           | Elapsed time (min.)             |
|---------|----------------|---------------------------------|---------------------------------|
| 5.0     | 1010           | 79                              | 0.0                             |
| 5       | 1010           | <del>                    </del> | <del>                    </del> |
| 10      | 945            | 660                             | 2.1                             |
| 15      | 882            | 1260                            | 4.2                             |
| 20      | 822            | 1860                            | 6.0                             |
| 25      | 764            | 2470                            | 8.7                             |
| 30      | 709            | 3080                            | 11.1                            |
| 35      | 656            | 3730                            | 13.1                            |
| 40      | 605            | 4370                            | 15.3                            |
| 45      | 556            | 5040                            | 18.1                            |
| 50      | 510            | 5740                            | 20.2                            |
| 55      | 466            | 6430                            | 22.2                            |
| 60      | 424            | 7160                            | 24.4                            |
| 65      | 385            | 7860                            | 26.9                            |
| 70      | 348            | 8600                            | 29.1                            |
| 75      | 313            | 9360                            | 31.3                            |
| 80      | 280            | 10130                           | 34.2                            |
| 85      | 249            | 10930                           | 36.0                            |
| 90      | 220            | 11730                           | 38.2                            |
| 95      | 194            | 12560                           | 40.4                            |
| 100     | 169            | 13430                           | 42.6                            |
| 105     | 146            | 14290                           | 44.7                            |
| 110     | 124            | 15300                           | 47.2                            |
| 115     | 105            | 16320                           | 49.5                            |
| 120     | 88             | 17420                           | 52.0                            |
| 125     | 71             | 18730                           | 55.1                            |
| 130     | 56             | 20230                           | 58.9                            |
| 135     |                |                                 |                                 |
| 140     |                |                                 |                                 |
| 1340    | 50             | 20910                           | 61.0                            |



|  |       |       |      |  |       |       |    |     |      |
|--|-------|-------|------|--|-------|-------|----|-----|------|
|  | 4990  | 7350  | 55.9 |  | 7700  | 15.8  | 26 | 353 | 7.3  |
|  | 7105  |       | 54.7 |  |       |       | 27 |     |      |
|  | 4770  | 7970  | 54.5 |  | 5700  | 15.4  | 28 | 332 | 10.1 |
|  | 7375  |       | 53.7 |  |       | 11.9  | 29 |     |      |
|  | 4950  | 8600  | 52.6 |  | 6600  | 8.2   | 30 | 320 | 10.4 |
|  | 7645  |       | 51.8 |  |       | 3.9   | 31 |     |      |
|  | 5130  | 9220  | 51.0 |  | 7500  | 1.2   | 32 | 322 | 12.6 |
|  | 7915  |       | 50.0 |  |       | 358.3 | 33 |     |      |
|  | 5310  | 9900  | 48.6 |  | 8700  | 355.0 | 34 | 337 | 13.8 |
|  | 8185  |       | 46.0 |  |       | 353.9 | 35 |     |      |
|  | 5490  | 10550 | 45.5 |  | 10300 | 352.2 | 36 | 337 | 16.2 |
|  | 8455  |       | 43.9 |  |       | 350.5 | 37 |     |      |
|  | 5670  | 11250 | 42.4 |  | 12300 | 349.7 | 38 | 325 | 14.2 |
|  | 8730  |       | 41.3 |  |       | 348.2 | 39 |     |      |
|  | 5850  | 12000 | 40.7 |  | 13800 | 346.5 | 40 | 343 | 15.0 |
|  | 9005  |       | 39.8 |  |       | 345.8 | 41 |     |      |
|  | 6030  | 12770 | 39.2 |  | 15600 | 346.2 | 42 | 356 | 18.0 |
|  | 9285  |       | 38.2 |  | 16700 | 346.8 | 43 |     |      |
|  | 6210  | 13130 | 37.3 |  | 17700 | 347.7 | 44 | 359 | 20.1 |
|  | 9565  |       | 36.2 |  | 19000 | 348.0 | 45 |     |      |
|  | 6390  | 13990 | 35.1 |  |       | 348.6 | 46 | 1   | 18.2 |
|  | 9850  |       | 34.5 |  | 21400 | 349.6 | 47 |     |      |
|  | 6570  |       | 33.8 |  |       | 350.2 | 48 | 10  | 14.5 |
|  | 10135 | 14820 | 33.7 |  | 23300 | 350.3 | 49 |     |      |
|  | 6750  |       | 33.5 |  |       | 351.4 | 50 | 35  | 11.7 |
|  | 10420 | 16520 | 33.6 |  | 24700 | 352.4 |    |     |      |
|  | 6930  |       |      |  |       |       |    |     |      |
|  | 10710 |       |      |  |       |       |    |     |      |
|  | 7110  |       |      |  |       |       |    |     |      |
|  | 11005 |       |      |  |       |       |    |     |      |
|  | 7290  |       |      |  |       |       |    |     |      |
|  | 11300 |       |      |  |       |       |    |     |      |
|  | 7470  |       |      |  |       |       |    |     |      |
|  | 11595 |       |      |  |       |       |    |     |      |
|  | 7650  |       |      |  |       |       |    |     |      |
|  | 11890 |       |      |  |       |       |    |     |      |
|  | 7830  |       |      |  |       |       |    |     |      |
|  | 12185 |       |      |  |       |       |    |     |      |
|  | 8010  |       |      |  |       |       |    |     |      |
|  | 12480 |       |      |  |       |       |    |     |      |
|  | 8190  |       |      |  |       |       |    |     |      |
|  | 12775 |       |      |  |       |       |    |     |      |
|  | 8370  |       |      |  |       |       |    |     |      |
|  | 13075 |       |      |  |       |       |    |     |      |
|  | 8550  |       |      |  |       |       |    |     |      |
|  | 13375 |       |      |  |       |       |    |     |      |
|  | 8730  |       |      |  |       |       |    |     |      |
|  | 13675 |       |      |  |       |       |    |     |      |
|  | 8910  |       |      |  |       |       |    |     |      |
|  | 13975 |       |      |  |       |       |    |     |      |
|  | 9090  |       |      |  |       |       |    |     |      |
|  | 14275 |       |      |  |       |       |    |     |      |

### Punched Card Data

### Maximum Wind Speed Data

### Coded Data for Transmission



U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

**WINDS-ALOFT COMPUTATION SHEET**  
(LAND STATION FORM)  
WBAN-20

|                        | Year | Month | Day | Time |
|------------------------|------|-------|-----|------|
| Actual time<br>th mer. | 1963 | JUN   | 26  | 1130 |
| Scheduled<br>(G.M.T.)  | 1963 | JUN   | 26  | 1730 |
| Ascension No. 709      |      |       |     |      |

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.) | Minute | Raw in<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                  |                   |
|-------------------------------|---------------------------------|--------|----------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|-----------------------|-------------------|
|                               | 100-<br>gram                    |        |                                        | Observed         | Smoothed |                                               |                       |        | Direction°<br>360°= N | Speed<br>(m.p.s.) |
|                               | 14570                           | 51     |                                        | 34.1             |          |                                               | 353.4                 | 51     |                       |                   |
|                               | 14860                           | 52     | 17370                                  | 34.4             |          | 25300                                         | 354.8                 | 52     | 68                    | 9.2               |
|                               | 15145                           | 53     |                                        | 34.9             |          |                                               | 356.0                 | 53     |                       |                   |
|                               | 15425                           | 54     | 18220                                  | 35.6             |          | 25300                                         | 357.4                 | 54     | 99                    | 9.1               |
|                               | 15705                           | 55     |                                        | 36.4             |          |                                               | 358.8                 | 55     |                       |                   |
|                               | 15985                           | 56     | 19020                                  | 37.3             |          | 24800                                         | 359.7                 | 56     | 117                   | 7.9               |
|                               | 16265                           | 57     |                                        | 38.1             |          |                                               | 0.5                   | 57     |                       |                   |
|                               | 16545                           | 58     | 19770                                  | 38.8             |          | 24400                                         | 1.2                   | 58     | 99                    | 6.8               |
|                               | 16825                           | 59     |                                        | 39.3             |          |                                               | 2.3                   | 59     |                       |                   |
|                               | 17105                           | 60     | 20560                                  | 39.7             |          | 24600                                         | 3.3                   | 60     | 92                    | 5.0               |
|                               | 17385                           | 61     | 20830                                  | 40.3             |          | 24400                                         | 3.4                   | 61     |                       |                   |
|                               | 17670                           | 62     |                                        |                  |          |                                               |                       | 62     |                       |                   |
|                               | 17950                           | 63     |                                        |                  |          |                                               |                       | 63     |                       |                   |
|                               | 18235                           | 64     |                                        |                  |          |                                               |                       | 64     |                       |                   |
|                               | 18515                           | 65     |                                        |                  |          |                                               |                       | 65     |                       |                   |
|                               | 18795                           | 66     |                                        |                  |          |                                               |                       | 66     |                       |                   |
|                               | 19080                           | 67     |                                        |                  |          |                                               |                       | 67     |                       |                   |
|                               | 19360                           | 68     |                                        |                  |          |                                               |                       | 68     |                       |                   |
|                               | 19645                           | 69     |                                        |                  |          |                                               |                       | 69     |                       |                   |
|                               | 19925                           | 70     |                                        |                  |          |                                               |                       | 70     |                       |                   |
|                               | 20210                           | 71     |                                        |                  |          |                                               |                       | 71     |                       |                   |
|                               | 20490                           | 72     |                                        |                  |          |                                               |                       | 72     |                       |                   |
|                               | 20775                           | 73     |                                        |                  |          |                                               |                       | 73     |                       |                   |
|                               | 21055                           | 74     |                                        |                  |          |                                               |                       | 74     |                       |                   |
|                               | 21340                           | 75     |                                        |                  |          |                                               |                       | 75     |                       |                   |
|                               | 21620                           | 76     |                                        |                  |          |                                               |                       | 76     |                       |                   |
|                               | 21905                           | 77     |                                        |                  |          |                                               |                       | 77     |                       |                   |
|                               | 22185                           | 78     |                                        |                  |          |                                               |                       | 78     |                       |                   |
|                               | 22470                           | 79     |                                        |                  |          |                                               |                       | 79     |                       |                   |
|                               | 22750                           | 80     |                                        |                  |          |                                               |                       | 80     |                       |                   |
|                               | 23040                           | 81     |                                        |                  |          |                                               |                       | 81     |                       |                   |
|                               | 23320                           | 82     |                                        |                  |          |                                               |                       | 82     |                       |                   |
|                               | 23600                           | 83     |                                        |                  |          |                                               |                       | 83     |                       |                   |
|                               | 23880                           | 84     |                                        |                  |          |                                               |                       | 84     |                       |                   |

| Slant<br>range<br>(m.) (yds.) | Minimum | Raw in<br>ht. above<br>surface (m.) | Elevation angle<br>Observed | Elevation angle<br>Smoothed | Distance from<br>observation<br>point (m.) | Azimuth<br>angle<br>° | Minimum | Wind<br>Direction<br>360° = N | Wind<br>Speed<br>(m.p.s.) |
|-------------------------------|---------|-------------------------------------|-----------------------------|-----------------------------|--------------------------------------------|-----------------------|---------|-------------------------------|---------------------------|
|                               | 106     |                                     |                             |                             |                                            |                       | 106     |                               |                           |
|                               | 107     |                                     |                             |                             |                                            |                       | 107     |                               |                           |
|                               | 108     |                                     |                             |                             |                                            |                       | 108     |                               |                           |
|                               | 109     |                                     |                             |                             |                                            |                       | 109     |                               |                           |
|                               | 110     |                                     |                             |                             |                                            |                       | 110     |                               |                           |
|                               | 111     |                                     |                             |                             |                                            |                       | 111     |                               |                           |
|                               | 112     |                                     |                             |                             |                                            |                       | 112     |                               |                           |
|                               | 113     |                                     |                             |                             |                                            |                       | 113     |                               |                           |
|                               | 114     |                                     |                             |                             |                                            |                       | 114     |                               |                           |
|                               | 115     |                                     |                             |                             |                                            |                       | 115     |                               |                           |

Pa.

2

- \* Stamp  
follow
1. Name  
State
2. Lat  
lon
3. Loc  
Sta  
time  
mer
4. El.
5. Met  
obs  
raw  
raw
6. Typ  
equ  
WB  
GM  
GM  
SCF  
the

# Altitude  
in km

### Punched Card Data

|          |                    |                |              |          |                    |                |
|----------|--------------------|----------------|--------------|----------|--------------------|----------------|
| Attitude | Reaction (degrees) | Speed (m.p.s.) | Card columns | Attitude | Reaction (degrees) | Speed (m.p.s.) |
|----------|--------------------|----------------|--------------|----------|--------------------|----------------|



NNNN

RC110

ZCSQJ 133ZC WYA403

PP RUCDSQ

DE RUWGAA 153

ZNR

P 272110Z

FM 2EW BARKSDALE AFB LA

TO RUWGALE/AIR DEFENSE COMMAND ENT AFB COLO

RUWGKF/CENTRAL AIR DEF FORCE HQ 20AD RICHARDS GENBAUR AFB MO

RUCDSQ/AIR TECHNICAL INTELLIGENCE CENTER WPAFB

RUEAHQ/HQ USAF WASH DC

RUEAHQ/SECRETARY OF THE AIR FORCE SAFOI WASH DC

INFO RUCSBR/SAC

ZEN/2AF BARKSDALE AFB LA

VZEN/4AD BARKSDALE AFB LA

1963 JUN 28

04 05

TO

NO

TIME

Date

By

21411

11-335 ORDERED WND  
26-27 June



|  |       |     |  |  |  |  |     |  |  |
|--|-------|-----|--|--|--|--|-----|--|--|
|  | 20480 | 72  |  |  |  |  | 72  |  |  |
|  | 20778 | 73  |  |  |  |  | 73  |  |  |
|  | 21055 | 74  |  |  |  |  | 74  |  |  |
|  | 21340 | 75  |  |  |  |  | 75  |  |  |
|  | 21620 | 76  |  |  |  |  | 76  |  |  |
|  | 21905 | 77  |  |  |  |  | 77  |  |  |
|  | 22185 | 78  |  |  |  |  | 78  |  |  |
|  | 22470 | 79  |  |  |  |  | 79  |  |  |
|  | 22750 | 80  |  |  |  |  | 80  |  |  |
|  | 23040 | 81  |  |  |  |  | 81  |  |  |
|  | 23320 | 82  |  |  |  |  | 82  |  |  |
|  | 23600 | 83  |  |  |  |  | 83  |  |  |
|  | 23880 | 84  |  |  |  |  | 84  |  |  |
|  | 24160 | 85  |  |  |  |  | 85  |  |  |
|  | 24440 | 86  |  |  |  |  | 86  |  |  |
|  | 24730 | 87  |  |  |  |  | 87  |  |  |
|  | 25010 | 88  |  |  |  |  | 88  |  |  |
|  | 25300 | 89  |  |  |  |  | 89  |  |  |
|  | 25580 | 90  |  |  |  |  | 90  |  |  |
|  | 25860 | 91  |  |  |  |  | 91  |  |  |
|  | 26140 | 92  |  |  |  |  | 92  |  |  |
|  | 26420 | 93  |  |  |  |  | 93  |  |  |
|  | 26700 | 94  |  |  |  |  | 94  |  |  |
|  | 26980 | 95  |  |  |  |  | 95  |  |  |
|  | 27260 | 96  |  |  |  |  | 96  |  |  |
|  | 27540 | 97  |  |  |  |  | 97  |  |  |
|  | 27820 | 98  |  |  |  |  | 98  |  |  |
|  | 28100 | 99  |  |  |  |  | 99  |  |  |
|  | 28380 | 100 |  |  |  |  | 100 |  |  |
|  | 28660 | 101 |  |  |  |  | 101 |  |  |
|  | 28940 | 102 |  |  |  |  | 102 |  |  |
|  | 29220 | 103 |  |  |  |  | 103 |  |  |
|  | 29500 | 104 |  |  |  |  | 104 |  |  |
|  | 29780 | 105 |  |  |  |  | 105 |  |  |

| Minute                  | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Slant range (m.) (yds.) |     |     |     |     |     |     |     |     |     |     |

# Altitude  
in km

Punched Card Data

| Altitude#         | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude#         | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|--------------|-------------------|---------------------|----------------|
| Card No. 3        |                     |                | 15           | Card No. 4        |                     |                |
| Type of equipment |                     |                | 16           | Type of equipment |                     |                |
| 19                | 116                 | 8              | 17-21        | 31                |                     |                |
| 20                | 97                  | 7              | 22-26        | 32                |                     |                |
| 21                |                     |                | 27-31        | 33                |                     |                |
| 22                |                     |                | 32-36        | 34                |                     |                |
| 23                |                     |                | 37-41        | 35                |                     |                |
| 24                |                     |                | 42-46        | 36                |                     |                |
| 25                |                     |                | 47-51        | 37                |                     |                |
| 26                |                     |                | 52-56        | 38                |                     |                |
| 27                |                     |                | 57-61        | 39                |                     |                |
| 28                |                     |                | 62-66        | 40                |                     |                |
| 29                |                     |                | 67-71        | 41                |                     |                |
| 30                |                     |                | 72-76        | 42                |                     |                |

Maximum Wind Speed Data

|                                                |  |  |
|------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)    |  |  |
| Alt. of maximum wind speed (m.)                |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind |  |  |
| Max. alt. wind speed 45 m.p.s. or more (m.)    |  |  |



SHREVEPORT, LOUISIANA  
 Greater Shreveport Municipal Airport  
 Lat. 32°23'N Long. 93°49'W  
 Local Standard Time, 90th Meridian  
 El. of Station, 79M, RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
 WEATHER BUREAU

WINDS-ALOFT COMPUTATION SHEET  
 (LAND STATION FORM)  
 WBAN-20

| Actual time<br>th mer. | Year | Month | Day | Time |
|------------------------|------|-------|-----|------|
|                        | 1963 | JUN   | 26  | 1730 |
| Scheduled<br>(G.M.T.)  | 1963 | JUN   | 26  | 2330 |
| Ascension No. 710      |      |       |     |      |

Type of Balloon 1300 5221

Orientation, 360° = South

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.)<br>30<br>gram<br>100<br>gram | Minute | Rawin<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                    |                   | Rawinsonde Time-Altitude Data |                   |                          |                           |
|-------------------------------|--------------------------------------------------------------|--------|---------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|-------------------------|-------------------|-------------------------------|-------------------|--------------------------|---------------------------|
|                               |                                                              |        |                                       | Observed         | Smoothed |                                               |                       |        | Direction°<br>360° = N. | Speed<br>(m.p.s.) | Con-<br>tact                  | Pressure<br>(mb.) | Altitude<br>(m., m.s.l.) | Elapsed<br>time<br>(min.) |
|                               |                                                              |        |                                       |                  |          |                                               |                       |        | sfc. 90                 | 3.1               |                               |                   |                          |                           |
|                               | 216<br>350                                                   | 1      | 260                                   | 55.0             |          | 100                                           | 159.1                 | 1      | 153                     | 3.6               | 5.3                           | 1004              | 79                       | 0.0                       |
|                               | 414<br>670                                                   | 2      | 570                                   | 51.6             |          | 450                                           | 152.7                 | 2      | 104                     | 4.4               | 5                             | 1011              |                          |                           |
|                               | 612<br>980                                                   | 3      | 820                                   | 53.3             |          | 600                                           | 116.4                 | 3      | 81                      | 4.5               | 10                            | 946               | 640                      | 2.2                       |
|                               | 801<br>1285                                                  | 4      | 1080                                  | 54.2             |          | 800                                           | 112.4                 | 4      | 91                      | 3.5               | 15                            | 882               | 1250                     | 4.5                       |
|                               | 990<br>1585                                                  | 5      | 1340                                  | 54.0             |          | 1000                                          | 105.5                 | 5      | 72                      | 3.1               | 20                            | 822               | 1850                     | 6.6                       |
|                               | 1170<br>1880                                                 | 6      | 1650                                  | 55.0             |          | 1100                                          | 98.9                  | 6      | 80                      | 2.7               | 25                            | 764               | 2460                     | 9.3                       |
|                               | 1350<br>2170                                                 | 7      | 1900                                  | 55.4             |          | 1300                                          | 98.8                  | 7      | 77                      | 1.7               | 30                            | 707               | 3090                     | 11.9                      |
|                               | 1530<br>2455                                                 | 8      | 2120                                  | 58.3             |          | 1300                                          | 95.8                  | 8      | 3                       | 2.3               | 35                            | 654               | 3720                     | 14.3                      |
|                               | 1710<br>2740                                                 | 9      | 2340                                  | 60.7             |          | 1300                                          | 86.4                  | 9      | 357                     | 3.6               | 40                            | 602               | 4400                     | 16.5                      |
|                               | 1890<br>3020                                                 | 10     | 2570                                  | 63.4             |          | 1300                                          | 76.4                  | 10     | 339                     | 4.2               | 45                            | 554               | 5060                     | 19.1                      |
|                               | 2070<br>3300                                                 | 11     | 2810                                  | 66.1             |          | 1250                                          | 63.1                  | 11     | 325                     | 5.2               | 50                            | 507               | 5770                     | 21.5                      |
|                               | 2250<br>3580                                                 | 12     | 3020                                  | 68.6             |          | 1200                                          | 47.8                  | 12     | 304                     | 5.9               | 55                            | 463               | 6450                     | 23.9                      |
|                               | 2430<br>3855                                                 | 13     | 3300                                  | 72.2             |          | 1100                                          | 28.2                  | 13     | 284                     | 6.3               | 60                            | 421               | 7160                     | 26.2                      |
|                               | 2610<br>4130                                                 | 14     | 3560                                  | 74.3             |          | 1000                                          | 7.6                   | 14     | 291                     | 5.1               | 65                            | 382               | 7890                     | 29.0                      |
|                               | 2790<br>4405                                                 | 15     | 3860                                  | 72.3             |          | 1200                                          | 357.8                 | 15     | 341                     | 4.3               | 70                            | 344               | 8650                     | 32.4                      |
|                               | 2970<br>4675                                                 | 16     | 4200                                  | 69.9             |          | 1500                                          | 358.3                 | 16     | 6                       | 5.8               | 75                            | 308               | 9450                     | 35.2                      |
|                               | 3150<br>4945                                                 | 17     | 4500                                  | 67.2             |          | 1900                                          | 1.2                   | 17     | 10                      | 5.9               | 80                            | 275               | 10200                    | 37.8                      |
|                               | 3330<br>5215                                                 | 18     | 4770                                  | 65.4             |          | 2200                                          | 2.1                   | 18     | 6                       | 4.9               | 85                            | 244               | 11000                    | 40.4                      |
|                               | 3510<br>5485                                                 | 19     | 5020                                  | 63.1             |          | 2500                                          | 2.0                   | 19     | 5                       | 6.6               | 90                            | 215               | 11820                    | 43.0                      |
|                               | 3690<br>5755                                                 | 20     | 5300                                  | 60.4             |          | 3000                                          | 2.6                   | 20     | 5                       | 7.6               | 95                            | 189               | 12700                    | 45.4                      |
|                               | 3870<br>6025                                                 | 21     | 5570                                  | 58.2             |          | 3400                                          | 2.9                   | 21     | 3                       | 6.7               | 100                           | 164               | 13590                    | 48.1                      |
|                               | 4050<br>6295                                                 | 22     | 5860                                  | 56.4             |          | 3800                                          | 2.5                   | 22     | 360                     | 6.5               | 105                           | 142               | 14450                    | 50.7                      |
|                               | 4230<br>6565                                                 | 23     | 6140                                  | 54.9             |          | 4200                                          | 2.2                   | 23     | 359                     | 6.5               | 110                           | 121               | 15410                    | 53.3                      |
|                               | 4410<br>6835                                                 | 24     | 6410                                  | 54.0             |          | 4600                                          | 1.9                   | 24     | 358                     | 7.4               | 115                           | 102               | 16450                    | 56.2                      |
|                               | 4590<br>7105                                                 | 25     | 6720                                  | 53.0             |          | 5100                                          | 1.4                   | 25     | 352                     | 6.7               | 120                           | 84                | 17610                    | 59.4                      |
|                               | 4770<br>7375                                                 | 26     | 7020                                  | 52.4             |          | 5400                                          | 0.3                   | 26     | 331                     | 4.8               | 125                           | 67                | 19090                    | 63.4                      |
|                               | 4950<br>7645                                                 | 27     | 7310                                  | 52.1             |          | 5600                                          | 358.3                 | 27     |                         |                   | 130                           | 52                | 20600                    | 67.8                      |
|                               | 5130<br>7915                                                 | 28     |                                       | 51.0             |          |                                               | 352.1                 | 28     | 336                     | 8.0               | 135                           | 37                | 22870                    | 73.3                      |
|                               | 5310<br>8185                                                 | 29     | 7880                                  | 50.2             |          | 6500                                          | 355.2                 | 29     |                         |                   | 140                           | 22                | 26160                    | 80.8                      |
|                               | 5490<br>8455                                                 | 30     |                                       | 48.6             |          |                                               | 352.7                 | 30     | 328                     | 11.8              | 225                           | 10                | 31400                    | 93.3                      |
|                               | 5670<br>8725                                                 | 31     | 8310                                  | 46.7             |          | 7800                                          | 350.5                 | 31     |                         |                   | 225                           | 7.4               | 33538                    | 94.0                      |
|                               | 5850<br>9005                                                 | 32     |                                       | 44.9             |          |                                               | 348.2                 | 32     | 328                     | 15.4              |                               |                   |                          |                           |
|                               | 6030<br>9285                                                 | 33     | 8820                                  | 42.9             |          | 9500                                          | 346.3                 | 33     |                         |                   |                               |                   |                          |                           |
|                               | 6210<br>9565                                                 | 34     |                                       | 40.4             |          |                                               | 344.8                 | 34     | 326                     | 17.0              |                               |                   |                          |                           |
|                               | 6390<br>9850                                                 | 35     | 9330                                  | 39.1             |          | 11400                                         | 342.6                 | 35     |                         |                   |                               |                   |                          |                           |

Punched Card Data

| Altitude# | Direction<br>(degrees) | Speed<br>(m.p.s.) | Card<br>columns | Altitude# | Direction<br>(degrees) | Speed<br>(m.p.s.) |
|-----------|------------------------|-------------------|-----------------|-----------|------------------------|-------------------|
|           |                        |                   |                 |           |                        |                   |



|       |    |       |      |       |       |    |     |      |
|-------|----|-------|------|-------|-------|----|-----|------|
| 4210  | 23 | 6140  | 54.9 | 4200  | 2.2   | 23 | 359 | 6.5  |
| 6252  | 24 | 6410  | 54.0 | 4600  | 1.9   | 24 | 358 | 7.4  |
| 4410  | 25 | 6720  | 53.0 | 5100  | 1.4   | 25 | 352 | 6.7  |
| 6912  | 26 | 7020  | 52.4 | 5400  | 0.3   | 26 | 321 | 4.8  |
| 4390  | 27 | 7310  | 52.1 | 5600  | 358.3 | 27 |     |      |
| 7105  | 28 |       | 51.0 |       | 357.1 | 28 | 336 | 8.0  |
| 4770  | 29 | 7880  | 50.2 | 6500  | 355.2 | 29 |     |      |
| 7175  | 30 |       | 48.6 |       | 352.7 | 30 | 328 | 11.9 |
| 4750  | 31 | 8310  | 46.7 | 7800  | 350.5 | 31 |     |      |
| 7642  | 32 |       | 44.9 |       | 348.2 | 32 | 328 | 15.4 |
| 5130  | 33 | 8820  | 42.9 | 9500  | 346.3 | 33 |     |      |
| 7915  | 34 |       | 40.9 |       | 344.8 | 34 | 326 | 17.0 |
| 5310  | 35 | 9330  | 39.1 | 11400 | 342.6 | 35 |     |      |
| 8195  | 36 |       | 37.2 |       | 340.4 | 36 | 321 | 20.2 |
| 5490  | 37 | 9930  | 35.7 | 13700 | 338.8 | 37 |     |      |
| 8455  | 38 |       | 34.8 |       | 338.0 | 38 | 326 | 15.5 |
| 5670  | 39 | 10520 | 34.0 | 15500 | 337.2 | 39 |     |      |
| 8730  | 40 |       | 33.4 |       | 336.1 | 40 | 309 | 14.0 |
| 5850  | 41 | 11120 | 32.9 | 17000 | 334.5 | 41 |     |      |
| 9005  | 42 |       | 32.1 |       | 333.7 | 42 | 325 | 18.0 |
| 6030  | 43 | 11820 | 31.6 | 19100 | 333.4 | 43 |     |      |
| 9285  | 44 |       | 30.3 |       | 333.3 | 44 | 335 | 20.5 |
| 6210  | 45 | 12500 | 29.9 | 21600 | 333.4 | 45 |     |      |
| 9565  | 46 |       | 29.0 |       | 334.1 | 46 | 344 | 22.0 |
| 6390  | 47 | 13120 | 28.2 | 24300 | 334.7 | 47 |     |      |
| 9850  | 48 | 13480 | 27.4 | 25800 | 335.9 | 48 | 354 | 26.0 |
| 6570  | 49 | 13830 | 26.8 | 27200 | 337.1 | 49 |     |      |
| 10135 | 50 | 14130 | 26.4 | 28200 | 338.3 | 50 | 6   | 21.0 |

|      |      |       |      |
|------|------|-------|------|
| 110  | 12.1 | 15210 | 55.3 |
| 115  | 10.2 | 16450 | 56.2 |
| 120  | 8.4  | 17610 | 59.4 |
| 125  | 6.7  | 19090 | 63.4 |
| 130  | 5.2  | 20600 | 67.8 |
| 135  | 3.7  | 22870 | 73.3 |
| 140  | 2.2  | 26160 | 80.8 |
| 20   | 1.0  | 31440 | 92.3 |
| 22.5 | 7.4  | 33538 | 94.0 |

Punched Card Data

| Altitude          | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude          | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|--------------|-------------------|---------------------|----------------|
| Card No. 1        |                     |                |              | Card No. 2        |                     |                |
| Type of equipment |                     |                |              | Type of equipment |                     |                |
| slc.              | 90                  | 3              | 17-21        | 7                 | 338                 | 7              |
| 150 m.            | 113                 | 3              | 22-26        | 8                 | 332                 | 10             |
| 300 m.            | 149                 | 4              | 27-31        | 9                 | 327                 | 17             |
| 0.5               | 125                 | 4              | 32-36        | 10                | 323                 | 18             |
| 1.0               | 84                  | 4              | 37-41        | 11                | 311                 | 15             |
| 1.5               | 72                  | 3              | 42-46        | 12                | 332                 | 20             |
| 2.0               | 60                  | 2              | 47-51        | 13                | 346                 | 23             |
| 2.5               | 351                 | 4              | 52-56        | 14                | 2                   | 23             |
| 3                 | 314                 | 5              | 57-61        | 15                | 7                   | 16             |
| 4                 | 344                 | 5              | 62-66        | 16                | 13                  | 9              |
| 5                 | 6                   | 6              | 67-71        | 17                | 55                  | 4              |
| 6                 | 359                 | 7              | 72-76        | 18                | 77                  | 4              |

Maximum Wind Speed Data

|                                                          |  |  |
|----------------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)              |  |  |
| Alt. of maximum wind speed (m.)                          |  |  |
| Max. wind speed (m.p.s.) and dir. (degrees)              |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind           |  |  |
| Enter check if additional levels appear on reverse side. |  |  |

Coded Data for Transmission

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5114  | 00921 | 1507  | 21009 | 0808  | 05806 | 0805  | 0804  | 3604  | 3507  |
| 7304  | 03111 | 23010 | 40111 | 60111 | 3604  | 03613 | 33410 | 53416 | 03533 |
| 23239 | 53223 | 03340 | 53551 | 00127 | 00107 | 99997 | 00717 | 00902 | 00728 |
| 01030 | 00831 |       |       |       |       |       |       |       |       |



SHREVEPORT, LOUISIANA  
Greater Shreveport Municipal Airport  
Lat. 32°28'N Long. 93°49'W  
Local Standard Time, 90th Meridian  
El of Station, 79M, RAWIN, GMD-1A

**WINDS-ALOFT COMPUTATION SHEET**  
(LAND STATION FORM)  
WBAN-20

|                        | Year | Month | Day | Time |
|------------------------|------|-------|-----|------|
| Actual time<br>sh mer. | 1963 | JUN   | 28  | 1730 |
| Scheduled<br>(G.M.T.)  | 1963 | JUN   | 28  | 7330 |
| Ascension No.          | 710  |       |     |      |

2

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.) | Minute | Raw in<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                  |                   |
|-------------------------------|---------------------------------|--------|----------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|-----------------------|-------------------|
|                               | 100-<br>gram                    |        |                                        | Observed         | Smoothed |                                               |                       |        | Direction°<br>360°= N | Speed<br>(m.p.s.) |
|                               | 14570                           | 51     |                                        | 26.1             |          |                                               | 339.2                 | 51     |                       |                   |
|                               | 14860                           | 52     | 14870                                  | 25.9             |          | 30400                                         | 340.2                 | 52     | 6                     | 16.0              |
|                               | 15145                           | 53     |                                        | 25.8             |          |                                               | 341.2                 | 53     |                       |                   |
|                               | 15425                           | 54     | 15600                                  | 26.0             |          | 31700                                         | 341.6                 | 54     | 8                     | 11.0              |
|                               | 15705                           | 55     |                                        | 26.2             |          |                                               | 341.9                 | 55     |                       |                   |
|                               | 15985                           | 56     | 15320                                  | 26.5             |          | 32500                                         | 342.4                 | 56     | 21                    | 5.0               |
|                               | 16265                           | 57     |                                        | 26.9             |          |                                               | 342.8                 | 57     |                       |                   |
|                               | 16545                           | 58     | 17050                                  | 27.3             |          | 32800                                         | 343.2                 | 58     | 67                    | 4.0               |
|                               | 16825                           | 59     |                                        | 27.8             |          |                                               | 343.6                 | 59     |                       |                   |
|                               | 17105                           | 60     | 17820                                  | 28.3             |          | 32800                                         | 344.3                 | 60     | 77                    | 4.0               |
|                               | 17385                           | 61     |                                        | 28.8             |          |                                               | 344.8                 | 61     |                       |                   |
|                               | 17670                           | 62     | 18530                                  | 29.2             |          | 32800                                         | 345.1                 | 62     | 71                    | 3.0               |
|                               | 17950                           | 63     |                                        | 29.6             |          |                                               | 345.4                 | 63     |                       |                   |
|                               | 18235                           | 64     | 19270                                  | 30.2             |          | 32800                                         | 345.7                 | 64     | 66                    | 4.0               |
|                               | 18515                           | 65     |                                        | 30.4             |          |                                               | 346.5                 | 65     |                       |                   |
|                               | 18795                           | 66     | 19940                                  | 30.8             |          | 33100                                         | 347.2                 | 66     | 65                    | 6.0               |
|                               | 19080                           | 67     |                                        | 31.2             |          |                                               | 348.0                 | 67     |                       |                   |
|                               | 19360                           | 68     | 20640                                  | 31.6             |          | 33200                                         | 349.2                 | 68     | 67                    | 8.0               |
|                               | 19645                           | 69     |                                        | 31.9             |          |                                               | 350.3                 | 69     |                       |                   |
|                               | 19925                           | 70     | 21440                                  | 32.3             |          | 33600                                         | 351.2                 | 70     | 72                    | 10.0              |
|                               | 20210                           | 71     |                                        | 32.7             |          |                                               | 352.2                 | 71     |                       |                   |
|                               | 20490                           | 72     | 22230                                  | 33.3             |          | 33500                                         | 353.2                 | 72     | 80                    | 11.0              |
|                               | 20775                           | 73     |                                        | 33.7             |          |                                               | 354.3                 | 73     |                       |                   |
|                               | 21055                           | 74     | 23140                                  | 34.2             |          | 33700                                         | 355.3                 | 74     | 82                    | 11.0              |
|                               | 21340                           | 75     |                                        | 34.6             |          |                                               | 356.3                 | 75     |                       |                   |
|                               | 21620                           | 76     | 23960                                  | 35.2             |          | 33600                                         | 357.3                 | 76     | 90                    | 12.0              |
|                               | 21905                           | 77     |                                        | 35.6             |          |                                               | 358.3                 | 77     |                       |                   |
|                               | 22185                           | 78     | 24820                                  | 36.2             |          | 33600                                         | 0.4                   | 78     | 92                    | 11.0              |
|                               | 22470                           | 79     |                                        | 36.8             |          |                                               | 0.7                   | 79     |                       |                   |
|                               | 22750                           | 80     | 25800                                  | 37.3             |          | 33600                                         | 1.7                   | 80     | 79                    | 8.0               |
|                               | 23040                           | 81     |                                        | 37.4             |          |                                               | 2.9                   | 81     |                       |                   |
|                               | 23320                           | 82     | 26800                                  | 37.9             |          | 34100                                         | 4.1                   | 82     | 74                    | 13.0              |
|                               | 23600                           | 83     |                                        | 38.2             |          |                                               | 5.7                   | 83     |                       |                   |
|                               | 23880                           | 84     | 27870                                  | 38.5             |          | 34600                                         | 7.3                   | 84     | 76                    | 16.0              |

| Slant<br>range<br>(m.) (yds.) | Minimum | Raw in<br>ht. above<br>surface (m.) | Elevation angle ° |          | Distance from<br>observation<br>point (m.) | Azimuth<br>angle<br>° | Direction<br>°<br>± 360° = N | Wind<br>Speed<br>(m.p.s.) |
|-------------------------------|---------|-------------------------------------|-------------------|----------|--------------------------------------------|-----------------------|------------------------------|---------------------------|
|                               | ft.     |                                     | Observed          | Smoothed |                                            |                       |                              |                           |
|                               | 106     |                                     |                   |          |                                            |                       | 106                          |                           |
|                               | 107     |                                     |                   |          |                                            |                       | 107                          |                           |
|                               | 108     |                                     |                   |          |                                            |                       | 108                          |                           |
|                               | 109     |                                     |                   |          |                                            |                       | 109                          |                           |
|                               | 110     |                                     |                   |          |                                            |                       | 110                          |                           |
|                               | 111     |                                     |                   |          |                                            |                       | 111                          |                           |
|                               | 112     |                                     |                   |          |                                            |                       | 112                          |                           |
|                               | 113     |                                     |                   |          |                                            |                       | 113                          |                           |
|                               | 114     |                                     |                   |          |                                            |                       | 114                          |                           |
|                               | 115     |                                     |                   |          |                                            |                       | 115                          |                           |

1. Name  
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GMD  
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\* Altitude in km.

| Altitude# | Direction<br>(degrees) | Speed<br>(m.p.s.) | Card<br>columns | Altitude# | Direction<br>(degrees) | Speed<br>(m.p.s.) |
|-----------|------------------------|-------------------|-----------------|-----------|------------------------|-------------------|
|-----------|------------------------|-------------------|-----------------|-----------|------------------------|-------------------|

| Altitude# | Direction<br>(degrees) | Speed<br>(m.p.s.) | Card<br>columns | Altitude# | Direction<br>(degrees) | Speed<br>(m.p.s.) |
|-----------|------------------------|-------------------|-----------------|-----------|------------------------|-------------------|
|-----------|------------------------|-------------------|-----------------|-----------|------------------------|-------------------|



|       |     |       |      |       |       |     |    |      |
|-------|-----|-------|------|-------|-------|-----|----|------|
| 20775 | 73  | 21140 | 33.1 | 33700 | 354.3 | 73  |    |      |
| 21055 | 74  |       | 34.2 |       | 355.3 | 74  | 82 | 11.0 |
| 21340 | 75  |       | 34.6 |       | 356.3 | 75  |    |      |
| 21620 | 76  | 23960 | 35.2 | 33600 | 357.3 | 76  | 90 | 12.0 |
| 21905 | 77  |       | 35.6 |       | 358.3 | 77  |    |      |
| 22185 | 78  | 24220 | 36.2 | 33600 | 0.4   | 78  | 92 | 11.0 |
| 22470 | 79  |       | 36.8 |       | 0.7   | 79  |    |      |
| 22750 | 80  | 25800 | 37.3 | 33600 | 1.7   | 80  | 79 | 8.0  |
| 23040 | 81  |       | 37.6 |       | 2.9   | 81  |    |      |
| 23320 | 82  | 26800 | 37.9 | 34100 | 4.1   | 82  | 74 | 13.0 |
| 23600 | 83  |       | 38.2 |       | 5.7   | 83  |    |      |
| 23880 | 84  | 27870 | 38.5 | 34600 | 7.3   | 84  | 76 | 16.0 |
| 24160 | 85  |       | 38.6 |       | 9.1   | 85  |    |      |
| 24440 | 86  | 29020 | 38.9 | 35700 | 10.5  | 86  | 86 | 18.0 |
| 24730 | 87  |       | 39.4 |       | 12.2  | 87  |    |      |
| 25010 | 88  | 30060 | 39.9 | 35600 | 14.0  | 88  | 99 | 16.0 |
| 25300 | 89  |       | 40.4 |       | 15.4  | 89  |    |      |
| 25580 | 90  | 31220 | 40.7 | 35900 | 16.9  | 90  | 97 | 14.0 |
| 25860 | 91  |       | 41.2 |       | 18.3  | 91  |    |      |
| 26140 | 92  | 32320 | 41.3 | 36400 | 19.8  | 92  | 86 | 15.0 |
| 26420 | 93  |       | 41.4 |       | 21.1  | 93  |    |      |
| 26700 | 94  | 33460 | 41.4 | 37600 | 22.5  | 94  | 79 | 16.0 |
| 26980 | 95  |       |      |       |       | 95  |    |      |
| 27260 | 96  |       |      |       |       | 96  |    |      |
| 27540 | 97  |       |      |       |       | 97  |    |      |
| 27820 | 98  |       |      |       |       | 98  |    |      |
| 28100 | 99  |       |      |       |       | 99  |    |      |
| 28360 | 100 |       |      |       |       | 100 |    |      |
| 28660 | 101 |       |      |       |       | 101 |    |      |
| 28940 | 102 |       |      |       |       | 102 |    |      |
| 29220 | 103 |       |      |       |       | 103 |    |      |
| 29500 | 104 |       |      |       |       | 104 |    |      |
| 29780 | 105 |       |      |       |       | 105 |    |      |

|                         |     |     |     |     |     |     |     |     |     |     |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Slant range (m.) (yds.) | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

# Altitude  
in km.

Punched Card Data

| Altitude#         | Direction (degrees) | Speed (m.p.s.) | Card columns      | Altitude#  | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|-------------------|------------|---------------------|----------------|
| Card No. 3        |                     |                | 15                | Card No. 4 |                     |                |
| Type of equipment | 8                   | 16             | Type of equipment | 8          |                     |                |
| 19                | 68                  | 3              | 17-21             | 31         | 97                  | 15             |
| 20                | 65                  | 6              | 22-26             | 32         | 90                  | 15             |
| 21                | 67                  | 9              | 27-31             | 33         | 82                  | 15             |
| 22                | 74                  | 11             | 32-36             | 34         |                     |                |
| 23                | 80                  | 11             | 37-41             | 35         |                     |                |
| 24                | 90                  | 12             | 42-46             | 36         |                     |                |
| 25                | 90                  | 11             | 47-51             | 37         |                     |                |
| 26                | 77                  | 8              | 52-56             | 38         |                     |                |
| 27                | 74                  | 13             | 57-61             | 39         |                     |                |
| 28                | 75                  | 16             | 62-66             | 40         |                     |                |
| 29                | 83                  | 18             | 67-71             | 41         |                     |                |
| 30                | 92                  | 16             | 72-76             | 42         |                     |                |

Maximum Wind Speed Data

|                                                |  |  |
|------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)    |  |  |
| Alt. of maximum wind speed (m.)                |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind |  |  |
| Max. alt. wind speed 45 m.p.s. or more (m.)    |  |  |



Identification  
 REVEPORT, LOUISIANA  
 Water Shreveport Municipal Airport  
 32°28'N Long. 93°49'W  
 Standard Time, 90th Meridian  
 of Station, 79M. RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
 WEATHER BUREAU

WINDS-ALOFT COMPUTATION SHEET  
 (LAND STATION FORM)

WBAN-20

|                        | Year | Month | Day | Time |
|------------------------|------|-------|-----|------|
| Actual time<br>th mer. | 1963 | JUN   | 26  | 2330 |
| Scheduled<br>(G.M.T.)  | 1963 | JUN   | 27  | 0530 |
| Ascension No.          | 711  |       |     |      |

Type of balloon 6003m

Orientation, 360° = South

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.)<br>30<br>100<br>grom | Minute | Rawin<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                    |                   | Rawinsonde Time-Altitude Data |                   |                          |                           |
|-------------------------------|------------------------------------------------------|--------|---------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|-------------------------|-------------------|-------------------------------|-------------------|--------------------------|---------------------------|
|                               |                                                      |        |                                       | Observed         | Smoothed |                                               |                       |        | Direction°<br>360° = N. | Speed<br>(m.p.s.) | Contact                       | Pressure<br>(mb.) | Altitude<br>(m., m.s.l.) | Elapsed<br>time<br>(min.) |
|                               | 216<br>350                                           | 1      | 230                                   | 59.7             |          | 100                                           | 133.1                 | 1      | 135                     | 3.3               | 5.0                           | 1008              | 79                       | 0.0                       |
|                               | 414<br>670                                           | 2      | 540                                   | 55.1             |          | 409                                           | 134.5                 | 2      | 141                     | 5.1               | 5                             | 1008              | —                        | —                         |
|                               | 612<br>980                                           | 3      | 820                                   | 50.8             |          | 700                                           | 139.3                 | 3      | 150                     | 4.6               | 10                            | 942               | 660                      | 2.2                       |
|                               | 801<br>1285                                          | 4      | 1130                                  | 49.1             |          | 950                                           | 144.3                 | 4      | 164                     | 4.4               | 15                            | 878               | 1300                     | 4.4                       |
|                               | 990<br>1585                                          | 5      | 1420                                  | 48.4             |          | 1208                                          | 150.3                 | 5      | 172                     | 4.8               | 20                            | 817               | 1900                     | 6.8                       |
|                               | 1170<br>1880                                         | 6      | 1640                                  | 48.2             |          | 1500                                          | 154.7                 | 6      | 164                     | 2.5               | 25                            | 758               | 2510                     | 9.2                       |
|                               | 1350<br>2170                                         | 7      | 1870                                  | 52.2             |          | 1500                                          | 152.7                 | 7      | 27                      | 1.4               | 30                            | 702               | 3140                     | 11.4                      |
|                               | 1530<br>2455                                         | 8      | 2130                                  | 56.5             |          | 1400                                          | 149.2                 | 8      | 22                      | 3.2               | 35                            | 649               | 3780                     | 13.7                      |
|                               | 1710<br>2740                                         | 9      | 2410                                  | 60.9             |          | 1300                                          | 139.7                 | 9      | 26                      | 4.4               | 40                            | 598               | 4450                     | 16.0                      |
|                               | 1890<br>3020                                         | 10     | 2670                                  | 65.7             |          | 1200                                          | 127.1                 | 10     | 12                      | 5.3               | 45                            | 549               | 5130                     | 18.3                      |
|                               | 2070<br>3300                                         | 11     | 2960                                  | 70.5             |          | 1050                                          | 110.1                 | 11     | 359                     | 7.6               | 50                            | 502               | 5860                     | 20.9                      |
|                               | 2250<br>3580                                         | 12     | 3230                                  | 73.2             |          | 950                                           | 78.8                  | 12     | 353                     | 8.6               | 55                            | 459               | 6520                     | 23.3                      |
|                               | 2430<br>3855                                         | 13     | 3560                                  | 72.0             |          | 1100                                          | 51.6                  | 13     | 356                     | 8.1               | 60                            | 417               | 7250                     | 25.8                      |
|                               | 2610<br>4130                                         | 14     | 3820                                  | 69.3             |          | 1450                                          | 36.3                  | 14     | 1                       | 6.4               | 65                            | 378               | 7960                     | 28.2                      |
|                               | 2790<br>4405                                         | 15     | 4120                                  | 67.5             |          | 1700                                          | 30.4                  | 15     | 2                       | 5.2               | 70                            | 340               | 8730                     | 30.7                      |
|                               | 2970<br>4675                                         | 16     | 4420                                  | 65.8             |          | 2000                                          | 26.3                  | 16     | 2                       | 5.13              | 75                            | 306               | 9420                     | 33.1                      |
|                               | 3150<br>4945                                         | 17     | 4730                                  | 64.2             |          | 2300                                          | 22.7                  | 17     | 6                       | 4.3               | 80                            | 272               | 10300                    | 35.3                      |
|                               | 3330<br>5215                                         | 18     | 5000                                  | 63.2             |          | 2500                                          | 22.1                  | 18     | 21                      | 4.2               | 85                            | 242               | 11060                    | 37.6                      |
|                               | 3510<br>5485                                         | 19     | 5260                                  | 61.7             |          | 2800                                          | 22.2                  | 19     | 25                      | 5.8               | 90                            | 214               | 11870                    | 40.1                      |
|                               | 3690<br>5755                                         | 20     | 5520                                  | 59.6             |          | 3200                                          | 23.3                  | 20     | 30                      | 6.7               | 95                            | 188               | 12720                    | 42.5                      |
|                               | 3870<br>6025                                         | 21     | 5800                                  | 58.4             |          | 3600                                          | 23.9                  | 21     | 28                      | 6.7               | 100                           | 164               | 13560                    | 45.1                      |
|                               | 4050<br>6295                                         | 22     | 6070                                  | 56.8             |          | 4000                                          | 24.7                  | 22     | 21                      | 5.0               | 105                           | 141               | 14500                    | 47.5                      |
|                               | 4230<br>6565                                         | 23     | 6340                                  | 55.8             |          | 4200                                          | 23.5                  | 23     | 13                      | 5.0               | 110                           | 120               | 15070                    | 49.7                      |
|                               | 4410<br>6835                                         | 24     | 6650                                  | 54.5             |          | 4700                                          | 22.4                  | 24     | 2                       | 8.0               | 115                           | 102               | 16470                    | 52.5                      |
|                               | 4590<br>7105                                         | 25     | 6930                                  | 53.7             |          | 5100                                          | 19.7                  | 25     |                         |                   | 120                           | 85                | 17560                    | 55.3                      |
|                               | 4770<br>7375                                         | 26     |                                       | 52.8             |          |                                               | 17.0                  | 26     | 349                     | 8.4               | 125                           | 70                | 18780                    | 58.5                      |
|                               | 4950<br>7645                                         | 27     | 7530                                  | 51.4             |          | 6000                                          | 14.9                  | 27     |                         |                   | 130                           | 54                | 20000                    | 62.5                      |
|                               | 5130<br>7915                                         | 28     |                                       | 50.4             |          |                                               | 13.4                  | 28     | 359                     | 9.4               | 135                           | 41                | 21100                    |                           |
|                               | 5310<br>8185                                         | 29     | 8120                                  | 48.7             |          | 7100                                          | 12.5                  | 29     |                         |                   | 140                           | 27                | 24750                    |                           |
|                               | 5490<br>8455                                         | 30     |                                       | 46.8             |          |                                               | 12.1                  | 30     | 7                       | 12.0              |                               |                   |                          |                           |
|                               | 5670<br>8730                                         | 31     | 8790                                  | 45.5             |          | 8500                                          | 11.2                  | 31     |                         |                   |                               |                   |                          |                           |
|                               | 5850<br>9005                                         | 32     |                                       | 44.6             |          |                                               | 9.7                   | 32     | 346                     | 10.6              |                               |                   |                          |                           |
|                               | 6030<br>9285                                         | 33     | 9400                                  | 43.9             |          | 9700                                          | 8.1                   | 33     |                         |                   |                               |                   |                          |                           |
|                               | 6210<br>9565                                         | 34     |                                       | 43.5             |          |                                               | 6.4                   | 34     | 334                     | 10.4              |                               |                   |                          |                           |
|                               | 6390                                                 | 35     | 10120                                 | 42.1             |          | 10700                                         | 4.2                   | 35     |                         |                   |                               |                   |                          |                           |

Punched Card Data

| Altitude | Direction<br>(degrees) | Speed<br>(m.p.s.) | Card<br>columns | Altitude | Direction<br>(degrees) | Speed<br>(m.p.s.) |
|----------|------------------------|-------------------|-----------------|----------|------------------------|-------------------|
|          |                        |                   |                 |          |                        |                   |



|      |    |       |      |       |       |    |     |      |
|------|----|-------|------|-------|-------|----|-----|------|
| 4810 | 24 | 6650  | 50.5 | 4700  | 22.4  | 24 | 2   | 2.0  |
| 4811 | 25 | 6930  | 53.7 | 5100  | 19.7  | 25 |     |      |
| 4812 | 26 |       | 52.8 |       | 17.0  | 26 | 349 | 8.4  |
| 4813 | 27 | 4530  | 51.4 | 6000  | 14.9  | 27 |     |      |
| 4814 | 28 |       | 50.4 |       | 13.4  | 28 | 359 | 9.4  |
| 4815 | 29 | 8120  | 48.7 | 7100  | 12.5  | 29 |     |      |
| 4816 | 30 |       | 46.7 |       | 12.1  | 30 | 7   | 12.0 |
| 4817 | 31 | 8790  | 45.5 | 8500  | 11.2  | 31 |     |      |
| 4818 | 32 |       | 44.6 |       | 9.7   | 32 | 346 | 10.6 |
| 4819 | 33 | 9400  | 43.9 | 9700  | 8.1   | 33 |     |      |
| 4820 | 34 |       | 43.5 |       | 6.4   | 34 | 334 | 10.4 |
| 4821 | 35 | 10120 | 43.2 | 10700 | 4.2   | 35 |     |      |
| 4822 | 36 |       | 42.2 |       | 2.9   | 36 | 354 | 15.0 |
| 4823 | 37 | 10820 | 40.7 | 12500 | 2.5   | 37 |     |      |
| 4824 | 38 |       | 39.1 |       | 2.5   | 38 | 355 | 19.3 |
| 4825 | 39 | 11520 | 37.7 | 14800 | 1.7   | 39 |     |      |
| 4826 | 40 |       | 36.2 |       | 0.7   | 40 | 354 | 22.0 |
| 4827 | 41 | 12200 | 34.9 | 17400 | 0.4   | 41 |     |      |
| 4828 | 42 |       | 33.4 |       | 0.4   | 42 | 360 | 20.5 |
| 4829 | 43 | 12820 | 32.9 | 19700 | 0.4   | 43 |     |      |
| 4830 | 44 | 13130 | 32.2 | 20700 | 359.3 | 44 | 351 | 17.4 |
| 4831 | 45 | 13500 | 31.6 | 21800 | 359.4 | 45 |     |      |
| 4832 | 46 | 13920 | 30.9 | 23000 | 357.1 | 46 | 354 | 20.0 |
| 4833 | 47 |       | 30.3 |       | 359.3 | 47 |     |      |
| 4834 | 48 | 14710 | 29.7 | 25600 | 359.0 | 48 | 9   | 18.0 |
| 4835 | 49 |       | 29.4 |       | 0.4   | 49 |     |      |
| 4836 | 50 | 15540 | 29.3 | 27500 | 1.0   | 50 | 18  | 12.0 |

Coded Data for Transmission

|       |        |        |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 541   | 06930  | 1407   | 2 1410 | 1509   | 4 1709 | 1707   | 6 0703 | 0206   | 8 0208 |
| 0112  | 0 3615 | 2 3615 | 4 3610 | 6 0109 | 8 0313 | 0 0210 | 4 3616 | 5 3617 | 03521  |
| 53531 | 03641  | 53537  | 00228  | 40211  | 00609  | 90821  |        |        |        |
|       |        |        |        |        |        |        |        |        |        |
|       |        |        |        |        |        |        |        |        |        |

|       |     |       |      |
|-------|-----|-------|------|
| 115   | 122 | 16670 | 52.3 |
| 120   | 85  | 17560 | 55.3 |
| 125   | 70  | 18780 | 58.5 |
| 130   | 54  | 20000 | 62.5 |
| 135   | 41  | 22100 |      |
| 140   | 27  | 24750 |      |
|       |     |       |      |
| 142.1 | 48  | 21150 | 64.0 |

Punched Card Data

| Altitude          | Direction (degrees) | Speed (m.p.s.) | Card columns      | Altitude   | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|-------------------|------------|---------------------|----------------|
| Card No. 1        |                     |                | 15                | Card No. 2 |                     |                |
| Type of equipment | 8                   | 16             | Type of equipment | 8          |                     |                |
| etc.              | 130                 | 2              | 17-21             | 7          | 356                 | 8              |
| 150 m.            | 133                 | 3              | 22-26             | 8          | 1                   | 10             |
| 300 m.            | 136                 | 4              | 27-31             | 9          | 353                 | 11             |
| 0.5               | 138                 | 4              | 32-36             | 10         | 338                 | 11             |
| 1.0               | 154                 | 5              | 37-41             | 11         | 355                 | 18             |
| 1.5               | 171                 | 5              | 42-46             | 12         | 355                 | 22             |
| 2.0               | 26                  | 2              | 47-51             | 13         | 354                 | 19             |
| 2.5               | 25                  | 4              | 52-56             | 14         | 254                 | 20             |
| 3                 | 360                 | 7              | 57-61             | 15         | 13                  | 17             |
| 4                 | 1                   | 6              | 62-66             | 16         | 18                  | 10             |
| 5                 | 17                  | 5              | 67-71             | 17         | 30                  | 5              |
| 6                 | 26                  | 6              | 72-76             | 18         | 58                  | 4              |

Maximum Wind Speed Data

|                                                          |  |  |
|----------------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)              |  |  |
| Alt. of maximum wind speed (m.)                          |  |  |
| Max. wind speed (m.p.s.) and dir. (degrees)              |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind           |  |  |
| Enter check if additional levels appear on reverse side. |  |  |



SHREVEPORT, LOUISIANA  
Greater Shreveport Municipal Airport  
Lat. 32°25'N Long. 93°49'W  
Local Standard Time, 90th Meridian  
Elev. of Station, 79M. RAWIN, GMD-1A

**WINDS-ALOFT COMPUTATION SHEET**  
 (LAND STATION FORM)  
 WBAN-20

Ascension No. 711

| Slant<br>range<br>(m.) (yds.) | Min<br>i | Raw<br>ht. above<br>surface (m.) | Elevation angle° |  | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Min<br>i | Wind<br>Direction°<br>360°= N | Wind<br>Speed<br>(m.p.s.) |
|-------------------------------|----------|----------------------------------|------------------|--|-----------------------------------------------|-----------------------|----------|-------------------------------|---------------------------|
|                               | 106      |                                  |                  |  |                                               |                       | 106      |                               |                           |
|                               | 107      |                                  |                  |  |                                               |                       | 107      |                               |                           |
|                               | 108      |                                  |                  |  |                                               |                       | 108      |                               |                           |
|                               | 109      |                                  |                  |  |                                               |                       | 109      |                               |                           |
|                               | 110      |                                  |                  |  |                                               |                       | 110      |                               |                           |
|                               | 111      |                                  |                  |  |                                               |                       | 111      |                               |                           |
|                               | 112      |                                  |                  |  |                                               |                       | 112      |                               |                           |
|                               | 113      |                                  |                  |  |                                               |                       | 113      |                               |                           |
|                               | 114      |                                  |                  |  |                                               |                       | 114      |                               |                           |
|                               | 115      |                                  |                  |  |                                               |                       | 115      |                               |                           |

2

1. Name  
State
2. Lat.  
long.
3. Loca  
Stand  
time  
meric
4. El. o
5. Meth  
obs.  
rawi  
rawi
6. Type  
equip  
WBR  
GMD  
GMD  
SCR  
theo

\* Altitude  
in km

|         |                    |                |              |         |                    |                |
|---------|--------------------|----------------|--------------|---------|--------------------|----------------|
| Student | Section<br>(green) | Seed<br>(p.s.) | Card<br>num. | Student | Section<br>(green) | Seed<br>(p.s.) |
|---------|--------------------|----------------|--------------|---------|--------------------|----------------|



|       |     |  |  |  |  |  |     |
|-------|-----|--|--|--|--|--|-----|
| 20450 | 72  |  |  |  |  |  | 72  |
| 20770 | 73  |  |  |  |  |  | 73  |
| 21000 | 74  |  |  |  |  |  | 74  |
| 21240 | 75  |  |  |  |  |  | 75  |
| 21420 | 76  |  |  |  |  |  | 76  |
| 21905 | 77  |  |  |  |  |  | 77  |
| 22185 | 78  |  |  |  |  |  | 78  |
| 22470 | 79  |  |  |  |  |  | 79  |
| 22750 | 80  |  |  |  |  |  | 80  |
| 23040 | 81  |  |  |  |  |  | 81  |
| 23320 | 82  |  |  |  |  |  | 82  |
| 23600 | 83  |  |  |  |  |  | 83  |
| 23880 | 84  |  |  |  |  |  | 84  |
| 24160 | 85  |  |  |  |  |  | 85  |
| 24440 | 86  |  |  |  |  |  | 86  |
| 24730 | 87  |  |  |  |  |  | 87  |
| 25010 | 88  |  |  |  |  |  | 88  |
| 25300 | 89  |  |  |  |  |  | 89  |
| 25580 | 90  |  |  |  |  |  | 90  |
| 25860 | 91  |  |  |  |  |  | 91  |
| 26140 | 92  |  |  |  |  |  | 92  |
| 26420 | 93  |  |  |  |  |  | 93  |
| 26700 | 94  |  |  |  |  |  | 94  |
| 26980 | 95  |  |  |  |  |  | 95  |
| 27260 | 96  |  |  |  |  |  | 96  |
| 27540 | 97  |  |  |  |  |  | 97  |
| 27820 | 98  |  |  |  |  |  | 98  |
| 28100 | 99  |  |  |  |  |  | 99  |
| 28380 | 100 |  |  |  |  |  | 100 |
| 28660 | 101 |  |  |  |  |  | 101 |
| 28940 | 102 |  |  |  |  |  | 102 |
| 29220 | 103 |  |  |  |  |  | 103 |
| 29500 | 104 |  |  |  |  |  | 104 |
| 29780 | 105 |  |  |  |  |  | 105 |

|                         |     |     |     |     |     |     |     |     |     |     |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Minute                  | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 |
| Slant range (m.) (yds.) |     |     |     |     |     |     |     |     |     |     |

# Altitude  
in km

#### Punched Card Data

| Altitude#         | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude#         | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|--------------|-------------------|---------------------|----------------|
| Card No. 3        |                     |                | 15           | Card No. 4        |                     |                |
| Type of equipment | 8                   |                | 16           | Type of equipment | 8                   |                |
| 19                | 61                  | 7              | 17-21        | 31                |                     |                |
| 20                | 76                  | 11             | 22-26        | 32                |                     |                |
| 21                | 84                  | 11             | 27-31        | 33                |                     |                |
| 22                |                     |                | 32-36        | 34                |                     |                |
| 23                |                     |                | 37-41        | 35                |                     |                |
| 24                |                     |                | 42-46        | 36                |                     |                |
| 25                |                     |                | 47-51        | 37                |                     |                |
| 26                |                     |                | 52-56        | 38                |                     |                |
| 27                |                     |                | 57-61        | 39                |                     |                |
| 28                |                     |                | 62-66        | 40                |                     |                |
| 29                |                     |                | 67-71        | 41                |                     |                |
| 30                |                     |                | 72-76        | 42                |                     |                |

#### Maximum Wind Speed Data

|                                                |  |  |
|------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)    |  |  |
| Alt. of maximum wind speed (m.)                |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind |  |  |
| Max. alt. wind speed 45 m.p.s. or more (m.)    |  |  |



Greater Shreveport Municipal Airport  
Lat. 32°28'N Long. 93°49'W  
Local Standard Time, 90th Meridian  
El. of Station, 79M, RAWIN, GMD-1A

**WINDS-ALOFT COMPUTATION SHEET**  
(LAND STATION FORM)  
WBAN-20

|                         | Year | Month | Day | Time |
|-------------------------|------|-------|-----|------|
| Actual time<br>—th mer. | 1963 | JUN   | 27  | 0530 |
| Scheduled<br>(G.M.T.)   | 1963 | JUN   | 27  | 1130 |
| Ascension No.           | 712  |       |     |      |

Type of balloon 1200- GRM

Orientation, 360° = South

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.)<br><div>30<br/>grom<br/>100<br/>grom</div> | Minute | Rowin<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                   |      |                   |
|-------------------------------|----------------------------------------------------------------------------|--------|---------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|------------------------|------|-------------------|
|                               |                                                                            |        |                                       | Observed         | Smoothed |                                               |                       |        | Direction°<br>360°= N. |      | Speed<br>(m.p.s.) |
|                               |                                                                            |        |                                       |                  |          |                                               |                       |        | sfc.                   | 120  |                   |
|                               | 216<br>350                                                                 | 1      | 250                                   | 29.4             |          | 400                                           | 139.1                 | 1      | 146                    | 5.8  |                   |
|                               | 414<br>670                                                                 | 2      | 530                                   | 35.9             |          | 700                                           | 145.8                 | 2      | 163                    | 3.5  |                   |
|                               | 612<br>980                                                                 | 3      | 800                                   | 45.1             |          | 800                                           | 150.7                 | 3      | 205                    | 1.2  |                   |
|                               | 801<br>1285                                                                | 4      | 1090                                  | 53.2             |          | 780                                           | 154.0                 | 4      | 306                    | 0.8  |                   |
|                               | 990<br>1585                                                                | 5      | 1400                                  | 62.0             |          | 730                                           | 153.7                 | 5      | 357                    | 1.8  |                   |
|                               | 1170<br>1880                                                               | 6      | 1700                                  | 71.5             |          | 580                                           | 145.7                 | 6      | 352                    | 3.3  |                   |
|                               | 1350<br>2170                                                               | 7      | 1970                                  | 79.1             |          | 370                                           | 135.3                 | 7      | 345                    | 3.3  |                   |
|                               | 1530<br>2455                                                               | 8      | 2280                                  | 84.0             |          | 240                                           | 116.9                 | 8      | 342                    | 3.2  |                   |
|                               | 1710<br>2740                                                               | 9      | 2560                                  | 86.8             |          | 150                                           | 56.3                  | 9      | 343                    | 3.9  |                   |
|                               | 1890<br>3020                                                               | 10     | 2850                                  | 82.1             |          | 380                                           | 13.2                  | 10     | 348                    | 6.4  |                   |
|                               | 2070<br>3300                                                               | 11     | 3120                                  | 74.2             |          | 840                                           | 758.4                 | 11     | 351                    | 7.7  |                   |
|                               | 2250<br>3580                                                               | 12     | 3410                                  | 69.6             |          | 1275                                          | 356.1                 | 12     | 352                    | 5.9  |                   |
|                               | 2430<br>3855                                                               | 13     | 3690                                  | 62.2             |          | 1550                                          | 355.4                 | 13     | 347                    | 5.3  |                   |
|                               | 2610<br>4130                                                               | 14     | 3900                                  | 64.2             |          | 1900                                          | 353.0                 | 14     | 347                    | 6.2  |                   |
|                               | 2790<br>4405                                                               | 15     | 4240                                  | 61.8             |          | 2275                                          | 352.6                 | 15     | 355                    | 7.2  |                   |
|                               | 2970<br>4675                                                               | 16     | 4550                                  | 58.7             |          | 2750                                          | 353.5                 | 16     | 358                    | 8.2  |                   |
|                               | 3150<br>4945                                                               | 17     | 4830                                  | 56.4             |          | 3250                                          | 354.3                 | 17     | 1                      | 8.0  |                   |
|                               | 3330<br>5215                                                               | 18     | 5080                                  | 54.5             |          | 3700                                          | 355.4                 | 18     | 352                    | 5.1  |                   |
|                               | 3510<br>5485                                                               | 19     | 5350                                  | 53.9             |          | 3850                                          | 353.9                 | 19     | 336                    | 5.3  |                   |
|                               | 3690<br>5755                                                               | 20     | 5650                                  | 52.9             |          | 4300                                          | 352.7                 | 20     | 346                    | 7.2  |                   |
|                               | 3870<br>6025                                                               | 21     | 5920                                  | 51.7             |          | 4700                                          | 352.6                 | 21     | 1                      | 6.7  |                   |
|                               | 4050<br>6295                                                               | 22     | 6180                                  | 50.5             |          | 5100                                          | 354.1                 | 22     | 10                     | 7.8  |                   |
|                               | 4230<br>6565                                                               | 23     | 6450                                  | 49.2             |          | 5600                                          | 355.4                 | 23     | 12                     | 7.8  |                   |
|                               | 4410<br>6835                                                               | 24     | 6730                                  | 48.1             |          | 6000                                          | 356.7                 | 24     | 21                     | 6.4  |                   |
|                               | 4590<br>7105                                                               | 25     | 7010                                  | 48.0             |          | 6300                                          | 358.5                 | 25     |                        |      |                   |
|                               | 4770<br>7375                                                               | 26     | X                                     | 47.6             |          |                                               | 0.0                   | 26     | 20                     | 8.0  |                   |
|                               | 4950<br>7645                                                               | 27     | 7620                                  | 47.2             |          | 7200                                          | 1.5                   | 27     |                        |      |                   |
|                               | 5130<br>7915                                                               | 28     |                                       | 46.7             |          |                                               | 2.5                   | 28     | 23                     | 5.0  |                   |
|                               | 5310<br>8185                                                               | 29     | 8140                                  | 46.1             |          | 7800                                          | 3.5                   | 29     |                        |      |                   |
|                               | 5490<br>8455                                                               | 30     |                                       | 44.9             |          |                                               | 4.3                   | 30     | 12                     | 11.0 |                   |
|                               | 5670<br>8730                                                               | 31     | 8710                                  | 43.8             |          | 9200                                          | 4.6                   | 31     |                        |      |                   |
|                               | 5850<br>9005                                                               | 32     |                                       | 42.2             |          |                                               | 5.4                   | 32     | 16                     | 13.0 |                   |
|                               | 6030<br>9285                                                               | 33     | 9270                                  | 40.8             |          | 10800                                         | 6.2                   | 33     |                        |      |                   |
|                               | 6210<br>9565                                                               | 34     |                                       | 39.2             |          |                                               | 6.2                   | 34     | 9                      | 15.0 |                   |
|                               | 6390<br>9850                                                               | 35     | 9860                                  | 37.8             |          | 12700                                         | 6.6                   | 35     |                        |      |                   |

| Rawinsonde Time-Altitude Data |                |                       |                     |
|-------------------------------|----------------|-----------------------|---------------------|
| Contact                       | Pressure (mb.) | Altitude (m., m.s.l.) | Elapsed time (min.) |
| 4.8                           | 1007           | 79                    | 0.0                 |
| 5                             | 1005           | 100                   | 0.3                 |
| 10                            | 938            | 700                   | 2.4                 |
| 15                            | 876            | 1300                  | 4.1                 |
| 20                            | 816            | 1900                  | 6.5                 |
| 25                            | 758            | 2500                  | 8.7                 |
| 30                            | 702            | 3160                  | 10.9                |
| 35                            | 650            | 3780                  | 13.2                |
| 40                            | 597            | 4470                  | 15.5                |
| 45                            | 550            | 5110                  | 17.9                |
| 50                            | 503            | 5800                  | 20.5                |
| 55                            | 459            | 6510                  | 23.0                |
| 60                            | 418            | 7220                  | 25.5                |
| 65                            | 379            | 7940                  | 28.1                |
| 70                            | 342            | 8700                  | 30.8                |
| 75                            | 307            | 9450                  | 33.6                |
| 80                            | 274            | 10250                 | 36.3                |
| 85                            | 244            | 11000                 | 39.0                |
| 90                            | 216            | 11830                 | 41.6                |
| 95                            | 190            | 12640                 | 44.5                |
| 100                           | 164            | 13570                 | 47.4                |
| 105                           | 142            |                       |                     |
| 110                           | 122            |                       |                     |
| 115                           | 102            |                       |                     |
| 120                           | 85             |                       |                     |
| 125                           | 67             |                       |                     |
| 130                           | 52             |                       |                     |
| 135                           | 36             |                       |                     |
| 140                           | 21             |                       |                     |
| 150                           | 142            | 14446                 | 50.0                |

### Punched Card Data

|           |                        |                   |                 |           |                        |                   |
|-----------|------------------------|-------------------|-----------------|-----------|------------------------|-------------------|
| Altitude# | Direction<br>(degrees) | Speed<br>(m.p.s.) | Cord<br>columns | Altitude# | Direction<br>(degrees) | Speed<br>(m.p.s.) |
|-----------|------------------------|-------------------|-----------------|-----------|------------------------|-------------------|



DATA PROCESSING DIVISION  
CLIMATIC CENTER, USAF  
Air Weather Service (MATS)  
Asheville, North Carolina

REPLY TO  
ATTN OF: CCDFD

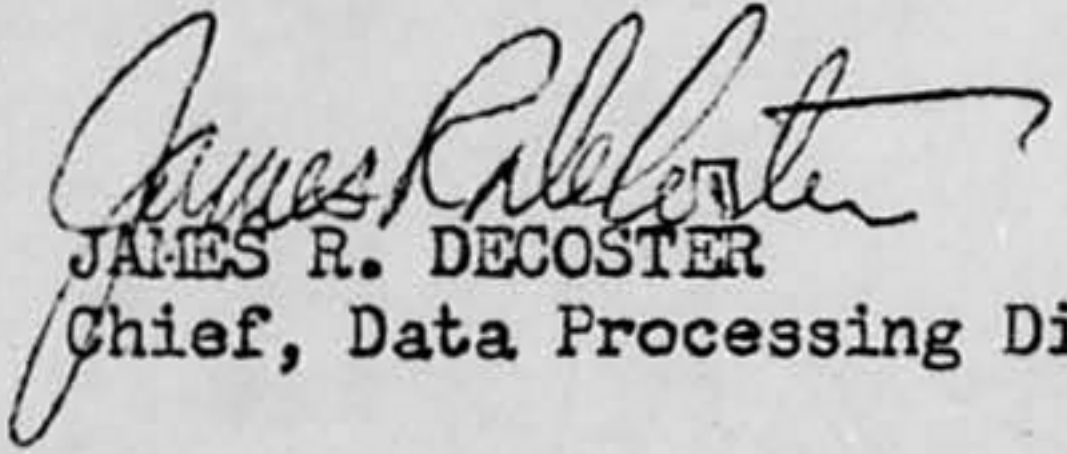
SUBJECT: Surface Data and Wind Data for Texarkana Area

25 Sep 1963

TO: ATIC/TDE (FD Div/Sgt Moody)

1. Reference: Your telephone request on 24 Sep 1963.
2. We are sending a copy of the surface observations (WBAN 10 Forms) recorded on 26-27 June 1963 at Texarkana, Arkansas. Also inclosed are copies of the WBAN 20 computation sheets for observations on 26-27 June 63 at Shreveport, La.

FOR THE DIRECTOR

  
JAMES R. DECOSTER  
Chief, Data Processing Division

- 2 Atch
1. Cy sfc data
  2. Cy wnd data



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|       |    |       |      |       |       |    |     |      |
|-------|----|-------|------|-------|-------|----|-----|------|
| 5405  | 20 | 5650  | 52.7 | 4300  | 552.7 | 20 | 340 | 6.7  |
| 3690  | 21 | 5920  | 51.7 | 4700  | 352.6 | 21 | 1   | 7.8  |
| 5755  | 22 | 6180  | 50.5 | 5100  | 354.1 | 22 | 10  | 7.8  |
| 3870  | 23 | 6450  | 49.2 | 5600  | 355.4 | 23 | 12  | 7.8  |
| 6025  | 24 | 6730  | 48.1 | 6000  | 356.7 | 24 | 21  | 6.4  |
| 4050  | 25 | 7010  | 48.0 | 6300  | 358.5 | 25 |     |      |
| 6295  | 26 | X     | 47.6 |       | 0.0   | 26 | 20  | 8.0  |
| 4230  | 27 | 7620  | 47.2 | 7200  | 1.5   | 27 |     |      |
| 6565  | 28 |       | 46.7 |       | 2.5   | 28 | 23  | 5.0  |
| 4410  | 29 | 8140  | 46.1 | 7800  | 3.5   | 29 |     |      |
| 6835  | 30 |       | 44.9 |       | 4.3   | 30 | 12  | 11.0 |
| 4590  | 31 | 8710  | 43.8 | 9200  | 4.6   | 31 |     |      |
| 7105  | 32 |       | 42.2 |       | 5.4   | 32 | 16  | 13.0 |
| 4770  | 33 | 9270  | 40.8 | 10800 | 6.2   | 33 |     |      |
| 7375  | 34 |       | 39.2 |       | 6.2   | 34 | 9   | 15.0 |
| 4950  | 35 | 9860  | 37.8 | 12700 | 6.6   | 35 |     |      |
| 7645  | 36 |       | 36.4 |       | 6.9   | 36 | 8   | 17.0 |
| 5130  | 37 | 10470 | 34.9 | 14900 | 6.8   | 37 |     |      |
| 7915  | 38 |       | 33.7 |       | 6.7   | 38 | 5   | 19.0 |
| 5310  | 39 | 11020 | 32.6 | 17200 | 6.2   | 39 |     |      |
| 8185  | 40 |       | 31.6 |       | 6.2   | 40 | 3   | 20.0 |
| 5490  | 41 | 11670 | 30.6 | 19600 | 5.9   | 41 |     |      |
| 8455  | 42 |       | 29.9 |       | 5.9   | 42 | 3   | 17.0 |
| 5670  | 43 | 12270 | 29.3 | 21700 | 5.4   | 43 |     |      |
| 8730  | 44 |       | 28.8 |       | 5.6   | 44 | 15  | 18.0 |
| 5850  | 45 | 12900 | 28.2 | 23900 | 6.2   | 45 |     |      |
| 9005  | 46 |       | 27.6 |       | 6.5   | 46 | 8   | 19.0 |
| 6030  | 47 | 13500 | 27.1 | 26300 | 6.6   | 47 |     |      |
| 9285  | 48 | 13820 | 26.6 | 27400 | 6.4   | 48 | 4   | 18.0 |
| 6210  | 49 | 14130 | 26.2 | 28500 | 6.0   | 49 |     |      |
| 9555  | 50 | 14370 | 25.8 | 29300 | 5.9   | 50 | 358 | 16.0 |
| 6390  |    |       |      |       |       |    |     |      |
| 9850  |    |       |      |       |       |    |     |      |
| 6570  |    |       |      |       |       |    |     |      |
| 10135 |    |       |      |       |       |    |     |      |
| 6750  |    |       |      |       |       |    |     |      |
| 10420 |    |       |      |       |       |    |     |      |
| 6930  |    |       |      |       |       |    |     |      |
| 10710 |    |       |      |       |       |    |     |      |
| 7110  |    |       |      |       |       |    |     |      |
| 11005 |    |       |      |       |       |    |     |      |
| 7290  |    |       |      |       |       |    |     |      |
| 11300 |    |       |      |       |       |    |     |      |
| 7470  |    |       |      |       |       |    |     |      |
| 11595 |    |       |      |       |       |    |     |      |
| 7650  |    |       |      |       |       |    |     |      |
| 11890 |    |       |      |       |       |    |     |      |
| 7830  |    |       |      |       |       |    |     |      |
| 12185 |    |       |      |       |       |    |     |      |
| 8010  |    |       |      |       |       |    |     |      |
| 12480 |    |       |      |       |       |    |     |      |
| 8190  |    |       |      |       |       |    |     |      |
| 12775 |    |       |      |       |       |    |     |      |
| 8370  |    |       |      |       |       |    |     |      |
| 13075 |    |       |      |       |       |    |     |      |
| 8550  |    |       |      |       |       |    |     |      |
| 13375 |    |       |      |       |       |    |     |      |
| 8730  |    |       |      |       |       |    |     |      |
| 13675 |    |       |      |       |       |    |     |      |
| 8910  |    |       |      |       |       |    |     |      |
| 13975 |    |       |      |       |       |    |     |      |
| 9090  |    |       |      |       |       |    |     |      |
| 14275 |    |       |      |       |       |    |     |      |

|     |      |       |            |
|-----|------|-------|------------|
| 100 | 164  | 13570 | 47.4       |
| 105 | 142  |       |            |
| 110 | 122  |       |            |
| 115 | 102  |       |            |
| 120 | 85   |       |            |
| 125 | 67   |       |            |
| 130 | 52   |       |            |
| 135 | 36   |       |            |
| 140 | 21   |       |            |
| X   | 1050 | 142   | 14446 50.0 |

## Punched Card Data

| Altitude#         | Direction (degrees) | Speed (m.p.s.) | Cord columns      | Altitude#  | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|-------------------|------------|---------------------|----------------|
| Cord No. 1        |                     |                |                   | Cord No. 2 |                     |                |
| Type of equipment | 8                   | 16             | Type of equipment | 8          |                     |                |
| Alt.              | 120                 | 4              | Alt.              | 20         | 7                   |                |
| 150 m.            | 125                 | 4              | 22-26             | 8          | 21                  | 6              |
| 300 m.            | 143                 | 6              | 27-31             | 9          | 15                  | 13             |
| 0.5               | 157                 | 4              | 32-36             | 10         | 9                   | 17             |
| 1.0               | 240                 | 1              | 37-41             | 11         | 5                   | 19             |
| 1.5               | 357                 | 2              | 42-46             | 12         | 2                   | 17             |
| 2.0               | 345                 | 3              | 47-51             | 13         | 10                  | 19             |
| 2.5               | 342                 | 3              | 52-56             | 14         | 2                   | 18             |
| 3                 | 349                 | 7              | 57-61             | 15         |                     |                |
| 4                 | 346                 | 6              | 62-66             | 16         |                     |                |
| 5                 | 359                 | 7              | 67-71             | 17         |                     |                |
| 6                 | 2                   | 7              | 72-76             | 18         |                     |                |

## Maximum Wind Speed Data

|                                                          |  |  |
|----------------------------------------------------------|--|--|
| Mjn. alt. wind speed 45 m.p.s. or more (m.)              |  |  |
| Alt. of maximum wind speed (m.)                          |  |  |
| Max. wind speed (m.p.s.) and dir. (degrees)              |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind           |  |  |
| Enter check if additional levels appear on reverse side. |  |  |

## Coded Data for Transmission

|       |       |       |       |       |       |       |        |       |       |
|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| SHV   | 12931 | 1511  | 21706 | 2402  | 43302 | 3505  | 63506  | 3406  | 83407 |
| 3511  | 03514 | 23510 | 43514 | 63615 | 83413 | 00115 | 830213 | 50313 | 00126 |
| 50136 | 00135 | 50136 | 23632 | XN170 |       |       |        |       |       |
|       |       |       |       |       |       |       |        |       |       |
|       |       |       |       |       |       |       |        |       |       |
|       |       |       |       |       |       |       |        |       |       |
|       |       |       |       |       |       |       |        |       |       |

Verifier D. C. CAMPBELL



\*Identification

SHREVEPORT, LOUISIANA

Greater Shreveport Municipal Airport

Lat. 32°25'N Long. 93°49'W

Local Standard Time, 90th Meridian

El of Station, 79M, RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAUWINDS-ALOFT COMPUTATION SHEET  
(LAND STATION FORM)

WBAN-20

| Actual time        | Year | Month | Day | Time |
|--------------------|------|-------|-----|------|
| 1130               | 1953 | JUN   | 27  | 1130 |
| Scheduled (G.M.T.) |      |       | 27  | 1730 |
| Ascension No. 713  |      |       |     |      |

Type of balloon LDD-BRM

Orientation, 360° = South

| Slant range (m.) (yds.) | Pibal hr. above sfc. (m.) | Minute | Rawin ht. above surface (m.) | Elevation angle° |          | Distance from observation point (m.) | Azimuth angle ° | Minute | Wind                 |                | Rawinsonde Time-Altitude Data |                |                       |                     |
|-------------------------|---------------------------|--------|------------------------------|------------------|----------|--------------------------------------|-----------------|--------|----------------------|----------------|-------------------------------|----------------|-----------------------|---------------------|
|                         |                           |        |                              | Observed         | Smoothed |                                      |                 |        | Direction° 360° = N. | Speed (m.p.s.) | Con- tact                     | Pressure (mb.) | Altitude (m., m.s.l.) | Elapsed time (min.) |
|                         | 216                       | 1      | 460                          | 65.8             |          | 200                                  | 283.5           | 1      | 266                  | 2.5            | 5.0                           | 1008           | 79                    | 0.0                 |
|                         | 350                       | 2      | 920                          | 73.6             |          | 300                                  | 266.3           | 2      | 227                  | 1.2            | 5                             | 1008           | —                     | —                   |
|                         | 414                       | 3      | 1400                         | 76.6             |          | 300                                  | 261.8           | 3      | 173                  | 0.6            | 10                            | 941            | 670                   | 1.5                 |
|                         | 612                       | 4      | 1800                         | 79.9             |          | 300                                  | 255.6           | 4      | 266                  | 0.6            | 15                            | 877            | 1390                  | 3.0                 |
|                         | 801                       | 5      | 2800                         | 84.0             |          | 300                                  | 249.3           | 5      | 79                   | 1.8            | 20                            | 816            | 1900                  | 4.2                 |
|                         | 1285                      | 6      | 3800                         | 88.2             |          | 100                                  | 279.9           | 6      | 73                   | 2.6            | 25                            | 757            | 2510                  | 4.8                 |
|                         | 990                       | 7      | 4510                         | 90.0             |          | 0                                    | 321.9           | 7      | 42                   | 1.8            | 30                            | 700            | 3170                  | 5.5                 |
|                         | 1505                      | 8      | 5200                         | 84.4             |          | 500                                  | 39.9            | 8      | 22                   | 8.0            | 35                            | 646            | 3830                  | 6.0                 |
|                         | 1170                      | 9      | 5780                         | 80.5             |          | 1000                                 | 22.0            | 9      | 11                   | 8.0            | 40                            | 594            | 4500                  | 6.7                 |
|                         | 1880                      | 10     | 6100                         | 76.1             |          | 1500                                 | 25.5            | 10     | 19                   | 10.0           | 45                            | 544            | 5200                  | 7.9                 |
|                         | 1350                      | 11     | 6450                         | 72.8             |          | 2000                                 | 21.3            | 11     | 6                    | 8.0            | 50                            | 498            | 5900                  | 9.3                 |
|                         | 2170                      | 12     | 6780                         | 69.5             |          | 2500                                 | 17.6            | 12     | 2                    | 9.0            | 55                            | 454            | 6600                  | 11.4                |
|                         | 1530                      | 13     | 7030                         | 67.8             |          | 2900                                 | 14.6            | 13     |                      |                | 60                            | 411            | 7360                  | 14.3                |
|                         | 2455                      | 14     |                              | 66.7             |          |                                      | 11.1            | 14     | 328                  | 8.0            | 65                            | 372            | 8070                  | 16.4                |
|                         | 1710                      | 15     | 7650                         | 66.7             |          | 3300                                 | 7.7             | 15     |                      |                | 70                            | 334            | 8860                  | 18.8                |
|                         | 2740                      | 16     |                              | 66.3             |          |                                      | 4.6             | 16     | 351                  | 5.0            | 75                            | 300            | 9610                  | 21.3                |
|                         | 1890                      | 17     | 8210                         | 65.0             |          | 3800                                 | 4.9             | 17     |                      |                | 80                            | 266            | 10450                 | 24.1                |
|                         | 3020                      | 18     |                              | 62.8             |          |                                      | 4.9             | 18     | 4                    | 11.0           | 85                            | 236            | 11280                 | 26.5                |
|                         | 2070                      | 19     | 8840                         | 60.1             |          | 5100                                 | 4.4             | 19     |                      |                | 90                            | 207            | 12100                 | 28.9                |
|                         | 3300                      | 20     |                              | 57.8             |          |                                      | 4.8             | 20     | 7                    | 12.0           | 95                            | 180            | 12980                 | 31.4                |
|                         | 2250                      | 21     | 9480                         | 55.3             |          | 6500                                 | 4.5             | 21     |                      |                | 100                           | 158            | 13820                 | 33.8                |
|                         | 3580                      | 22     |                              | 52.5             |          |                                      | 3.8             | 22     | 357                  | 17.0           | 105                           |                |                       |                     |
|                         | 2430                      | 23     | 10110                        | 49.9             |          | 6500                                 | 2.8             | 23     |                      |                | 110                           |                |                       |                     |
|                         | 3855                      | 24     |                              | 48.4             |          |                                      | 1.9             | 24     | 357                  | 13.0           | 115                           |                |                       |                     |
|                         | 2610                      | 25     | 10730                        | 46.7             |          | 10100                                | 2.4             | 25     |                      |                | 120                           |                |                       |                     |
|                         | 4130                      | 26     |                              | 45.1             |          |                                      | 2.5             | 26     | 2                    | 15.0           | 125                           |                |                       |                     |
|                         | 2790                      | 27     | 11410                        | 43.9             |          | 11900                                | 2.2             | 27     |                      |                | 130                           |                |                       |                     |
|                         | 4405                      | 28     |                              | 42.8             |          |                                      | 2.6             | 28     | 3                    | 14.0           | 135                           |                |                       |                     |
|                         | 2970                      | 29     | 12060                        | 41.6             |          | 13600                                | 3.7             | 29     |                      |                | 140                           |                |                       |                     |
|                         | 4675                      | 30     |                              | 40.6             |          |                                      | 3.1             | 30     | 357                  | 15.0           |                               |                |                       |                     |
|                         | 3150                      | 31     | 12780                        | 39.5             |          | 15400                                | 2.9             | 31     |                      |                | 62.3                          | 142            | 14900                 | 36.0                |
|                         | 4945                      | 32     |                              | 38.7             |          |                                      | 1.9             | 32     | 340                  | 18.0           |                               |                |                       |                     |
|                         | 3330                      | 33     | 13430                        | 37.6             |          | 17400                                | 0.8             | 33     |                      |                |                               |                |                       |                     |
|                         | 5215                      | 34     | 13700                        | 36.4             |          | 18500                                | 0.5             | 34     | 10                   | 18.0           |                               |                |                       |                     |
|                         | 3510                      | 35     |                              | 35.1             |          |                                      |                 |        |                      |                |                               |                |                       |                     |

Punched Card Data

| Latitude | Direction (degrees) | Speed (m.p.s.) | Card column | Latitude | Direction (degrees) | Speed (m.p.s.) |
|----------|---------------------|----------------|-------------|----------|---------------------|----------------|
|          |                     |                |             |          |                     |                |



|      |    |       |      |       |     |    |     |      |
|------|----|-------|------|-------|-----|----|-----|------|
| 4230 | 23 | 10110 | 49.9 | 4500  | 2.8 | 23 |     |      |
| 4410 | 24 |       | 48.4 |       | 1.9 | 24 | 357 | 13.0 |
| 4590 | 25 | 10730 | 46.7 | 10100 | 2.4 | 25 |     |      |
| 4770 | 26 |       | 45.1 |       | 2.5 | 26 | 2   | 15.0 |
| 4950 | 27 | 11410 | 43.9 | 11900 | 2.2 | 27 |     |      |
| 5130 | 28 |       | 42.8 |       | 2.4 | 28 | 3   | 14.0 |
| 5310 | 29 | 12060 | 41.6 | 13600 | 3.7 | 29 |     |      |
| 5490 | 30 |       | 40.6 |       | 3.1 | 30 | 357 | 15.0 |
| 5670 | 31 | 12280 | 39.5 | 15400 | 2.9 | 31 |     |      |
| 5850 | 32 |       | 38.7 |       | 1.9 | 32 | 340 | 18.0 |
| 6030 | 33 | 13430 | 37.6 | 17400 | 0.8 | 33 |     |      |
| 6210 | 34 | 13700 | 36.4 | 18500 | 0.5 | 34 | 10  | 18.0 |
| 6390 | 35 | 14100 | 35.6 | 19600 | 0.9 | 35 |     |      |
| 6570 | 36 | 14320 | 34.6 | 20600 | 1.0 | 36 | 6   | 20.0 |
| 6750 | 37 |       |      |       |     | 37 |     |      |
| 6930 | 38 |       |      |       |     | 38 |     |      |
| 7110 | 39 |       |      |       |     | 39 |     |      |
| 7290 | 40 |       |      |       |     | 40 |     |      |
| 7470 | 41 |       |      |       |     | 41 |     |      |
| 7650 | 42 |       |      |       |     | 42 |     |      |
| 7830 | 43 |       |      |       |     | 43 |     |      |
| 8010 | 44 |       |      |       |     | 44 |     |      |
| 8190 | 45 |       |      |       |     | 45 |     |      |
| 8370 | 46 |       |      |       |     | 46 |     |      |
| 8550 | 47 |       |      |       |     | 47 |     |      |
| 8730 | 48 |       |      |       |     | 48 |     |      |
| 8910 | 49 |       |      |       |     | 49 |     |      |
| 9090 | 50 |       |      |       |     | 50 |     |      |

Coded Data for Transmission

|       |       |       |       |       |       |       |        |       |       |
|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| SHV   | 18951 | 2604  | 22504 | 2303  | 1801  | 2102  | 62804  | 3404  | 80404 |
| 0704  | 00804 | 20705 | 40804 | 60410 | 80216 | 00219 | 033517 | 53413 | 00123 |
| 53627 | 03629 | 53635 | 80139 |       |       |       |        |       |       |
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| 675  |  |  |  |
| 680  |  |  |  |
| 685  |  |  |  |
| 690  |  |  |  |
| 695  |  |  |  |
| 700  |  |  |  |
| 705  |  |  |  |
| 710  |  |  |  |
| 715  |  |  |  |
| 720  |  |  |  |
| 725  |  |  |  |
| 730  |  |  |  |
| 735  |  |  |  |
| 740  |  |  |  |
| 745  |  |  |  |
| 750  |  |  |  |
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| 770  |  |  |  |
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| 780  |  |  |  |
| 785  |  |  |  |
| 790  |  |  |  |
| 795  |  |  |  |
| 800  |  |  |  |
| 805  |  |  |  |
| 810  |  |  |  |
| 815  |  |  |  |
| 820  |  |  |  |
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| 900  |  |  |  |
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| 970  |  |  |  |
| 975  |  |  |  |
| 980  |  |  |  |
| 985  |  |  |  |
| 990  |  |  |  |
| 995  |  |  |  |
| 1000 |  |  |  |

| Punched Card Data |                     |                |              |                   |                     |
|-------------------|---------------------|----------------|--------------|-------------------|---------------------|
| Altitude          | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude          | Direction (degrees) |
| Card No. 1        |                     |                | 15           | Card No. 2        |                     |
| Type of equipment | 8                   |                | 16           | Type of equipment | 8                   |
| Alt.              | 280                 | 3              | 17-21        | 7                 | 349 9               |
| 150 m.            | 244                 | 3              | 22-26        | 8                 | 350 5               |
| 300 m.            | 251                 | 3              | 27-31        | 9                 | 7 12                |
| 0.5               | 263                 | 2              | 32-36        | 10                | 355 16              |
| 1.0               | 224                 | 1              | 37-41        | 11                | 360 15              |
| 1.5               | 179                 | 1              | 42-46        | 12                | 360 14              |
| 2.0               | 281                 | 2              | 47-51        | 13                | 343 17              |
| 2.5               | 37                  | 2              | 52-56        | 14                | 9 19                |
| 3                 | 77                  | 2              | 57-61        | 15                |                     |
| 4                 | 74                  | 3              | 62-66        | 16                |                     |
| 5                 | 40                  | 6              | 67-71        | 17                |                     |
| 6                 | 15                  | 9              | 72-76        | 18                |                     |

Maximum Wind Speed Data

|                                                          |  |  |
|----------------------------------------------------------|--|--|
| Min. alt. wind speed * 45 m.p.s. or more (m.)            |  |  |
| Alt. of maximum wind speed (m.)                          |  |  |
| Max. wind speed (m.p.s.) and dir. (degrees)              |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind           |  |  |
| Enter check if additional levels appear on reverse side. |  |  |



Identification  
**SHREVEPORT, LOUISIANA**  
 Greater Shreveport Municipal Airport  
 Lat. 32°28'N Long. 93°49'W  
 Local Standard Time, 90th Meridian  
 E of Station, 79M, RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
 WEATHER BUREAU

**WINDS-ALOFT COMPUTATION SHEET**  
 (LAND STATION FORM)

WBAN-20

| Actual time<br>—th mer. | Year | Month | Day  | Time |
|-------------------------|------|-------|------|------|
| 1963                    | JUN  | 27    | 1230 |      |
| Scheduled<br>(G.M.T.)   | Year | Month | Day  | Time |
| 1963                    | JUN  | 27    | 2330 |      |
| Ascension No. 710       |      |       |      |      |

Type of balloon 1200 927

Orientation, 360° = South

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.)<br>30<br>90m<br>100<br>90m | Minute | Rawin<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                    |                   | Rawinsonde Time-Altitude Data |                   |                          |                           |
|-------------------------------|------------------------------------------------------------|--------|---------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|-------------------------|-------------------|-------------------------------|-------------------|--------------------------|---------------------------|
|                               |                                                            |        |                                       | Observed         | Smoothed |                                               |                       |        | Direction°<br>360° = N. | Speed<br>(m.p.s.) | Contact                       | Pressure<br>(mb.) | Altitude<br>(m., m.s.l.) | Elapsed<br>time<br>(min.) |
|                               | 216<br>350                                                 | 1      | 230                                   | 47.8             |          | 100                                           | 214.0                 | 1      | 214                     | 3.2               | 5.5                           | 1004              | 79                       | 0.0                       |
|                               | 414<br>670                                                 | 2      | 520                                   | 50.3             |          | 400                                           | 213.7                 | 2      | 204                     | 3.3               | 5                             | 1011              | —                        | —                         |
|                               | 612<br>980                                                 | 3      | 760                                   | 54.4             |          | 500                                           | 203.0                 | 3      | 161                     | 3.2               | 10                            | 944               | 610                      | 2.3                       |
|                               | 801<br>1285                                                | 4      | 1052                                  | 57.6             |          | 700                                           | 188.8                 | 4      | 130                     | 3.1               | 15                            | 880               | 1260                     | 4.7                       |
|                               | 990<br>1585                                                | 5      | 1300                                  | 60.7             |          | 700                                           | 173.2                 | 5      | 93                      | 2.5               | 20                            | 817               | 1880                     | 7.0                       |
|                               | 1170<br>1880                                               | 6      | 1590                                  | 64.5             |          | 750                                           | 165.0                 | 6      | 57                      | 1.3               | 25                            | 758               | 2500                     | 9.4                       |
|                               | 1350<br>2170                                               | 7      | 1860                                  | 70.1             |          | 650                                           | 161.9                 | 7      | 10                      | 3.0               | 30                            | 700               | 3170                     | 11.9                      |
|                               | 1530<br>2455                                               | 8      | 2100                                  | 76.9             |          | 450                                           | 146.3                 | 8      | 354                     | 4.8               | 35                            | 646               | 3860                     | 14.3                      |
|                               | 1710<br>2740                                               | 9      | 2370                                  | 86.3             |          | 150                                           | 105.3                 | 9      | 345                     | 4.2               | 40                            | 594               | 4510                     | 16.8                      |
|                               | 1890<br>3020                                               | 10     | 2660                                  | 87.1             |          | 150                                           | 89.0                  | 10     | 346                     | 7.1               | 45                            | 544               | 5210                     | 17.5                      |
|                               | 2070<br>3300                                               | 11     | 2900                                  | 74.6             |          | 800                                           | 356.6                 | 11     | 346                     | 9.3               | 50                            | 498               | 5910                     | 22.1                      |
|                               | 2250<br>3580                                               | 12     | 3140                                  | 69.2             |          | 1000                                          | 350.1                 | 12     | 336                     | 6.7               | 55                            | 453               | 6600                     | 24.6                      |
|                               | 2430<br>3855                                               | 13     | 3420                                  | 64.6             |          | 1600                                          | 346.5                 | 13     | 338                     | 6.7               | 60                            | 411               | 7340                     | 27.5                      |
|                               | 2610<br>4130                                               | 14     | 3700                                  | 61.4             |          | 2000                                          | 345.0                 | 14     | 342                     | 6.6               | 65                            | 372               | 8130                     | 30.1                      |
|                               | 2790<br>4405                                               | 15     | 3940                                  | 58.8             |          | 2400                                          | 345.0                 | 15     | 351                     | 7.4               | 70                            | 334               | 8990                     | 32.6                      |
|                               | 2970<br>4675                                               | 16     | 4210                                  | 55.8             |          | 2900                                          | 342.1                 | 16     | 357                     | 8.5               | 75                            | 300               | 9750                     | 35.3                      |
|                               | 3150<br>4945                                               | 17     | 4500                                  | 52.9             |          | 3400                                          | 348.8                 | 17     | 4                       | 7.7               | 80                            | 266               | 10460                    | 38.1                      |
|                               | 3330<br>5215                                               | 18     | 4760                                  | 50.9             |          | 3800                                          | 351.1                 | 18     | 20                      | 7.5               | 85                            | 236               | 11260                    | 40.9                      |
|                               | 3510<br>5485                                               | 19     | 5000                                  | 49.7             |          | 4200                                          | 355.0                 | 19     | 12                      | 7.9               | 90                            | 207               | 12120                    | 43.5                      |
|                               | 3690<br>5755                                               | 20     | 5300                                  | 48.6             |          | 4700                                          | 355.1                 | 20     | 358                     | 6.5               | 95                            | 181               | 13030                    | 46.0                      |
|                               | 3870<br>6025                                               | 21     | 5580                                  | 47.7             |          | 5000                                          | 355.5                 | 21     | 357                     | 5.9               | 100                           | 158               | 13870                    | 48.8                      |
|                               | 4050<br>6295                                               | 22     | 5840                                  | 46.9             |          | 5400                                          | 355.2                 | 22     | 354                     | 5.8               | 105                           | 136               | 14770                    | 51.3                      |
|                               | 4230<br>6565                                               | 23     | 6100                                  | 46.3             |          | 5700                                          | 355.1                 | 23     | 358                     | 7.5               | 110                           | 116               | 15780                    | 54.2                      |
|                               | 4410<br>6835                                               | 24     | 6400                                  | 45.4             |          | 6300                                          | 355.9                 | 24     | 7                       | 8.4               | 115                           | 97                | 16730                    | 57.0                      |
|                               | 4590<br>7105                                               | 25     | 6670                                  | 44.6             |          | 6700                                          | 356.9                 | 25     | 13                      | 7.0               | 120                           | 80                | 18000                    | 60.2                      |
|                               | 4770<br>7375                                               | 26     | 6930                                  | 43.8             |          | 7100                                          | 357.9                 | 26     | 6                       | 9.2               | 125                           | 64                | 19340                    | 64.0                      |
|                               | 4950<br>7645                                               | 27     | 7260                                  | 42.7             |          | 7800                                          | 358.3                 | 27     |                         |                   | 130                           | 50                | 20920                    | 68.4                      |
|                               | 5130<br>7915                                               | 28     |                                       | 42.2             |          |                                               | 359.3                 | 28     | 19                      | 6.5               | 135                           | 34                | 23450                    | 73.8                      |
|                               | 5310<br>8185                                               | 29     | 7760                                  | 42.0             |          | 8500                                          | 21                    | 29     |                         |                   | 140                           | 20                | 26880                    | 81.7                      |
|                               | 5490<br>8455                                               | 30     |                                       | 41.7             |          |                                               | 0.7                   | 30     | 4                       | 7.4               |                               |                   |                          |                           |
|                               | 5670<br>8730                                               | 31     | 8400                                  | 41.6             |          | 9400                                          | 0.7                   | 31     |                         |                   | 50.1                          | 17.0              | 27970                    | 84.0                      |
|                               | 5850<br>9005                                               | 32     |                                       | 41.5             |          |                                               | 0.2                   | 32     | 350                     | 6.8               |                               |                   |                          |                           |
|                               | 6030<br>9285                                               | 33     | 9000                                  | 41.2             |          | 10200                                         | 359.8                 | 33     |                         |                   |                               |                   |                          |                           |
|                               | 6210<br>9565                                               | 34     |                                       | 40.5             |          |                                               | 358.8                 | 34     | 343                     | 10.2              |                               |                   |                          |                           |
|                               | 6390<br>9850                                               | 35     | 9600                                  | 39.9             |          | 11400                                         | 358.1                 | 35     |                         |                   |                               |                   |                          |                           |

Punched Card Data

| Altitude | Direction<br>(degrees) | Speed<br>(m.p.s.) | Card<br>columns | Altitude | Direction<br>(degrees) | Speed<br>(m.p.s.) |
|----------|------------------------|-------------------|-----------------|----------|------------------------|-------------------|
|          |                        |                   |                 |          |                        |                   |



|      |    |       |      |       |       |    |     |      |
|------|----|-------|------|-------|-------|----|-----|------|
| 4410 | 24 | 6400  | 45.0 | 6500  | 355.9 | 24 | 7   | 8.7  |
| 4530 | 25 | 6670  | 44.6 | 6700  | 356.9 | 25 | 13  | 7.0  |
| 4770 | 26 | 6930  | 43.8 | 7100  | 357.9 | 26 | 6   | 9.2  |
| 4950 | 27 | 7260  | 42.7 | 7800  | 358.3 | 27 |     |      |
| 5130 | 28 |       | 42.2 |       | 359.3 | 28 | 19  | 6.5  |
| 5310 | 29 | 7760  | 42.0 | 8500  | 361   | 29 |     |      |
| 5490 | 30 |       | 41.7 |       | 362   | 30 | 4   | 7.4  |
| 5670 | 31 | 8400  | 41.6 | 9400  | 367   | 31 |     |      |
| 5850 | 32 |       | 41.5 |       | 368   | 32 | 350 | 6.8  |
| 6030 | 33 | 9000  | 41.2 | 10200 | 369.8 | 33 |     |      |
| 6210 | 34 |       | 40.5 |       | 368.8 | 34 | 343 | 10.2 |
| 6390 | 35 | 9600  | 39.9 | 11400 | 358.1 | 35 |     |      |
| 6570 | 36 |       | 39.1 |       | 356.9 | 36 | 341 | 12.4 |
| 6750 | 37 | 10170 | 38.4 | 12800 | 356.0 | 37 |     |      |
| 6930 | 38 |       | 37.7 |       | 355.4 | 38 | 342 | 12.7 |
| 7110 | 39 | 10800 | 37.0 | 14300 | 354.5 | 39 |     |      |
| 7290 | 40 |       | 36.6 |       | 353.7 | 40 | 345 | 10.3 |
| 7470 | 41 | 11380 | 36.1 | 15500 | 353.7 | 41 |     |      |
| 7650 | 42 |       | 35.7 |       | 353.2 | 42 | 338 | 10.5 |
| 7830 | 43 | 12020 | 35.5 | 16700 | 352.6 | 43 |     |      |
| 8010 | 44 |       | 35.5 |       | 352.2 | 44 | 334 | 10.0 |
| 8190 | 45 | 12640 | 35.2 | 17800 | 351.2 | 45 |     |      |
| 8370 | 46 |       | 34.5 |       | 350.8 | 46 | 347 | 15.0 |
| 8550 | 47 | 13210 | 33.8 | 19000 | 350.9 | 47 |     |      |
| 8730 | 48 | 13540 | 32.9 | 20700 | 351.3 | 48 | 3   | 21.0 |
| 8910 | 49 | 13900 | 32.0 | 22100 | 352.1 | 49 |     |      |
| 9090 | 50 | 14200 | 31.4 | 23100 | 352.7 | 50 | 7   | 19.0 |

Coded Data for Transmission

|       |       |       |       |       |       |       |        |       |       |
|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| SHV   | 00951 | 2106  | 21906 | 1406  | 41005 | 0603  | 60205  | 3509  | 3509  |
| 3515  | 03415 | 23413 | 43516 | 60215 | 83612 | 03614 | 630118 | 50213 | 03517 |
| 53424 | 03420 | 53440 | 00127 | 00310 | 99997 | 00913 | 00915  | 00924 | 10923 |
|       |       |       |       |       |       |       |        |       |       |
|       |       |       |       |       |       |       |        |       |       |

|     |      |       |      |
|-----|------|-------|------|
| 115 | 17   | 10700 | 21.1 |
| 120 | 50   | 18000 | 60.2 |
| 125 | 64   | 19340 | 64.0 |
| 130 | 50   | 20920 | 68.4 |
| 135 | 34   | 23450 | 73.8 |
| 140 | 20   | 26880 | 81.7 |
| 150 | 17.0 | 27970 | 84.0 |

Punched Card Data

| Altitude          | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude          | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|--------------|-------------------|---------------------|----------------|
| Card No. 1        |                     |                | 15           | Card No. 2        |                     |                |
| Type of equipment | 8                   |                | 16           | Type of equipment | 8                   |                |
| Alt.              | 210                 | 4              | 17-21        | 7                 | 7                   | 9              |
| 150 m.            | 213                 | 4              | 22-26        | 8                 | 9                   | 7              |
| 300 m.            | 211                 | 3              | 27-31        | 9                 | 347                 | 8              |
| 0.5               | 207                 | 3              | 32-36        | 10                | 341                 | 12             |
| 1.0               | 142                 | 3              | 37-41        | 11                | 345                 | 11             |
| 1.5               | 80                  | 2              | 42-46        | 12                | 337                 | 10             |
| 2.0               | 7                   | 3              | 47-51        | 13                | 347                 | 15             |
| 2.5               | 345                 | 5              | 52-56        | 14                | 5                   | 20             |
| 3                 | 345                 | 9              | 57-61        | 15                | 5                   | 16             |
| 4                 | 348                 | 7              | 62-66        | 16                | 16                  | 11             |
| 5                 | 14                  | 8              | 67-71        | 17                | 47                  | 7              |
| 6                 | 354                 | 16             | 72-76        | 18                | 44                  | 4              |

Maximum Wind Speed Data

|                                                          |  |  |
|----------------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)              |  |  |
| Alt. of maximum wind speed (m.)                          |  |  |
| Max. wind speed (m.p.s.) and dir. (degrees)              |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind           |  |  |
| Enter check if additional levels appear on reverse side. |  |  |

Verifier P. E. F. S. C.



U.S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

**WINDS-ALOFT COMPUTATION SHEET**  
(LAND STATION FORM)  
WBAN-20

|                        | Year | Month | Day | Time |
|------------------------|------|-------|-----|------|
| Actual time<br>th mer. | 1963 | JUN   | 27  | 1730 |
| Scheduled<br>(G.M.T.)  | 1963 | JUN   | 27  | 2330 |
| Ascension No. 714      |      |       |     |      |

Pa

2

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.) | Minute | Raw in<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                  |                   |
|-------------------------------|---------------------------------|--------|----------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|-----------------------|-------------------|
|                               | 100-<br>gram                    |        |                                        | Observed         | Smoothed |                                               |                       |        | Direction°<br>360°= N | Speed<br>(m.p.s.) |
|                               | 14570                           | 51     |                                        | 30.9             |          |                                               | 353.6                 | 51     |                       |                   |
|                               | 14860                           | 52     | 14900                                  | 30.5             |          | 25100                                         | 354.3                 | 52     | 5                     | 16.0              |
|                               | 15145                           | 53     |                                        | 30.1             |          |                                               | 354.3                 | 53     |                       |                   |
|                               | 15425                           | 54     | 15550                                  | 29.9             |          | 26800                                         | 354.8                 | 54     | 6                     | 12.0              |
|                               | 15705                           | 55     |                                        | 30.0             |          |                                               | 355.3                 | 55     |                       |                   |
|                               | 15985                           | 56     | 16240                                  | 30.1             |          | 27800                                         | 355.7                 | 56     | 31                    | 10.0              |
|                               | 16265                           | 57     |                                        | 30.1             |          |                                               | 356.4                 | 57     |                       |                   |
|                               | 16545                           | 58     | 17070                                  | 30.4             |          | 28800                                         | 357.2                 | 58     | 51                    | 7.0               |
|                               | 16825                           | 59     |                                        | 30.8             |          |                                               | 358.0                 | 59     |                       |                   |
|                               | 17105                           | 60     | 17860                                  | 31.4             |          | 29000                                         | 358.5                 | 60     | 46                    | 4.0               |
|                               | 17385                           | 61     |                                        | 31.6             |          |                                               | 358.5                 | 61     |                       |                   |
|                               | 17670                           | 62     | 18620                                  | 31.9             |          | 29600                                         | 358.9                 | 62     | 27                    | 6.0               |
|                               | 17950                           | 63     |                                        | 31.9             |          |                                               | 359.4                 | 63     |                       |                   |
|                               | 18235                           | 64     | 19410                                  | 32.0             |          | 30800                                         | 0.3                   | 64     | 41                    | 9.0               |
|                               | 18515                           | 65     |                                        | 32.2             |          |                                               | 1.1                   | 65     |                       |                   |
|                               | 18795                           | 66     | 20250                                  | 32.6             |          | 31300                                         | 2.1                   | 66     | 76                    | 6.0               |
|                               | 19080                           | 67     |                                        | 33.2             |          |                                               | 2.7                   | 67     |                       |                   |
|                               | 19360                           | 68     | 21070                                  | 33.7             |          | 31200                                         | 3.7                   | 68     | 91                    | 6.0               |
|                               | 19645                           | 69     |                                        | 34.2             |          |                                               | 5.0                   | 69     |                       |                   |
|                               | 19925                           | 70     | 21870                                  | 34.7             |          | 31200                                         | 5.8                   | 70     | 80                    | 9.0               |
|                               | 20210                           | 71     |                                        | 34.7             |          |                                               | 6.7                   | 71     |                       |                   |
|                               | 20490                           | 72     | 22700                                  | 35.3             |          | 31800                                         | 7.9                   | 72     | 78                    | 11.0              |
|                               | 20775                           | 73     |                                        | 35.5             |          |                                               | 8.9                   | 73     |                       |                   |
|                               | 21055                           | 74     | 23460                                  | 35.7             |          | 32300                                         | 10.1                  | 74     | 80                    | 11.0              |
|                               | 21340                           | 75     |                                        | 35.9             |          |                                               | 11.1                  | 75     |                       |                   |
|                               | 21620                           | 76     | 24310                                  | 36.4             |          | 32700                                         | 12.2                  | 76     | 90                    | 7.0               |
|                               | 21905                           | 77     |                                        | 37.0             |          |                                               | 12.8                  | 77     |                       |                   |
|                               | 22185                           | 78     | 25210                                  | 37.4             |          | 32700                                         | 13.7                  | 78     | 88                    | 10.0              |
|                               | 22470                           | 79     |                                        | 37.6             |          |                                               | 14.9                  | 79     |                       |                   |
|                               | 22750                           | 80     | 26120                                  | 37.8             |          | 33500                                         | 16.2                  | 80     | 83                    | 14.0              |
|                               | 23040                           | 81     |                                        | 37.9             |          |                                               | 17.9                  | 81     |                       |                   |
|                               | 23320                           | 82     | 27010                                  | 38.2             |          | 34100                                         | 19.5                  | 82     | 89                    | 13.0              |
|                               | 23600                           | 83     |                                        | 38.4             |          |                                               | 20.7                  | 83     |                       |                   |
|                               | 23880                           | 84     | 27090                                  | 38.1             |          | 34100                                         | 21.1                  | 84     | 81                    | 11.0              |

| Slant<br>range<br>(m.) (yds.) | Minute | Raw in<br>ht. above<br>surface (m.) | Elevation angle ° |          | Distance from<br>observation<br>point (m.) | Azimuth<br>angle<br>° | Minute | Wind<br>Direction °<br>360° = N | Wind<br>Speed<br>(m.p.s.) |
|-------------------------------|--------|-------------------------------------|-------------------|----------|--------------------------------------------|-----------------------|--------|---------------------------------|---------------------------|
|                               |        |                                     | Observed          | Smoother |                                            |                       |        |                                 |                           |
|                               | 106    |                                     |                   |          |                                            |                       | 106    |                                 |                           |
|                               | 107    |                                     |                   |          |                                            |                       | 107    |                                 |                           |
|                               | 108    |                                     |                   |          |                                            |                       | 108    |                                 |                           |
|                               | 109    |                                     |                   |          |                                            |                       | 109    |                                 |                           |
|                               | 110    |                                     |                   |          |                                            |                       | 110    |                                 |                           |
|                               | 111    |                                     |                   |          |                                            |                       | 111    |                                 |                           |
|                               | 112    |                                     |                   |          |                                            |                       | 112    |                                 |                           |
|                               | 113    |                                     |                   |          |                                            |                       | 113    |                                 |                           |
|                               | 114    |                                     |                   |          |                                            |                       | 114    |                                 |                           |
|                               | 115    |                                     |                   |          |                                            |                       | 115    |                                 |                           |

- \* Stamp follow
1. Name Stat
2. Lat long
3. Loc Stan time mer
4. El.
5. Mer obs raw row
6. Type equi WBF GMD GMD SCR the

\* Altitude in km.

### Punched Card Data

|       |                  |               |             |       |                  |               |
|-------|------------------|---------------|-------------|-------|------------------|---------------|
| tude# | ection<br>(rees) | eed<br>(p.s.) | ord<br>umns | tude# | ection<br>(rees) | eed<br>(p.s.) |
|-------|------------------|---------------|-------------|-------|------------------|---------------|



[illegible]\* Altitude  
\* in km.

| Altitude          | Direction (degrees) | Speed (m.p.h.) | Card columns | Altitude          | Direction (degrees) | Speed (m.p.h.) |
|-------------------|---------------------|----------------|--------------|-------------------|---------------------|----------------|
| Card No. 3        |                     |                | 15           | Card No. 4        |                     |                |
| Type of equipment |                     | 8              | 16           | Type of equipment |                     | 8              |
| 19                | 31                  | 7              | 17-21        | 31                |                     |                |
| 20                | 60                  | 7              | 22-26        | 32                |                     |                |
| 21                | 88                  | 6              | 27-31        | 33                |                     |                |
| 22                | 80                  | 9              | 32-36        | 34                |                     |                |
| 23                | 80                  | 11             | 37-41        | 35                |                     |                |
| 24                | 85                  | 9              | 42-46        | 36                |                     |                |
| 25                | 88                  | 9              | 47-51        | 37                |                     |                |
| 26                | 84                  | 13             | 52-56        | 38                |                     |                |
| 27                | 88                  | 13             | 57-61        | 39                |                     |                |
| 28                |                     |                | 62-66        | 40                |                     |                |
| 29                |                     |                | 67-71        | 41                |                     |                |
| 30                |                     |                | 72-76        | 42                |                     |                |

### Maximum Wind Speed Data

|                                                   |  |  |
|---------------------------------------------------|--|--|
| Min. alt. wind speed<br>45 m.p.s. or more (m.)    |  |  |
| Alt. of maximum<br>wind speed (m.)                |  |  |
| Dir. (degrees) and speed<br>(m.p.s.) of Max. wind |  |  |
| Max. alt. wind speed<br>45 m.p.s. or more (m.)    |  |  |



10-12

SHREVEPORT, LOUISIANA  
 Greater Shreveport Municipal Airport  
 Lat. 32°28'N Long. 93°49'W  
 Local Standard Time, 90th Meridian  
 Elevation of Station, 75M, RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
 WEATHER BUREAU

WINDS-ALOFT COMPUTATION SHEET  
 (LAND STATION FORM)

WBAN-20

|                         | Year | Month | Day | Time |
|-------------------------|------|-------|-----|------|
| Actual time<br>—th mer. | 1963 | JUN   | 27  | 2330 |
| Scheduled<br>(G.M.T.)   | 1963 | JUN   | 28  | 0530 |
| Ascension No.           | 715  |       |     |      |

Type of balloon *h20*

Orientation, 360° = South

| Slant<br>range<br>(m.) (yds.) | Pibal<br>ht. above<br>sfc. (m.)<br>30<br>from<br>100<br>from | Minute | Rawin<br>ht. above<br>surface<br>(m.) | Elevation angle° |          | Distance from<br>observation<br>point<br>(m.) | Azimuth<br>angle<br>° | Minute | Wind                                |                          | Rawinsonde Time-Altitude Data |                   |                          |                           |
|-------------------------------|--------------------------------------------------------------|--------|---------------------------------------|------------------|----------|-----------------------------------------------|-----------------------|--------|-------------------------------------|--------------------------|-------------------------------|-------------------|--------------------------|---------------------------|
|                               |                                                              |        |                                       | Observed         | Smoothed |                                               |                       |        | Direction°<br>360° = N.<br>sfc. 120 | Speed<br>(m.p.s.)<br>2.1 | Contact                       | Pressure<br>(mb.) | Altitude<br>(m., m.s.l.) | Elapsed<br>time<br>(min.) |
|                               | 216                                                          | 1      | 280                                   | 70.4             |          | 100                                           | 147.5                 | 1      | 146                                 | 1.7                      | 48                            | 1005              | 79                       | 0.0                       |
|                               | 350                                                          | 2      | 580                                   | 69.5             |          | 200                                           | 145.8                 | 2      | 125                                 | 2.0                      | 5                             | 1002              | 100                      | 0.2                       |
|                               | 414                                                          | 3      | 880                                   | 68.3             |          | 300                                           | 130.9                 | 3      | 118                                 | 1.3                      | 10                            | 936               | 700                      | 2.3                       |
|                               | 612                                                          | 4      | 1170                                  | 71.9             |          | 350                                           | 135.3                 | 4      | 201                                 | 0.8                      | 15                            | 873               | 1320                     | 4.3                       |
|                               | 980                                                          | 5      | 1480                                  | 76.4             |          | 350                                           | 150.1                 | 5      | 258                                 | 1.2                      | 20                            | 811               | 1940                     | 6.4                       |
|                               | 1170                                                         | 6      | 1780                                  | 80.5             |          | 300                                           | 158.3                 | 6      | 326                                 | 1.7                      | 25                            | 753               | 2560                     | 8.4                       |
|                               | 1880                                                         | 7      | 2100                                  | 85.2             |          | 170                                           | 138.2                 | 7      | 38                                  | 4.0                      | 30                            | 697               | 3200                     | 10.6                      |
|                               | 1350                                                         | 8      | 2400                                  | 80.8             |          | 400                                           | 75.6                  | 8      | 37                                  | 4.4                      | 35                            | 644               | 3850                     | 12.9                      |
|                               | 2170                                                         | 9      | 2680                                  | 78.4             |          | 550                                           | 54.4                  | 9      | 17                                  | 5.6                      | 40                            | 592               | 4540                     | 15.1                      |
|                               | 1530                                                         | 10     | 2960                                  | 72.4             |          | 950                                           | 38.0                  | 10     | 21                                  | 6.6                      | 45                            | 544               | 5200                     | 17.2                      |
|                               | 2455                                                         | 11     | 3260                                  | 67.2             |          | 1300                                          | 33.9                  | 11     | 30                                  | 7.0                      | 50                            | 498               | 5920                     | 19.2                      |
|                               | 1710                                                         | 12     | 3530                                  | 62.8             |          | 1800                                          | 34.4                  | 12     | 29                                  | 7.5                      | 55                            | 454               | 6580                     | 21.4                      |
|                               | 2740                                                         | 13     | 3820                                  | 59.9             |          | 2200                                          | 32.2                  | 13     | 22                                  | 6.7                      | 60                            | 412               | 7330                     | 23.8                      |
|                               | 1890                                                         | 14     | 4120                                  | 57.6             |          | 2600                                          | 30.9                  | 14     | 20                                  | 5.9                      | 65                            | 372               | 8080                     | 26.4                      |
|                               | 3020                                                         | 15     | 4430                                  | 56.8             |          | 2900                                          | 29.7                  | 15     | 21                                  | 5.1                      | 70                            | 336               | 8850                     | 28.9                      |
|                               | 2070                                                         | 16     | 4770                                  | 55.5             |          | 3200                                          | 28.6                  | 16     | 23                                  | 5.9                      | 75                            | 301               | 9630                     | 31.1                      |
|                               | 3300                                                         | 17     | 5100                                  | 54.9             |          | 3600                                          | 28.0                  | 17     | 6                                   | 5.3                      | 80                            | 269               | 10400                    | 33.3                      |
|                               | 2250                                                         | 18     | 5410                                  | 55.1             |          | 3800                                          | 24.9                  | 18     | 341                                 | 4.5                      | 85                            | 240               | 11170                    | 35.5                      |
|                               | 3580                                                         | 19     | 5750                                  | 54.9             |          | 4000                                          | 22.2                  | 19     | 344                                 | 5.2                      | 90                            | 211               | 12000                    | 38.1                      |
|                               | 2430                                                         | 20     | 6050                                  | 54.6             |          | 4300                                          | 19.5                  | 20     | 343                                 | 6.3                      | 95                            | 184               | 12900                    | 40.6                      |
|                               | 3855                                                         | 21     | 6360                                  | 54.2             |          | 4600                                          | 16.1                  | 21     | 342                                 | 7.0                      | 100                           | 160               | 13780                    | —                         |
|                               | 2610                                                         | 22     | 6660                                  | 53.1             |          | 5000                                          | 13.6                  | 22     | 345                                 | 6.6                      | 105                           | 138               | 14200                    | —                         |
|                               | 4130                                                         | 23     | 6970                                  | 52.3             |          | 5300                                          | 11.7                  | 23     |                                     |                          | 110                           | 118               | 15020                    | —                         |
|                               | 2790                                                         | 24     |                                       | 50.7             |          |                                               | 10.2                  | 24     | 358                                 | 9.4                      | 115                           | 99                | 16650                    | —                         |
|                               | 4405                                                         | 25     | 7610                                  | 49.7             |          | 6400                                          | 9.6                   | 25     |                                     |                          | 120                           | 82                | 17220                    | —                         |
|                               | 2970                                                         | 26     |                                       | 48.7             |          |                                               | 8.3                   | 26     | 358                                 | 9.0                      | 125                           | 66                | 19200                    | —                         |
|                               | 4675                                                         | 27     | 8220                                  | 47.5             |          | 7500                                          | 7.7                   | 27     |                                     |                          | 130                           | 52                | 20700                    | —                         |
|                               | 3150                                                         | 28     |                                       | 46.5             |          |                                               | 7.5                   | 28     | 358                                 | 8.3                      | 135                           | 38                | 22200                    | —                         |
|                               | 4945                                                         | 29     | 8870                                  | 45.9             |          | 8500                                          | 6.6                   | 29     |                                     |                          | 140                           | 24                | 25700                    | —                         |
|                               | 3330                                                         | 30     |                                       | 45.6             |          |                                               | 7.1                   | 30     | 13                                  | 8.4                      |                               |                   |                          |                           |
|                               | 5215                                                         | 31     | 9520                                  | 45.1             |          | 9500                                          | 6.9                   | 31     |                                     |                          | 145                           | 175               | 18210                    | 41.2                      |
|                               | 3510                                                         | 32     |                                       | 44.7             |          |                                               | 5.4                   | 32     | 338                                 | 9.5                      |                               |                   |                          |                           |
|                               | 5465                                                         | 33     | 10250                                 | 44.2             |          | 10500                                         | 4.0                   | 33     |                                     |                          |                               |                   |                          |                           |
|                               | 3690                                                         | 34     |                                       | 43.9             |          |                                               | 2.4                   | 34     | 337                                 | 9.5                      |                               |                   |                          |                           |
|                               | 5755                                                         | 35     | 10980                                 | 43.1             |          | 11500                                         | 1.3                   | 35     |                                     |                          |                               |                   |                          |                           |

Punched Card Data

| Altitude | Direction<br>(degrees) | Speed<br>(m.p.s.) | Card<br>columns | Altitude | Direction<br>(degrees) | Speed<br>(m.p.s.) |
|----------|------------------------|-------------------|-----------------|----------|------------------------|-------------------|
|----------|------------------------|-------------------|-----------------|----------|------------------------|-------------------|



|       |    |       |      |       |       |    |     |      |
|-------|----|-------|------|-------|-------|----|-----|------|
| 4230  | 23 | 6970  | 52.3 | 5500  | 10.2  | 24 | 358 | 9.4  |
| 4410  | 24 |       | 50.7 |       | 9.6   | 25 |     |      |
| 4610  | 25 | 7610  | 49.7 | 6400  | 8.3   | 26 | 358 | 9.0  |
| 4770  | 26 |       | 48.7 |       | 7.7   | 27 |     |      |
| 4930  | 27 | 8220  | 47.5 | 7500  | 7.5   | 28 | 358 | 8.3  |
| 5110  | 28 |       | 46.5 |       | 6.6   | 29 |     |      |
| 5310  | 29 | 8870  | 45.9 | 8500  | 7.1   | 30 | 13  | 8.4  |
| 5490  | 30 |       | 45.1 |       | 6.9   | 31 |     |      |
| 5670  | 31 | 9520  | 44.7 | 9500  | 5.4   | 32 | 338 | 9.5  |
| 5850  | 32 |       | 44.2 |       | 4.0   | 33 |     |      |
| 6030  | 33 | 10250 | 43.9 | 10500 | 2.4   | 34 | 337 | 9.5  |
| 6210  | 34 |       | 43.6 |       | 1.3   | 35 |     |      |
| 6390  | 35 | 10980 | 42.8 | 11500 | 0.2   | 36 | 343 | 9.2  |
| 6570  | 36 |       | 42.2 |       | 359.7 | 37 |     |      |
| 6750  | 37 | 11570 | 41.4 | 12600 | 358.6 | 38 | 352 | 14.2 |
| 6930  | 38 |       | 40.6 |       | 358.8 | 39 |     |      |
| 7110  | 39 | 12300 | 39.9 | 14300 | 359.0 | 40 | 357 | 15.0 |
| 7290  | 40 | 12720 | 39.0 | 15120 | 358.7 | 41 |     |      |
| 7470  | 41 | 13110 |      | 16100 |       | 42 |     |      |
| 7650  | 42 |       |      |       |       | 43 |     |      |
| 7830  | 43 |       |      |       |       | 44 |     |      |
| 8010  | 44 |       |      |       |       | 45 |     |      |
| 8190  | 45 |       |      |       |       | 46 |     |      |
| 8370  | 46 |       |      |       |       | 47 |     |      |
| 8550  | 47 |       |      |       |       | 48 |     |      |
| 8730  | 48 |       |      |       |       | 49 |     |      |
| 8910  | 49 |       |      |       |       | 50 |     |      |
| 9090  | 50 |       |      |       |       |    |     |      |
| 14275 |    |       |      |       |       |    |     |      |

|     |     |       |      |
|-----|-----|-------|------|
| 115 | 49  | 16250 | —    |
| 120 | 82  | 17220 | —    |
| 125 | 66  | 19200 | —    |
| 130 | 52  | 20700 | —    |
| 135 | 38  | 22800 | —    |
| 140 | 24  | 25700 | —    |
| 167 | 175 | 13210 | 41.2 |

# Punched Card Data

| Altitude          | Direction (degrees) | Speed (m.p.s.) | Card columns      | Altitude   | Direction (degrees) | Speed (m.p.s.) |
|-------------------|---------------------|----------------|-------------------|------------|---------------------|----------------|
| Card No. 1        |                     |                |                   | Card No. 2 |                     |                |
| Type of equipment | 8                   | 16             | Type of equipment | 8          |                     |                |
| slc.              | 120                 | 2              | 17-21             | 7          | 352                 | 8              |
| 150 m.            | 133                 | 2              | 22-26             | 8          | 359                 | 9              |
| 300 m.            | 142                 | 2              | 27-31             | 9          | 7                   | 8              |
| 0.5               | 134                 | 2              | 32-36             | 10         | 339                 | 10             |
| 1.0               | 118                 | 1              | 37-41             | 11         | 340                 | 9              |
| 1.5               | 250                 | 1              | 42-46             | 12         | 352                 | 14             |
| 2.0               | 356                 | 3              | 47-51             | 13         |                     |                |
| 2.5               | 37                  | 4              | 52-56             | 14         |                     |                |
| 3                 | 20                  | 6              | 57-61             | 15         |                     |                |
| 4                 | 21                  | 6              | 62-66             | 16         |                     |                |
| 5                 | 14                  | 6              | 67-71             | 17         |                     |                |
| 6                 | 343                 | 6              | 72-76             | 18         |                     |                |

# Maximum Wind Speed Data

|                                                          |  |  |
|----------------------------------------------------------|--|--|
| Min. alt. wind speed 45 m.p.s. or more (m.)              |  |  |
| Alt. of maximum wind speed (m.)                          |  |  |
| Max. wind speed (m.p.s.) and dir. (degrees)              |  |  |
| Dir. (degrees) and speed (m.p.s.) of Max. wind           |  |  |
| Enter check if additional levels appear on reverse side. |  |  |

# Coded Data for Transmission

|       |       |       |   |      |       |       |       |    |      |       |       |
|-------|-------|-------|---|------|-------|-------|-------|----|------|-------|-------|
| SHV   | 06930 | 1403  | 2 | 1204 | 1202  | 2102  | 2102  | 6  | 3304 | 0408  | 0409  |
| 0211  | 00213 | 20314 | 0 | 0211 | 00211 | 03409 | 03412 | 23 | 3516 | 53618 | 00116 |
| 53419 | 03528 | 13629 |   |      |       |       |       |    |      |       |       |
|       |       |       |   |      |       |       |       |    |      |       |       |
|       |       |       |   |      |       |       |       |    |      |       |       |

Verifier P-1451164



BT

UNCLAS FROM DCOI 27F40. DAYLIGHT.

ACTION: ADC, 20ADIV, ATIC, HQ USAF, SAF. INFO: SAC, 2AF, 4AIRDIV.

SUBJ: UNIDENTIFIED FLYING OBJECTS. MESSAGE TRANSMITTED IAW

INSTRUCTIONS IN AFR 200-2 UFO. A. (1) ROUND. (2) PIN-HEAD.

(3) WHITE TO ORANGE. (4) TWO. (5) TRAIL. (6) NONE. (7)

NONE. (8) NONE. (9) NONE. B. (1) NOTICED WHILE WATCHING

STARS AND LISTENING TO BALL GAME. (2) VERY HIGH TO NORTHWEST.

(3) 45 DEG NORTH OF TEXARKANA. (4) CHANGED COURSE. (5) FADED

INSTANTLY TO NORTH. (6) 1/2 HOUR. C. (1) GROUND VISUAL.

(2) NONE. (3) N/A. D. (1) 27/0245Z (JUNE). (2) NIGHT.

*wind dir  
wrong(?)*

PAGE TWO RUWGAA 153

E. (1) SIGHTED FROM BACK YARD AT 420 DELK ROAD, TEXARKANA,  
TEXAS. ~~REDACTED~~, ~~REDACTED~~, TEXARKANA, TEXAS.

RELIABLE. G. (1) NOT AVAILABLE. (2) WINDS AT 6,000 FEET

WERE 4 KNOTS AT 080DEG, 10,000 - 11 KNOTS AT 310DEG, 16,000 - 11

KNOTS AT 010DEG, 20,000 - 13 KNOTS AT 360DEG, 30,000 - 33 KNOTS

AT 330DEG, 50,000 - 27 KNOTS AT 010DEG, 60,000 - 7 KNOTS AT 070DEG.

(3) CLEAR. (4) 12 MILES. (5) FEW CUMULOUS WEST OF TEX-

ARKANA. (6) NO RADAR ECHOS WITHIN 150 MILES OF TEXARKANA.

(7) 82DEG WINDS CALM. (H. N/A. I. N/A. J. N/A. K. CHIEF

ESTIMATES BRANCH, WING INTELLIGENCE DIVISION. L. N/A

BT

27/2230Z JUN RUWGAA

*1 observer*



STATION

DATE 6-26-63

| TYPE<br>(1) | TIME<br>(2) | SKY AND CEILING<br>(hundreds of feet)<br>(3) | VISI-<br>BILITY<br>(miles)<br>(4) | WEATHER AND<br>OBSTRUCTIONS<br>TO VISION<br>(5) | SEA-<br>LEVEL<br>PRESSURE<br>(mb.)<br>(6) | TEMP<br>(°F)<br>(7) | DEW<br>POINT<br>(°F)<br>(8) | WIND                  |                         |                                         | ALTIM-<br>ETER<br>SET-<br>TING<br>(in.)<br>(12) | REMARKS AND SUPPLEMENTAL CODED DATA<br>(13) |
|-------------|-------------|----------------------------------------------|-----------------------------------|-------------------------------------------------|-------------------------------------------|---------------------|-----------------------------|-----------------------|-------------------------|-----------------------------------------|-------------------------------------------------|---------------------------------------------|
|             |             |                                              |                                   |                                                 |                                           |                     |                             | DIREC-<br>TION<br>(9) | SPEED<br>(kts.)<br>(10) | CHAR-<br>ACTER<br>AND<br>SHIFTS<br>(11) |                                                 |                                             |
| R           | 0055        | 0                                            | 12                                |                                                 | 187                                       | 75                  | 74                          | ←                     | 5                       |                                         | 009                                             |                                             |
| R           | 0155        | 0                                            | 10                                |                                                 | 182                                       | 72                  | 71                          | ←                     | 5                       |                                         | 007                                             |                                             |
| R           | 0255        | 0                                            | 10                                |                                                 | 182                                       | 72                  | 71                          | ←                     | 5                       |                                         | 007                                             |                                             |
| R           | 0355        | 0                                            | 10                                |                                                 | 184                                       | 71                  | 70                          |                       | C                       |                                         | 008                                             |                                             |
| R           | 0455        | 120 ①                                        | 8                                 |                                                 | 184                                       | 71                  | 69                          | ↘                     | 8                       |                                         | 008                                             |                                             |
| R           | 0555        | 1 ①                                          | 2                                 | GF                                              | 187                                       | 71                  | 71                          | ↙↘                    | 5                       |                                         | 009                                             | FEW AC / 49071                              |
| S           | 0618        | 1 ①                                          | 3                                 | GF                                              |                                           |                     |                             | ↙↘                    | 6                       |                                         |                                                 |                                             |
| R           | 0655        | 1-①                                          | 8                                 |                                                 | 191                                       | 74                  | 71                          | ←                     | 6                       |                                         | 010                                             |                                             |
| R           | 0755        | 0                                            | 8                                 |                                                 | 193                                       | 78                  | 72                          | ↙↘                    | 5                       |                                         | 011                                             | FEW CI                                      |
| R           | 0855        | 0                                            | 8                                 |                                                 | 191                                       | 81                  | 73                          | ↙↘                    | 7                       |                                         | 010                                             | FEW CI                                      |
| R           | 0955        | 30 ①                                         | 12                                |                                                 | 187                                       | 84                  | 72                          | ↑                     | 4                       |                                         | 009                                             |                                             |
| R           | 1055        | 30 ①                                         | 12                                |                                                 | 184                                       | 84                  | 72                          | ←                     | 5                       |                                         | 008                                             |                                             |
| R           | 1155        | 35 ① / ①                                     | 12                                |                                                 | 180                                       | 86                  | 71                          | ↖                     | 7                       |                                         | 007                                             | BLDG CU SE CB TOP DSNT                      |
| R           | 1255        | 45 ① / ①                                     | 12                                |                                                 | 170                                       | 89                  | 69                          | ↙↘                    | 9                       |                                         | 004                                             | CB TOP DSNT NNW                             |
| R           | 1355        | 45 ① / ①                                     | 12                                |                                                 | 164                                       | 89                  | 71                          | ↙↘                    | 8                       |                                         | 002                                             | BLDG <sup>CU</sup> ALQDS                    |
| R           | 1455        | E 45 ① / ①                                   | 12                                |                                                 | 157                                       | 90                  | 71                          | ↙↘                    | 12                      |                                         | 000                                             | CB ALQDS                                    |
| R           | 1555        | 45 ①                                         | 12                                |                                                 | 157                                       | 88                  | 71                          | ↙↘                    | 6                       |                                         | 000                                             | CU VCU CB ALQDS                             |
| R           | 1655        | 45 ①                                         | 12                                |                                                 | 150                                       | 89                  | 70                          | ↖                     | 10                      |                                         | 997                                             | TCU NE CB ALQDS                             |
| R           | 1755        | 0                                            | 12                                |                                                 | 144                                       | 87                  | 70                          | ↖                     | 8                       |                                         | 996                                             | CB S CU W 8/12 92                           |
| R           | 1855        | 0                                            | 12                                |                                                 | 144                                       | 86                  | 71                          | ↖                     | 5                       |                                         | 996                                             | CB S - NE                                   |
| R           | 1955        | 0                                            | 12                                |                                                 | 150                                       | 82                  | 71                          |                       | C                       |                                         | 997                                             | CU W                                        |
| R           | 2055        | 0                                            | 12                                |                                                 | 150                                       | 81                  | 71                          | ↖                     | 5                       |                                         | 998                                             |                                             |
| R           | 2155        | 0                                            | 12                                |                                                 | 157                                       | 77                  | 71                          | ↖                     | 6                       |                                         | 000                                             |                                             |
| R           | 2255        | 0                                            | 12                                |                                                 | 159                                       | 77                  | 70                          | ↑↖                    | 8                       |                                         | 001                                             |                                             |
| R           | 2355        | 0                                            | 12                                |                                                 | 156                                       | 75                  | 69                          | ↑                     | 5                       |                                         | 000                                             |                                             |

[illegible]



**WEATHER OBSERVATIONS**  
for use at designated FAA stations)

U. S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

*W. R.* DATE *6-26-63*

| ALTIMETER SETTING (in.) (12) | REMARKS AND SUPPLEMENTAL CODED DATA (13) | STATION PRESSURE (in.) (17) | DRY BULB (°F) (18) | WET BULB (°F) (19) | TOTAL SKY COVER (21) | TOTAL OPAQUE SKY COVER (22) | OBSERVER'S INITIALS (15) |
|------------------------------|------------------------------------------|-----------------------------|--------------------|--------------------|----------------------|-----------------------------|--------------------------|
| 009                          |                                          | 29.700                      |                    |                    | 0                    | 0                           | H.S.                     |
| 007                          |                                          | 29.680                      |                    |                    | 0                    | 0                           | H.S.                     |
| 007                          |                                          | 29.680                      |                    |                    | 0                    | 0                           | H.S.                     |
| 008                          |                                          | 29.690                      |                    |                    | 0                    | 0                           | H.S.                     |
| 008                          |                                          | 29.690                      |                    |                    | 1                    | 1                           | H.S.                     |
| 009                          | FEW AC / 49071                           | 29.700                      |                    |                    | 3                    | 2                           | W.O.                     |
|                              |                                          |                             |                    |                    |                      |                             | W.O.                     |
| 010                          |                                          | 29.710                      |                    |                    | 1                    | 0                           | W.O.                     |
| 011                          | FEW CI                                   | 29.715                      |                    |                    | 0                    | 0                           | W.O.                     |
| 010                          | FEW CI                                   | 29.710                      |                    |                    | 0                    | 0                           | W.O.                     |
| 009                          |                                          | 29.700                      |                    |                    | 2                    | 2                           | <del>W.O.</del>          |
| 008                          |                                          | 29.690                      |                    |                    | 5                    | 5                           | W.O.                     |
| 007                          | BLD6 CU SE CB TOP DSNT N                 | 29.680                      |                    |                    | 5                    | 5                           | W.O.                     |
| 004                          | CB TOP DSNT NNW                          | 29.650                      |                    |                    | 5                    | 5                           | W.O.                     |
| 002                          | BLD6 CU ALQDS                            | 29.630                      |                    |                    | 5                    | 5                           | CC                       |
| 000                          | CB ALQDS                                 | 29.610                      |                    |                    | 6                    | 6                           | CC                       |
| 000                          | CDVCD CB ALQDS                           | 29.610                      |                    |                    | 5                    | 5                           | CC                       |
| 097                          | TEU NE CB ALQDS                          | 29.585                      |                    |                    | 5                    | 5                           | cm                       |
| 096                          | CB S CU W 812 92                         | 29.575                      |                    |                    | 0                    | 0                           | <del>W.O.</del>          |
| 096                          | CB S - NE                                | 29.575                      |                    |                    | 0                    | 0                           | cm                       |
| 097                          | CU W                                     | 29.585                      |                    |                    | 0                    | 0                           | cm                       |
| 098                          |                                          | 29.590                      |                    |                    | 0                    | 0                           | W.O.                     |
| 000                          |                                          | 29.610                      |                    |                    | 0                    | 0                           | cm                       |
| 001                          |                                          | 29.620                      |                    |                    | 0                    | 0                           | W.O.                     |
| 000                          |                                          | 29.610                      |                    |                    | 0                    | 0                           | W.O.                     |

| SUMMARY OF DAY (MIDNIGHT TO MIDNIGHT) |                      |                           |                       | REMARKS, NOTES AND MISCELLANEOUS PHENOMENA |  |  |  |
|---------------------------------------|----------------------|---------------------------|-----------------------|--------------------------------------------|--|--|--|
| MAX. TEMP. (°F) (6a)                  | MIN. TEMP. (°F) (7a) | 24 HR. PRECIP. (in.) (8a) | SNOW DEPTH (in.) (9a) |                                            |  |  |  |
|                                       |                      |                           |                       |                                            |  |  |  |
|                                       |                      |                           |                       |                                            |  |  |  |
|                                       |                      |                           |                       |                                            |  |  |  |
|                                       |                      |                           |                       |                                            |  |  |  |
|                                       |                      |                           |                       |                                            |  |  |  |
|                                       |                      |                           |                       |                                            |  |  |  |
|                                       |                      |                           |                       |                                            |  |  |  |

Commerce-Weather Bureau, Washington, D. C.

*W. R.*



### SURFACE WEATHER OBSERVATIONS

(Abridged form for use at designated FAA stations)

STATION TEXARKANA, ARK. DATE 6-27-

| TYPE<br>(1) | TIME<br>(2) | SKY AND CEILING<br>(hundreds of feet)<br>(3) | VISI-<br>BILITY<br>(miles)<br>(4) | WEATHER AND<br>OBSTRUCTIONS<br>TO VISION<br>(5) | SEA-<br>LEVEL<br>PRESSURE<br>(mb.)<br>(6) | TEMP<br>(°F)<br>(7) | DEW<br>POINT<br>(°F)<br>(8) | WIND                  |                        |                                      | ALTIM-<br>ETER<br>SET-<br>TING<br>(in.)<br>(12) | REMARKS AND SUPPLEMENTAL CODED DATA<br>(13) |
|-------------|-------------|----------------------------------------------|-----------------------------------|-------------------------------------------------|-------------------------------------------|---------------------|-----------------------------|-----------------------|------------------------|--------------------------------------|-------------------------------------------------|---------------------------------------------|
|             |             |                                              |                                   |                                                 |                                           |                     |                             | DIREC-<br>TION<br>(9) | SPEED<br>(Kts)<br>(10) | CHARAC-<br>TER AND<br>SHIFTS<br>(11) |                                                 |                                             |
| R           | 0055        | 0                                            | 12                                |                                                 | 150                                       | 75                  | 68                          | ↑                     | 5                      |                                      | 998                                             |                                             |
| R           | 0155        | 0                                            | 12                                |                                                 | 150                                       | 75                  | 68                          | ↑                     | 5                      |                                      | 998                                             |                                             |
| R           | 0255        | 0                                            | 10                                |                                                 | 150                                       | 72                  | 68                          | ↖                     | 7                      |                                      | 998                                             |                                             |
| R           | 0355        | 0                                            | 10                                |                                                 | 150                                       | 72                  | 67                          | ↖                     | 6                      |                                      | 998                                             |                                             |
| R           | 0455        | 1-0                                          | 10                                |                                                 | 156                                       | 72                  | 65                          | ↑                     | 5                      |                                      | 000                                             |                                             |
| R           | 0555        | 1-0                                          | 8                                 |                                                 | 161                                       | 74                  | 65                          | ↑                     | 7                      |                                      | 001                                             | FEW AC / 49272                              |
| R           | 0655        | 1-0                                          | 8                                 |                                                 | 166                                       | 75                  | 65                          | ↑                     | 8                      |                                      | 003                                             |                                             |
| R           | 0755        | 1-0                                          | 10                                |                                                 | 170                                       | 79                  | 66                          | ↑                     | 10                     |                                      | 004                                             |                                             |
| R           | 0855        | 1-0                                          | 10                                |                                                 | 170                                       | 81                  | 67                          | ↑↑                    | 6                      |                                      | 004                                             | FEW AC                                      |
| R           | 0955        | 0                                            | 10                                |                                                 | 170                                       | 84                  | 68                          | ↑                     | 5                      |                                      | 004                                             | FEW CI                                      |
| R           | 1055        | 400 1-0                                      | 12                                |                                                 | 166                                       | 86                  | 68                          |                       | C                      |                                      | 003                                             |                                             |
| R           | 1155        | 400                                          | 12                                |                                                 | 164                                       | 88                  | 70                          | ↑                     | 4                      |                                      | 002                                             |                                             |
| R           | 1255        | 400                                          | 12                                |                                                 | 155                                       | 88                  | 69                          | ↖                     | 8                      |                                      | 999                                             |                                             |
| R           | 1355        | 400                                          | 15                                |                                                 | 146                                       | 88                  | 69                          | ↓                     | 6                      |                                      | 997                                             |                                             |
| R           | 1455        | 40 0                                         | 15                                |                                                 | 140                                       | 89                  | 68                          | ↑↖                    | 4                      |                                      | 995                                             |                                             |
| R           | 1555        | 45 0                                         | 15                                |                                                 | 131                                       | 90                  | 68                          | ↖                     | 5                      |                                      | 992                                             |                                             |
| R           | 1655        | 500                                          | 15                                |                                                 | 131                                       | 89                  | 68                          | ↖                     | 5                      |                                      | 992                                             | TCU S-SW                                    |
| R           | 1755        | 0                                            | 15                                |                                                 | 131                                       | 89                  | 68                          | ↖                     | 4                      |                                      | 992                                             | FEW TCU DSNT SW / 610                       |
| R           | 1855        | 600                                          | 15                                |                                                 | 131                                       | 86                  | 70                          | ↖                     | 6                      |                                      | 992                                             |                                             |
| R           | 1955        | 600                                          | 15                                |                                                 | 130                                       | 83                  | 69                          | ↖                     | 5                      |                                      | 992                                             |                                             |
| R           | 2055        | 1-0                                          | 15                                |                                                 | 138                                       | 81                  | 70                          | ↖                     | 6                      |                                      | 994                                             |                                             |
| R           | 2155        | 0                                            | 15                                |                                                 | 141                                       | 78                  | 70                          | ↑                     | 5                      |                                      | 995                                             |                                             |
| R           | 2255        | 0                                            | 12                                |                                                 | 138                                       | 76                  | 69                          | ↑                     | 5                      |                                      | 994                                             |                                             |
| R           | 2355        | 0                                            | 12                                |                                                 | 138                                       | 75                  | 70                          |                       | C                      |                                      | 994                                             |                                             |

[illegible]



# WEATHER OBSERVATIONS

(for use at designated FAA stations)

U. S. DEPARTMENT OF COMMERCE  
WEATHER BUREAU

LA ARK DATE 6-27-63

| ALTIMETER SETTING (in.) (12) | REMARKS AND SUPPLEMENTAL CODED DATA (13) | STATION PRESSURE (in.) (17) | DRY BULB (°F) (18) | WET BULB (°F) (19) | TOTAL SKY COVER (21) | TOTAL OPAQUE SKY COVER (24) | OBSERVER'S INITIALS (15) |
|------------------------------|------------------------------------------|-----------------------------|--------------------|--------------------|----------------------|-----------------------------|--------------------------|
| 978                          |                                          | 29.590                      |                    |                    | 0                    | 0                           | H.S.                     |
| 978                          |                                          | 29.590                      |                    |                    | 0                    | 0                           | H.S.                     |
| 978                          |                                          | 29.590                      |                    |                    | 0                    | 0                           | H.S.                     |
| 978                          |                                          | 29.590                      |                    |                    | 0                    | 0                           | H.S.                     |
| 000                          |                                          | 29.610                      |                    |                    | 1                    | 0                           | H.S.                     |
| 001                          | FEW AC / 49272                           | 29.625                      |                    |                    | 7                    | 2                           | W.O.                     |
| 003                          |                                          | 29.640                      |                    |                    | 3                    | 0                           | W.O.                     |
| 004                          |                                          | 29.650                      |                    |                    | 3                    | 0                           | W.O.                     |
| 004                          | FEW AC                                   | 29.650                      |                    |                    | 1                    | 0                           | W.O.                     |
| 004                          | FEW CI                                   | 29.650                      |                    |                    | 0                    | 0                           | W.O.                     |
| 003                          |                                          | 29.640                      |                    |                    | 2                    | 1                           | W.O.                     |
| 002                          |                                          | 29.630                      |                    |                    | 4                    | 4                           | W.O.                     |
| 999                          |                                          | 29.605                      |                    |                    | 4                    | 4                           | W.O.                     |
| 997                          |                                          | 29.585                      |                    |                    | 4                    | 4                           | SL                       |
| 915                          |                                          | 29.565                      |                    |                    | 4                    | 4                           | SC                       |
| 992                          |                                          | 29.535                      |                    |                    | 3                    | 3                           | GH                       |
| 992                          | TCU S-SW                                 | 29.535                      |                    |                    | 3                    | 2                           | GH                       |
| 992                          | FEW TCU DSNT SW / 610 92                 | 29.535                      |                    |                    | 0                    | 0                           | W.O.                     |
| 992                          |                                          | 29.535                      |                    |                    | 1                    | 1                           | GH                       |
| 992                          |                                          | 29.535                      |                    |                    | 1                    | 1                           | W.O.                     |
| 994                          |                                          | 29.555                      |                    |                    | 5                    | 2                           | GH                       |
| 995                          |                                          | 29.565                      |                    |                    | 0                    | 0                           | GH                       |
| 994                          |                                          | 29.555                      |                    |                    | 0                    | 0                           | W.O.                     |
| 994                          |                                          | 29.555                      |                    |                    | 0                    | 0                           | W.O.                     |

| SUMMARY OF DAY (MIDNIGHT TO MIDNIGHT) |                                        |                                     |                       |  | REMARKS, NOTES AND MISCELLANEOUS PHENOMENA |  |
|---------------------------------------|----------------------------------------|-------------------------------------|-----------------------|--|--------------------------------------------|--|
| 24-HR. MIN. TEMP. (°F) (67)           | 24-HR. PRECIP. WATER EQUIV. (in.) (68) | 24-HR. SNOW FALL UNMLTD. (in.) (69) | SNOW DEPTH (in.) (70) |  |                                            |  |
|                                       |                                        |                                     |                       |  |                                            |  |
|                                       |                                        |                                     |                       |  |                                            |  |
|                                       |                                        |                                     |                       |  |                                            |  |
|                                       |                                        |                                     |                       |  |                                            |  |
|                                       |                                        |                                     |                       |  |                                            |  |
|                                       |                                        |                                     |                       |  |                                            |  |

Commerce-Weather Bureau, Washington, D. C.

*Atch 1*



Identification  
**SHREVEPORT, LOUISIANA**  
 Greater Shreveport Municipal Airport  
 Lat. 32°28'N Long. 93°49'W  
 Local Standard Time, 90th Meridian  
 Sl of Station, 79M, RAWIN, GMD-1A

U.S. DEPARTMENT OF COMMERCE  
 WEATHER BUREAU  
**WINDS-ALOFT COMPUTATION SHEET**  
 (LAND STATION FORM)  
 WBAN-20

|                    | Year | Month | Day | Time |
|--------------------|------|-------|-----|------|
| Actual time        | 1963 | JUN   | 25  | 2330 |
| Scheduled (G.M.T.) | 1963 | JUN   | 25  | 0530 |
| Ascension No. 707  |      |       |     |      |

Type of balloon **DAREX-600**

Orientation, 360° = South

| Slant range (m.) (yds.) | Pibal ht. above slc. (m.)<br>30<br>100<br>1500 | Minute | Rawin ht. above surface (m.) | Elevation angle° |          | Distance from observation point (m.) | Azimuth angle ° | Minute | Wind                             |                | Rawinsonde Time-Altitude Data |                |                       |                     |
|-------------------------|------------------------------------------------|--------|------------------------------|------------------|----------|--------------------------------------|-----------------|--------|----------------------------------|----------------|-------------------------------|----------------|-----------------------|---------------------|
|                         |                                                |        |                              | Observed         | Smoothed |                                      |                 |        | Direction° 360° = N.<br>slc. 130 | Speed (m.p.s.) | Contact                       | Pressure (mb.) | Altitude (m., m.s.l.) | Elapsed time (min.) |
|                         | 216                                            | 1      | 280                          | 47.7             |          | 200                                  | 112.0           | 1      | 109                              | 5.0            | 52                            | 1011           | 79                    | 0.0                 |
|                         | 350                                            | 2      | 580                          | 41.8             |          | 600                                  | 109.2           | 2      | 113                              | 5.8            | 5                             | 1014           |                       |                     |
|                         | 414                                            | 3      | 900                          | 43.6             |          | 900                                  | 112.6           | 3      | 115                              | 3.5            | 10                            | 946            | 660                   | 7.8                 |
|                         | 612                                            | 4      | 1210                         | 49.0             |          | 1050                                 | 111.7           | 4      | 102                              | 1.6            | 15                            | 880            | 1290                  | 4.0                 |
|                         | 980                                            | 5      | 1520                         | 54.4             |          | 1100                                 | 110.8           | 5      | 353                              | 1.0            | 20                            | 816            | 1930                  | 6.2                 |
|                         | 801                                            | 6      | 1810                         | 59.9             |          | 1000                                 | 106.7           | 6      | 341                              | 2.3            | 25                            | 756            | 2570                  | 8.4                 |
|                         | 1285                                           | 7      | 2130                         | 66.1             |          | 950                                  | 98.0            | 7      | 359                              | 2.8            | 30                            | 698            | 3210                  | 10.4                |
|                         | 990                                            | 8      | 2450                         | 69.1             |          | 950                                  | 85.8            | 8      | 12                               | 4.0            | 35                            | 644            | 3890                  | 12.5                |
|                         | 1505                                           | 9      | 2770                         | 68.2             |          | 1100                                 | 71.2            | 9      | 18                               | 5.0            | 40                            | 591            | 4560                  | 15.0                |
|                         | 1170                                           | 10     | 3070                         | 67.3             |          | 1300                                 | 60.4            | 10     | 1                                | 4.7            | 45                            | 541            | 5280                  | 17.1                |
|                         | 1880                                           | 11     | 3360                         | 66.4             |          | 1400                                 | 48.7            | 11     | 5                                | 4.5            | 50                            | 494            | 6000                  | 19.3                |
|                         | 1350                                           | 12     | 3650                         | 65.2             |          | 1700                                 | 44.9            | 12     | 17                               | 2.8            | 55                            | 450            | 6700                  | 21.5                |
|                         | 2170                                           | 13     | 3940                         | 66.4             |          | 1700                                 | 42.3            | 13     | 96                               | 1.3            | 60                            | 407            | 7470                  | 22.9                |
|                         | 1530                                           | 14     | 4210                         | 66.9             |          | 1800                                 | 48.9            | 14     | 96                               | 2.3            | 65                            | 368            | 8210                  | 26.3                |
|                         | 2455                                           | 15     | 4480                         | 66.5             |          | 1950                                 | 52.2            | 15     | 84                               | 3.0            | 70                            | 330            | 9000                  | 28.5                |
|                         | 1710                                           | 16     | 4810                         | 66.1             |          | 2100                                 | 54.2            | 16     | 60                               | 3.0            | 75                            | 295            | 9800                  | 30.8                |
|                         | 2740                                           | 17     | 5130                         | 65.4             |          | 2300                                 | 54.1            | 17     | 49                               | 4.5            | 80                            | 262            | 10600                 | 33.2                |
|                         | 1890                                           | 18     | 5500                         | 64.1             |          | 2650                                 | 53.3            | 18     | 39                               | 5.0            | 85                            | 232            | 11400                 | 35.6                |
|                         | 3020                                           | 19     | 5880                         | 63.5             |          | 2900                                 | 50.7            | 19     | 15                               | 4.6            | 90                            | 204            | 12240                 | 37.9                |
|                         | 2070                                           | 20     | 6200                         | 63.5             |          | 3100                                 | 46.6            | 20     | 3                                | 4.6            | 95                            | 179            | 13090                 | 40.2                |
|                         | 3300                                           | 21     | 6500                         | 63.3             |          | 2300                                 | 43.3            | 21     | 3                                | 4.4            | 100                           | 155            | 13920                 | 42.5                |
|                         | 2250                                           | 22     | 6810                         | 63.0             |          | 3500                                 | 40.7            | 22     | 357                              | 4.5            | 105                           | 134            | 14500                 | 44.9                |
|                         | 3500                                           | 23     | 7110                         | 62.5             |          | 3700                                 | 37.2            | 23     |                                  |                | 110                           | 114            | 15780                 | 46.7                |
|                         | 2430                                           | 24     |                              | 61.3             |          |                                      | 34.7            | 24     | 359                              | 7.0            | 115                           | 96             | 16840                 | 49.1                |
|                         | 3855                                           | 25     | 7750                         | 60.2             |          | 4400                                 | 30.4            | 25     |                                  |                | 120                           | 81             | 17940                 | 51.8                |
|                         | 2610                                           | 26     |                              | 58.9             |          |                                      | 25.0            | 26     | 346                              | 11.6           | 125                           | 64             | 19320                 | 54.9                |
|                         | 4130                                           | 27     | 8410                         | 56.6             |          | 5500                                 | 20.0            | 27     |                                  |                | 130                           | 50             | 20890                 | 58.7                |
|                         | 2790                                           | 28     |                              | 54.8             |          |                                      | 15.7            | 28     | 341                              | 13.0           | 135                           | 37             | 22800                 | 62.7                |
|                         | 4405                                           | 29     | 9080                         | 53.2             |          | 6800                                 | 11.9            | 29     |                                  |                | 140                           | 24             | 25600                 |                     |
|                         | 2970                                           | 30     |                              | 51.7             |          |                                      | 9.2             | 30     | 345                              | 10.0           |                               |                |                       |                     |
|                         | 4675                                           | 31     | 9760                         | 50.7             |          | 7900                                 | 7.6             | 31     |                                  |                |                               |                |                       |                     |
|                         | 3150                                           | 32     |                              | 50.1             |          |                                      | 5.4             | 32     | 325                              | 10.5           |                               |                |                       |                     |
|                         | 4945                                           | 33     | 10450                        | 49.7             |          | 8900                                 | 2.3             | 33     |                                  |                |                               |                |                       |                     |
|                         | 3330                                           | 34     |                              | 49.2             |          |                                      | 359.3           | 34     | 312                              | 11.0           |                               |                |                       |                     |
|                         | 5215                                           | 35     | 11100                        | 48.6             |          | 9800                                 | 256.4           | 35     |                                  |                |                               |                |                       |                     |

Punched Card Data

| Altitude | Direction (degrees) | Speed (m.p.s.) | Card columns | Altitude | Direction (degrees) | Speed (m.p.s.) |
|----------|---------------------|----------------|--------------|----------|---------------------|----------------|
|          |                     |                |              |          |                     |                |