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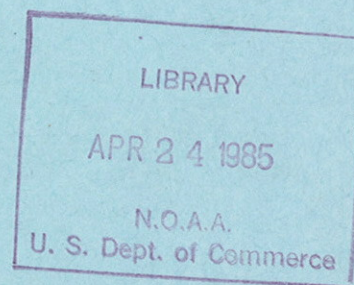
Technical Memorandum NWS WR-189



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ANNUAL DATA AND VERIFICATION TABULATION  
EASTERN NORTH PACIFIC TROPICAL STORMS AND HURRICANES 1984

Salt Lake City, Utah  
April 1985



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**U.S. DEPARTMENT OF  
COMMERCE**

National Oceanic and  
Atmospheric Administration

National Weather  
Service



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E. B. Gunther and R. L. Cross

Eastern Pacific Hurricane Center  
San Francisco, California  
April 1985

UNITED STATES  
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Malcolm Baldrige, Secretary


National Oceanic and  
Atmospheric Administration  
John V. Byrne, Administrator

National Weather  
Service  
Richard E. Hallgren, Director





This publication has been reviewed  
and is approved for publication by  
Scientific Services Division,  
Western Region.



*for* Glenn E. Rasch, Chief  
Scientific Services Division  
Western Region Headquarters  
Salt Lake City, Utah



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## I. INTRODUCTION

This is the sixth report of an annual series covering eastern north Pacific tropical cyclone activity. Data are provided by the National Weather Service, the National Earth Satellite Service Field Station - San Francisco, California, and the Chief, Aerial Reconnaissance Coordination, all Hurricanes (CARCAH), Miami, Florida.

## II. OBJECTIVE FORECAST TECHNIQUES

Tropical cyclone prediction models used by Eastern Pacific Hurricane Center (EPHC) forecasters include:

1. EPHC77 (Leftwich and Neumann, 1977). A statistical-synoptic model.
2. EPHC81 (Leftwich, 1981). A statistical-dynamic model.
3. EPCLIPER (Neumann, 1982). A simulated analog model based on persistence and climatology.
4. EPANALOG (Jarrell, Mauck, and Renard, 1975). An analog model.
5. SANBAR (Sanders and Burpee, 1968). A filtered barotropic model.

In addition to the above models, forecasters also make use of NMC analyses and prognoses.

## III. VERIFICATION

Verification statistics for the 1984 season are shown in Table 1. The forecast displacement error is the vector difference between the forecast displacement and the actual displacement computed from best-track positions. The initial position error is not subtracted from the forecast error, and depressions are not verified.

## IV. DATA SUMMARIES

A summary of the 1984 eastern north Pacific tropical cyclone statistics is given in Table 2. Best track, operational positions, and position errors are given in Tables 3-26.

Reconnaissance aircraft flew into three of the 1984 cyclones as they moved up the west coast of Baja California in September and October. The first flight, with two penetrations, was made by the U.S. Air Force into Hurricane Marie on 8 September. The following day, two more penetrations of the hurricane were made. The next reconnaissance flights were made by NOAA research aircraft into Hurricane Norbert on 22 September. Three penetrations of the hurricane were made on that day, two the next, and three on the following day. The final reconnaissance of the 1984 season was made by the U.S. Air Force into Tropical Storm Polo on 2 October. Two penetrations of the storm were made.

Even as satellite imagery continues to improve and is one of the more important tools used by tropical forecasters, aircraft reconnaissance and ship reports are invaluable in providing comparative observations.

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TABLE 1  
1984 FORECAST ERRORS\*

|                  | Forecast Period |              |              |
|------------------|-----------------|--------------|--------------|
|                  | 24 HR           | 48 HR        | 72 HR        |
| EPHC Forecasters | 165(89)/343     | 334(180)/269 | 513(277)/203 |
| EPANALOG         | 167(90)/325     | 334(180)/259 | 506(273)/193 |
| EPHC77           | 167(90)/327     | 326(176)/262 | 497(268)/196 |
| CLIPER           | 167(90)/333     | 358(193)/268 | 562(303)/201 |
| EPHC81           | 158(85)/145     | 313(169)/116 | 517(279)/86  |

\*Average error in kilometers (nautical miles) / number of cases.

TABLE 2

Summary of Eastern North Pacific Tropical Cyclones of 1984

(Includes only those Storms that Reached Hurricane HU or Tropical Storm TS)

| NO. | NAME      | CLASS | DATES         | MAX(KTS) | DAMAGE<br>(\$MILLION) | DEATHS  |
|-----|-----------|-------|---------------|----------|-----------------------|---------|
| 1   | ALMA      | TS    | 17-21 MAY     | 50       | UNKNOWN               | UNKNOWN |
| 2   | BORIS     | HU    | 28 MAY-18 JUN | 65       |                       |         |
| 3   | CRISTINA  | HU    | 17-26 JUN     | 90       |                       |         |
| 4   | DOUGLAS   | HU    | 25 JUN-3 JUL  | 125      |                       |         |
| 5   | ELIDA     | HU    | 28 JUN-8 JUL  | 115      |                       |         |
| 6   | FAUSTO    | HU    | 3-10 JUL      | 95       |                       |         |
| 7   | GENEVIEVE | HU    | 7-14 JUL      | 100      |                       |         |
| 8   | HERNAN    | TS    | 27 JUL-1 AUG  | 45       |                       |         |
| 9   | ISELLE    | HU    | 3-12 AUG      | 115      |                       |         |
| 10  | JULIO     | TS    | 15-20 AUG     | 55       |                       |         |
| 11  | KENNA     | TS    | 16-18 AUG     | 40       |                       |         |
| 12  | LOWELL    | HU    | 26-30 AUG     | 75       |                       |         |
| 13  | MARIE     | HU    | 5-11 SEP      | 80       |                       |         |
| 14  | NORBERT   | HU    | 14-26 SEP     | 115      |                       |         |
| 15  | ODILE     | HU    | 7-22 SEP      | 90       |                       |         |
| 16  | POLO      | HU    | 26 SEP-3 OCT  | 100      |                       |         |
| 17  | RACHEL    | TS    | 7-16 OCT      | 55       |                       |         |
| 18  | SIMON     | TS    | 31 OCT-8 NOV  | 55       |                       |         |



T.S. ALMA

| DATE/TIME<br>(GMT)         | BEST TRACK |       | OPERATIONAL<br>POSITION |       | 24 HOUR FORECAST<br>POSITION |       | 48 HOUR FORECAST<br>POSITION |       | 72 HOUR FORECAST<br>POSITION |       |
|----------------------------|------------|-------|-------------------------|-------|------------------------------|-------|------------------------------|-------|------------------------------|-------|
|                            | LAT.       | LONG. | LAT.                    | LONG. | LAT.                         | LONG. | LAT.                         | LONG. | LAT.                         | LONG. |
| 51700                      | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0                          | 0.0   | 0.0                          | 0.0   | 0.0                          | 0.0   |
| 51706                      | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0                          | 0.0   | 0.0                          | 0.0   | 0.0                          | 0.0   |
| 51712                      | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0                          | 0.0   | 0.0                          | 0.0   | 0.0                          | 0.0   |
| 51718                      | 9.7        | 99.8  | 9.0                     | 99.5  | 45.6                         | 103.1 | 118.                         | 9.5   | 106.2                        | 361.  |
| 51800                      | 9.9        | 101.3 | 9.3                     | 101.0 | 40.1                         | 9.6   | 105.5                        | 89.   | 9.7                          | 109.3 |
| 51806                      | 9.1        | 102.8 | 9.1                     | 102.8 | 0.0                          | 10.0  | 108.9                        | 56.   | 11.1                         | 112.0 |
| 51812                      | 9.2        | 104.3 | 9.1                     | 104.2 | 8.4                          | 9.6   | 107.3                        | 189.  | 10.9                         | 110.5 |
| 51818                      | 9.3        | 105.8 | 9.3                     | 105.1 | 41.0                         | 10.5  | 109.9                        | 154.  | 12.5                         | 114.1 |
| 51900                      | 9.5        | 107.4 | 9.5                     | 107.0 | 23.5                         | 10.1  | 112.0                        | 107.  | 10.5                         | 115.8 |
| 51906                      | 9.5        | 109.0 | 9.4                     | 109.0 | 6.0                          | 10.0  | 114.4                        | 56.   | 10.7                         | 119.7 |
| 51912                      | 9.5        | 110.5 | 9.6                     | 110.5 | 6.0                          | 10.7  | 116.0                        | 78.   | 12.7                         | 120.1 |
| 51918                      | 9.5        | 112.0 | 9.5                     | 112.3 | 17.6                         | 10.2  | 118.3                        | 59.   | 12.2                         | 121.5 |
| 52000                      | 9.5        | 113.6 | 9.5                     | 113.7 | 5.9                          | 9.7   | 119.3                        | 40.   | 10.0                         | 123.5 |
| 52006                      | 9.5        | 115.1 | 9.5                     | 115.2 | 5.9                          | 9.8   | 120.1                        | 40.   | 10.0                         | 123.7 |
| 52012                      | 9.5        | 116.4 | 9.5                     | 116.5 | 5.9                          | 9.8   | 121.6                        | 68.   | 10.6                         | 125.8 |
| 52018                      | 9.5        | 117.6 | 9.5                     | 117.6 | 0.0                          | 9.6   | 121.9                        | 35.   | 10.0                         | 126.0 |
| 52100                      | 9.5        | 118.7 | 9.4                     | 118.7 | 6.0                          | 9.5   | 123.0                        | 0.    | 9.8                          | 126.9 |
| 52106                      | 9.5        | 119.6 | 9.5                     | 119.5 | 5.9                          | 9.7   | 122.9                        | 0.    | 10.3                         | 126.0 |
| 52112                      | 9.5        | 120.5 | 9.5                     | 120.5 | 0.0                          | 9.7   | 123.9                        | 0.    | 10.7                         | 127.0 |
| 52118                      | 9.6        | 121.3 | 9.6                     | 121.3 | 0.0                          | 10.0  | 124.8                        | 0.    | 0.0                          | 0.0   |
| MEAN VECTOR ERRORS (N.MI.) |            |       |                         |       |                              |       |                              |       |                              |       |
| 387.                       |            |       |                         |       |                              |       |                              |       |                              |       |
| NUMBER OF CASES            |            |       |                         |       |                              |       |                              |       |                              |       |
| 9                          |            |       |                         |       |                              |       |                              |       |                              |       |

TABLE 3.

BORIS

| DATE/TIME<br>(GMT) | REST TRACK |       | OPERATIONAL POSITION |       | 24 HOUR FORECAST  |      | 48 HOUR FORECAST |                   | 72 HOUR FORECAST |       | ERROR<br>(N.M.I.) |
|--------------------|------------|-------|----------------------|-------|-------------------|------|------------------|-------------------|------------------|-------|-------------------|
|                    | LAT.       | LONG. | LAT.                 | LONG. | ERROR<br>(N.M.I.) | LAT. | LONG.            | ERROR<br>(N.M.I.) | LAT.             | LONG. |                   |
| 52800              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.0               | 0.0              | 0.0   | 0.0               |
| 52806              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.0               | 0.0              | 0.0   | 0.0               |
| 52812              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.0               | 0.0              | 0.0   | 0.0               |
| 52818              | 11.6       | 94.0  | 11.2                 | 94.2  | 26.7              | 12.1 | 96.8             | 71.               | 12.2             | 99.5  | 126.              |
| 52900              | 11.7       | 94.6  | 11.4                 | 94.8  | 21.4              | 12.7 | 97.4             | 71.               | 13.8             | 100.4 | 155.              |
| 52906              | 12.0       | 95.0  | 11.6                 | 95.1  | 24.7              | 12.6 | 97.2             | 55.               | 13.8             | 99.8  | 71.               |
| 52912              | 12.3       | 95.3  | 11.8                 | 95.6  | 34.7              | 13.0 | 97.9             | 71.               | 13.9             | 100.6 | 95.               |
| 52918              | 12.7       | 95.8  | 12.6                 | 95.7  | 8.3               | 14.2 | 97.5             | 49.               | 15.5             | 99.6  | 127.              |
| 53000              | 13.0       | 96.2  | 13.2                 | 96.3  | 13.3              | 15.0 | 98.7             | 115.              | 16.5             | 101.2 | 305.              |
| 53006              | 13.2       | 96.6  | 13.3                 | 96.6  | 6.0               | 14.8 | 98.1             | 78.               | 15.9             | 99.8  | 137.              |
| 53012              | 13.4       | 97.1  | 13.5                 | 96.8  | 18.4              | 14.3 | 98.4             | 55.               | 15.0             | 100.5 | 109.              |
| 53018              | 13.1       | 97.6  | 13.4                 | 97.7  | 19.9              | 13.6 | 99.8             | 33.               | 14.2             | 102.5 | 177.              |
| 53100              | 13.5       | 98.1  | 13.3                 | 97.8  | 21.3              | 13.4 | 98.6             | 54.               | 13.8             | 101.1 | 93.               |
| 53106              | 13.6       | 98.3  | 13.6                 | 98.6  | 17.5              | 13.9 | 100.7            | 88.               | 14.2             | 102.8 | 163.              |
| 53112              | 13.6       | 98.5  | 13.6                 | 99.0  | 23.4              | 13.8 | 101.1            | 111.              | 14.0             | 103.3 | 206.              |
| 53118              | 13.6       | 98.8  | 13.4                 | 99.4  | 37.1              | 13.3 | 101.1            | 96.               | 13.2             | 102.8 | 266.              |
| 6 100              | 13.7       | 99.0  | 13.4                 | 99.7  | 44.8              | 13.3 | 101.5            | 123.              | 13.5             | 104.0 | 324.              |
| 6 106              | 13.5       | 99.1  | 13.7                 | 99.2  | 13.5              | 14.1 | 100.3            | 18.               | 14.4             | 101.9 | 222.              |
| 6 112              | 13.4       | 99.2  | 13.7                 | 99.2  | 18.0              | 13.9 | 99.7             | 0.                | 14.1             | 100.4 | 137.              |
| 6 118              | 13.2       | 99.3  | 13.7                 | 99.5  | 32.2              | 14.0 | 100.3            | 129.              | 0.0              | 0.0   | 0.                |
| 6 200              | 12.9       | 99.3  | 13.7                 | 99.5  | 49.4              | 13.9 | 100.1            | 150.              | 0.0              | 0.0   | 0.                |
| 6 206              | 12.6       | 99.2  | 14.0                 | 100.0 | 93.2              | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 6 212              | 12.5       | 99.1  | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 6 218              | 12.1       | 99.1  | 12.0                 | 99.5  | 24.0              | 12.3 | 103.0            | 40.               | 12.5             | 100.8 | 96.               |
| 6 300              | 11.8       | 99.2  | 11.5                 | 98.9  | 25.1              | 10.3 | 92.3             | 48.               | 10.8             | 101.4 | 164.              |
| 6 306              | 11.7       | 99.3  | 11.2                 | 100.0 | 50.7              | 11.2 | 102.9            | 196.              | 11.5             | 105.1 | 335.              |
| 6 312              | 11.5       | 99.5  | 12.0                 | 99.5  | 30.0              | 11.2 | 100.1            | 72.               | 0.0              | 0.0   | 0.                |
| 6 318              | 11.3       | 99.7  | 11.7                 | 99.7  | 24.0              | 11.6 | 100.9            | 61.               | 0.0              | 0.0   | 0.                |
| 6 400              | 11.2       | 99.9  | 11.2                 | 100.0 | 5.8               | 11.2 | 101.5            | 167.              | 0.0              | 0.0   | 0.                |
| 6 406              | 11.4       | 100.1 | 10.6                 | 99.6  | 46.4              | 10.7 | 99.5             | 168.              | 0.0              | 0.0   | 0.                |
| 6 412              | 11.3       | 100.1 | 10.8                 | 99.6  | 56.7              | 10.6 | 99.8             | 229.              | 0.0              | 0.0   | 0.                |
| 6 418              | 12.3       | 100.0 | 11.1                 | 100.0 | 72.0              | 11.6 | 101.0            | 193.              | 0.0              | 0.0   | 0.                |
| 6 500              | 12.9       | 99.7  | 12.9                 | 99.6  | 3.8               | 15.5 | 98.4             | 162.              | 0.0              | 0.0   | 0.                |
| 6 506              | 13.6       | 99.4  | 13.6                 | 99.7  | 18.5              | 16.1 | 99.1             | 176.              | 0.0              | 0.0   | 0.                |
| 6 512              | 14.4       | 99.3  | 14.4                 | 99.5  | 17.5              | 0.0  | 0.0              | 9.                | 0.0              | 0.0   | 0.                |
| 6 518              | 14.6       | 100.4 | 14.9                 | 100.1 | 25.1              | 0.0  | 0.0              | 9.                | 0.0              | 0.0   | 0.                |
| 6 600              | 14.7       | 101.0 | 14.2                 | 100.9 | 30.6              | 13.3 | 103.0            | 0.                | 0.0              | 0.0   | 0.                |
| 6 606              | 14.8       | 101.6 | 14.0                 | 101.8 | 18.0              | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 6 612              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 6 618              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 6 700              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 6 706              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 6 712              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 6 718              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |

MEAN VECTOR ERRORS (N.M.I.)  
NUMBER OF CASES

103.  
15

164.  
16

301.  
16

TABLE 4. BORIS - PART 1



BORIS

| DATE/TIME<br>(GMT) | REST TRACK |       | OPERATIONAL POSITION |       | 24 HOUR FORECAST              |      | 48 HOUR FORECAST |                               | 72 HOUR FORECAST |       |                               |      |       |                               |
|--------------------|------------|-------|----------------------|-------|-------------------------------|------|------------------|-------------------------------|------------------|-------|-------------------------------|------|-------|-------------------------------|
|                    | LAT.       | LONG. | LAT.                 | LONG. | POSITION<br>ERROR<br>(N.M.I.) | LAT. | LONG.            | POSITION<br>ERROR<br>(N.M.I.) | LAT.             | LONG. | POSITION<br>ERROR<br>(N.M.I.) | LAT. | LONG. | POSITION<br>ERROR<br>(N.M.I.) |
| 5 800              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 5 805              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 5 812              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 5 818              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 5 900              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 5 906              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 5 912              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 6 918              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61000              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61005              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61012              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61018              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61100              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61106              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61112              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61118              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61200              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61206              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61212              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61218              | 14.1       | 109.9 | 13.9                 | 109.6 | 21.0                          | 14.0 | 110.0            | 48.1                          | 14.1             | 111.2 | 121.0                         | 14.2 | 112.0 | 280.0                         |
| 61300              | 14.1       | 110.1 | 14.0                 | 109.7 | 23.8                          | 14.0 | 110.0            | 77.0                          | 14.2             | 111.5 | 133.0                         | 14.2 | 112.2 | 303.0                         |
| 61306              | 14.0       | 110.4 | 14.0                 | 110.1 | 17.2                          | 13.9 | 111.2            | 29.0                          | 14.0             | 112.5 | 181.0                         | 14.2 | 114.1 | 315.0                         |
| 61312              | 14.0       | 110.7 | 13.9                 | 110.3 | 23.6                          | 14.1 | 111.7            | 35.0                          | 14.5             | 113.7 | 203.0                         | 15.8 | 116.8 | 295.0                         |
| 61318              | 14.1       | 110.8 | 13.8                 | 110.8 | 18.0                          | 13.8 | 111.8            | 109.0                         | 14.4             | 114.8 | 272.0                         | 15.8 | 116.8 | 300.0                         |
| 61400              | 14.3       | 111.2 | 13.8                 | 111.3 | 30.5                          | 14.2 | 113.2            | 127.0                         | 15.1             | 114.8 | 251.0                         | 16.2 | 116.9 | 308.0                         |
| 61406              | 14.5       | 111.6 | 13.9                 | 111.7 | 38.0                          | 14.5 | 113.6            | 159.0                         | 16.0             | 115.1 | 224.0                         | 18.5 | 118.2 | 229.0                         |
| 61412              | 14.8       | 112.2 | 13.8                 | 112.0 | 61.1                          | 14.0 | 114.2            | 239.0                         | 15.1             | 116.3 | 312.0                         | 17.0 | 117.8 | 289.0                         |
| 61418              | 15.6       | 112.6 | 15.6                 | 112.6 | 0.0                           | 17.5 | 113.5            | 73.0                          | 20.4             | 113.4 | 48.0                          | 21.5 | 111.2 | 211.0                         |
| 61500              | 15.3       | 112.9 | 16.0                 | 113.0 | 23.2                          | 17.1 | 113.0            | 38.0                          | 21.0             | 114.4 | 79.0                          | 0.0  | 0.0   | 0.0                           |
| 61506              | 17.0       | 113.1 | 17.0                 | 113.0 | 5.6                           | 20.9 | 113.6            | 113.0                         | 25.5             | 115.8 | 335.0                         | 0.0  | 0.0   | 0.0                           |
| 61512              | 17.7       | 113.3 | 17.6                 | 113.9 | 23.2                          | 21.5 | 112.9            | 130.0                         | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61518              | 18.4       | 113.6 | 18.7                 | 113.3 | 24.4                          | 22.5 | 113.7            | 155.0                         | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61600              | 18.9       | 113.7 | 19.1                 | 113.5 | 14.4                          | 21.1 | 113.3            | 103.0                         | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61606              | 19.3       | 113.7 | 19.4                 | 113.4 | 17.9                          | 21.3 | 113.1            | 36.0                          | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61612              | 19.3       | 113.8 | 19.5                 | 113.4 | 22.4                          | 21.7 | 113.5            | 41.0                          | 21.9             | 113.7 | 9.0                           | 0.0  | 0.0   | 0.0                           |
| 61618              | 19.7       | 113.9 | 19.5                 | 113.4 | 28.7                          | 21.8 | 113.6            | 71.0                          | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61700              | 19.9       | 114.0 | 20.1                 | 113.4 | 35.7                          | 21.5 | 113.5            | 123.0                         | 22.5             | 113.7 | 0.0                           | 21.0 | 114.2 | 0.0                           |
| 61706              | 20.1       | 114.3 | 20.7                 | 113.9 | 38.4                          | 21.4 | 111.8            | 259.0                         | 25.8             | 110.3 | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61712              | 20.2       | 114.6 | 20.2                 | 114.0 | 37.6                          | 20.3 | 114.1            | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61718              | 20.3       | 115.0 | 20.2                 | 113.7 | 17.9                          | 20.5 | 114.1            | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61800              | 20.3       | 115.4 | 20.2                 | 115.2 | 10.7                          | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61806              | 0.0        | 0.0   | 20.2                 | 115.3 | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61812              | 0.0        | 0.0   | 20.2                 | 115.3 | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |
| 61818              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0                           | 0.0  | 0.0              | 0.0                           | 0.0              | 0.0   | 0.0                           | 0.0  | 0.0   | 0.0                           |

MEAN VECTOR ERRORS (N.M.I.)  
NUMBER OF CASES

101.0  
196.0  
13.0

191.0  
7.0

TABLE 5. BORIS - PART 2

CRISTINA

| DATE/TIME<br>(GMT) | BEST TRACK |       | OPERATIONAL |       | 24 HOUR FORECAST  |      | 48 HOUR FORECAST |                   | 72 HOUR FORECAST |       |                   |
|--------------------|------------|-------|-------------|-------|-------------------|------|------------------|-------------------|------------------|-------|-------------------|
|                    | LAT.       | LONG. | LAT.        | LONG. | ERROR<br>(N.M.I.) | LAT. | LONG.            | ERROR<br>(N.M.I.) | LAT.             | LONG. | ERROR<br>(N.M.I.) |
| 61700              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0               | 0.0  | 0.0              | 0.0               | 0.0              | 0.0   | 0.                |
| 61706              | 14.0       | 103.3 | 14.0        | 102.2 | 63.6              | 14.3 | 102.9            | 122.              | 14.3             | 104.8 | 134.              |
| 61712              | 14.0       | 103.6 | 14.0        | 103.0 | 34.8              | 14.1 | 104.9            | 53.               | 14.9             | 107.7 | 35.               |
| 61718              | 14.0       | 104.1 | 14.1        | 103.9 | 13.0              | 14.9 | 106.3            | 55.               | 15.4             | 108.7 | 69.               |
| 61800              | 14.0       | 104.1 | 14.2        | 104.6 | 31.3              | 14.6 | 106.2            | 46.               | 15.4             | 109.7 | 75.               |
| 61806              | 14.0       | 105.3 | 14.2        | 105.0 | 21.0              | 15.0 | 107.7            | 64.               | 16.8             | 110.0 | 109.              |
| 61812              | 14.0       | 105.9 | 14.3        | 105.8 | 18.9              | 14.7 | 108.6            | 55.               | 16.0             | 111.2 | 79.               |
| 61818              | 14.0       | 106.5 | 14.0        | 106.5 | 0.0               | 14.4 | 109.2            | 64.               | 15.1             | 112.0 | 58.               |
| 61900              | 14.1       | 106.9 | 14.0        | 106.7 | 13.0              | 14.6 | 106.2            | 145.              | 14.4             | 110.8 | 70.               |
| 61906              | 14.2       | 107.3 | 14.1        | 107.1 | 13.0              | 14.3 | 108.9            | 63.               | 14.7             | 111.3 | 71.               |
| 61912              | 14.3       | 107.7 | 14.2        | 107.6 | 9.3               | 14.5 | 110.0            | 35.               | 15.3             | 115.0 | 164.              |
| 61918              | 14.4       | 108.2 | 14.4        | 108.1 | 5.7               | 15.0 | 109.8            | 70.               | 15.8             | 114.0 | 44.               |
| 62000              | 14.7       | 108.7 | 14.6        | 108.7 | 6.0               | 15.3 | 111.1            | 63.               | 16.3             | 113.6 | 81.               |
| 62006              | 14.8       | 109.4 | 15.0        | 109.7 | 21.0              | 15.4 | 112.9            | 64.               | 15.8             | 116.2 | 191.              |
| 62012              | 14.8       | 110.2 | 15.0        | 110.3 | 13.3              | 15.6 | 113.0            | 84.               | 16.4             | 116.2 | 167.              |
| 62018              | 14.6       | 111.0 | 15.0        | 111.0 | 24.0              | 15.0 | 114.1            | 130.              | 15.5             | 117.2 | 218.              |
| 62100              | 14.5       | 111.8 | 14.5        | 111.8 | 0.0               | 14.5 | 115.1            | 175.              | 14.4             | 119.1 | 350.              |
| 62106              | 14.6       | 111.9 | 14.5        | 112.3 | 23.7              | 14.8 | 114.8            | 131.              | 14.9             | 117.6 | 258.              |
| 62112              | 14.8       | 112.0 | 14.5        | 112.3 | 24.9              | 14.8 | 113.0            | 103.              | 15.0             | 114.6 | 216.              |
| 62118              | 15.1       | 112.1 | 15.1        | 112.2 | 5.7               | 15.5 | 113.1            | 91.               | 15.9             | 114.5 | 191.              |
| 62200              | 15.5       | 112.5 | 15.6        | 112.4 | 8.2               | 17.6 | 113.3            | 36.               | 19.2             | 114.8 | 75.               |
| 62206              | 16.0       | 112.9 | 16.0        | 112.9 | 0.0               | 17.5 | 114.8            | 35.               | 19.8             | 116.9 | 73.               |
| 62212              | 16.4       | 113.3 | 16.5        | 113.3 | 6.0               | 18.2 | 114.9            | 25.               | 19.4             | 116.7 | 79.               |
| 62218              | 16.9       | 113.8 | 16.9        | 113.7 | 5.6               | 18.7 | 115.3            | 21.               | 20.1             | 116.7 | 85.               |
| 62300              | 17.3       | 114.2 | 17.4        | 113.9 | 17.7              | 19.2 | 114.5            | 91.               | 21.1             | 115.0 | 231.              |
| 62306              | 17.8       | 114.7 | 18.0        | 114.5 | 16.4              | 19.8 | 116.0            | 41.               | 21.5             | 117.1 | 180.              |
| 62312              | 18.3       | 115.2 | 18.6        | 114.8 | 28.6              | 20.8 | 116.3            | 77.               | 22.1             | 117.4 | 223.              |
| 62318              | 18.8       | 115.6 | 18.9        | 115.6 | 6.0               | 21.0 | 117.5            | 67.               | 22.5             | 118.9 | 172.              |
| 62400              | 19.3       | 116.2 | 19.3        | 116.1 | 5.6               | 21.0 | 118.0            | 87.               | 23.7             | 119.6 | 179.              |
| 62406              | 19.8       | 116.8 | 20.0        | 116.7 | 13.2              | 21.8 | 119.2            | 111.              | 23.0             | 121.4 | 188.              |
| 62412              | 20.0       | 117.5 | 20.4        | 117.6 | 24.0              | 21.8 | 120.8            | 79.               | 22.8             | 122.8 | 0.                |
| 62418              | 20.1       | 118.3 | 20.1        | 118.2 | 5.6               | 20.2 | 120.7            | 90.               | 20.4             | 123.2 | 0.                |
| 62500              | 20.2       | 119.1 | 20.2        | 119.0 | 5.6               | 20.7 | 122.0            | 38.               | 21.0             | 124.6 | 0.                |
| 62506              | 20.5       | 121.9 | 20.5        | 121.0 | 50.1              | 19.4 | 123.6            | 0.                | 0.0              | 0.0   | 0.                |
| 62512              | 21.0       | 121.8 | 21.3        | 121.8 | 18.6              | 23.5 | 124.8            | 0.                | 0.0              | 0.0   | 0.                |
| 62500              | 21.5       | 122.6 | 21.6        | 122.6 | 6.0               | 24.2 | 125.1            | 0.                | 0.0              | 0.0   | 0.                |
| 62600              | 0.0        | 0.0   | 21.0        | 123.0 | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 62612              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |
| 62618              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                |

NEAR VECTOR ERRORS (N.M.I.) 74.  
NUMBER OF CASES 33

TABLE 6.

141.  
35

MOUSLAS

| DATE/TIME<br>(GMT)          | BEST TRACK |       | OPERATIONAL POSITION |       | POSITION ERROR |          | 24 HOUR FORECAST ERROR |       | 48 HOUR FORECAST ERROR |          | 72 HOUR FORECAST ERROR |       |          |      |
|-----------------------------|------------|-------|----------------------|-------|----------------|----------|------------------------|-------|------------------------|----------|------------------------|-------|----------|------|
|                             | LAT.       | LONG. | LAT.                 | LONG. | (N.M.I.)       | (N.M.I.) | LAT.                   | LONG. | (N.M.I.)               | (N.M.I.) | LAT.                   | LONG. | (N.M.I.) |      |
| 62500                       | 10.3       | 106.5 | 10.5                 | 106.5 | 12.0           | 11.4     | 110.7                  | 59.   | 12.4                   | 114.7    | 59.                    | 13.1  | 118.9    | 50.  |
| 62506                       | 10.3       | 107.4 | 10.5                 | 108.5 | 65.5           | 11.1     | 112.0                  | 32.   | 12.0                   | 115.4    | 44.                    | 12.5  | 118.5    | 38.  |
| 62512                       | 10.4       | 108.3 | 10.5                 | 108.2 | 8.4            | 10.6     | 111.9                  | 54.   | 11.5                   | 115.3    | 115.                   | 12.3  | 118.9    | 67.  |
| 62518                       | 10.4       | 109.3 | 10.5                 | 109.4 | 8.4            | 11.2     | 113.0                  | 17.   | 12.8                   | 116.6    | 17.                    | 14.3  | 120.0    | 64.  |
| 62600                       | 10.5       | 110.4 | 10.5                 | 110.3 | 5.8            | 11.3     | 114.3                  | 30.   | 12.4                   | 118.1    | 24.                    | 14.1  | 121.7    | 25.  |
| 62606                       | 10.6       | 111.5 | 10.6                 | 111.8 | 17.5           | 11.1     | 113.7                  | 130.  | 12.2                   | 120.5    | 105.                   | 13.6  | 123.2    | 33.  |
| 62612                       | 10.9       | 112.5 | 10.8                 | 112.8 | 18.5           | 11.4     | 117.2                  | 123.  | 12.3                   | 121.2    | 92.                    | 13.2  | 125.5    | 113. |
| 62618                       | 11.3       | 113.5 | 11.4                 | 113.2 | 18.4           | 12.8     | 117.0                  | 17.   | 14.2                   | 120.4    | 54.                    | 15.7  | 123.9    | 92.  |
| 62700                       | 11.9       | 114.3 | 11.7                 | 114.0 | 21.1           | 12.9     | 117.2                  | 53.   | 13.9                   | 120.1    | 100.                   | 14.4  | 123.3    | 165. |
| 62706                       | 12.4       | 115.3 | 12.7                 | 115.2 | 18.9           | 15.8     | 118.2                  | 173.  | 17.5                   | 120.5    | 249.                   | 18.5  | 123.5    | 285. |
| 62712                       | 12.6       | 116.1 | 13.2                 | 116.2 | 36.5           | 14.8     | 119.6                  | 107.  | 16.2                   | 123.1    | 132.                   | 16.3  | 127.0    | 79.  |
| 62718                       | 12.7       | 117.0 | 13.0                 | 116.8 | 21.4           | 13.7     | 120.1                  | 39.   | 13.9                   | 123.5    | 97.                    | 13.7  | 126.9    | 159. |
| 62800                       | 12.8       | 117.9 | 12.8                 | 118.1 | 11.6           | 13.0     | 121.5                  | 42.   | 13.3                   | 125.6    | 100.                   | 13.6  | 129.5    | 133. |
| 62806                       | 13.0       | 118.9 | 13.0                 | 118.9 | 0.0            | 13.5     | 122.7                  | 31.   | 13.8                   | 126.4    | 96.                    | 13.8  | 130.1    | 150. |
| 62812                       | 13.1       | 119.8 | 13.0                 | 119.8 | 6.0            | 13.3     | 123.8                  | 48.   | 13.7                   | 128.3    | 102.                   | 13.7  | 132.7    | 208. |
| 62818                       | 13.4       | 120.7 | 13.3                 | 120.4 | 18.3           | 14.2     | 123.5                  | 90.   | 14.4                   | 126.7    | 144.                   | 14.7  | 130.0    | 176. |
| 62900                       | 13.8       | 121.8 | 13.7                 | 121.8 | 5.0            | 14.8     | 126.3                  | 13.   | 15.5                   | 131.6    | 106.                   | 15.8  | 136.8    | 281. |
| 62906                       | 14.0       | 122.8 | 14.0                 | 122.8 | 0.0            | 15.2     | 127.3                  | 6.    | 16.1                   | 131.9    | 99.                    | 17.4  | 136.3    | 192. |
| 62912                       | 14.3       | 123.9 | 14.1                 | 123.8 | 13.3           | 15.4     | 128.8                  | 8.    | 14.5                   | 131.4    | 135.                   | 17.4  | 135.1    | 208. |
| 62918                       | 14.6       | 125.0 | 14.6                 | 125.0 | 0.0            | 15.9     | 130.4                  | 35.   | 15.8                   | 132.5    | 110.                   | 15.8  | 136.1    | 132. |
| 63000                       | 14.9       | 126.1 | 14.9                 | 126.1 | 0.0            | 16.4     | 131.7                  | 66.   | 16.3                   | 134.8    | 163.                   | 16.8  | 139.3    | 182. |
| 63006                       | 15.1       | 127.2 | 15.2                 | 127.2 | 6.0            | 16.3     | 131.7                  | 86.   | 17.1                   | 136.0    | 180.                   | 17.6  | 140.3    | 167. |
| 63012                       | 15.3       | 128.1 | 15.4                 | 128.2 | 8.3            | 16.4     | 132.3                  | 83.   | 17.1                   | 136.4    | 148.                   | 17.8  | 139.9    | 0.   |
| 63018                       | 15.6       | 128.8 | 15.5                 | 128.9 | 8.3            | 16.2     | 132.5                  | 91.   | 17.0                   | 136.2    | 71.                    | 17.9  | 140.4    | 0.   |
| 7 100                       | 15.9       | 129.6 | 15.8                 | 129.8 | 12.9           | 16.8     | 133.2                  | 68.   | 17.4                   | 135.8    | 37.                    | 18.4  | 140.4    | 0.   |
| 7 106                       | 16.2       | 130.2 | 16.3                 | 130.2 | 0.0            | 17.7     | 132.7                  | 25.   | 19.1                   | 135.2    | 144.                   | 20.6  | 137.9    | 0.   |
| 7 112                       | 16.7       | 130.8 | 16.7                 | 130.9 | 5.7            | 18.3     | 133.3                  | 44.   | 19.6                   | 136.0    | 0.                     | 20.5  | 139.6    | 0.   |
| 7 118                       | 17.1       | 131.5 | 17.3                 | 131.4 | 13.3           | 18.7     | 134.2                  | 64.   | 19.7                   | 137.0    | 0.                     | 20.3  | 140.2    | 0.   |
| 7 200                       | 17.4       | 132.2 | 17.4                 | 132.2 | 0.0            | 18.2     | 135.1                  | 97.   | 18.5                   | 136.6    | 0.                     | 20.3  | 143.0    | 0.   |
| 7 206                       | 17.7       | 133.3 | 18.0                 | 133.0 | 24.9           | 19.4     | 136.4                  | 164.  | 20.0                   | 139.7    | 0.                     | 20.3  | 143.0    | 0.   |
| 7 212                       | 17.7       | 134.4 | 18.0                 | 134.0 | 29.1           | 18.5     | 137.7                  | 0.    | 18.8                   | 141.4    | 0.                     | 18.9  | 145.1    | 0.   |
| 7 218                       | 17.8       | 135.4 | 17.9                 | 135.4 | 6.0            | 18.0     | 139.9                  | 0.    | 18.2                   | 144.1    | 0.                     | 18.4  | 148.3    | 0.   |
| 7 300                       | 17.8       | 136.5 | 17.8                 | 136.3 | 11.4           | 17.7     | 140.3                  | 0.    | 17.7                   | 144.0    | 0.                     | 17.6  | 147.7    | 0.   |
| 7 306                       | 17.8       | 137.6 | 17.9                 | 137.4 | 12.9           | 18.1     | 141.4                  | 0.    | 0.0                    | 0.0      | 0.                     | 0.0   | 0.0      | 0.   |
| 7 312                       | 17.9       | 138.8 | 0.0                  | 0.0   | 0.0            | 18.4     | 143.9                  | 0.    | 18.9                   | 154.6    | 0.                     | 19.4  | 154.6    | 0.   |
| 7 318                       | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0      | 0.0                    | 0.    | 0.0                    | 0.0      | 0.                     | 0.0   | 0.0      | 0.   |
| MEAN VECTOR ERRORS (N.M.I.) |            |       |                      |       |                |          |                        |       |                        |          |                        |       | 137.     |      |
| NUMBER OF CASES             |            |       |                      |       |                |          |                        |       |                        |          |                        |       | 32       |      |

TABLE 7.

| DATE/TIME<br>(GMT) | BEST TRACK |       | OPERATIONAL |       | POSITION                     |      | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |       |      |
|--------------------|------------|-------|-------------|-------|------------------------------|------|------------------|-------|------------------|-------|------------------|-------|-------|------|
|                    | LAT.       | LONG. | LAT.        | LONG. | POSITION<br>ERROR<br>(N.MI.) | LAT. | LONG.            | LONG. | LONG.            | LONG. | LONG.            | LONG. |       |      |
| 62800              | 10.1       | 101.8 | 9.5         | 101.5 | 40.0                         | 9.9  | 104.4            | 51.   | 10.3             | 107.6 | 216.             | 11.3  | 110.7 | 240. |
| 62806              | 10.2       | 102.6 | 9.6         | 102.2 | 42.9                         | 10.1 | 105.6            | 74.   | 10.9             | 109.2 | 205.             | 11.5  | 112.6 | 250. |
| 62812              | 10.4       | 103.5 | 9.7         | 102.9 | 48.1                         | 10.1 | 105.8            | 139.  | 10.4             | 108.7 | 253.             | 10.8  | 111.5 | 295. |
| 62818              | 10.5       | 104.0 | 10.0        | 104.0 | 30.0                         | 11.1 | 107.7            | 133.  | 12.6             | 111.3 | 160.             | 14.0  | 114.6 | 142. |
| 62900              | 10.9       | 104.8 | 10.5        | 105.0 | 26.7                         | 12.0 | 108.9            | 137.  | 13.1             | 113.0 | 188.             | 13.6  | 117.2 | 249. |
| 62906              | 11.7       | 105.6 | 11.3        | 105.9 | 29.6                         | 12.6 | 109.7            | 126.  | 13.7             | 113.6 | 167.             | 14.0  | 117.6 | 236. |
| 62912              | 12.5       | 106.3 | 12.4        | 106.0 | 18.3                         | 14.6 | 108.7            | 23.   | 15.6             | 112.0 | 6.               | 16.8  | 115.2 | 44.  |
| 62918              | 13.2       | 107.0 | 13.2        | 107.0 | 0.0                          | 14.3 | 110.2            | 40.   | 14.5             | 113.2 | 70.              | 14.6  | 114.0 | 158. |
| 63000              | 13.9       | 107.6 | 13.9        | 107.6 | 0.0                          | 16.0 | 110.5            | 44.   | 18.0             | 113.4 | 121.             | 18.3  | 116.5 | 164. |
| 63006              | 14.3       | 108.3 | 14.2        | 108.3 | 6.0                          | 15.9 | 111.1            | 30.   | 17.2             | 114.2 | 54.              | 18.0  | 117.7 | 72.  |
| 63012              | 14.6       | 109.1 | 14.6        | 109.1 | 0.0                          | 15.9 | 112.4            | 26.   | 16.9             | 115.4 | 53.              | 17.7  | 118.8 | 36.  |
| 63018              | 15.0       | 109.9 | 14.9        | 109.9 | 6.0                          | 16.2 | 113.2            | 43.   | 17.1             | 116.4 | 43.              | 17.8  | 119.8 | 44.  |
| 7 100              | 15.3       | 110.6 | 15.3        | 110.7 | 5.7                          | 16.5 | 113.8            | 31.   | 18.0             | 118.1 | 217.             | 18.1  | 120.3 | 55.  |
| 7 106              | 15.5       | 111.4 | 15.5        | 111.4 | 0.0                          | 16.2 | 114.7            | 24.   | 18.8             | 118.1 | 17.              | 17.1  | 121.5 | 13.  |
| 7 112              | 15.7       | 112.0 | 15.7        | 112.0 | 0.0                          | 16.6 | 115.0            | 30.   | 17.4             | 118.0 | 47.              | 18.0  | 121.0 | 103. |
| 7 118              | 15.9       | 112.8 | 15.6        | 112.8 | 18.0                         | 16.8 | 115.9            | 25.   | 17.8             | 119.0 | 54.              | 18.0  | 123.0 | 53.  |
| 7 200              | 16.0       | 113.6 | 16.0        | 113.7 | 5.7                          | 16.6 | 117.0            | 6.    | 17.2             | 120.4 | 5.               | 17.7  | 124.2 | 75.  |
| 7 206              | 16.9       | 114.3 | 16.3        | 114.3 | 12.0                         | 17.0 | 117.7            | 13.   | 17.6             | 121.1 | 42.              | 18.1  | 124.7 | 117. |
| 7 212              | 16.2       | 115.1 | 16.1        | 115.0 | 8.3                          | 16.5 | 118.2            | 50.   | 17.0             | 121.7 | 53.              | 17.5  | 125.0 | 100. |
| 7 218              | 16.4       | 116.0 | 16.4        | 116.0 | 0.0                          | 17.4 | 119.3            | 25.   | 18.0             | 122.7 | 48.              | 18.6  | 126.3 | 246. |
| 7 300              | 16.6       | 116.9 | 16.6        | 116.9 | 0.0                          | 17.3 | 120.6            | 8.    | 18.0             | 124.2 | 87.              | 18.3  | 128.0 | 322. |
| 7 306              | 16.8       | 117.8 | 16.8        | 117.8 | 0.0                          | 17.5 | 121.3            | 29.   | 17.8             | 124.9 | 112.             | 18.1  | 128.4 | 333. |
| 7 312              | 17.0       | 118.7 | 17.1        | 118.8 | 8.3                          | 18.1 | 123.0            | 59.   | 19.0             | 126.8 | 237.             | 19.9  | 130.3 | 495. |
| 7 400              | 17.0       | 120.6 | 17.2        | 120.5 | 13.3                         | 17.4 | 124.2            | 65.   | 18.4             | 127.3 | 279.             | 18.7  | 131.4 | 518. |
| 7 406              | 16.9       | 121.4 | 17.2        | 121.7 | 24.9                         | 17.4 | 125.7            | 140.  | 18.1             | 128.8 | 352.             | 18.4  | 132.7 | 610. |
| 7 412              | 16.8       | 122.0 | 17.2        | 122.6 | 42.0                         | 17.5 | 126.4            | 171.  | 17.7             | 130.3 | 429.             | 17.9  | 134.3 | 709. |
| 7 418              | 16.7       | 122.5 | 17.2        | 123.6 | 30.5                         | 17.3 | 125.6            | 162.  | 17.5             | 129.0 | 364.             | 17.9  | 132.8 | 685. |
| 7 500              | 16.5       | 123.8 | 16.9        | 123.2 | 29.2                         | 16.8 | 126.3            | 191.  | 17.1             | 129.4 | 390.             | 17.2  | 132.7 | 743. |
| 7 506              | 16.3       | 123.1 | 16.6        | 123.4 | 25.0                         | 16.4 | 126.1            | 167.  | 16.3             | 129.2 | 384.             | 16.4  | 132.7 | 764. |
| 7 512              | 15.9       | 123.3 | 16.5        | 123.6 | 39.9                         | 16.2 | 125.2            | 129.  | 16.4             | 127.2 | 292.             | 16.4  | 130.6 | 774. |
| 7 518              | 15.5       | 123.5 | 15.5        | 123.5 | 0.0                          | 14.4 | 124.7            | 87.   | 14.0             | 127.0 | 346.             | 14.0  | 129.8 | 819. |
| 7 600              | 15.1       | 123.7 | 15.1        | 123.5 | 11.6                         | 14.5 | 123.9            | 60.   | 15.0             | 124.5 | 261.             | 16.2  | 125.4 | 0.   |
| 7 606              | 15.0       | 123.7 | 15.0        | 123.6 | 5.8                          | 14.4 | 124.3            | 130.  | 0.0              | 0.0   | 0.               | 0.0   | 0.0   | 0.   |
| 7 612              | 14.8       | 123.6 | 14.8        | 123.5 | 5.8                          | 13.9 | 123.9            | 121.  | 13.9             | 124.9 | 458.             | 15.9  | 127.2 | 0.   |
| 7 618              | 14.9       | 123.3 | 14.9        | 123.3 | 0.0                          | 15.2 | 124.1            | 168.  | 15.7             | 124.7 | 514.             | 16.8  | 126.5 | 0.   |
| 7 700              | 15.0       | 123.0 | 15.0        | 123.0 | 0.0                          | 16.0 | 123.3            | 198.  | 0.0              | 0.0   | 0.               | 0.0   | 0.0   | 0.   |
| 7 706              | 15.1       | 122.6 | 15.0        | 122.7 | 8.3                          | 15.1 | 121.8            | 134.  | 0.0              | 0.0   | 0.               | 0.0   | 0.0   | 0.   |
| 7 712              | 15.2       | 122.0 | 15.2        | 122.3 | 17.4                         | 15.3 | 121.0            | 220.  | 15.0             | 120.2 | 0.               | 15.0  | 119.3 | 0.   |
| 7 718              | 15.3       | 121.2 | 15.3        | 121.2 | 0.0                          | 16.1 | 119.7            | 226.  | 17.0             | 118.0 | 0.               | 18.6  | 117.4 | 0.   |
| 7 800              | 15.4       | 120.4 | 15.1        | 120.0 | 29.4                         | 15.4 | 117.2            | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0   | 0.   |
| 7 806              | 15.4       | 119.5 | 15.4        | 119.5 | 0.0                          | 15.8 | 116.1            | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0   | 0.   |
| 7 812              | 15.5       | 117.2 | 15.5        | 117.2 | 0.0                          | 18.0 | 113.0            | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0   | 0.   |
| 7 818              | 15.8       | 115.8 | 15.8        | 115.8 | 0.0                          | 13.8 | 109.5            | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0   | 0.   |

MEAN VECTOR ERRORS (N.MI.) 59.  
NUMBER OF CASES 49

194.  
35

312.  
32

TABLE 8.

FRUSTO

| DATE/TIME<br>(GMT) | BEST TRACK |       | OPERATIONAL |       | POSITION |       | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |          |       |
|--------------------|------------|-------|-------------|-------|----------|-------|------------------|-------|------------------|-------|------------------|-------|----------|-------|
|                    | LAT.       | LONG. | LAT.        | LONG. | (N.M.I.) | ERROR | LAT.             | LONG. | (N.M.I.)         | ERROR | LAT.             | LONG. | (N.M.I.) | ERROR |
| 7 300              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |
| 7 306              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |
| 7 312              | 15.8       | 103.9 | 15.5        | 103.5 | 29.1     | 0.0   | 15.8             | 104.8 | 16.3             | 110.0 | 16.8             | 113.4 | 302.     | 0.    |
| 7 318              | 16.1       | 104.0 | 15.3        | 103.9 | 34.4     | 0.0   | 16.3             | 107.3 | 17.2             | 111.2 | 17.8             | 115.2 | 372.     | 0.    |
| 7 400              | 16.4       | 105.5 | 16.4        | 105.9 | 22.6     | 0.0   | 17.5             | 109.8 | 18.6             | 113.5 | 19.4             | 117.0 | 421.     | 0.    |
| 7 406              | 16.7       | 106.1 | 16.5        | 106.7 | 36.0     | 0.0   | 17.2             | 110.3 | 17.7             | 116.0 | 18.6             | 117.0 | 406.     | 0.    |
| 7 412              | 17.0       | 106.6 | 16.9        | 107.2 | 34.2     | 0.0   | 17.6             | 110.3 | 19.0             | 113.4 | 19.8             | 117.0 | 380.     | 0.    |
| 7 418              | 17.3       | 107.0 | 17.4        | 107.3 | 17.8     | 0.0   | 19.0             | 109.2 | 20.0             | 111.4 | 20.7             | 113.8 | 180.     | 0.    |
| 7 500              | 17.5       | 107.5 | 17.5        | 107.5 | 5.6      | 0.0   | 18.6             | 109.9 | 19.8             | 112.2 | 19.8             | 114.8 | 206.     | 0.    |
| 7 506              | 17.6       | 107.7 | 17.6        | 108.0 | 16.8     | 0.0   | 18.3             | 110.3 | 19.2             | 113.0 | 20.9             | 115.6 | 266.     | 0.    |
| 7 512              | 17.8       | 108.0 | 17.7        | 108.1 | 8.2      | 0.0   | 18.7             | 108.8 | 20.0             | 109.8 | 20.9             | 111.8 | 175.     | 0.    |
| 7 518              | 17.9       | 108.1 | 18.0        | 108.0 | 8.2      | 0.0   | 19.2             | 108.9 | 20.4             | 110.4 | 21.4             | 113.0 | 158.     | 0.    |
| 7 600              | 18.2       | 108.3 | 18.2        | 108.3 | 0.0      | 0.0   | 19.2             | 109.5 | 19.7             | 110.8 | 21.1             | 113.2 | 280.     | 0.    |
| 7 606              | 18.7       | 108.6 | 18.7        | 108.6 | 0.0      | 0.0   | 20.5             | 109.9 | 21.6             | 111.5 | 22.3             | 113.2 | 179.     | 0.    |
| 7 612              | 19.3       | 108.8 | 19.3        | 108.8 | 0.0      | 0.0   | 21.4             | 110.0 | 23.8             | 111.9 | 23.0             | 114.0 | 143.     | 0.    |
| 7 618              | 19.9       | 109.1 | 19.8        | 109.0 | 8.1      | 0.0   | 21.8             | 110.1 | 23.2             | 111.5 | 24.2             | 113.5 | 193.     | 0.    |
| 7 700              | 20.3       | 109.6 | 20.3        | 109.6 | 0.0      | 0.0   | 21.9             | 111.9 | 23.3             | 114.3 | 24.4             | 116.9 | 58.      | 0.    |
| 7 706              | 20.7       | 110.1 | 20.5        | 110.1 | 12.0     | 0.0   | 21.3             | 112.5 | 21.9             | 115.0 | 23.0             | 117.3 | 63.      | 0.    |
| 7 712              | 21.1       | 110.4 | 21.2        | 110.4 | 6.0      | 0.0   | 22.9             | 112.1 | 24.0             | 114.4 | 24.7             | 117.0 | 0.       | 0.    |
| 7 718              | 21.5       | 110.7 | 21.5        | 110.7 | 0.0      | 0.0   | 23.0             | 112.2 | 24.3             | 113.8 | 24.9             | 115.9 | 0.       | 0.    |
| 7 800              | 22.0       | 111.3 | 22.0        | 111.3 | 0.0      | 0.0   | 23.6             | 113.3 | 24.7             | 115.5 | 25.5             | 118.7 | 0.       | 0.    |
| 7 806              | 22.7       | 112.0 | 22.8        | 111.9 | 6.1      | 0.0   | 25.1             | 114.3 | 26.4             | 116.5 | 27.1             | 118.8 | 0.       | 0.    |
| 7 812              | 23.3       | 112.7 | 23.7        | 112.7 | 24.0     | 0.0   | 26.4             | 114.3 | 29.1             | 116.0 | 32.1             | 117.1 | 0.       | 0.    |
| 7 818              | 23.9       | 113.5 | 24.0        | 113.5 | 6.0      | 0.0   | 25.7             | 115.3 | 27.5             | 117.0 | 29.7             | 118.5 | 0.       | 0.    |
| 7 900              | 24.0       | 114.6 | 24.3        | 114.9 | 24.4     | 0.0   | 25.2             | 113.9 | 25.7             | 124.3 | 26.1             | 118.4 | 0.       | 0.    |
| 7 906              | 24.0       | 115.5 | 24.3        | 115.6 | 18.5     | 0.0   | 25.0             | 110.2 | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |
| 7 912              | 23.9       | 116.2 | 24.3        | 116.3 | 29.1     | 0.0   | 24.4             | 113.9 | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |
| 7 918              | 23.9       | 117.0 | 23.9        | 117.0 | 0.0      | 0.0   | 24.4             | 115.2 | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |
| 71000              | 23.9       | 117.8 | 23.9        | 117.8 | 0.0      | 0.0   | 24.1             | 110.9 | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |
| 71006              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |
| 71012              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |
| 71018              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0      | 0.    |

MEAN VECTOR ERRORS (N.M.I.)  
NUMBER OF CASES

156.  
24

236.  
16

TABLE 9.

GENEVIEWE

| DATE/TIME<br>(GMT) | BEST TRACK |       | OPERATIONAL POSITION |       | POSITION ERROR |       | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |
|--------------------|------------|-------|----------------------|-------|----------------|-------|------------------|-------|------------------|-------|------------------|-------|
|                    | LAT.       | LONG. | LAT.                 | LONG. | (N.M.I.)       | ERROR | LAT.             | LONG. | (N.M.I.)         | ERROR | LAT.             | LONG. |
| 7 700              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 7 704              | 10.5       | 95.5  | 10.5                 | 95.5  | 0.0            | 0.0   | 11.7             | 97.6  | 0.0              | 0.0   | 13.7             | 103.1 |
| 7 712              | 10.9       | 96.1  | 11.0                 | 96.0  | 8.3            | 8.3   | 12.7             | 99.0  | 80.1             | 138.0 | 14.1             | 103.6 |
| 7 718              | 11.3       | 96.8  | 11.3                 | 96.8  | 0.0            | 0.0   | 12.6             | 99.7  | 59.1             | 113.0 | 14.3             | 105.6 |
| 7 800              | 11.7       | 97.8  | 11.8                 | 97.8  | 6.0            | 6.0   | 13.2             | 101.3 | 6.1              | 211.0 | 15.5             | 108.1 |
| 7 806              | 11.7       | 98.8  | 12.1                 | 98.8  | 24.0           | 24.0  | 13.7             | 102.7 | 45.1             | 186.0 | 16.2             | 108.7 |
| 7 812              | 12.0       | 99.7  | 12.3                 | 100.3 | 38.6           | 38.6  | 13.8             | 104.8 | 131.1            | 187.0 | 16.4             | 111.7 |
| 7 818              | 12.3       | 100.4 | 12.6                 | 100.7 | 24.8           | 24.8  | 14.0             | 104.6 | 92.1             | 223.0 | 16.3             | 113.0 |
| 7 900              | 13.0       | 101.4 | 13.1                 | 101.3 | 8.3            | 8.3   | 14.5             | 104.5 | 104.1            | 231.0 | 16.9             | 111.1 |
| 7 906              | 13.7       | 102.2 | 14.0                 | 102.0 | 21.2           | 21.2  | 16.4             | 105.8 | 44.1             | 138.0 | 19.0             | 114.0 |
| 7 912              | 14.5       | 103.2 | 14.8                 | 103.8 | 28.8           | 28.8  | 17.2             | 106.3 | 58.1             | 141.0 | 19.8             | 113.5 |
| 7 918              | 15.3       | 104.3 | 15.5                 | 104.3 | 12.0           | 12.0  | 17.0             | 107.0 | 115.1            | 148.0 | 19.2             | 113.0 |
| 71000              | 16.1       | 105.1 | 16.1                 | 105.2 | 5.6            | 5.6   | 18.1             | 108.9 | 93.1             | 197.0 | 20.2             | 115.6 |
| 71006              | 17.0       | 106.1 | 17.1                 | 106.0 | 8.2            | 8.2   | 19.3             | 110.0 | 62.1             | 254.0 | 21.3             | 117.2 |
| 71012              | 17.9       | 107.0 | 17.9                 | 107.0 | 0.0            | 0.0   | 20.1             | 110.8 | 81.1             | 283.0 | 21.9             | 116.0 |
| 71018              | 18.8       | 107.8 | 18.8                 | 107.7 | 5.5            | 5.5   | 21.4             | 111.4 | 122.1            | 292.0 | 23.8             | 118.0 |
| 71100              | 19.4       | 108.4 | 19.6                 | 108.5 | 13.2           | 13.2  | 21.9             | 111.4 | 130.1            | 284.0 | 24.1             | 117.0 |
| 71106              | 20.0       | 108.9 | 20.1                 | 109.3 | 22.8           | 22.8  | 22.0             | 111.7 | 170.1            | 309.0 | 24.1             | 117.7 |
| 71112              | 20.4       | 109.0 | 20.4                 | 109.4 | 22.0           | 22.0  | 22.0             | 111.7 | 170.1            | 230.0 | 23.5             | 116.0 |
| 71118              | 20.7       | 109.0 | 20.6                 | 109.4 | 22.8           | 22.8  | 21.8             | 110.2 | 64.1             | 73.0  | 23.0             | 114.0 |
| 71200              | 20.9       | 109.0 | 20.8                 | 109.4 | 22.8           | 22.8  | 21.5             | 109.5 | 6.1              | 21.0  | 22.9             | 114.7 |
| 71206              | 21.1       | 109.0 | 21.0                 | 109.0 | 6.0            | 6.0   | 21.9             | 109.1 | 21.1             | 69.0  | 23.8             | 112.0 |
| 71212              | 21.3       | 109.1 | 21.5                 | 108.7 | 25.0           | 25.0  | 22.4             | 108.4 | 72.1             | 232.0 | 23.8             | 109.6 |
| 71218              | 21.4       | 109.3 | 21.5                 | 109.1 | 12.5           | 12.5  | 22.0             | 110.2 | 30.1             | 30.0  | 23.0             | 112.3 |
| 71300              | 21.7       | 109.6 | 21.5                 | 109.6 | 12.0           | 12.0  | 22.0             | 111.1 | 36.1             | 36.0  | 23.8             | 112.9 |
| 71306              | 21.8       | 110.0 | 22.1                 | 109.4 | 37.5           | 37.5  | 23.4             | 110.7 | 18.1             | 9.0   | 0.0              | 0.0   |
| 71312              | 22.0       | 110.3 | 22.4                 | 109.7 | 40.8           | 40.8  | 23.3             | 111.1 | 0.1              | 0.0   | 0.0              | 0.0   |
| 71318              | 22.9       | 110.6 | 22.2                 | 110.7 | 42.4           | 42.4  | 23.2             | 112.7 | 0.1              | 0.0   | 24.5             | 119.0 |
| 71400              | 22.7       | 110.8 | 22.6                 | 111.1 | 17.5           | 17.5  | 24.0             | 112.7 | 0.1              | 0.0   | 0.0              | 0.0   |
| 71406              | 23.5       | 110.9 | 23.5                 | 111.0 | 5.5            | 5.5   | 0.0              | 0.0   | 0.1              | 0.0   | 0.0              | 0.0   |
| 71412              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0   | 0.0              | 0.0   | 0.1              | 0.0   | 0.0              | 0.0   |
| 71418              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0   | 0.0              | 0.0   | 0.1              | 0.0   | 0.0              | 0.0   |

MEAN VECTOR ERRORS (N.M.I.)  
NUMBER OF CASES

76.  
25

173.  
21

308.  
17

TABLE 10.

HERRAR

| DATE/TIME<br>(GMT)          | BEST TRACK |       | OPERATIONAL<br>POSITION |       | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |
|-----------------------------|------------|-------|-------------------------|-------|------------------|-------|------------------|-------|------------------|-------|
|                             | LAT.       | LONG. | LAT.                    | LONG. | LAT.             | LONG. | LAT.             | LONG. | LAT.             | LONG. |
| 72700                       | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 72706                       | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 72712                       | 16.0       | 110.6 | 16.1                    | 111.0 | 18.3             | 114.3 | 20.5             | 116.3 | 22.1             | 118.8 |
| 72718                       | 16.4       | 111.4 | 16.6                    | 112.0 | 18.0             | 115.7 | 19.3             | 119.5 | 20.2             | 123.3 |
| 72800                       | 16.6       | 112.3 | 16.8                    | 112.5 | 18.1             | 116.3 | 19.5             | 120.0 | 20.0             | 123.1 |
| 72806                       | 16.9       | 113.1 | 17.2                    | 113.5 | 18.5             | 117.0 | 19.8             | 120.6 | 20.7             | 123.7 |
| 72812                       | 17.0       | 114.0 | 17.2                    | 114.0 | 18.1             | 117.3 | 19.2             | 120.6 | 20.0             | 123.9 |
| 72818                       | 17.2       | 115.0 | 17.2                    | 115.5 | 17.6             | 117.7 | 17.8             | 124.0 | 17.8             | 128.2 |
| 72900                       | 17.3       | 115.9 | 17.3                    | 116.1 | 17.9             | 119.3 | 18.7             | 123.7 | 19.1             | 126.3 |
| 72906                       | 17.4       | 116.7 | 17.5                    | 117.0 | 18.3             | 120.6 | 19.3             | 123.7 | 19.9             | 126.2 |
| 72912                       | 17.5       | 117.6 | 17.7                    | 118.0 | 18.6             | 122.1 | 20.1             | 125.9 | 22.0             | 129.8 |
| 72918                       | 17.5       | 118.4 | 17.6                    | 118.6 | 18.4             | 122.0 | 19.4             | 125.3 | 20.4             | 128.6 |
| 73000                       | 17.5       | 119.2 | 17.6                    | 119.7 | 17.9             | 123.6 | 18.7             | 127.3 | 19.4             | 131.5 |
| 73006                       | 17.4       | 120.0 | 17.4                    | 120.2 | 17.3             | 123.9 | 17.7             | 127.5 | 18.3             | 131.0 |
| 73012                       | 17.5       | 120.7 | 17.2                    | 121.0 | 16.9             | 124.9 | 0.0              | 0.0   | 0.0              | 0.0   |
| 73018                       | 17.5       | 121.5 | 17.5                    | 121.8 | 17.1             | 125.0 | 0.0              | 0.0   | 0.0              | 0.0   |
| 73100                       | 17.6       | 122.2 | 17.6                    | 122.2 | 17.7             | 124.8 | 0.0              | 0.0   | 0.0              | 0.0   |
| 73106                       | 17.5       | 122.9 | 17.5                    | 122.8 | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 73112                       | 17.4       | 123.6 | 17.5                    | 123.6 | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 73118                       | 17.3       | 124.2 | 17.3                    | 124.2 | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 8 100                       | 17.1       | 125.1 | 17.1                    | 125.1 | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 8 106                       | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 8 112                       | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 8 118                       | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| MEAN VECTOR ERRORS (N.M.I.) |            |       |                         |       | 50.              |       |                  |       | 137.             | 196.  |
| NUMBER OF CASES             |            |       |                         |       | 15               |       |                  |       | 11               | 7     |

TABLE 11.

ISELLE

| DATE/TIME<br>(GMT) | BEST TRACK |       | OPERATIONAL |       | POSITION |       | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |         |       |
|--------------------|------------|-------|-------------|-------|----------|-------|------------------|-------|------------------|-------|------------------|-------|---------|-------|
|                    | LAT.       | LONG. | LAT.        | LONG. | (N.MI.)  | ERROR | LAT.             | LONG. | (N.MI.)          | ERROR | LAT.             | LONG. | (N.MI.) | ERROR |
| 8 300              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0     | 0.0   |
| 8 306              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0     | 0.0   |
| 8 312              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0     | 0.0   |
| 8 318              | 14.0       | 96.4  | 13.0        | 99.0  | 161.8    | 13.3  | 103.7            | 192.  | 13.7             | 106.3 | 241.             | 14.2  | 109.5   | 225.  |
| 8 400              | 14.1       | 97.2  | 14.2        | 96.5  | 40.8     | 14.2  | 97.8             | 140.  | 14.3             | 99.4  | 217.             | 14.8  | 102.5   | 354.  |
| 8 406              | 14.2       | 97.9  | 14.2        | 97.2  | 40.2     | 14.4  | 99.6             | 76.   | 15.2             | 102.9 | 67.              | 16.5  | 107.0   | 148.  |
| 8 412              | 14.3       | 98.7  | 14.1        | 99.4  | 42.1     | 14.3  | 101.7            | 34.   | 14.5             | 104.2 | 141.             | 14.8  | 107.0   | 271.  |
| 8 418              | 14.4       | 99.3  | 14.4        | 99.6  | 17.2     | 15.0  | 103.0            | 34.   | 15.8             | 106.6 | 74.              | 16.5  | 110.2   | 141.  |
| 8 500              | 14.6       | 100.0 | 14.9        | 100.1 | 18.9     | 16.2  | 102.9            | 35.   | 17.4             | 106.1 | 115.             | 18.3  | 109.8   | 189.  |
| 8 506              | 14.8       | 100.7 | 14.9        | 100.8 | 8.3      | 15.5  | 103.9            | 40.   | 16.2             | 106.9 | 161.             | 17.6  | 111.5   | 139.  |
| 8 512              | 15.0       | 101.5 | 15.0        | 101.5 | 9.0      | 15.7  | 104.6            | 66.   | 16.5             | 107.9 | 174.             | 17.5  | 112.0   | 164.  |
| 8 518              | 15.4       | 102.5 | 15.3        | 102.5 | 6.0      | 16.4  | 105.8            | 73.   | 17.7             | 109.3 | 161.             | 18.9  | 113.0   | 145.  |
| 8 600              | 16.0       | 103.5 | 15.8        | 102.8 | 41.5     | 17.5  | 105.4            | 156.  | 18.8             | 108.1 | 289.             | 19.9  | 111.6   | 287.  |
| 8 606              | 16.6       | 104.5 | 16.1        | 103.6 | 57.1     | 17.4  | 106.8            | 149.  | 18.8             | 110.2 | 216.             | 20.0  | 113.7   | 210.  |
| 8 612              | 16.8       | 105.6 | 16.8        | 104.7 | 50.8     | 18.4  | 107.9            | 167.  | 19.8             | 111.1 | 233.             | 20.6  | 113.9   | 248.  |
| 8 618              | 17.0       | 106.9 | 17.0        | 106.9 | 0.0      | 17.7  | 111.7            | 29.   | 18.4             | 115.3 | 19.              | 19.3  | 119.0   | 23.   |
| 8 700              | 17.2       | 108.1 | 17.2        | 108.1 | 0.0      | 17.6  | 113.0            | 25.   | 18.4             | 116.7 | 17.              | 19.4  | 119.8   | 56.   |
| 8 706              | 17.4       | 109.3 | 17.4        | 109.4 | 5.6      | 18.2  | 114.3            | 26.   | 19.3             | 119.1 | 131.             | 20.3  | 123.8   | 231.  |
| 8 712              | 17.7       | 110.6 | 17.6        | 110.7 | 8.2      | 18.4  | 115.5            | 44.   | 19.5             | 120.2 | 135.             | 20.6  | 124.5   | 255.  |
| 8 718              | 17.9       | 112.0 | 18.0        | 112.1 | 8.2      | 19.0  | 117.7            | 142.  | 20.3             | 122.5 | 228.             | 21.2  | 128.0   | 449.  |
| 8 800              | 18.0       | 113.1 | 18.0        | 113.1 | 0.0      | 18.1  | 117.1            | 44.   | 18.4             | 121.5 | 170.             | 18.9  | 126.0   | 365.  |
| 8 806              | 18.1       | 114.0 | 18.0        | 113.9 | 8.2      | 18.1  | 117.4            | 35.   | 18.5             | 120.7 | 133.             | 19.3  | 123.5   | 283.  |
| 8 812              | 18.2       | 114.8 | 18.1        | 114.8 | 6.0      | 18.5  | 118.4            | 37.   | 19.2             | 122.0 | 165.             | 20.0  | 125.5   | 325.  |
| 8 818              | 18.3       | 115.5 | 18.1        | 115.4 | 13.2     | 18.3  | 118.6            | 60.   | 18.5             | 121.8 | 239.             | 19.0  | 125.0   | 377.  |
| 8 900              | 18.5       | 116.3 | 18.4        | 116.4 | 8.2      | 18.8  | 120.3            | 99.   | 19.5             | 124.0 | 261.             | 20.1  | 127.7   | 391.  |
| 8 906              | 18.8       | 117.0 | 18.6        | 117.1 | 13.2     | 19.8  | 120.0            | 45.   | 20.9             | 122.9 | 181.             | 21.4  | 125.8   | 282.  |
| 8 912              | 19.1       | 117.7 | 18.9        | 117.9 | 16.2     | 19.9  | 121.1            | 100.  | 21.0             | 124.2 | 241.             | 22.0  | 127.5   | 315.  |
| 8 918              | 19.5       | 118.2 | 19.3        | 118.6 | 25.0     | 20.6  | 121.6            | 127.  | 22.0             | 125.0 | 211.             | 24.2  | 127.8   | 0.    |
| 81000              | 20.0       | 119.7 | 19.8        | 118.9 | 16.2     | 20.7  | 121.6            | 135.  | 21.7             | 124.6 | 223.             | 21.9  | 127.7   | 0.    |
| 81006              | 20.5       | 119.2 | 20.5        | 119.7 | 27.4     | 22.0  | 123.3            | 109.  | 23.2             | 125.0 | 163.             | 24.1  | 128.0   | 0.    |
| 81012              | 21.3       | 119.8 | 21.2        | 120.0 | 12.5     | 24.2  | 121.9            | 61.   | 27.0             | 124.0 | 43.              | 28.7  | 126.5   | 0.    |
| 81018              | 22.1       | 120.4 | 22.1        | 120.0 | 21.9     | 25.5  | 121.3            | 97.   | 28.5             | 122.9 | 3.               | 29.0  | 124.9   | 0.    |
| 81100              | 22.9       | 121.0 | 22.9        | 121.1 | 3.5      | 25.5  | 123.0            | 24.   | 27.4             | 124.2 | 9.               | 28.1  | 125.1   | 0.    |
| 81106              | 23.7       | 121.7 | 23.8        | 122.0 | 17.5     | 26.5  | 125.8            | 106.  | 28.0             | 129.0 | 3.               | 29.3  | 132.3   | 0.    |
| 81112              | 24.3       | 122.3 | 24.8        | 122.8 | 40.6     | 28.7  | 125.4            | 158.  | 31.2             | 127.6 | 9.               | 0.0   | 0.0     | 0.    |
| 81118              | 24.9       | 123.9 | 25.0        | 123.0 | 9.1      | 27.3  | 125.1            | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0     | 0.    |
| 81200              | 25.4       | 123.5 | 25.2        | 123.3 | 16.2     | 26.1  | 124.7            | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0     | 0.    |
| 81206              | 25.8       | 124.0 | 25.8        | 124.0 | 0.0      | 0.0   | 0.0              | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0     | 0.    |
| 81212              | 26.4       | 124.2 | 26.3        | 124.2 | 6.0      | 0.0   | 0.0              | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0     | 0.    |
| 81218              | 0.0        | 0.0   | 0.0         | 0.0   | 0.0      | 0.0   | 0.0              | 0.    | 0.0              | 0.0   | 0.               | 0.0   | 0.0     | 0.    |

MEAN VECTOR ERRORS (N.MI.)  
NUMBER OF CASES

165.  
245.

27.  
32

TABLE 12.



| DATE/TIME<br>(GMT)          | BEST TRACK |       | OPERATIONAL POSITION |       | 24 HOUR FORECAST  |      | 48 HOUR FORECAST |                   | 72 HOUR FORECAST |       |                   |      |       |      |
|-----------------------------|------------|-------|----------------------|-------|-------------------|------|------------------|-------------------|------------------|-------|-------------------|------|-------|------|
|                             | LAT.       | LONG. | LAT.                 | LONG. | ERROR<br>(N.M.I.) | LAT. | LONG.            | ERROR<br>(N.M.I.) | LAT.             | LONG. | ERROR<br>(N.M.I.) |      |       |      |
| 81500                       | 14.5       | 98.8  | 14.4                 | 99.0  | 12.9              | 15.1 | 101.5            | 68.               | 16.3             | 104.5 | 59.               | 17.6 | 108.6 | 155. |
| 81506                       | 14.5       | 99.5  | 14.4                 | 99.7  | 12.9              | 15.0 | 102.7            | 49.               | 16.0             | 105.8 | 187.              | 17.2 | 109.9 | 217. |
| 81512                       | 14.6       | 100.4 | 14.4                 | 100.3 | 13.3              | 15.0 | 103.4            | 72.               | 16.4             | 106.8 | 238.              | 18.0 | 110.2 | 230. |
| 81518                       | 15.0       | 101.3 | 15.0                 | 101.5 | 11.3              | 16.5 | 105.4            | 81.               | 18.4             | 109.2 | 176.              | 20.0 | 113.5 | 341. |
| 81520                       | 15.4       | 102.1 | 15.5                 | 102.6 | 28.8              | 17.7 | 106.7            | 182.              | 17.6             | 110.4 | 243.              | 21.3 | 114.0 | 381. |
| 81606                       | 15.8       | 103.7 | 15.8                 | 103.2 | 11.3              | 17.4 | 106.2            | 170.              | 19.1             | 109.4 | 159.              | 20.7 | 112.7 | 285. |
| 81612                       | 16.1       | 103.3 | 16.2                 | 103.5 | 12.8              | 17.9 | 106.8            | 212.              | 17.5             | 110.1 | 170.              | 21.0 | 114.0 | 346. |
| 81618                       | 16.5       | 103.9 | 16.4                 | 104.0 | 8.2               | 18.1 | 106.8            | 71.               | 19.8             | 110.2 | 154.              | 21.6 | 114.0 | 341. |
| 81700                       | 16.8       | 104.5 | 17.2                 | 104.1 | 32.9              | 19.0 | 104.5            | 97.               | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 81706                       | 17.2       | 105.0 | 18.0                 | 103.3 | 106.8             | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 81712                       | 17.6       | 105.5 | 18.2                 | 103.1 | 139.4             | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 81718                       | 17.9       | 105.9 | 17.2                 | 103.0 | 42.4              | 18.9 | 108.6            | 59.               | 22.0             | 110.0 | 161.              | 25.0 | 108.5 | 330. |
| 81800                       | 18.3       | 106.3 | 18.0                 | 106.2 | 30.5              | 22.3 | 108.4            | 175.              | 25.4             | 110.7 | 352.              | 0.0  | 0.0   | 0.   |
| 81806                       | 18.7       | 106.7 | 19.0                 | 106.6 | 18.8              | 21.5 | 108.1            | 121.              | 24.3             | 108.1 | 259.              | 0.0  | 0.0   | 0.   |
| 81812                       | 18.9       | 106.9 | 20.1                 | 106.8 | 72.2              | 23.7 | 107.8            | 240.              | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 81818                       | 19.1       | 107.1 | 19.4                 | 107.5 | 28.6              | 20.9 | 108.8            | 89.               | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 81900                       | 19.3       | 107.4 | 19.5                 | 107.5 | 13.2              | 20.3 | 108.2            | 18.               | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 81906                       | 19.5       | 107.6 | 19.5                 | 107.8 | 11.1              | 20.6 | 109.4            | 67.               | 22.0             | 111.0 | 0.                | 0.0  | 0.0   | 0.   |
| 81912                       | 19.7       | 107.8 | 19.7                 | 108.0 | 11.1              | 20.9 | 109.4            | 82.               | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 81918                       | 19.9       | 108.0 | 19.9                 | 108.2 | 11.1              | 21.1 | 109.4            | 109.              | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 82000                       | 20.0       | 108.1 | 20.0                 | 108.2 | 5.6               | 20.7 | 108.7            | 9.                | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 82006                       | 20.0       | 108.3 | 20.0                 | 108.4 | 5.6               | 20.6 | 109.0            | 0.                | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 82012                       | 0.0        | 0.0   | 19.7                 | 108.7 | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| 82018                       | 0.0        | 0.0   | 19.5                 | 108.5 | 0.0               | 0.0  | 0.0              | 0.                | 0.0              | 0.0   | 0.                | 0.0  | 0.0   | 0.   |
| MEAN VECTOR ERRORS (N.M.I.) |            |       |                      |       |                   |      |                  |                   |                  |       | 107.              | 200. | 292.  |      |
| NUMBER OF CASES             |            |       |                      |       |                   |      |                  |                   |                  |       | 18                | 11   | 9     |      |

TABLE 13. JULIO

GENR0

| DATE/TIME<br>(GMT)          | BEST TRACK |       | OPERATIONAL |       | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |
|-----------------------------|------------|-------|-------------|-------|------------------|-------|------------------|-------|------------------|-------|
|                             | LAT.       | LONG. | LAT.        | LONG. | LAT.             | LONG. | LAT.             | LONG. | LAT.             | LONG. |
| 81600                       | 0.0        | 0.0   | 0.0         | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 81606                       | 0.0        | 0.0   | 0.0         | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 81612                       | 12.4       | 133.8 | 0.0         | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 81618                       | 12.4       | 134.2 | 12.2        | 134.5 | 12.2             | 134.2 | 12.2             | 134.2 | 12.2             | 134.2 |
| 81700                       | 12.5       | 135.1 | 12.5        | 135.5 | 12.4             | 135.4 | 12.4             | 135.4 | 12.4             | 135.4 |
| 81706                       | 12.5       | 135.0 | 12.5        | 135.0 | 12.4             | 134.9 | 12.4             | 134.9 | 12.4             | 134.9 |
| 81712                       | 12.5       | 135.8 | 12.5        | 135.4 | 12.4             | 135.1 | 12.4             | 135.1 | 12.4             | 135.1 |
| 81718                       | 12.5       | 137.8 | 12.5        | 137.6 | 12.4             | 137.4 | 12.4             | 137.4 | 12.4             | 137.4 |
| 81800                       | 12.6       | 138.3 | 12.5        | 138.3 | 12.4             | 138.3 | 12.4             | 138.3 | 12.4             | 138.3 |
| 81812                       | 0.0        | 0.0   | 12.5        | 137.5 | 12.5             | 137.5 | 12.5             | 137.5 | 12.5             | 137.5 |
| 81818                       | 0.0        | 0.0   | 0.0         | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| MEAN VECTOR ERRORS (N.M.I.) |            |       |             |       |                  |       |                  |       |                  |       |
| NUMBER OF CASES             |            |       |             |       |                  |       |                  |       |                  |       |
| 26.                         |            |       |             |       |                  |       |                  |       |                  |       |
| 3                           |            |       |             |       |                  |       |                  |       |                  |       |

TABLE 14.

LOWELL

| DATE/TIME<br>(GMT)         | BEST TRACK |       | OPERATIONAL<br>POSITION |       | POSITION<br>ERROR |          | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |
|----------------------------|------------|-------|-------------------------|-------|-------------------|----------|------------------|-------|------------------|-------|------------------|-------|
|                            | LAT.       | LONG. | LAT.                    | LONG. | (N.M.I.)          | (N.M.I.) | LAT.             | LONG. | LAT.             | LONG. | LAT.             | LONG. |
| 82600                      | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0               | 0.0      | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 82606                      | 15.6       | 114.1 | 13.1                    | 117.0 | 233.5             | 13.1     | 120.8            | 252.  | 13.8             | 123.8 | 15.2             | 126.7 |
| 82612                      | 15.7       | 114.8 | 13.2                    | 118.0 | 237.1             | 13.3     | 121.2            | 263.  | 13.3             | 125.8 | 13.4             | 130.0 |
| 82618                      | 15.8       | 115.7 | 15.8                    | 115.7 | 0.0               | 16.2     | 119.0            | 88.   | 16.9             | 122.7 | 18.0             | 125.7 |
| 82700                      | 16.0       | 116.8 | 16.0                    | 116.8 | 0.0               | 17.0     | 121.3            | 33.   | 18.2             | 125.5 | 19.4             | 129.1 |
| 82706                      | 16.2       | 117.8 | 16.3                    | 118.0 | 12.6              | 17.7     | 122.2            | 31.   | 19.4             | 126.0 | 21.3             | 129.2 |
| 82712                      | 16.5       | 118.9 | 16.5                    | 118.6 | 3.5               | 17.5     | 122.7            | 26.   | 19.2             | 126.0 | 20.1             | 129.8 |
| 82718                      | 16.7       | 120.0 | 16.8                    | 120.0 | 6.0               | 18.0     | 123.7            | 21.   | 19.2             | 127.7 | 20.3             | 131.5 |
| 82800                      | 17.0       | 120.9 | 17.2                    | 121.2 | 20.5              | 18.7     | 125.0            | 108.  | 20.0             | 129.3 | 21.8             | 132.7 |
| 82806                      | 17.4       | 121.6 | 17.5                    | 121.7 | 8.2               | 18.5     | 124.9            | 114.  | 19.8             | 128.2 | 20.9             | 131.1 |
| 82812                      | 17.8       | 122.6 | 17.7                    | 122.3 | 17.6              | 18.7     | 125.1            | 119.  | 19.8             | 128.0 | 21.2             | 131.3 |
| 82818                      | 18.7       | 123.7 | 18.3                    | 123.5 | 26.4              | 20.1     | 126.6            | 164.  | 21.7             | 129.6 | 23.0             | 132.9 |
| 82900                      | 19.7       | 124.7 | 19.3                    | 124.3 | 25.1              | 23.0     | 126.9            | 110.  | 25.7             | 129.1 | 0.0              | 0.0   |
| 82906                      | 20.6       | 125.6 | 20.4                    | 125.0 | 35.2              | 22.9     | 127.7            | 166.  | 24.0             | 129.2 | 0.0              | 0.0   |
| 82912                      | 21.7       | 126.7 | 20.5                    | 126.0 | 31.7              | 22.6     | 129.2            | 0.    | 24.0             | 132.1 | 0.0              | 0.0   |
| 82918                      | 22.7       | 127.5 | 22.7                    | 127.5 | 0.0               | 26.2     | 131.0            | 0.    | 0.0              | 0.0   | 0.0              | 0.0   |
| 83000                      | 23.8       | 128.7 | 23.8                    | 128.7 | 0.0               | 27.1     | 133.3            | 0.    | 0.0              | 0.0   | 0.0              | 0.0   |
| 83006                      | 24.8       | 129.9 | 24.8                    | 129.9 | 0.0               | 0.0      | 0.0              | 0.    | 0.0              | 0.0   | 0.0              | 0.0   |
| 83012                      | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0               | 0.0      | 0.0              | 0.    | 0.0              | 0.0   | 0.0              | 0.0   |
| 83018                      | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0               | 0.0      | 0.0              | 0.    | 0.0              | 0.0   | 0.0              | 0.0   |
| MEAN VECTOR ERRORS (N.M.I) |            |       |                         |       |                   |          | 112.             |       | 189.             |       | 318.             |       |
| NUMBER OF CASES            |            |       |                         |       |                   |          | 13               |       | 9                |       | 5                |       |

TABLE 15.

TABLE

| DATE/TIME<br>(GMT)          | BEST TRACK |       | OPERATIONAL |       | POSITION          |       | 24 HOUR FORECAST |                   | 18 HOUR FORECAST |       | 12 HOUR FORECAST  |       |       |                   |
|-----------------------------|------------|-------|-------------|-------|-------------------|-------|------------------|-------------------|------------------|-------|-------------------|-------|-------|-------------------|
|                             | LAT.       | LONG. | LAT.        | LONG. | ERROR<br>(N.M.I.) | LAT.  | LONG.            | ERROR<br>(N.M.I.) | LAT.             | LONG. | ERROR<br>(N.M.I.) | LAT.  | LONG. | ERROR<br>(N.M.I.) |
| 9 500                       | 0.0        | 0.0   | 0.0         | 0.0   | 0.0               | 0.0   | 0.0              | 0.0               | 0.0              | 0.0   | 0.0               | 0.0   | 0.0   | 0.0               |
| 9 506                       | 0.0        | 0.0   | 0.0         | 0.0   | 0.0               | 0.0   | 0.0              | 0.0               | 0.0              | 0.0   | 0.0               | 0.0   | 0.0   | 0.0               |
| 9 512                       | 104.4      | 104.0 | 104.0       | 104.0 | 104.0             | 104.0 | 104.0            | 104.0             | 104.0            | 104.0 | 104.0             | 104.0 | 104.0 | 104.0             |
| 9 518                       | 17.0       | 105.3 | 17.0        | 105.3 | 17.0              | 105.3 | 17.0             | 105.3             | 17.0             | 105.3 | 17.0              | 105.3 | 17.0  | 105.3             |
| 9 505                       | 17.5       | 105.1 | 17.2        | 105.0 | 17.5              | 105.3 | 17.5             | 105.3             | 17.5             | 105.3 | 17.5              | 105.3 | 17.5  | 105.3             |
| 9 509                       | 18.0       | 107.3 | 17.6        | 107.4 | 18.0              | 107.3 | 17.6             | 107.4             | 18.0             | 107.3 | 17.6              | 107.4 | 18.0  | 107.3             |
| 9 512                       | 18.5       | 108.5 | 18.3        | 108.2 | 18.5              | 108.5 | 18.3             | 108.2             | 18.5             | 108.5 | 18.3              | 108.2 | 18.5  | 108.5             |
| 9 518                       | 19.5       | 109.5 | 19.3        | 109.0 | 19.5              | 109.5 | 19.3             | 109.0             | 19.5             | 109.5 | 19.3              | 109.0 | 19.5  | 109.5             |
| 9 700                       | 20.0       | 110.6 | 20.0        | 110.6 | 20.0              | 110.6 | 20.0             | 110.6             | 20.0             | 110.6 | 20.0              | 110.6 | 20.0  | 110.6             |
| 9 706                       | 20.8       | 111.4 | 20.6        | 111.7 | 20.8              | 111.4 | 20.6             | 111.7             | 20.8             | 111.4 | 20.6              | 111.7 | 20.8  | 111.4             |
| 9 712                       | 21.6       | 112.3 | 21.7        | 112.3 | 21.6              | 112.3 | 21.7             | 112.3             | 21.6             | 112.3 | 21.7              | 112.3 | 21.6  | 112.3             |
| 9 718                       | 22.4       | 112.9 | 22.7        | 112.7 | 22.4              | 112.9 | 22.7             | 112.7             | 22.4             | 112.9 | 22.7              | 112.7 | 22.4  | 112.9             |
| 9 800                       | 23.4       | 113.5 | 23.5        | 113.5 | 23.4              | 113.5 | 23.5             | 113.5             | 23.4             | 113.5 | 23.5              | 113.5 | 23.4  | 113.5             |
| 9 806                       | 24.2       | 113.9 | 24.3        | 113.9 | 24.2              | 113.9 | 24.3             | 113.9             | 24.2             | 113.9 | 24.3              | 113.9 | 24.2  | 113.9             |
| 9 812                       | 25.0       | 115.0 | 25.0        | 115.0 | 25.0              | 115.0 | 25.0             | 115.0             | 25.0             | 115.0 | 25.0              | 115.0 | 25.0  | 115.0             |
| 9 818                       | 25.9       | 115.8 | 25.9        | 115.8 | 25.9              | 115.8 | 25.9             | 115.8             | 25.9             | 115.8 | 25.9              | 115.8 | 25.9  | 115.8             |
| 9 900                       | 27.0       | 116.2 | 27.0        | 116.2 | 27.0              | 116.2 | 27.0             | 116.2             | 27.0             | 116.2 | 27.0              | 116.2 | 27.0  | 116.2             |
| 9 906                       | 28.0       | 117.0 | 28.0        | 117.1 | 28.0              | 117.1 | 28.0             | 117.1             | 28.0             | 117.1 | 28.0              | 117.1 | 28.0  | 117.1             |
| 9 912                       | 28.6       | 118.0 | 28.6        | 117.7 | 28.6              | 117.7 | 28.6             | 117.7             | 28.6             | 117.7 | 28.6              | 117.7 | 28.6  | 117.7             |
| 9 918                       | 29.0       | 119.0 | 28.9        | 118.4 | 29.0              | 119.0 | 28.9             | 118.4             | 29.0             | 119.0 | 28.9              | 118.4 | 29.0  | 119.0             |
| 9100                        | 29.5       | 119.5 | 29.4        | 119.3 | 29.5              | 119.5 | 29.4             | 119.3             | 29.5             | 119.5 | 29.4              | 119.3 | 29.5  | 119.5             |
| 9106                        | 29.8       | 120.0 | 29.7        | 120.0 | 29.8              | 120.0 | 29.7             | 120.0             | 29.8             | 120.0 | 29.7              | 120.0 | 29.8  | 120.0             |
| 9112                        | 30.2       | 120.3 | 30.3        | 120.3 | 30.2              | 120.3 | 30.3             | 120.3             | 30.2             | 120.3 | 30.3              | 120.3 | 30.2  | 120.3             |
| 9118                        | 30.4       | 120.5 | 30.4        | 120.5 | 30.4              | 120.5 | 30.4             | 120.5             | 30.4             | 120.5 | 30.4              | 120.5 | 30.4  | 120.5             |
| 9100                        | 30.5       | 120.5 | 30.5        | 120.6 | 30.5              | 120.6 | 30.5             | 120.6             | 30.5             | 120.6 | 30.5              | 120.6 | 30.5  | 120.6             |
| 9106                        | 0.0        | 0.0   | 0.0         | 0.0   | 0.0               | 0.0   | 0.0              | 0.0               | 0.0              | 0.0   | 0.0               | 0.0   | 0.0   | 0.0               |
| 9112                        | 0.0        | 0.0   | 0.0         | 0.0   | 0.0               | 0.0   | 0.0              | 0.0               | 0.0              | 0.0   | 0.0               | 0.0   | 0.0   | 0.0               |
| 9118                        | 0.0        | 0.0   | 0.0         | 0.0   | 0.0               | 0.0   | 0.0              | 0.0               | 0.0              | 0.0   | 0.0               | 0.0   | 0.0   | 0.0               |
| MEAN VECTOR ERRORS (N.M.I.) |            |       |             |       | 10.1              |       |                  |                   | 10.1             |       |                   |       | 10.1  |                   |
| NUMBER OF CASES             |            |       |             |       | 19                |       |                  |                   | 19               |       |                   |       | 19    |                   |

TABLE 16.

NOBBERT

| DATE/TIME<br>(GMT) | BEST TRACK |       | OPERATIONAL POSITION |       | POSITION ERROR |       | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |
|--------------------|------------|-------|----------------------|-------|----------------|-------|------------------|-------|------------------|-------|------------------|-------|
|                    | LAT.       | LONG. | LAT.                 | LONG. | (N.MI.)        | ERROR | LAT.             | LONG. | (N.MI.)          | ERROR | LAT.             | LONG. |
| 91400              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 91406              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 91412              | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 91418              | 18.5       | 115.5 | 18.5                 | 115.6 | 5.7            | 140.  | 18.6             | 117.2 | 18.9             | 119.0 | 19.3             | 121.5 |
| 91500              | 18.1       | 115.5 | 18.1                 | 115.5 | 0.0            | 106.  | 17.3             | 116.5 | 17.8             | 117.6 | 18.0             | 119.2 |
| 91506              | 17.9       | 115.2 | 17.9                 | 115.1 | 5.7            | 24.   | 17.6             | 114.1 | 0.0              | 0.0   | 0.0              | 0.0   |
| 91512              | 17.8       | 115.0 | 18.0                 | 115.3 | 20.8           | 173.  | 18.5             | 115.7 | 18.9             | 116.4 | 19.2             | 117.2 |
| 91518              | 17.7       | 114.8 | 17.8                 | 114.9 | 8.3            | 145.  | 18.2             | 115.0 | 18.5             | 115.4 | 18.8             | 115.8 |
| 91600              | 17.5       | 114.3 | 17.7                 | 114.7 | 25.4           | 98.   | 18.0             | 113.4 | 19.3             | 112.1 | 23.0             | 111.0 |
| 91606              | 17.3       | 113.7 | 17.7                 | 114.5 | 51.1           | 122.  | 17.9             | 113.7 | 18.3             | 114.4 | 20.0             | 116.6 |
| 91612              | 17.2       | 113.0 | 17.2                 | 113.0 | 0.0            | 17.   | 17.5             | 111.9 | 18.1             | 111.5 | 18.9             | 111.3 |
| 91618              | 17.1       | 112.5 | 17.2                 | 112.7 | 12.8           | 31.   | 17.5             | 111.7 | 18.3             | 111.1 | 19.3             | 110.9 |
| 91700              | 17.1       | 112.0 | 17.2                 | 112.1 | 8.2            | 91.   | 17.4             | 111.0 | 18.2             | 110.3 | 19.7             | 110.2 |
| 91706              | 17.4       | 111.8 | 17.2                 | 111.7 | 13.3           | 139.  | 17.8             | 110.5 | 18.7             | 110.0 | 19.8             | 109.9 |
| 91712              | 17.7       | 111.7 | 17.3                 | 111.7 | 24.0           | 122.  | 17.8             | 111.2 | 18.4             | 110.8 | 19.0             | 110.4 |
| 91718              | 17.9       | 111.8 | 18.0                 | 111.8 | 6.0            | 90.   | 19.5             | 112.0 | 21.0             | 113.0 | 22.1             | 114.5 |
| 91800              | 18.3       | 112.0 | 18.4                 | 112.2 | 12.7           | 82.   | 20.6             | 114.9 | 22.7             | 118.3 | 24.8             | 122.0 |
| 91806              | 18.6       | 112.5 | 18.8                 | 112.7 | 16.4           | 80.   | 20.3             | 115.7 | 22.1             | 118.5 | 24.1             | 120.8 |
| 91812              | 18.9       | 112.9 | 18.9                 | 113.0 | 5.7            | 13.   | 19.9             | 115.0 | 20.4             | 117.0 | 20.4             | 119.1 |
| 91818              | 19.1       | 113.4 | 19.0                 | 113.5 | 8.3            | 32.   | 19.2             | 115.6 | 19.5             | 117.8 | 19.9             | 120.3 |
| 91900              | 19.4       | 113.9 | 19.4                 | 114.2 | 17.0           | 66.   | 20.5             | 116.3 | 21.6             | 118.7 | 22.3             | 121.2 |
| 91906              | 19.5       | 114.6 | 19.6                 | 114.5 | 8.3            | 20.   | 20.4             | 116.5 | 21.1             | 118.5 | 21.5             | 120.5 |
| 91912              | 19.6       | 115.1 | 19.8                 | 115.2 | 13.3           | 134.  | 20.7             | 117.7 | 21.8             | 120.0 | 22.9             | 122.7 |
| 91918              | 19.5       | 115.8 | 19.7                 | 115.8 | 12.0           | 149.  | 19.6             | 118.4 | 20.0             | 120.9 | 20.8             | 123.4 |
| 92000              | 19.4       | 116.3 | 19.4                 | 116.4 | 5.7            | 162.  | 19.2             | 118.5 | 18.9             | 120.8 | 19.3             | 122.8 |
| 92006              | 18.9       | 116.7 | 19.1                 | 116.8 | 13.3           | 175.  | 17.7             | 118.4 | 17.0             | 120.2 | 16.6             | 122.2 |
| 92012              | 18.3       | 116.7 | 18.6                 | 116.9 | 21.3           | 197.  | 17.3             | 118.0 | 17.7             | 120.4 | 18.3             | 125.3 |
| 92018              | 17.8       | 116.5 | 17.8                 | 116.6 | 5.7            | 157.  | 17.0             | 116.0 | 17.7             | 115.4 | 20.1             | 114.0 |
| 92100              | 17.3       | 116.1 | 17.5                 | 116.3 | 16.5           | 122.  | 17.2             | 114.0 | 17.8             | 113.0 | 18.8             | 111.2 |
| 92106              | 16.9       | 115.4 | 17.1                 | 115.4 | 12.0           | 135.  | 17.3             | 113.0 | 18.1             | 111.0 | 19.9             | 110.0 |
| 92112              | 16.6       | 114.4 | 16.8                 | 114.6 | 16.4           | 130.  | 17.5             | 111.8 | 18.2             | 111.0 | 21.6             | 110.4 |
| 92118              | 16.5       | 113.3 | 16.6                 | 113.3 | 6.0            | 58.   | 17.0             | 110.0 | 17.9             | 109.4 | 18.9             | 109.7 |
| 92200              | 16.5       | 111.9 | 16.5                 | 112.0 | 5.6            | 140.  | 18.7             | 106.4 | 0.0              | 0.0   | 0.0              | 0.0   |
| 92206              | 16.5       | 110.8 | 16.5                 | 110.8 | 0.0            | 106.  | 18.5             | 106.8 | 0.0              | 0.0   | 0.0              | 0.0   |
| 92212              | 16.6       | 109.7 | 16.7                 | 109.7 | 6.0            | 111.  | 19.1             | 106.7 | 22.3             | 105.0 | 0.0              | 0.0   |
| 92218              | 17.0       | 108.9 | 17.1                 | 109.0 | 8.2            | 206.  | 21.1             | 106.0 | 0.0              | 0.0   | 0.0              | 0.0   |
| 92300              | 17.4       | 108.4 | 17.5                 | 108.5 | 8.2            | 137.  | 20.0             | 106.7 | 0.0              | 0.0   | 0.0              | 0.0   |
| 92306              | 17.8       | 108.3 | 17.6                 | 108.4 | 13.3           | 110.  | 19.2             | 107.8 | 21.8             | 107.7 | 23.7             | 107.2 |
| 92312              | 18.3       | 108.3 | 18.4                 | 108.5 | 12.8           | 135.  | 20.9             | 108.1 | 24.0             | 107.3 | 0.0              | 0.0   |
| 92318              | 18.8       | 108.7 | 18.9                 | 108.8 | 8.2            | 36.   | 20.9             | 111.3 | 22.2             | 114.4 | 0.0              | 0.0   |
| 92400              | 19.3       | 109.1 | 19.3                 | 109.0 | 5.6            | 124.  | 21.1             | 110.3 | 22.8             | 112.8 | 0.0              | 0.0   |
| 92406              | 19.9       | 109.6 | 19.9                 | 109.6 | 0.0            | 91.   | 21.9             | 111.7 | 23.7             | 113.6 | 0.0              | 0.0   |
| 92412              | 20.7       | 110.5 | 20.7                 | 110.5 | 11.3           | 64.   | 23.1             | 113.7 | 25.3             | 116.7 | 0.0              | 0.0   |
| 92418              | 21.5       | 111.1 | 21.5                 | 111.4 | 16.9           | 116.  | 25.7             | 115.7 | 30.3             | 118.5 | 0.0              | 0.0   |
| 92500              | 22.3       | 112.0 | 22.3                 | 112.1 | 5.6            | 0.    | 26.3             | 115.3 | 30.5             | 117.5 | 0.0              | 0.0   |
| 92506              | 23.1       | 112.6 | 23.1                 | 112.7 | 5.6            | 0.    | 26.1             | 115.1 | 27.2             | 114.9 | 0.0              | 0.0   |
| 92512              | 24.1       | 113.1 | 24.1                 | 113.2 | 5.6            | 0.    | 0.0              | 0.0   | 0.0              | 0.0   | 0.0              | 0.0   |
| 92518              | 25.1       | 113.5 | 25.3                 | 113.6 | 13.3           | 0.    | 30.1             | 112.8 | 0.0              | 0.0   | 0.0              | 0.0   |

MEAN VECTOR ERRORS (N.MI.) 108.  
NUMBER OF CASES 91

TABLE 17.

108.  
91

OBILE

| DATE/TIME<br>(GMT)          | BEST TRACK |       | OPERATIONAL<br>POSITION |       | 24 HOUR FORECAST<br>POSITION<br>ERROR (N.M.I.) |       | 48 HOUR FORECAST<br>POSITION<br>ERROR (N.M.I.) |       | 72 HOUR FORECAST<br>POSITION<br>ERROR (N.M.I.) |       |
|-----------------------------|------------|-------|-------------------------|-------|------------------------------------------------|-------|------------------------------------------------|-------|------------------------------------------------|-------|
|                             | LAT.       | LONG. | LAT.                    | LONG. | LAT.                                           | LONG. | LAT.                                           | LONG. | LAT.                                           | LONG. |
| 91700                       | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0                                            | 0.0   | 0.0                                            | 0.0   | 0.0                                            | 0.0   |
| 91706                       | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0                                            | 0.0   | 0.0                                            | 0.0   | 0.0                                            | 0.0   |
| 91712                       | 0.0        | 0.0   | 0.0                     | 0.0   | 0.0                                            | 0.0   | 0.0                                            | 0.0   | 0.0                                            | 0.0   |
| 91718                       | 14.3       | 101.5 | 14.0                    | 101.7 | 21.4                                           | 105.1 | 14.6                                           | 105.2 | 20.5                                           | 111.2 |
| 91800                       | 14.5       | 102.2 | 14.4                    | 102.2 | 6.0                                            | 105.7 | 15.0                                           | 105.7 | 68.                                            | 113.2 |
| 91806                       | 14.7       | 102.9 | 15.0                    | 103.2 | 24.8                                           | 106.6 | 16.6                                           | 106.6 | 104.                                           | 111.5 |
| 91812                       | 15.0       | 103.6 | 15.0                    | 103.7 | 5.7                                            | 106.5 | 16.3                                           | 106.5 | 55.                                            | 112.0 |
| 91818                       | 15.2       | 104.1 | 15.2                    | 104.4 | 17.2                                           | 107.3 | 16.1                                           | 107.3 | 151.                                           | 113.2 |
| 91900                       | 15.4       | 104.5 | 15.4                    | 104.6 | 5.7                                            | 106.6 | 16.4                                           | 106.6 | 109.                                           | 112.8 |
| 91906                       | 15.7       | 104.9 | 15.5                    | 104.8 | 13.3                                           | 106.7 | 16.4                                           | 106.7 | 127.                                           | 110.8 |
| 91912                       | 16.0       | 105.0 | 15.8                    | 105.5 | 30.9                                           | 107.9 | 16.9                                           | 107.9 | 178.                                           | 113.3 |
| 91918                       | 16.3       | 104.7 | 16.4                    | 104.7 | 6.0                                            | 106.7 | 16.4                                           | 106.7 | 202.                                           | 113.4 |
| 92000                       | 16.5       | 104.5 | 16.4                    | 104.7 | 12.9                                           | 104.9 | 16.7                                           | 104.9 | 139.                                           | 109.4 |
| 92006                       | 16.6       | 104.1 | 16.5                    | 104.5 | 23.5                                           | 104.4 | 17.4                                           | 104.4 | 148.                                           | 107.8 |
| 92012                       | 16.6       | 103.6 | 16.4                    | 104.5 | 52.6                                           | 104.7 | 17.5                                           | 104.7 | 219.                                           | 107.8 |
| 92018                       | 16.6       | 103.2 | 16.7                    | 103.2 | 6.0                                            | 101.7 | 17.3                                           | 101.7 | 71.                                            | 107.3 |
| 92100                       | 16.6       | 102.6 | 16.5                    | 102.5 | 8.3                                            | 106.2 | 16.5                                           | 106.2 | 44.                                            | 107.3 |
| 92106                       | 16.4       | 101.9 | 16.5                    | 102.0 | 8.3                                            | 100.1 | 16.8                                           | 100.1 | 44.                                            | 107.3 |
| 92112                       | 16.3       | 101.2 | 16.3                    | 101.1 | 5.7                                            | 98.6  | 16.4                                           | 98.6  | 199.                                           | 107.3 |
| 92118                       | 16.4       | 100.9 | 16.4                    | 100.9 | 0.0                                            | 101.7 | 16.7                                           | 101.7 | 80.                                            | 107.3 |
| 92200                       | 16.4       | 100.8 | 16.3                    | 100.9 | 8.3                                            | 101.1 | 17.2                                           | 101.1 | 0.                                             | 107.3 |
| 92206                       | 16.5       | 100.7 | 16.5                    | 100.8 | 5.7                                            | 100.7 | 17.1                                           | 100.7 | 0.                                             | 107.3 |
| 92212                       | 17.0       | 102.0 | 17.0                    | 102.0 | 0.0                                            | 106.7 | 19.5                                           | 106.7 | 0.                                             | 107.3 |
| 92218                       | 18.0       | 102.0 | 18.0                    | 102.0 | 0.0                                            | 0.0   | 0.0                                            | 0.0   | 0.                                             | 107.3 |
| MEAN VECTOR ERRORS (N.M.I.) |            |       |                         |       | 119.                                           |       |                                                |       | 348.                                           | 630.  |
| NUMBER OF CASES             |            |       |                         |       | 17                                             |       |                                                |       | 12                                             | 9     |

TABLE 18.

FOLO

| DATE/TIME<br>(GMT)        | BEST TRACK |       | OPERATIONAL POSITION |       | 24 HOUR FORECAST |       | 48 HOUR FORECAST |       | 72 HOUR FORECAST |       |      |       |         |       |
|---------------------------|------------|-------|----------------------|-------|------------------|-------|------------------|-------|------------------|-------|------|-------|---------|-------|
|                           | LAT.       | LONG. | LAT.                 | LONG. | (N.MI.)          | ERROR | LAT.             | LONG. | (N.MI.)          | ERROR | LAT. | LONG. | (N.MI.) | ERROR |
| 92600                     | 12.9       | 97.6  | 13.6                 | 100.5 | 173.8            | 14.1  | 104.6            | 258.  | 14.7             | 107.7 | 240. | 15.0  | 110.6   | 246.  |
| 92606                     | 12.8       | 98.2  | 11.6                 | 100.1 | 131.7            | 12.0  | 103.6            | 183.  | 13.3             | 106.7 | 124. | 16.0  | 111.0   | 258.  |
| 92612                     | 12.7       | 98.8  | 13.5                 | 99.0  | 115.1            | 13.5  | 99.1             | 258.  | 13.9             | 100.0 | 302. | 14.3  | 101.9   | 349.  |
| 92618                     | 12.6       | 99.5  | 13.5                 | 96.0  | 210.3            | 13.6  | 97.1             | 394.  | 13.8             | 99.3  | 400. | 14.1  | 103.0   | 325.  |
| 92700                     | 12.5       | 100.4 | 12.5                 | 100.5 | 5.8              | 12.9  | 102.9            | 103.  | 14.0             | 105.5 | 79.  | 14.5  | 108.0   | 96.   |
| 92706                     | 12.4       | 101.3 | 12.4                 | 100.5 | 46.3             | 12.7  | 102.3            | 155.  | 13.7             | 104.6 | 158. | 15.0  | 107.1   | 160.  |
| 92712                     | 12.3       | 102.4 | 12.2                 | 102.3 | 8.3              | 12.8  | 105.3            | 21.   | 14.2             | 108.0 | 15.  | 15.6  | 110.5   | 78.   |
| 92718                     | 12.2       | 103.5 | 12.2                 | 103.5 | 0.0              | 12.8  | 107.8            | 100.  | 17.4             | 111.5 | 221. | 15.9  | 115.0   | 229.  |
| 92800                     | 12.3       | 104.2 | 12.2                 | 104.5 | 19.3             | 12.5  | 108.3            | 108.  | 13.7             | 111.8 | 189. | 15.1  | 115.3   | 245.  |
| 92806                     | 12.4       | 104.8 | 12.2                 | 104.9 | 13.3             | 12.4  | 107.7            | 76.   | 13.4             | 110.8 | 163. | 15.1  | 114.3   | 215.  |
| 92812                     | 12.7       | 105.5 | 12.6                 | 105.0 | 29.3             | 13.1  | 106.9            | 97.   | 13.7             | 109.3 | 202. | 14.3  | 111.9   | 329.  |
| 92818                     | 13.0       | 106.2 | 13.0                 | 106.1 | 5.7              | 14.7  | 109.0            | 38.   | 16.6             | 112.0 | 58.  | 16.5  | 114.6   | 91.   |
| 92900                     | 13.4       | 106.7 | 13.4                 | 106.7 | 0.0              | 14.7  | 109.4            | 55.   | 15.7             | 112.2 | 132. | 16.0  | 115.2   | 287.  |
| 92906                     | 13.9       | 107.3 | 13.6                 | 107.3 | 18.0             | 14.9  | 109.5            | 61.   | 16.0             | 112.0 | 178. | 17.0  | 115.1   | 283.  |
| 92912                     | 14.4       | 107.9 | 14.4                 | 107.9 | 0.0              | 16.4  | 110.2            | 32.   | 19.0             | 112.0 | 116. | 21.7  | 112.0   | 111.  |
| 92918                     | 15.1       | 108.6 | 15.1                 | 108.5 | 5.5              | 17.9  | 110.5            | 58.   | 21.0             | 111.6 | 168. | 24.0  | 112.0   | 91.   |
| 93000                     | 15.6       | 109.3 | 15.6                 | 109.2 | 5.6              | 17.2  | 111.8            | 48.   | 18.4             | 114.4 | 138. | 19.0  | 115.9   | 356.  |
| 93006                     | 16.1       | 110.0 | 15.9                 | 109.7 | 20.4             | 17.4  | 116.6            | 180.  | 20.0             | 112.5 | 128. | 22.7  | 110.9   | 68.   |
| 93012                     | 16.7       | 110.7 | 16.9                 | 110.4 | 20.4             | 19.6  | 112.6            | 80.   | 23.6             | 112.3 | 106. | 0.0   | 0.0     | 0.    |
| 93018                     | 17.3       | 111.5 | 17.3                 | 111.3 | 11.0             | 19.9  | 113.7            | 40.   | 23.3             | 114.2 | 73.  | 0.0   | 0.0     | 0.    |
| 10 100                    | 18.0       | 112.5 | 17.9                 | 112.2 | 17.6             | 20.2  | 119.4            | 288.  | 22.1             | 113.9 | 107. | 0.0   | 0.0     | 0.    |
| 10 106                    | 18.6       | 113.4 | 18.6                 | 113.5 | 5.5              | 21.4  | 116.3            | 129.  | 25.5             | 114.8 | 221. | 0.0   | 0.0     | 0.    |
| 10 112                    | 19.4       | 114.1 | 19.4                 | 114.0 | 5.5              | 24.0  | 113.6            | 91.   | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 118                    | 20.0       | 114.5 | 20.0                 | 114.4 | 5.5              | 23.4  | 114.0            | 66.   | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 200                    | 20.8       | 114.4 | 20.7                 | 114.3 | 8.1              | 24.0  | 112.5            | 55.   | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 206                    | 21.7       | 114.2 | 21.6                 | 114.0 | 12.6             | 25.5  | 111.1            | 102.  | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 212                    | 22.2       | 113.8 | 22.5                 | 113.8 | 18.0             | 25.7  | 112.6            | 156.  | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 218                    | 22.6       | 113.1 | 22.8                 | 113.0 | 13.2             | 24.5  | 112.6            | 0.    | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 300                    | 23.2       | 112.3 | 23.1                 | 112.3 | 6.0              | 24.5  | 110.2            | 0.    | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 306                    | 23.8       | 111.3 | 23.8                 | 111.2 | 5.5              | 0.0   | 0.0              | 0.    | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 312                    | 24.5       | 109.9 | 24.8                 | 109.9 | 18.0             | 0.0   | 0.0              | 0.    | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| 10 318                    | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0              | 0.0   | 0.0              | 0.    | 0.0              | 0.0   | 0.   | 0.0   | 0.0     | 0.    |
| MEAN VECTOR ERRORS (N.MI) |            |       |                      |       |                  |       |                  |       |                  |       | 119. | 160.  | 212.    |       |
| NUMBER OF CASES           |            |       |                      |       |                  |       |                  |       |                  |       | 27   | 22    | 19      |       |

TABLE 19.

RACHEL

| DATE/TIME<br>(GMT) | BEST TRACK |       | OPERATIONAL POSITION |       | POSITION ERROR |          | 24 HOUR FORECAST |       | 48 HOUR FORECAST |          | 72 HOUR FORECAST |       | ERROR    |          |
|--------------------|------------|-------|----------------------|-------|----------------|----------|------------------|-------|------------------|----------|------------------|-------|----------|----------|
|                    | LAT.       | LONG. | LAT.                 | LONG. | (N.M.I.)       | (N.M.I.) | LAT.             | LONG. | (N.M.I.)         | (N.M.I.) | LAT.             | LONG. | (N.M.I.) | (N.M.I.) |
| 10 700             | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0      | 0.0              | 0.0   | 0.0              | 0.0      | 0.0              | 0.0   | 0.0      | 0.       |
| 10 706             | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0      | 0.0              | 0.0   | 0.0              | 0.0      | 0.0              | 0.0   | 0.0      | 0.       |
| 10 712             | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.0      | 0.0              | 0.0   | 0.0              | 0.0      | 0.0              | 0.0   | 0.0      | 0.       |
| 10 718             | 11.2       | 97.0  | 11.2                 | 97.0  | 0.0            | 0.0      | 12.0             | 100.6 | 38.              | 13.5     | 104.3            | 74.   | 15.3     | 107.9    |
| 10 800             | 11.3       | 98.0  | 11.2                 | 97.2  | 47.1           | 130.     | 11.4             | 99.7  | 130.             | 12.3     | 102.9            | 141.  | 13.7     | 102.1    |
| 10 806             | 11.4       | 99.0  | 11.4                 | 99.0  | 0.0            | 0.0      | 11.6             | 103.0 | 17.              | 12.7     | 106.8            | 73.   | 13.8     | 110.4    |
| 10 812             | 11.4       | 100.0 | 11.5                 | 100.0 | 6.0            | 32.      | 11.9             | 103.7 | 32.              | 12.6     | 106.8            | 41.   | 13.6     | 109.8    |
| 10 818             | 11.5       | 101.0 | 11.5                 | 101.0 | 0.0            | 0.0      | 12.1             | 104.7 | 13.              | 12.9     | 108.0            | 70.   | 14.0     | 111.0    |
| 10 900             | 11.6       | 102.1 | 11.6                 | 101.9 | 11.6           | 19.      | 12.2             | 105.6 | 19.              | 13.3     | 109.1            | 140.  | 14.7     | 112.5    |
| 10 906             | 11.8       | 103.0 | 11.8                 | 103.2 | 11.6           | 108.     | 13.1             | 107.3 | 108.             | 14.7     | 110.8            | 255.  | 17.0     | 114.0    |
| 10 912             | 11.9       | 103.8 | 12.1                 | 104.2 | 26.0           | 94.      | 12.5             | 107.7 | 94.              | 15.2     | 110.0            | 215.  | 18.2     | 112.5    |
| 10 918             | 12.1       | 104.5 | 12.3                 | 104.6 | 13.3           | 67.      | 13.7             | 107.6 | 67.              | 15.6     | 110.1            | 121.  | 18.1     | 112.6    |
| 101000             | 12.3       | 105.2 | 12.3                 | 105.3 | 5.8            | 94.      | 13.4             | 108.3 | 94.              | 15.0     | 111.6            | 59.   | 17.0     | 114.6    |
| 101006             | 12.6       | 105.9 | 12.4                 | 105.6 | 21.1           | 82.      | 13.4             | 108.0 | 82.              | 14.8     | 110.8            | 127.  | 16.0     | 113.7    |
| 101012             | 12.9       | 106.7 | 12.5                 | 106.1 | 42.0           | 101.     | 13.5             | 108.3 | 101.             | 15.1     | 110.6            | 195.  | 17.3     | 113.2    |
| 101018             | 13.2       | 107.3 | 12.9                 | 106.8 | 33.9           | 127.     | 14.3             | 108.7 | 127.             | 16.3     | 110.5            | 269.  | 18.5     | 112.1    |
| 101100             | 13.4       | 108.2 | 13.3                 | 106.7 | 85.9           | 284.     | 15.4             | 107.3 | 284.             | 17.8     | 107.2            | 523.  | 20.0     | 105.6    |
| 101106             | 13.5       | 109.1 | 13.5                 | 106.6 | 142.7          | 403.     | 15.0             | 106.0 | 403.             | 17.5     | 105.4            | 548.  | 0.0      | 0.       |
| 101112             | 13.6       | 109.9 | 13.8                 | 106.6 | 188.7          | 452.     | 15.7             | 106.2 | 452.             | 17.8     | 105.9            | 522.  | 20.7     | 105.3    |
| 101118             | 13.6       | 110.5 | 13.7                 | 110.8 | 18.1           | 29.      | 14.6             | 114.3 | 29.              | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101200             | 14.0       | 111.9 | 14.1                 | 112.0 | 8.3            | 64.      | 16.0             | 115.4 | 64.              | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101206             | 14.2       | 112.9 | 14.2                 | 112.9 | 0.0            | 60.      | 15.0             | 114.8 | 60.              | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101212             | 14.4       | 113.9 | 14.5                 | 113.9 | 6.0            | 152.     | 15.6             | 117.4 | 152.             | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101218             | 14.6       | 114.8 | 14.6                 | 114.8 | 0.0            | 13.      | 15.6             | 117.1 | 13.              | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101300             | 14.8       | 115.4 | 15.0                 | 115.8 | 25.8           | 118.     | 16.2             | 119.6 | 118.             | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101306             | 15.0       | 115.9 | 16.0                 | 114.8 | 86.8           | 248.     | 18.4             | 114.3 | 248.             | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101312             | 15.3       | 116.4 | 16.0                 | 114.8 | 100.5          | 152.     | 16.6             | 115.3 | 152.             | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101318             | 15.5       | 117.0 | 15.5                 | 116.9 | 5.7            | 0.       | 16.3             | 119.0 | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101400             | 15.6       | 117.5 | 15.8                 | 117.6 | 13.3           | 0.       | 0.0              | 0.0   | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101406             | 15.6       | 117.9 | 16.1                 | 118.1 | 32.1           | 0.       | 0.0              | 0.0   | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101412             | 15.6       | 118.3 | 15.3                 | 117.7 | 41.8           | 0.       | 0.0              | 0.0   | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101418             | 15.5       | 118.5 | 0.0                  | 0.0   | 0.0            | 0.       | 0.0              | 0.0   | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101500             | 15.5       | 118.7 | 0.0                  | 0.0   | 0.0            | 0.       | 0.0              | 0.0   | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101506             | 15.4       | 118.9 | 0.0                  | 0.0   | 0.0            | 0.       | 0.0              | 0.0   | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101512             | 15.3       | 119.1 | 0.0                  | 0.0   | 0.0            | 0.       | 0.0              | 0.0   | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101518             | 15.3       | 119.3 | 15.8                 | 118.8 | 41.4           | 0.       | 17.0             | 120.1 | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101600             | 15.3       | 119.5 | 15.4                 | 119.9 | 23.6           | 0.       | 16.1             | 120.6 | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101606             | 15.2       | 119.7 | 15.3                 | 120.1 | 23.6           | 0.       | 15.4             | 121.4 | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101612             | 15.2       | 119.9 | 15.2                 | 119.9 | 0.0            | 0.       | 15.2             | 120.7 | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |
| 101618             | 0.0        | 0.0   | 0.0                  | 0.0   | 0.0            | 0.       | 0.0              | 0.0   | 0.               | 0.0      | 0.0              | 0.    | 0.0      | 0.       |

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TABLE 20.



SIMON

| DATE/TIME<br>(GMT) | REST TRACK |       | OPERATIONAL POSITION |       | POSITION ERROR |         | 24 HOUR FORECAST ERROR |       | 48 HOUR FORECAST ERROR |       | 72 HOUR FORECAST ERROR |       |       |      |
|--------------------|------------|-------|----------------------|-------|----------------|---------|------------------------|-------|------------------------|-------|------------------------|-------|-------|------|
|                    | LAT.       | LONG. | LAT.                 | LONG. | (N.MI.)        | (N.MI.) | LAT.                   | LONG. | LAT.                   | LONG. | LAT.                   | LONG. |       |      |
| 103100             | 13.1       | 98.4  | 13.2                 | 98.5  | 8.3            | 13.7    | 102.4                  | 39.   | 15.0                   | 106.2 | 17.0                   | 108.0 | 440.  |      |
| 103106             | 13.1       | 99.2  | 13.2                 | 99.3  | 13.3           | 14.1    | 103.0                  | 54.   | 14.9                   | 105.9 | 16.7                   | 108.4 | 529.  |      |
| 103112             | 13.1       | 100.2 | 13.5                 | 100.2 | 24.0           | 14.6    | 104.0                  | 59.   | 15.8                   | 107.9 | 18.6                   | 110.8 | 582.  |      |
| 103118             | 13.3       | 101.4 | 13.3                 | 101.3 | 5.8            | 13.7    | 105.2                  | 173.  | 15.3                   | 108.3 | 17.7                   | 110.4 | 584.  |      |
| 11 100             | 13.6       | 102.7 | 13.1                 | 102.2 | 41.7           | 13.5    | 105.2                  | 259.  | 14.5                   | 109.6 | 16.6                   | 112.1 | 590.  |      |
| 11 106             | 14.0       | 104.0 | 13.9                 | 103.9 | 8.3            | 15.3    | 108.4                  | 130.  | 16.2                   | 111.8 | 16.5                   | 115.6 | 460.  |      |
| 11 112             | 14.3       | 105.7 | 14.4                 | 105.0 | 40.6           | 16.0    | 109.7                  | 157.  | 17.5                   | 114.0 | 21.1                   | 115.0 | 709.  |      |
| 11 118             | 14.5       | 107.3 | 14.0                 | 107.0 | 91.6           | 17.9    | 111.9                  | 195.  | 19.7                   | 112.4 | 21.7                   | 111.0 | 989.  |      |
| 11 200             | 14.6       | 108.7 | 17.6                 | 107.6 | 190.7          | 23.7    | 109.2                  | 582.  | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    |      |
| 11 206             | 14.8       | 110.4 | 14.8                 | 110.4 | 0.0            | 17.0    | 115.0                  | 152.  | 20.4                   | 115.0 | 24.6                   | 113.5 | 1043. |      |
| 11 212             | 15.0       | 112.1 | 15.0                 | 112.2 | 5.7            | 17.0    | 116.9                  | 141.  | 20.7                   | 118.5 | 24.0                   | 118.7 | 811.  |      |
| 11 218             | 15.3       | 113.8 | 15.2                 | 113.8 | 6.0            | 17.2    | 119.0                  | 166.  | 20.4                   | 121.5 | 23.3                   | 124.6 | 541.  |      |
| 11 300             | 15.4       | 115.4 | 16.1                 | 115.6 | 43.5           | 18.2    | 121.4                  | 242.  | 19.0                   | 126.6 | 34.3                   | 131.9 | 247.  |      |
| 11 306             | 15.2       | 117.0 | 16.5                 | 117.6 | 95.2           | 18.4    | 123.7                  | 277.  | 20.6                   | 128.5 | 38.4                   | 0.0   | 0.    |      |
| 11 312             | 14.9       | 118.7 | 16.5                 | 119.3 | 101.9          | 17.5    | 125.1                  | 256.  | 18.3                   | 127.5 | 23.4                   | 18.6  | 130.2 | 76.  |
| 11 318             | 14.5       | 120.1 | 14.6                 | 120.0 | 8.3            | 14.0    | 124.7                  | 91.   | 14.6                   | 127.7 | 13.6                   | 18.2  | 129.6 | 71.  |
| 11 400             | 14.2       | 121.6 | 14.2                 | 122.0 | 23.1           | 15.5    | 127.8                  | 6.    | 13.7                   | 133.0 | 20.4                   | 14.0  | 138.1 | 457. |
| 11 406             | 13.8       | 123.2 | 13.7                 | 123.0 | 13.0           | 13.2    | 127.4                  | 97.   | 14.0                   | 131.1 | 17.2                   | 0.0   | 0.    | 0.   |
| 11 412             | 13.6       | 124.6 | 13.3                 | 124.3 | 25.0           | 12.4    | 128.9                  | 194.  | 12.9                   | 132.7 | 29.6                   | 14.5  | 135.2 | 271. |
| 11 418             | 13.7       | 126.1 | 13.5                 | 126.0 | 13.3           | 13.8    | 130.4                  | 109.  | 14.3                   | 132.7 | 20.6                   | 0.0   | 0.    | 0.   |
| 11 500             | 14.2       | 127.4 | 13.4                 | 127.8 | 53.3           | 13.7    | 133.7                  | 256.  | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 506             | 14.6       | 128.4 | 14.2                 | 128.7 | 29.6           | 15.3    | 132.7                  | 156.  | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 512             | 15.0       | 129.2 | 14.9                 | 129.5 | 18.3           | 16.4    | 133.0                  | 159.  | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 518             | 15.6       | 129.8 | 15.4                 | 129.7 | 13.3           | 16.2    | 132.1                  | 104.  | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 600             | 15.0       | 130.2 | 16.0                 | 130.6 | 11.5           | 0.0     | 0.0                    | 0.    | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 606             | 16.2       | 130.4 | 16.8                 | 130.5 | 36.3           | 0.0     | 0.0                    | 0.    | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 612             | 16.2       | 130.7 | 17.4                 | 130.6 | 72.2           | 19.6    | 130.4                  | 164.  | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 618             | 16.3       | 130.9 | 17.0                 | 130.5 | 47.9           | 0.0     | 0.0                    | 0.    | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 700             | 16.2       | 131.1 | 16.7                 | 130.8 | 45.4           | 0.0     | 0.0                    | 0.    | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 706             | 16.2       | 131.4 | 17.0                 | 131.0 | 53.3           | 17.2    | 131.1                  | 0.    | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 712             | 16.0       | 132.3 | 17.0                 | 131.3 | 83.3           | 17.4    | 132.6                  | 0.    | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |
| 11 718             | 17.7       | 133.3 | 16.1                 | 131.8 | 129.3          | 16.0    | 133.1                  | 0.    | 0.0                    | 0.0   | 0.0                    | 0.0   | 0.    | 0.   |

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