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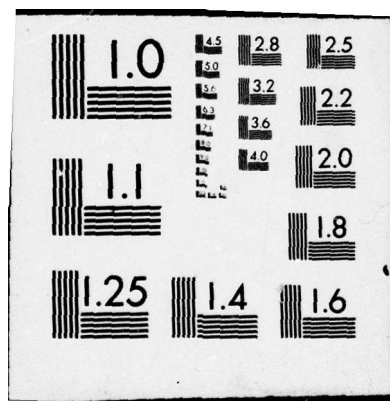
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OBSERVED MEAN MONTHLY WINDS AT STANDARD  
PRESSURE SURFACES FROM 850 MB TO 100 MB

AIR FORCE GEOPHYSICS LABORATORY  
HANSCOM AIR FORCE BASE, MASSACHUSETTS

30 SEPTEMBER 1976

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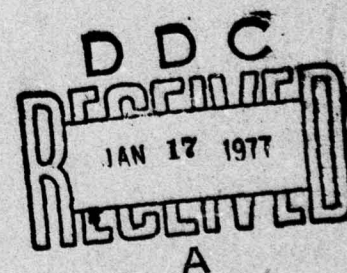


# Observed Mean Monthly Winds at Standard Pressure Surfaces From 850 mb to 100 mb

ARTHUR J. KANTOR

30 September 1976

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METEOROLOGY DIVISION PROJECT 8624

**AIR FORCE GEOPHYSICS LABORATORY**

HANSCOM AFB, MASSACHUSETTS 01731

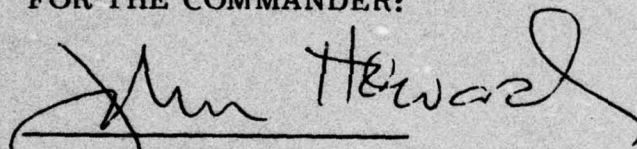
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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br><br>This paper contains tables of mean monthly east-west and north-south wind components for January, April, July, and October at 200 Northern Hemisphere locations. The information provided herein is considered to be the best climatic mean monthly wind data currently available for these locations. However, it does not completely satisfy the need for an up-to-date wind atlas. |                                                                                       |                                             |

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## Contents

|                                |   |
|--------------------------------|---|
| 1. INTRODUCTION                | 5 |
| 2. OBSERVED VS "ATLAS" WINDS   | 6 |
| 3. MEAN MONTHLY OBSERVED WINDS | 7 |
| 4. CONCLUSIONS                 | 7 |

## Illustrations

|                                                             |   |
|-------------------------------------------------------------|---|
| 1. Locations of 200 Northern Hemisphere Rawinsonde Stations | 9 |
|-------------------------------------------------------------|---|

## Tables

|                                                                     |    |
|---------------------------------------------------------------------|----|
| 1. Comparison of "Atlas" and Observed Mean Seasonal Wind Components | 8  |
| 2. Climatic Mean Monthly Observed East-West and North-South Winds   | 10 |

## Observed Mean Monthly Winds at Standard Pressure Surfaces From 850 mb to 100 mb

### 1. INTRODUCTION

This paper contains mean east-west (zonal) and north-south (meridional) wind components for the seven standard pressure surfaces between 850 mb and 100 mb at 200 Northern Hemisphere rawinsonde stations. The wind components are based on at least 8 years of rawinsonde observations taken during the 10-year period from January 1964 through December 1973. Values were summarized from the publication Monthly Climatic Data for the World,<sup>1</sup> which contains mean monthly vector winds based on daily rawinsonde observations. For most stations, less than 10 percent of the daily observations are missing. No attempt was made to estimate any bias that may be introduced by the absence of these observations; however, in general, the strong wind cases are the most frequently missed observations, resulting in slightly smaller computed mean values than the true means. Because observing equipment has improved in recent years, fewer observations are missed now than prior to 1964.

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(Received for publication 29 September 1970)

1. NOAA (1964-1974) Monthly Climatic Data for the World, January 1964-December 1973, U.S. Government Printing Office.

The climatic mean wind components provided in this paper were originally calculated for use in comparing observed and computer-deduced mean monthly winds.<sup>2</sup> This comparison led to the conclusion that winds based on daily rawinsonde observations provided better estimates of true climatic winds than the computer-generated values. This conclusion and the fact that one of the most highly regarded wind atlases available today is more than 17 years old,<sup>3</sup> has prompted publication of these tables.

These tables are based on at least 8 years of observations taken since 1964 and are considered to be good estimates of the true climatic winds. On the other hand, the charts in Crutcher's atlas<sup>3</sup> are based on observations taken between 1944 and early 1958. At that time, only 4 years of upper-air data were available for many locations. Consequently, a new atlas based on more recent observations is needed.

## 2. OBSERVED VS "ATLAS" WINDS

Mean seasonal "atlas" winds obtained from reference 3 were compared with the observed climatic winds published in this report for a number of Northern Hemisphere stations ranging in latitude from 14°N to 80°N. Winter (December, January, and February) and summer (June, July, and August) zonal and meridional winds for six of these stations are shown in Table 1 for six standard pressure levels, 850 through 100 mb. Speeds are in knots, and positive values represent winds from the west and south.

Values shown for the two methods are in general agreement. However, differences at some locations, levels, and seasons are significant, notably at the higher altitudes and speeds. For example, winter zonal winds for 200 and 300 mb at Kagoshima, Japan, and for 100 to 300 mb at Lihue, Kauai, Hawaii, do not compare well, in that observed winds are considerably larger than "atlas" values (see Table 1). At least a portion of these discrepancies is a result of the fact that "atlas" winds at the six stations shown are based on only 5 to 6 years of data, whereas the observed climatic winds are based on 10 years (9 years at Jan Mayen). Furthermore, the "atlas" winds were taken from data roughly 15 years older than that for the climatic winds in this paper; hence, the actual period of record at the higher pressure altitudes is for even fewer years than indicated in both Crutcher's atlas and Table 1. Much of the missing data at the higher altitudes was undoubtedly

2. Kantor, A.J. (1976) A Comparison Between Observed and Deduced Mean Monthly Winds from 700 mb to 200 mb, ERP No. 548, AFCHL-TR-76-0044.

3. Crutcher, H.L. (1959) Upper Wind Statistics Charts of the Northern Hemisphere, NAVAER 50-IC-535, Volumes I and II.

due to strong winds aloft in winter that severely affected the older rawinsonde tracking equipment. Consequently, the resulting bias toward lighter winds (at the higher levels) is greater in the earlier "atlas" data.

### 3. MEAN MONTHLY OBSERVED WINDS

Climatic mean monthly observed winds are provided in Table 2 for the 200 Northern Hemisphere locations shown in Figure 1. Based on at least 8 years of daily observations, as described earlier, the mean zonal and meridional winds presented in Table 2 are for the midseason months January, April, July, and October. Again, speeds are in knots, and positive values represent winds from the west and south.

### 4. CONCLUSIONS

The information provided in Table 2 is considered to be the best climatic mean monthly wind data currently available. Moreover, it indicates a need for the construction of an up-to-date, upper-air wind atlas that will contain scalar wind speeds, standard vector deviations, and standard deviations of zonal and meridional components.

Table 1. Comparison of "Atlas" and Observed Mean Seasonal Wind Components\*

| Guam (14°N, 145°E)                                   |                   |                   |                   |                   |
|------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|
| (Period of Record: Atlas, 5-1/2 yr; Observed, 10 yr) |                   |                   |                   |                   |
| mb                                                   | Winter            |                   | Summer            |                   |
|                                                      | E/W<br>Atlas Obs. | N/S<br>Atlas Obs. | E/W<br>Atlas Obs. | N/S<br>Atlas Obs. |
| 850                                                  | -15               | 0                 | -9                | 3                 |
| 700                                                  | -15               | 2                 | -8                | 4                 |
| 500                                                  | -11               | 2                 | -9                | 3                 |
| 300                                                  | -5                | 2                 | -4                | -1                |
| 200                                                  | -4                | 3                 | -5                | -3                |
| 100                                                  | -10               | 5                 | -17               | -4                |

| Kagoshima (32°N, 131°E)                          |                   |                   |                   |                   |
|--------------------------------------------------|-------------------|-------------------|-------------------|-------------------|
| (Period of Record: Atlas, 6 yr; Observed, 10 yr) |                   |                   |                   |                   |
| mb                                               | Winter            |                   | Summer            |                   |
|                                                  | E/W<br>Atlas Obs. | N/S<br>Atlas Obs. | E/W<br>Atlas Obs. | N/S<br>Atlas Obs. |
| 850                                              | -7                | 1                 | -11               | -5                |
| 700                                              | -1                | 3                 | -7                | -2                |
| 500                                              | 9                 | -2                | 0                 | 0                 |
| 300                                              | 31                | -8                | 22                | 6                 |
| 200                                              | 43                | -11               | 22                | -1                |
| 100                                              | 19                | -11               | -1                | 4                 |

| Ship Delta (44°N, 43°W)                          |                   |                   |                   |                   |
|--------------------------------------------------|-------------------|-------------------|-------------------|-------------------|
| (Period of Record: Atlas, 5 yr; Observed, 10 yr) |                   |                   |                   |                   |
| mb                                               | Winter            |                   | Summer            |                   |
|                                                  | E/W<br>Atlas Obs. | N/S<br>Atlas Obs. | E/W<br>Atlas Obs. | N/S<br>Atlas Obs. |
| 850                                              | 17                | 6                 | 13                | 3                 |
| 700                                              | 25                | 6                 | 17                | 3                 |
| 500                                              | 37                | 11                | 23                | 2                 |
| 300                                              | 45                | 14                | 33                | 0                 |
| 200                                              | 44                | 12                | 35                | -1                |
| 100                                              | 27                | 6                 | 17                | 1                 |

| Jan Mayen (71°N, 9°W)                           |                   |                   |                   |                   |
|-------------------------------------------------|-------------------|-------------------|-------------------|-------------------|
| (Period of Record: Atlas, 5 yr; Observed, 9 Yr) |                   |                   |                   |                   |
| mb                                              | Winter            |                   | Summer            |                   |
|                                                 | E/W<br>Atlas Obs. | N/S<br>Atlas Obs. | E/W<br>Atlas Obs. | N/S<br>Atlas Obs. |
| 850                                             | 6                 | -2                | -3                | 0                 |
| 700                                             | 8                 | 2                 | 5                 | 1                 |
| 500                                             | 14                | 7                 | 4                 | 3                 |
| 300                                             | 23                | 6                 | 10                | 4                 |
| 200                                             | 23                | 2                 | 9                 | 3                 |
| 100                                             | 27                | 2                 | 2                 | 4                 |

\*Speed is in knots; winds from the west and south are positive.

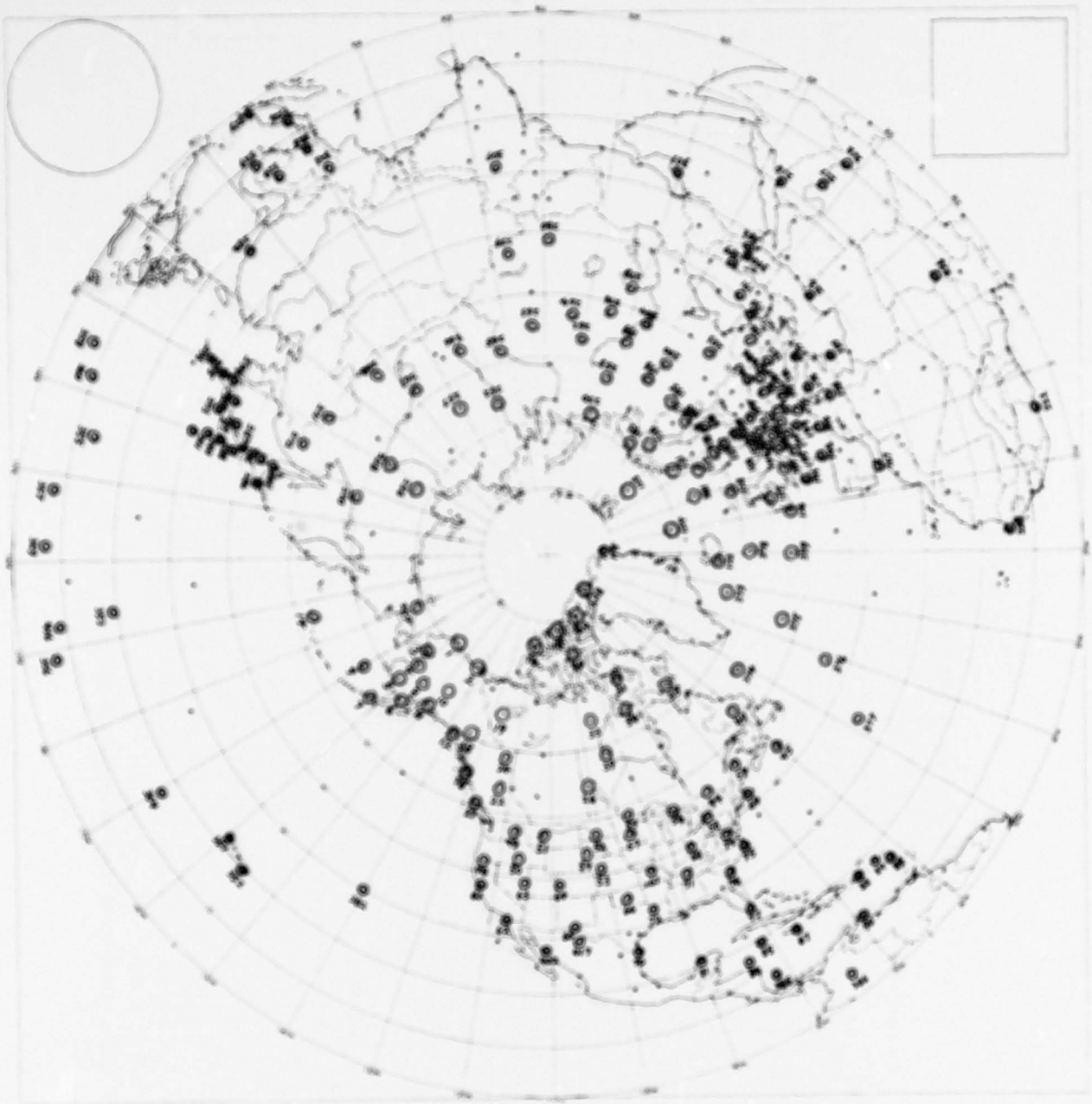


Figure 1. Locations of 200 Northern Hemisphere Rawinsonde Stations

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\*

#1 Barrow (71°N, 157°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -5             | -1             | 5               | 4              |
| 700 | 0              | -4             | 7               | 5              |
| 500 | 8              | -5             | 13              | 6              |
| 300 | 17             | -6             | 13              | 5              |
| 200 | 21             | -3             | 11              | 6              |
| 150 | 25             | -2             | 11              | 7              |
| 100 | 33             | -3             | 11              | 8              |

#4 Nome (64°N, 165°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -3             | 3              | 1               | 7              |
| 700 | 2              | 3              | 2               | 7              |
| 500 | 8              | 4              | 3               | 6              |
| 300 | 16             | 6              | 6               | 3              |
| 200 | 18             | 14             | 7               | 1              |
| 150 | 22             | 8              | 7               | 5              |
| 100 | 27             | 9              | 12              | 1              |

#2 Barter (70°N, 144°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 3              | -1             | 7               | 2              |
| 700 | 3              | -4             | 10              | 3              |
| 500 | 8              | -8             | 12              | 4              |
| 300 | 17             | -12            | 18              | 5              |
| 200 | 21             | -9             | 16              | 4              |
| 150 | 25             | -9             | 15              | 4              |
| 100 | 32             | -10            | 14              | 4              |

#5 Bethel (61°N, 162°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 0              | 0              | 3               | 5              |
| 700 | 4              | 0              | 5               | 6              |
| 500 | 11             | 5              | 10              | 7              |
| 300 | 18             | 8              | 20              | 8              |
| 200 | 21             | 9              | 18              | 8              |
| 150 | 23             | 10             | 17              | 9              |
| 100 | 24             | 9              | 12              | 8              |

#3 Kotzebue (67°N, 163°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -4             | 2              | -2              | 3              |
| 700 | 1              | 0              | 0               | 5              |
| 500 | 9              | 1              | 4               | 8              |
| 300 | 19             | 4              | 11              | 10             |
| 200 | 22             | 6              | 14              | 9              |
| 150 | 24             | 7              | 15              | 10             |
| 100 | 31             | 9              | 14              | 10             |

#6 King Salmon (59°N, 157°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 0              | -3             | 2               | 3              |
| 700 | 4              | -2             | 7               | 4              |
| 500 | 11             | -3             | 13              | 5              |
| 300 | 16             | -2             | 23              | 3              |
| 200 | 21             | 0              | 21              | 4              |
| 150 | 22             | 2              | 19              | 6              |
| 100 | 21             | 1              | 15              | 6              |

\*Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#7 Cold Bay (55°N, 163°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 3 0            | 10 1           | 5 4             | 10 -4          |
| 700 | 8 0            | 14 2           | 9 4             | 14 -4          |
| 500 | 14 7           | 22 5           | 15 3            | 20 -1          |
| 300 | 20 12          | 28 7           | 24 2            | 29 4           |
| 200 | 21 11          | 27 9           | 23 -1           | 29 4           |
| 150 | 19 11          | 23 9           | 16 -1           | 28 6           |
| 100 | 17 9           | 15 8           | 7 0             | 24 5           |

#10 Fairbanks (65°N, 148°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -5 1           | 3 4            | 6 3             | 0 5            |
| 700 | 2 -1           | 6 6            | 5 5             | 5 8            |
| 500 | 6 -5           | 10 9           | 7 6             | 10 11          |
| 300 | 16 -8          | 18 10          | 7 7             | 16 14          |
| 200 | 22 -6          | 16 9           | 4 4             | 19 11          |
| 150 | 25 -4          | 15 6           | 3 3             | 19 10          |
| 100 | 31 -6          | 13 5           | 2 2             | 20 8           |

#8 McGrath (63°N, 156°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -6 -1          | 0 4            | 3 6             | -1 2           |
| 700 | 2 -1           | 3 7            | 2 7             | 3 5            |
| 500 | 8 0            | 7 8            | 3 6             | 6 9            |
| 300 | 18 -1          | 15 7           | 7 6             | 14 11          |
| 200 | 23 2           | 15 5           | 8 2             | 19 7           |
| 150 | 25 2           | 14 5           | 6 2             | 18 8           |
| 100 | 28 3           | 12 6           | 1 1             | 19 7           |

#11 Anchorage (61°N, 150°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -4 -3          | -4 4           | -2 4            | -2 4           |
| 700 | 0 -1           | 0 9            | -2 5            | -1 9           |
| 500 | 8 -3           | 8 10           | 2 5             | 6 12           |
| 300 | 17 -3          | 19 9           | 6 5             | 16 14          |
| 200 | 23 -2          | 17 6           | 9 2             | 21 10          |
| 150 | 24 -1          | 16 6           | 2 2             | 21 9           |
| 100 | 25 -2          | 12 5           | 2 2             | 20 8           |

#9 St. Paul (57°N, 170°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 1 4            | 5 0            | 3 5             | -2 8           |
| 700 | 4 5            | 9 1            | 5 4             | -2 12          |
| 500 | 9 8            | 16 2           | 9 3             | -3 18          |
| 300 | 14 15          | 24 7           | 15 2            | 0 24           |
| 200 | 16 13          | 23 5           | 18 1            | 1 27           |
| 150 | 16 14          | 20 7           | 12 0            | 2 26           |
| 100 | 17 13          | 15 7           | 5 0             | 23 3           |

#12 Yakutat (60°N, 140°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -5 4           | -5 8           | -3 5            | -6 11          |
| 700 | 1 4            | 1 8            | -2 4            | 1 12           |
| 500 | 12 2           | 8 7            | 0 4             | 10 15          |
| 300 | 25 -6          | 19 3           | 4 3             | 22 12          |
| 200 | 25 -8          | 19 1           | 8 2             | 26 7           |
| 150 | 26 -8          | 16 2           | 7 3             | 25 7           |
| 100 | 26 -9          | 12 3           | 2 2             | 22 6           |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#13 Annette I. (55°N, 132°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 1          | 9          | 1          | 11         | 1           | 5           | 3          | 15         |
| 700 | 10         | 7          | 7          | 9          | 4           | 4           | 12         | 14         |
| 500 | 21         | 1          | 15         | 7          | 9           | 4           | 22         | 15         |
| 300 | 30         | -3         | 25         | -1         | 16          | 4           | 34         | 8          |
| 200 | 29         | -8         | 22         | -3         | 16          | 2           | 33         | 1          |
| 150 | 28         | -9         | 17         | -2         | 12          | 3           | 29         | 2          |
| 100 | 26         | -11        | 12         | 0          | 6           | 3           | 22         | 1          |

#16 Mould Bay (76°N, 120°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 2          | -8         | 2          | -4         | 8           | -2          | 3          | -2         |
| 700 | 1          | -10        | 5          | -6         | 11          | -4          | 6          | -3         |
| 500 | 1          | -13        | 8          | -8         | 16          | -6          | 10         | -4         |
| 300 | 4          | -15        | 12         | -8         | 20          | -8          | 18         | -4         |
| 200 | 10         | -15        | 13         | -5         | 12          | -5          | 18         | -1         |
| 150 | 13         | -16        | 13         | -4         | 8           | -4          | 18         | 0          |
| 100 | 20         | -19        | 13         | -2         | 3           | -3          | 18         | 2          |

#14 Shemya (53°N, 174°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 1          | 6          | 7          | 2          | 4           | 3           | 13         | -2         |
| 700 | 4          | 8          | 12         | 1          | 8           | 3           | 17         | -3         |
| 500 | 8          | 13         | 20         | 2          | 14          | 2           | 28         | -5         |
| 300 | 14         | 18         | 30         | 4          | 25          | 0           | 43         | -8         |
| 200 | 16         | 18         | 30         | 6          | 26          | 0           | 48         | -5         |
| 150 | 18         | 17         | 27         | 6          | 20          | -1          | 42         | -3         |
| 100 | 16         | 16         | 21         | 7          | 10          | -1          | 34         | 0          |

#18 Whitehorse (61°N, 135°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 1          | 1          | 1          | 7          | 2           | 3           | -1         | 10         |
| 700 | 6          | 1          | 8          | 6          | 3           | 2           | 10         | 11         |
| 500 | 12         | -1         | 11         | 6          | 3           | 3           | 14         | 11         |
| 300 | 25         | -6         | 19         | 7          | 5           | 3           | 26         | 14         |
| 200 | 25         | -8         | 17         | 5          | 9           | 1           | 27         | 11         |
| 150 | 26         | -9         | 15         | 4          | 7           | 2           | 25         | 8          |
| 100 | 27         | -10        | 11         | 4          | 4           | 2           | 24         | 6          |

#15 Isachsen (79°N, 104°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 0          | -7         | 2          | -4         | 6           | -2          | 1          | 0          |
| 700 | -1         | -8         | 2          | -6         | 8           | -3          | 3          | -2         |
| 500 | -2         | -8         | 3          | -8         | 12          | -4          | 7          | -2         |
| 300 | -1         | -7         | 5          | -7         | 15          | -6          | 13         | -1         |
| 200 | 2          | -8         | 8          | -5         | 7           | -5          | 14         | 0          |
| 150 | 5          | -10        | 8          | -3         | 4           | -4          | 15         | 1          |
| 100 | 12         | -13        | 10         | -2         | 1           | -3          | 16         | 2          |

#19 Norman Wells (65°N, 127°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 7          | -4         | 4          | 1          | 3           | -2          | 6          | 0          |
| 700 | 7          | -6         | 10         | 0          | 6           | -3          | 11         | 0          |
| 500 | 14         | -8         | 14         | 0          | 9           | -3          | 18         | 2          |
| 300 | 19         | -12        | 21         | 0          | 15          | -4          | 26         | 4          |
| 200 | 21         | -14        | 18         | 0          | 14          | -3          | 27         | 3          |
| 150 | 24         | -15        | 16         | 1          | 10          | -1          | 25         | 3          |
| 100 | 29         | -18        | 11         | 1          | 5           | -1          | 24         | 3          |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#22 Prince George (54°N, 123°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 4          | 6          | 6          | 4          | 6           | 0           | 8          | 11         |
| 700 | 16         | 2          | 11         | 5          | 10          | 4           | 18         | 5          |
| 500 | 28         | 0          | 18         | 3          | 14          | 5           | 29         | 4          |
| 300 | 42         | -4         | 29         | 3          | 21          | 7           | 43         | 3          |
| 200 | 38         | -9         | 24         | 0          | 23          | 6           | 41         | -2         |
| 150 | 33         | -9         | 18         | 0          | 19          | 6           | 34         | -1         |
| 100 | 29         | -10        | 13         | 1          | 10          | 4           | 26         | 0          |

#27 Port Hardy (51°N, 127°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 6          | 9          | 4          | 7          | 2           | 2           | 6          | 10         |
| 700 | 17         | 7          | 10         | 7          | 7           | 3           | 15         | 11         |
| 500 | 31         | 3          | 20         | 4          | 15          | 4           | 29         | 9          |
| 300 | 48         | -1         | 34         | -2         | 24          | 5           | 50         | 6          |
| 200 | 43         | -5         | 30         | -4         | 26          | 6           | 58         | 0          |
| 150 | 35         | -7         | 22         | -2         | 21          | 7           | 38         | 0          |
| 100 | 27         | -7         | 15         | -1         | 11          | 5           | 24         | 0          |

#24 Fort Nelson (59°N, 123°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 6          | -3         | 5          | -1         | 5           | -4          | 9          | -2         |
| 700 | 12         | -4         | 10         | 0          | 6           | -2          | 16         | -2         |
| 500 | 22         | -5         | 17         | 3          | 9           | 0           | 24         | 1          |
| 300 | 35         | -10        | 25         | 3          | 13          | 1           | 40         | 2          |
| 200 | 31         | -12        | 21         | 1          | 14          | 1           | 41         | 0          |
| 150 | 30         | -13        | 17         | 1          | 12          | 1           | 33         | 1          |
| 100 | 29         | -15        | 13         | 0          | 8           | 1           | 26         | 1          |

#28 Alert (82°N, 62°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 0          | -1         | 1          | 0          | 4           | 1           | 4          | 0          |
| 700 | 0          | 2          | -2         | 2          | 4           | 2           | 5          | 1          |
| 500 | 1          | 5          | -3         | 5          | 6           | 4           | 8          | 1          |
| 300 | 3          | 7          | 1          | 6          | 6           | 5           | 11         | 3          |
| 200 | 4          | 5          | 4          | 5          | 1           | 3           | 12         | 3          |
| 150 | 5          | 3          | 6          | 3          | 0           | 2           | 12         | 2          |
| 100 | 7          | -1         | 8          | 1          | -2          | 1           | 14         | 2          |

#26 The Pas (54°N, 101°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 8          | -5         | 4          | -2         | 6           | -3          | 8          | -5         |
| 700 | 15         | -7         | 10         | -5         | 12          | -5          | 14         | -7         |
| 500 | 26         | -10        | 18         | -5         | 20          | -6          | 24         | -9         |
| 300 | 37         | -16        | 25         | -2         | 33          | -6          | 38         | -11        |
| 200 | 36         | -15        | 25         | -4         | 35          | -4          | 42         | -9         |
| 150 | 34         | -14        | 21         | -2         | 28          | -5          | 34         | -8         |
| 100 | 33         | -16        | 16         | -2         | 16          | -4          | 25         | -5         |

#29 Eureka (80°N, 86°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | -2         | -2         | -1         | 0          | 2           | 2           | 0          | 1          |
| 700 | -2         | -1         | -1         | -1         | 4           | 0           | 2          | 1          |
| 500 | -1         | 0          | -1         | -2         | 6           | -1          | 4          | 2          |
| 300 | 0          | 1          | 1          | -1         | 9           | -4          | 9          | 3          |
| 200 | 0          | -1         | 4          | 0          | 4           | -2          | 11         | 2          |
| 150 | 4          | -3         | 6          | 0          | 1           | -1          | 11         | 2          |
| 100 | 6          | -7         | 8          | 0          | -1          | -1          | 12         | 2          |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#30 Resolute (75°N, 95°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 0          | -4         | 2          | -3         | 4           | -4          | 2          | 0          |
| 700 | 0          | -5         | 4          | -6         | 6           | -6          | 4          | -1         |
| 500 | -1         | -2         | 6          | -7         | 9           | -7          | 8          | -2         |
| 300 | 1          | -2         | 10         | -7         | 13          | -8          | 15         | -3         |
| 200 | 4          | -5         | 10         | -4         | 8           | -7          | 15         | -2         |
| 150 | 6          | -7         | 10         | -4         | 5           | -5          | 15         | -2         |
| 100 | 12         | -12        | 10         | -2         | 1           | -3          | 16         | -2         |

#34 Coral Harbor (64°N, 83°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 2          | -2         | 4          | -4         | 1           | -5          | 2          | -3         |
| 700 | 5          | -2         | 9          | -5         | 3           | -8          | 6          | -4         |
| 500 | 7          | 0          | 16         | -5         | 6           | -8          | 13         | -4         |
| 300 | 12         | 4          | 20         | -3         | 8           | -8          | 19         | 2          |
| 200 | 14         | 0          | 17         | -3         | 8           | -6          | 22         | -3         |
| 150 | 15         | -2         | 17         | -2         | 6           | -4          | 20         | -3         |
| 100 | 18         | -4         | 12         | -3         | 2           | -4          | 19         | -3         |

#31 Hall Beach (69°N, 81°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 0          | -2         | 4          | -3         | 1           | -4          | 2          | -3         |
| 700 | 1          | 1          | 8          | -2         | 3           | -4          | 4          | -2         |
| 500 | 3          | 4          | 14         | -1         | 6           | -5          | 9          | -1         |
| 300 | 6          | 8          | 18         | 1          | 9           | -6          | 17         | -2         |
| 200 | 9          | 3          | 15         | 1          | 7           | -4          | 17         | -1         |
| 150 | 10         | 1          | 12         | 1          | 4           | -3          | 16         | -1         |
| 100 | 13         | -4         | 10         | 0          | 1           | -2          | 16         | -2         |

#35 Frobisher Bay (64°N, 69°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 2          | 0          | 3          | -1         | -1          | 1           | 1          | 1          |
| 700 | 4          | 4          | 7          | 0          | 1           | -1          | 4          | 0          |
| 500 | 4          | 9          | 12         | 2          | 4           | 0           | 9          | 1          |
| 300 | 7          | 13         | 16         | 5          | 6           | 3           | 17         | 1          |
| 200 | 10         | 10         | 15         | 5          | 6           | 3           | 18         | 2          |
| 150 | 13         | 9          | 12         | 4          | 5           | 2           | 17         | 2          |
| 100 | 16         | 7          | 9          | 3          | 2           | 1           | 18         | 1          |

#33 Baker Lake (64°N, 96°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 3          | -6         | 6          | -4         | 3           | -6          | 5          | -3         |
| 700 | 6          | -6         | 11         | -6         | 6           | -8          | 8          | -5         |
| 500 | 11         | -6         | 19         | -7         | 10          | -10         | 15         | -7         |
| 300 | 15         | -6         | 27         | -10        | 15          | -10         | 23         | -7         |
| 200 | 16         | -9         | 20         | -9         | 14          | -8          | 24         | -6         |
| 150 | 19         | -12        | 17         | -6         | 10          | -8          | 23         | -6         |
| 100 | 23         | -17        | 14         | -5         | 5           | -7          | 21         | -6         |

#39 Churchill (59°N, 94°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 6          | -8         | 5          | -6         | 4           | -7          | 6          | -6         |
| 700 | 11         | -7         | 9          | -6         | 7           | -8          | 11         | -7         |
| 500 | 16         | -8         | 19         | -9         | 13          | -10         | 19         | -9         |
| 300 | 24         | -9         | 31         | -8         | 22          | -11         | 31         | -8         |
| 200 | 25         | -11        | 26         | -7         | 23          | -10         | 32         | -8         |
| 150 | 26         | -13        | 22         | -6         | 18          | -8          | 29         | -7         |
| 100 | 30         | -14        | 16         | -5         | 10          | -7          | 24         | -6         |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#40 Goose Bay (53°N, 60°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 4          | -7         | 2          | -4         | 11          | 1           | 11         | -2         |
| 700 | 8          | -2         | 5          | -2         | 17          | 1           | 17         | -2         |
| 500 | 14         | 2          | 11         | 1          | 24          | 4           | 28         | 1          |
| 300 | 24         | 8          | 21         | 6          | 37          | 8           | 44         | 5          |
| 200 | 31         | 9          | 19         | 5          | 37          | 8           | 44         | 6          |
| 150 | 32         | 9          | 16         | 6          | 27          | 6           | 36         | 4          |
| 100 | 34         | 9          | 12         | 5          | 13          | 3           | 26         | 2          |

#48 Medford (42°N, 123°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 6          | 8          | 2          | 1          | -1          | 0           | 0          | 4          |
| 700 | 22         | 2          | 10         | -2         | 8           | 8           | 10         | 1          |
| 500 | 35         | -3         | 21         | -6         | 17          | 10          | 22         | -3         |
| 300 | 47         | -7         | 30         | -12        | 28          | 15          | 30         | -7         |
| 200 | 47         | -11        | 33         | -10        | 37          | 21          | 34         | -7         |
| 150 | 40         | -11        | 28         | -5         | 32          | 19          | 34         | -5         |
| 100 | 28         | -8         | 20         | -2         | 12          | 8           | 23         | -3         |

#44 Maniwaki (46°N, 76°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 14         | -4         | 7          | -2         | 12          | -1          | 13         | 1          |
| 700 | 23         | -4         | 15         | -5         | 19          | -2          | 21         | 0          |
| 500 | 37         | -6         | 28         | -8         | 27          | -3          | 31         | 1          |
| 300 | 55         | -1         | 41         | -12        | 35          | -1          | 45         | 0          |
| 200 | 54         | 0          | 39         | -10        | 44          | -4          | 47         | -2         |
| 150 | 50         | 0          | 33         | -6         | 34          | -2          | 41         | 0          |
| 100 | 40         | 0          | 23         | -4         | 16          | -2          | 28         | 0          |

#49 Spokane (48°N, 118°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 12         | 10         | 7          | 6          | 5           | 3           | 7          | 5          |
| 700 | 22         | 3          | 11         | 4          | 11          | 5           | 16         | 2          |
| 500 | 37         | -3         | 18         | 2          | 21          | 9           | 27         | -1         |
| 300 | 56         | -10        | 27         | -1         | 37          | 15          | 38         | -7         |
| 200 | 51         | -14        | 27         | -3         | 45          | 16          | 41         | -8         |
| 150 | 40         | -12        | 21         | -2         | 35          | 12          | 35         | -5         |
| 100 | 31         | -9         | 15         | 1          | 15          | 5           | 25         | -3         |

#45 Sable Island (44°N, 60°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 20         | -2         | 10         | -3         | 15          | 5           | 16         | 0          |
| 700 | 31         | 0          | 18         | 0          | 21          | 4           | 24         | 1          |
| 500 | 47         | 3          | 28         | 2          | 30          | 6           | 36         | 2          |
| 300 | 72         | 4          | 41         | 4          | 41          | 8           | 47         | 3          |
| 200 | 66         | 0          | 41         | 2          | 44          | 6           | 53         | 0          |
| 150 | 55         | 2          | 32         | 0          | 34          | 4           | 44         | 1          |
| 100 | 44         | 3          | 22         | 2          | 14          | 2           | 28         | 0          |

#50 Boise (44°N, 116°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 4          | 4          | 4          | -4         | 2           | -3          | 2          | 0          |
| 700 | 20         | -2         | 11         | -4         | 9           | 2           | 11         | -2         |
| 500 | 35         | -6         | 18         | 0          | 21          | 11          | 21         | -3         |
| 300 | 50         | -13        | 25         | -1         | 35          | 16          | 30         | -6         |
| 200 | 49         | -15        | 28         | -3         | 44          | 21          | 33         | -9         |
| 150 | 39         | -11        | 24         | 0          | 39          | 16          | 32         | -6         |
| 100 | 30         | -9         | 18         | 2          | 14          | 6           | 23         | -4         |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#51 Great Falls (47°N, 111°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 15         | 7          | 10         | 3          | 6           | 2           | 15         | 6          |
| 700 | 27         | -5         | 12         | -3         | 13          | 2           | 18         | -4         |
| 500 | 36         | -11        | 18         | -1         | 27          | 6           | 28         | -6         |
| 300 | 52         | -17        | 26         | 1          | 42          | 8           | 40         | -9         |
| 200 | 47         | -15        | 25         | 1          | 33          | 10          | 39         | -9         |
| 150 | 41         | -11        | 22         | 1          | 42          | 7           | 36         | -6         |
| 100 | 31         | -9         | 16         | 2          | 17          | 3           | 24         | -3         |

#54 Rapid City (44°N, 103°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 11         | -7         | 7          | -5         | 4           | 2           | 9          | -8         |
| 700 | 22         | -12        | 12         | -5         | 14          | -2          | 14         | -8         |
| 500 | 35         | -13        | 21         | 0          | 22          | -3          | 26         | -7         |
| 300 | 50         | -18        | 30         | 4          | 40          | -3          | 36         | -5         |
| 200 | 50         | -14        | 35         | 4          | 52          | -4          | 40         | -6         |
| 150 | 46         | -9         | 32         | 3          | 43          | -4          | 36         | -4         |
| 100 | 35         | -8         | 23         | 2          | 16          | -3          | 24         | -4         |

#52 Bismark (47°N, 101°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 12         | -8         | 4          | -3         | 7           | -1          | 10         | -7         |
| 700 | 22         | -11        | 11         | -5         | 16          | -5          | 18         | -9         |
| 500 | 36         | -15        | 22         | -3         | 28          | -7          | 28         | -8         |
| 300 | 52         | -18        | 31         | 0          | 43          | -8          | 38         | -7         |
| 200 | 49         | -15        | 34         | 2          | 54          | -7          | 44         | -7         |
| 150 | 46         | -12        | 28         | 0          | 44          | -7          | 38         | -5         |
| 100 | 37         | -11        | 22         | -1         | 18          | -5          | 26         | -6         |

#55 International Falls (49°N, 93°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 12         | -5         | 4          | -2         | 11          | -2          | 11         | -2         |
| 700 | 20         | -9         | 11         | -4         | 16          | -6          | 18         | -4         |
| 500 | 32         | -12        | 22         | -5         | 26          | -10         | 28         | -6         |
| 300 | 47         | -15        | 35         | -5         | 41          | -14         | 41         | -8         |
| 200 | 46         | -13        | 34         | -3         | 50          | -14         | 44         | -6         |
| 150 | 43         | -10        | 29         | -3         | 38          | -12         | 36         | -5         |
| 100 | 37         | -11        | 22         | -3         | 19          | -8          | 25         | -5         |

#53 North Platte (41°N, 101°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 11         | -7         | 5          | -2         | 5           | 6           | 7          | -4         |
| 700 | 21         | -10        | 14         | -3         | 8           | 0           | 14         | -6         |
| 500 | 34         | -11        | 24         | 2          | 16          | -6          | 23         | -4         |
| 300 | 47         | -13        | 38         | 7          | 34          | -7          | 33         | -4         |
| 200 | 56         | -10        | 44         | 10         | 42          | -8          | 41         | -4         |
| 150 | 51         | -7         | 39         | 5          | 36          | -10         | 39         | -4         |
| 100 | 35         | -7         | 27         | 2          | 12          | -4          | 24         | -3         |

#56 Saulte Ste Marie (46°N, 84°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 13         | -3         | 7          | -1         | 11          | -2          | 13         | 1          |
| 700 | 22         | -4         | 14         | -3         | 18          | -4          | 20         | 1          |
| 500 | 35         | -5         | 26         | -6         | 28          | -7          | 30         | 0          |
| 300 | 54         | -4         | 42         | -7         | 38          | -11         | 43         | -2         |
| 200 | 55         | -3         | 45         | -5         | 46          | -15         | 46         | -2         |
| 150 | 50         | -4         | 35         | -5         | 34          | -12         | 40         | -2         |
| 100 | 44         | -4         | 25         | -4         | 17          | -6          | 27         | -2         |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#57 St. Cloud (46°N, 94°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 13         | -6         | 5          | -2         | 10          | -2          | 12         | -2         |
| 700 | 22         | -10        | 14         | -3         | 15          | -6          | 19         | -5         |
| 500 | 36         | -14        | 23         | -4         | 25          | -10         | 29         | -3         |
| 300 | 53         | -15        | 36         | -2         | 40          | -13         | 40         | -5         |
| 200 | 52         | -11        | 41         | 0          | 50          | -13         | 44         | -4         |
| 150 | 47         | -10        | 34         | -2         | 40          | -14         | 40         | -4         |
| 100 | 38         | -9         | 23         | -1         | 17          | -8          | 26         | -4         |

#60 Nantucket (41°N, 70°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 19         | -5         | 12         | -6         | 10          | 1           | 13         | 0          |
| 700 | 32         | -2         | 22         | -6         | 17          | 1           | 21         | 2          |
| 500 | 50         | 0          | 34         | -8         | 25          | 4           | 32         | 6          |
| 300 | 73         | 3          | 50         | -11        | 37          | 8           | 46         | 9          |
| 200 | 74         | -1         | 51         | -12        | 42          | 4           | 51         | 5          |
| 150 | 62         | 1          | 42         | -8         | 33          | 0           | 44         | 4          |
| 100 | 47         | 1          | 31         | -6         | 15          | -1          | 31         | 4          |

#58 Buffalo (43°N, 79°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 20         | 1          | 13         | -1         | 12          | -1          | 15         | 2          |
| 700 | 31         | -2         | 22         | -4         | 17          | -1          | 21         | 1          |
| 500 | 48         | -2         | 33         | -7         | 25          | -1          | 31         | 1          |
| 300 | 63         | 2          | 48         | -9         | 35          | -2          | 43         | 3          |
| 200 | 62         | -1         | 49         | -9         | 42          | -7          | 47         | 2          |
| 150 | 53         | -1         | 39         | -6         | 32          | -5          | 41         | 2          |
| 100 | 43         | -1         | 27         | -3         | 17          | -3          | 29         | 1          |

#61 Oakland (38°N, 122°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 7          | 0          | 6          | -4         | 5           | 0           | 2          | -2         |
| 700 | 15         | -3         | 10         | -5         | 4           | 6           | 6          | -2         |
| 500 | 28         | -6         | 20         | -10        | 9           | 8           | 15         | -5         |
| 300 | 41         | -11        | 33         | -14        | 19          | 14          | 22         | -8         |
| 200 | 47         | -14        | 39         | -12        | 24          | 22          | 29         | -9         |
| 150 | 42         | -12        | 36         | -6         | 24          | 22          | 29         | -6         |
| 100 | 28         | -9         | 25         | -1         | 6           | 7           | 21         | -4         |

#59 Caribou (47°N, 68°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 14         | -6         | 8          | -6         | 12          | 0           | 14         | -3         |
| 700 | 23         | -4         | 14         | -6         | 19          | 1           | 22         | -2         |
| 500 | 38         | 0          | 24         | -6         | 30          | 3           | 35         | 1          |
| 300 | 57         | 5          | 36         | -6         | 43          | 8           | 48         | 5          |
| 200 | 56         | 3          | 36         | -5         | 46          | 5           | 50         | 2          |
| 150 | 50         | 4          | 29         | -3         | 36          | 5           | 43         | 1          |
| 100 | 42         | 4          | 21         | -1         | 16          | 2           | 29         | 1          |

#62 San Diego (33°N, 117°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 4          | -3         | 7          | -3         | 4           | -2          | 2          | -2         |
| 700 | 12         | -5         | 13         | -2         | 2           | 7           | 5          | -1         |
| 500 | 22         | -8         | 27         | -2         | 2           | 7           | 14         | -2         |
| 300 | 36         | -11        | 42         | 1          | 9           | 14          | 28         | -2         |
| 200 | 49         | -9         | 52         | 3          | 10          | 22          | 37         | -1         |
| 150 | 47         | -6         | 50         | 6          | 9           | 20          | 36         | 1          |
| 100 | 33         | -4         | 34         | 6          | -3          | 5           | 20         | -2         |

\*Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#63 Ely (39°N, 115°W)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | -   | -   | -   | -   | -    | -   | -   | -   |
| 700 | 11  | -2  | 7   | -1  | 6    | 7   | 5   | 0   |
| 500 | 27  | -10 | 19  | 0   | 10   | 10  | 16  | -4  |
| 300 | 37  | -16 | 29  | -1  | 26   | 16  | 23  | -4  |
| 200 | 44  | -16 | 34  | -2  | 36   | 24  | 28  | -6  |
| 150 | 42  | -12 | 31  | 1   | 31   | 17  | 28  | -3  |
| 100 | 29  | -9  | 21  | 3   | 6    | 6   | 18  | -3  |

#66 Oklahoma City (35°N, 98°W)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 13  | 1   | 12  | 7   | 8    | 9   | 9   | 5   |
| 700 | 23  | -1  | 20  | 4   | 3    | 1   | 12  | 0   |
| 500 | 42  | 1   | 33  | 6   | 4    | -3  | 21  | 1   |
| 300 | 61  | 2   | 55  | 14  | 8    | -11 | 38  | 3   |
| 200 | 76  | 1   | 66  | 14  | 10   | -16 | 50  | 3   |
| 150 | 68  | 1   | 58  | 8   | 8    | -14 | 45  | 1   |
| 100 | 51  | 0   | 39  | 4   | -3   | -6  | 27  | 0   |

#64 Grand Junction (39°N, 109°W)

|     |    |     |    |   |     |    |    |    |
|-----|----|-----|----|---|-----|----|----|----|
| 850 | -4 | 2   | -5 | 3 | -15 | -1 | -5 | 3  |
| 700 | 12 | 1   | 9  | 4 | 6   | 0  | 7  | 1  |
| 500 | 28 | -9  | 21 | 6 | 18  | 19 | 17 | -2 |
| 300 | 43 | -15 | 36 | 5 | 22  | -6 | 30 | -3 |
| 200 | 47 | -16 | 40 | 5 | 31  | 10 | 36 | -3 |
| 150 | 42 | -10 | 35 | 6 | 25  | 10 | 33 | -2 |
| 100 | 30 | -6  | 25 | 6 | 4   | -1 | 21 | -2 |

#67 Columbia (39°N, 92°W)

|     |    |    |    |   |    |     |    |    |
|-----|----|----|----|---|----|-----|----|----|
| 850 | 16 | -2 | 16 | 3 | 10 | 0   | 14 | -2 |
| 700 | 24 | -5 | 23 | 0 | 10 | -4  | 18 | -4 |
| 500 | 40 | -4 | 37 | 2 | 13 | -8  | 28 | -3 |
| 300 | 58 | -4 | 55 | 7 | 20 | 18  | 39 | -6 |
| 200 | 62 | -4 | 65 | 8 | 24 | -22 | 47 | -5 |
| 150 | 56 | -3 | 54 | 2 | 20 | -20 | 44 | -4 |
| 100 | 42 | -4 | 33 | 1 | 6  | -10 | 28 | -2 |

#65 El Paso (32°N, 106°W)

|     |    |    |    |    |     |    |    |   |
|-----|----|----|----|----|-----|----|----|---|
| 850 | -4 | -3 | 6  | -2 | -2  | 3  | 1  | 1 |
| 700 | 18 | -1 | 18 | 6  | -2  | 3  | 9  | 3 |
| 500 | 29 | -2 | 34 | 12 | -7  | 0  | 18 | 3 |
| 300 | 48 | 1  | 54 | 17 | -4  | -1 | 31 | 4 |
| 200 | 59 | 1  | 60 | 15 | -3  | -3 | 44 | 5 |
| 150 | 54 | 1  | 60 | 14 | -4  | -2 | 42 | 4 |
| 100 | 39 | 0  | 40 | 9  | -10 | -2 | 23 | 0 |

#68 Dayton (40°N, 84°W)

|     |    |   |    |    |    |     |    |   |
|-----|----|---|----|----|----|-----|----|---|
| 850 | 20 | 0 | 15 | 1  | 10 | -1  | 12 | 1 |
| 700 | 31 | 0 | 23 | -1 | 14 | -2  | 18 | 1 |
| 500 | 48 | 2 | 36 | -2 | 18 | -3  | 27 | 2 |
| 300 | 71 | 7 | 54 | -3 | 28 | -7  | 41 | 2 |
| 200 | 76 | 4 | 61 | -4 | 35 | -12 | 49 | 2 |
| 150 | 66 | 4 | 50 | -5 | 26 | -11 | 43 | 0 |
| 100 | 50 | 2 | 35 | -3 | 12 | -6  | 28 | 0 |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#70 Brownsville (26°N, 97°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 3          | 8          | 0          | 16         | -4          | 16          | -2         | 3          |
| 700 | 13         | 6          | 9          | 8          | -6          | 6           | 2          | -1         |
| 500 | 30         | 8          | 23         | 4          | -6          | 0           | 9          | 1          |
| 300 | 56         | 16         | 50         | 7          | -8          | -6          | 27         | 4          |
| 200 | 68         | 17         | 67         | 9          | -11         | -7          | 39         | 3          |
| 150 | 62         | 17         | 63         | 12         | -13         | -9          | 34         | 4          |
| 100 | 42         | 11         | 36         | 9          | -19         | -7          | 16         | 0          |

#74 Washington (Dulles) (39°N, 77°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 18         | -6         | 14         | -4         | 7           | -2          | 9          | -2         |
| 700 | 31         | -1         | 22         | -5         | 14          | 0           | 16         | 0          |
| 500 | 51         | 2          | 36         | -5         | 20          | 2           | 26         | 2          |
| 300 | 77         | 6          | 56         | -9         | 30          | 1           | 39         | 4          |
| 200 | 83         | 2          | 62         | -14        | 34          | -4          | 49         | 3          |
| 150 | 70         | 2          | 51         | -10        | 26          | -4          | 43         | 3          |
| 100 | 52         | 2          | 34         | -5         | 11          | -3          | 28         | 2          |

#71 Nashville (36°N, 87°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 16         | 0          | 14         | 3          | 8           | 0           | 8          | 1          |
| 700 | 29         | 0          | 22         | 1          | 9           | -1          | 13         | 0          |
| 500 | 48         | 3          | 38         | 1          | 11          | -3          | 23         | 1          |
| 300 | 70         | 9          | 56         | 0          | 17          | -8          | 38         | 0          |
| 200 | 80         | 9          | 69         | -2         | 20          | -11         | 50         | 0          |
| 150 | 70         | 5          | 60         | -2         | 14          | -13         | 46         | 0          |
| 100 | 52         | 3          | 33         | 3          | 2           | -6          | 27         | 0          |

#75 Cape Hatteras (35°N, 76°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 19         | 1          | 13         | -3         | 8           | 2           | 4          | 0          |
| 700 | 33         | 2          | 23         | -3         | 12          | 3           | 11         | 2          |
| 500 | 54         | 4          | 37         | -6         | 14          | 3           | 22         | 3          |
| 300 | 77         | 9          | 55         | -10        | 15          | 2           | 36         | 6          |
| 200 | 88         | 3          | 63         | -18        | 17          | -4          | 48         | 3          |
| 150 | 72         | 2          | 57         | -12        | 12          | -6          | 43         | 0          |
| 100 | 58         | 2          | 40         | -7         | 1           | -3          | 26         | 0          |

#72 Shreveport (32°N, 94°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 13         | 2          | 10         | 9          | 3           | 4           | 4          | 1          |
| 700 | 23         | 1          | 19         | 3          | 1           | 1           | 9          | -1         |
| 500 | 41         | 4          | 34         | 5          | 0           | -3          | 19         | 0          |
| 300 | 62         | 10         | 57         | 8          | -2          | -10         | 35         | 1          |
| 200 | 77         | 10         | 72         | 6          | -2          | -13         | 47         | 0          |
| 150 | 67         | 7          | 66         | 5          | -4          | -13         | 44         | 0          |
| 100 | 50         | 4          | 43         | 4          | -9          | -6          | 24         | 0          |

#76 Charleston (33°N, 80°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 17         | 3          | 12         | -1         | 7           | 3           | 2          | 0          |
| 700 | 29         | 3          | 20         | -2         | 8           | 2           | 10         | 1          |
| 500 | 48         | 4          | 35         | -5         | 8           | 2           | 19         | 2          |
| 300 | 74         | 8          | 51         | -8         | 7           | 0           | 33         | 1          |
| 200 | 87         | 8          | 64         | -13        | 6           | -5          | 45         | 1          |
| 150 | 79         | 6          | 57         | -11        | 2           | -7          | 41         | 0          |
| 100 | 56         | 5          | 40         | -6         | -4          | -4          | 24         | -1         |

\*Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#77 Miami (26°N, 80°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 3              | -1             | -5              | -4             |
| 700 | 12             | 6              | -4              | 2              |
| 500 | 28             | 4              | -2              | 8              |
| 300 | 49             | 5              | -6              | 21             |
| 200 | 63             | 7              | -9              | 32             |
| 150 | 59             | 8              | -12             | 29             |
| 100 | 42             | 5              | -10             | 11             |

#85 Grand Cayman (19°N, 81°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -9             | -10            | -16             | -8             |
| 700 | -3             | -4             | -12             | -4             |
| 500 | 7              | 6              | -7              | -3             |
| 300 | 24             | 24             | -1              | -4             |
| 200 | 36             | 36             | 6               | -7             |
| 150 | 34             | 32             | 4               | -8             |
| 100 | 16             | 14             | -14             | 0              |

#81 Merida (21°N, 90°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -4             | -9             | -13             | -5             |
| 700 | 2              | -3             | -11             | -4             |
| 500 | 15             | 8              | -8              | 0              |
| 300 | 30             | 10             | -1              | 10             |
| 200 | 36             | 9              | 3               | 14             |
| 150 | 36             | 13             | 0               | 13             |
| 100 | 21             | 8              | -14             | 3              |

#86 Swan Island (17°N, 84°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -10            | -12            | -21             | -7             |
| 700 | -6             | -6             | -18             | -6             |
| 500 | 3              | 2              | -10             | -5             |
| 300 | 23             | 19             | 0               | -3             |
| 200 | 33             | 30             | 0               | -4             |
| 150 | 30             | 29             | 8               | -7             |
| 100 | 16             | 10             | -14             | -4             |

#84 Juliana Airfield (18°N, 63°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -13            | -9             | -18             | -9             |
| 700 | -8             | -2             | -14             | -6             |
| 500 | -1             | 8              | -8              | -3             |
| 300 | 18             | 31             | 5               | 1              |
| 200 | 31             | 43             | 11              | 7              |
| 150 | 25             | 36             | 9               | 10             |
| 100 | 9              | 18             | -9              | 2              |

#87 Kingston (18°N, 77°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -13            | -11            | -22             | -12            |
| 700 | -7             | -6             | -15             | -7             |
| 500 | 3              | 5              | -8              | -4             |
| 300 | 25             | 24             | 3               | 0              |
| 200 | 39             | 37             | 13              | 7              |
| 150 | 36             | 36             | 11              | -6             |
| 100 | 15             | 15             | -9              | -1             |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#88 San Juan (18°N, 66°W)

| mb      | JAN     | APR     | JULY    | OCT     |
|---------|---------|---------|---------|---------|
| E/W N/S | E/W N/S | E/W N/S | E/W N/S | E/W N/S |
| 850     | -13     | -9      | -18     | -10     |
| 700     | -8      | -3      | -14     | -6      |
| 500     | 1       | 8       | -8      | -3      |
| 300     | 24      | 32      | 4       | 2       |
| 200     | 39      | 47      | 11      | 8       |
| 150     | 35      | 44      | 9       | 11      |
| 100     | 15      | 22      | -9      | 2       |

#115 Nord (82°N, 17°W)

| mb      | JAN     | APR     | JULY    | OCT     |
|---------|---------|---------|---------|---------|
| E/W N/S | E/W N/S | E/W N/S | E/W N/S | E/W N/S |
| 850     | 5       | 3       | 3       | 4       |
| 700     | 8       | 4       | 3       | 6       |
| 500     | 14      | 10      | 3       | 9       |
| 300     | 15      | 15      | 5       | 15      |
| 200     | 15      | 14      | 2       | 16      |
| 150     | 16      | 13      | 1       | 18      |
| 100     | 14      | 13      | -1      | 18      |

#89 Raizet (16°N, 62°W)

| mb      | JAN     | APR     | JULY    | OCT     |
|---------|---------|---------|---------|---------|
| E/W N/S | E/W N/S | E/W N/S | E/W N/S | E/W N/S |
| 850     | -16     | -12     | -18     | -11     |
| 700     | -10     | -4      | -18     | -9      |
| 500     | 0       | 7       | -9      | -3      |
| 300     | 18      | 30      | 1       | 5       |
| 200     | 28      | 44      | 10      | 7       |
| 150     | 25      | 38      | 9       | 10      |
| 100     | 7       | 17      | -12     | 4       |

#122 Keflavik (64°N, 23°W)

| mb      | JAN     | APR     | JULY    | OCT     |
|---------|---------|---------|---------|---------|
| E/W N/S | E/W N/S | E/W N/S | E/W N/S | E/W N/S |
| 850     | -2      | 8       | 5       | 0       |
| 700     | 4       | 9       | 5       | 7       |
| 500     | 9       | 10      | 10      | 16      |
| 300     | 18      | 12      | 17      | 27      |
| 200     | 21      | 12      | 16      | 28      |
| 150     | 24      | 11      | 12      | 24      |
| 100     | 28      | 9       | 5       | 20      |

#90 Dr. A. Plesman AP (12°N, 65°W)

| mb      | JAN     | APR     | JULY    | OCT     |
|---------|---------|---------|---------|---------|
| E/W N/S | E/W N/S | E/W N/S | E/W N/S | E/W N/S |
| 850     | -18     | -15     | -20     | -12     |
| 700     | -12     | -6      | -19     | -10     |
| 500     | -6      | 0       | -14     | -6      |
| 300     | 13      | 15      | -2      | 3       |
| 200     | 28      | 23      | 7       | 11      |
| 150     | 23      | 24      | 10      | 14      |
| 100     | 7       | 11      | -6      | 6       |

#124 Jan Mayen (71°N, 8°W)

| mb      | JAN     | APR     | JULY    | OCT     |
|---------|---------|---------|---------|---------|
| E/W N/S | E/W N/S | E/W N/S | E/W N/S | E/W N/S |
| 850     | 2       | 2       | 0       | 3       |
| 700     | 6       | 3       | 2       | 10      |
| 500     | 14      | 14      | 4       | 19      |
| 300     | 25      | 1       | 7       | 28      |
| 200     | 28      | 0       | 6       | 29      |
| 150     | 31      | -1      | 5       | 28      |
| 100     | 36      | -2      | 2       | 27      |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#125 Bjornoya (75°N, 19°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 6              | 2              | 4               | 3              |
| 700 | 12             | 6              | 7               | 11             |
| 500 | 20             | 13             | 10              | 17             |
| 300 | 27             | 18             | 14              | 26             |
| 200 | 28             | 19             | 11              | 26             |
| 150 | 29             | 19             | 7               | 26             |
| 100 | 31             | 18             | 4               | 26             |

#128 Lerwick (60°N, 1°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 6              | 5              | 9               | 12             |
| 700 | 10             | 9              | 12              | 18             |
| 500 | 16             | 13             | 16              | 26             |
| 300 | 25             | 19             | 23              | 38             |
| 200 | 28             | 17             | 20              | 36             |
| 150 | 28             | 14             | 14              | 30             |
| 100 | 31             | 12             | 7               | 23             |

#126 Valentia Observatory (52°N, 10°W)

|     |    |    |    |     |    |    |    |   |
|-----|----|----|----|-----|----|----|----|---|
| 850 | 11 | 12 | 10 | -2  | 10 | 0  | 10 | 7 |
| 700 | 15 | 7  | 11 | -4  | 15 | -1 | 15 | 7 |
| 500 | 20 | 6  | 15 | -7  | 20 | -2 | 20 | 7 |
| 300 | 29 | 2  | 21 | -12 | 28 | -5 | 28 | 7 |
| 200 | 28 | 2  | 20 | -11 | 27 | -6 | 28 | 3 |
| 150 | 24 | 1  | 14 | -8  | 20 | -3 | 23 | 2 |
| 100 | 24 | 0  | 8  | -7  | 12 | 0  | 15 | 1 |

#129 Crawley (51°N, 0°W)

|     |    |     |    |     |    |    |    |    |
|-----|----|-----|----|-----|----|----|----|----|
| 850 | 8  | 2   | 6  | -3  | 8  | 0  | 8  | 3  |
| 700 | 12 | 0   | 10 | -3  | 12 | 0  | 12 | 3  |
| 500 | 16 | -3  | 15 | -6  | 18 | -1 | 17 | 3  |
| 300 | 23 | -8  | 21 | -9  | 26 | -1 | 23 | 2  |
| 200 | 26 | -10 | 18 | -10 | 26 | -2 | 24 | -1 |
| 150 | 24 | -8  | 14 | -7  | 21 | 0  | 21 | -4 |
| 100 | 24 | -8  | 11 | -5  | 11 | 1  | 16 | -4 |

#127 Long Kesh (54°N, 6°W)

|     |    |    |    |     |    |    |    |   |
|-----|----|----|----|-----|----|----|----|---|
| 850 | 9  | 6  | 7  | -3  | 12 | 0  | 13 | 5 |
| 700 | 12 | 5  | 9  | -4  | 14 | 0  | 17 | 6 |
| 500 | 17 | 2  | 14 | -7  | 20 | -1 | 23 | 6 |
| 300 | 26 | 0  | 20 | -11 | 28 | -3 | 32 | 5 |
| 200 | 29 | -2 | 18 | -10 | 26 | -2 | 33 | 3 |
| 150 | 27 | -1 | 14 | -8  | 20 | 0  | 26 | 1 |
| 100 | 27 | -3 | 10 | -6  | 10 | 1  | 19 | 0 |

#130 Jaegersborg (56°N, 13°E)

|     |    |     |    |    |    |   |    |     |
|-----|----|-----|----|----|----|---|----|-----|
| 850 | 5  | 2   | 6  | 0  | 9  | 2 | 22 | -5  |
| 700 | 8  | -1  | 9  | 0  | 10 | 4 | 18 | -2  |
| 500 | 11 | -4  | 14 | 0  | 14 | 4 | 24 | -6  |
| 300 | 17 | -9  | 20 | -2 | 20 | 5 | 32 | -11 |
| 200 | 20 | -11 | 16 | -3 | 20 | 4 | 31 | -11 |
| 150 | 21 | -11 | 13 | -2 | 14 | 4 | 25 | -8  |
| 100 | 23 | -11 | 10 | -2 | 7  | 4 | 19 | -6  |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#131 Bodo (67°N, 14°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 8              | 3              | 7               | 12             |
| 700 | 14             | 9              | 9               | 18             |
| 500 | 19             | 14             | 12              | 27             |
| 300 | 27             | 18             | 16              | 36             |
| 200 | 28             | 18             | 13              | 34             |
| 150 | 31             | 18             | 10              | 31             |
| 100 | 37             | 18             | 5               | 30             |

#136 Stockholm (59°N, 18°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 5              | 3              | 6               | 14             |
| 700 | 7              | 7              | 7               | 19             |
| 500 | 13             | 13             | 12              | 27             |
| 300 | 19             | 20             | 20              | 39             |
| 200 | 21             | 17             | 17              | 36             |
| 150 | 23             | 14             | 13              | 30             |
| 100 | 27             | 13             | 6               | 23             |

#132 Orlandet (64°N, 10°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 9              | 3              | 8               | 15             |
| 700 | 13             | 9              | 10              | 19             |
| 500 | 17             | 12             | 12              | 27             |
| 300 | 22             | 14             | 17              | 32             |
| 200 | 24             | 16             | 14              | 30             |
| 150 | 26             | 15             | 11              | 28             |
| 100 | 30             | 14             | 7               | 26             |

#137 Göteborg (58°N, 12°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 4              | 3              | 7               | 13             |
| 700 | 6              | 8              | 10              | 17             |
| 500 | 11             | 13             | 13              | 24             |
| 300 | 17             | 20             | 18              | 32             |
| 200 | 20             | 17             | 24              | 31             |
| 150 | 21             | 14             | 12              | 25             |
| 100 | 25             | 10             | 6               | 20             |

#133 Oslo/Gardermoen (60°N, 11°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 4              | 1              | 2               | 10             |
| 700 | 8              | 5              | 6               | 16             |
| 500 | 15             | 11             | 12              | 24             |
| 300 | 24             | 17             | 19              | 36             |
| 200 | 25             | 15             | 18              | 35             |
| 150 | 25             | 14             | 13              | 30             |
| 100 | 26             | 13             | 8               | 26             |

#138 Sodankylä (67°N, 27°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 10             | 1              | 4               | 8              |
| 700 | 12             | 4              | 7               | 12             |
| 500 | 18             | 8              | 10              | 20             |
| 300 | 23             | 15             | 14              | 30             |
| 200 | 27             | 22             | 13              | 30             |
| 150 | 28             | 20             | 9               | 28             |
| 100 | 33             | 18             | 5               | 26             |

\*Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#140 Jokioinen (61°N, 23°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 6          | 1          | 4          | 3          | 4           | 3           | 12         | -3         |
| 700 | 10         | -2         | 8          | 3          | 5           | 2           | 15         | -5         |
| 500 | 14         | -6         | 14         | 4          | 9           | 3           | 22         | -9         |
| 300 | 21         | -13        | 20         | 6          | 15          | 6           | 28         | -13        |
| 200 | 23         | -14        | 18         | 2          | 14          | 4           | 29         | -15        |
| 150 | 25         | -14        | 16         | 1          | 10          | 3           | 27         | -14        |
| 100 | 29         | -17        | 14         | -1         | 4           | 2           | 24         | -11        |

#144 Nancy (49°N, 6°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 8          | 2          | 7          | 2          | 8           | 2           | 7          | 4          |
| 700 | 10         | -2         | 10         | 1          | 12          | 2           | 10         | 2          |
| 500 | 14         | -7         | 13         | -2         | 17          | 1           | 14         | 0          |
| 300 | 19         | -12        | 19         | -5         | 23          | 0           | 17         | -2         |
| 200 | 21         | -12        | 17         | -4         | 26          | 0           | 18         | -4         |
| 150 | 21         | -11        | 16         | -2         | 22          | 1           | 18         | -4         |
| 100 | 22         | -9         | 12         | 0          | 12          | 3           | 14         | -3         |

#141 Brest/Guipavas (48°N, 4°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 11         | 4          | 6          | -2         | 6           | -2          | 7          | 5          |
| 700 | 15         | 1          | 10         | -3         | 11          | -1          | 10         | 4          |
| 500 | 20         | -1         | 14         | -7         | 18          | -1          | 15         | 4          |
| 300 | 30         | -6         | 20         | -12        | 26          | -2          | 17         | 4          |
| 200 | 30         | -8         | 20         | -12        | 29          | -2          | 21         | -3         |
| 150 | 26         | -6         | 16         | -7         | 24          | 0           | 18         | -2         |
| 100 | 23         | -6         | 12         | -5         | 13          | 1           | 13         | -2         |

#145 Trappes (49°N, 2°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 8          | 3          | 7          | -1         | 6           | 0           | 7          | 3          |
| 700 | 11         | 0          | 10         | -1         | 12          | 1           | 10         | 3          |
| 500 | 17         | -4         | 15         | -4         | 18          | 0           | 15         | 2          |
| 300 | 23         | -9         | 22         | -9         | 25          | -1          | 17         | 0          |
| 200 | 25         | -10        | 20         | -7         | 27          | -2          | 19         | -3         |
| 150 | 24         | -8         | 16         | -4         | 23          | 0           | 18         | -2         |
| 100 | 23         | -7         | 13         | -3         | 14          | 1           | 14         | -2         |

#142 Bordeaux/Mérignac (45°N, 1°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 11         | -1         | 8          | -1         | 6           | 1           | 6          | 3          |
| 700 | 13         | -4         | 10         | -3         | 13          | 1           | 7          | 2          |
| 500 | 18         | -7         | 14         | -5         | 19          | 0           | 10         | 1          |
| 300 | 25         | -13        | 20         | -10        | 27          | 0           | 13         | -1         |
| 200 | 27         | -14        | 22         | -10        | 33          | 0           | 14         | -4         |
| 150 | 26         | -11        | 19         | -5         | 30          | 1           | 14         | -3         |
| 100 | 22         | -8         | 14         | -3         | 17          | 2           | 12         | -2         |

#146 Nîmes (44°N, 4°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 1          | -6         | 1          | -8         | 2           | -7          | -2         | -2         |
| 700 | 8          | -7         | 7          | -6         | 10          | -4          | 3          | 0          |
| 500 | 13         | -11        | 14         | -8         | 18          | -4          | 8          | -2         |
| 300 | 20         | -19        | 20         | -8         | 26          | -4          | 12         | -5         |
| 200 | 22         | -18        | 22         | -6         | 33          | -4          | 14         | -6         |
| 150 | 22         | -14        | 20         | -4         | 28          | -1          | 14         | -5         |
| 100 | 20         | -11        | 14         | -2         | 12          | 0           | 11         | -3         |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#148 DeBilt (52°N, 5°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 8          | 2          | 7          | 0          | 6           | 2           | 9          | 2          |
| 700 | 10         | -1         | 10         | 1          | 12          | 2           | 13         | 2          |
| 500 | 14         | -3         | 17         | -3         | 18          | 1           | 19         | 0          |
| 300 | 20         | -11        | 21         | -6         | 24          | 1           | 25         | -2         |
| 200 | 22         | -13        | 20         | -5         | 24          | 1           | 26         | -4         |
| 150 | 23         | -11        | 18         | -4         | 19          | 1           | 23         | -4         |
| 100 | 23         | -10        | 13         | -4         | 10          | 2           | 18         | -3         |

#149 Payerne (47°N, 7°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 5          | 4          | 4          | 2          | 3           | 1           | 3          | 2          |
| 700 | 8          | 0          | 8          | 2          | 9           | 4           | 6          | 3          |
| 500 | 13         | -9         | 13         | -2         | 15          | -2          | 9          | -1         |
| 300 | 19         | -15        | 19         | -5         | 22          | -1          | 10         | -3         |
| 200 | 21         | -14        | 20         | -5         | 26          | -2          | 12         | -5         |
| 150 | 21         | -13        | 18         | -3         | 25          | 0           | 13         | -5         |
| 100 | 22         | -12        | 14         | -2         | 15          | 1           | 12         | -4         |

#151 Stuttgart/Cannstatt (49°N, 9°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 8          | 1          | 7          | 0          | 6           | 1           | 6          | 2          |
| 700 | 10         | -2         | 11         | 1          | 12          | 2           | 9          | 1          |
| 500 | 13         | -7         | 14         | 0          | 15          | 0           | 13         | -1         |
| 300 | 17         | -12        | 19         | -2         | 21          | 0           | 15         | -5         |
| 200 | 20         | -14        | 18         | -3         | 23          | -1          | 17         | -6         |
| 150 | 20         | -12        | 15         | -2         | 20          | 1           | 16         | -5         |
| 100 | 21         | -10        | 13         | -1         | 10          | 2           | 13         | -4         |

#152 Muenchen/Riem (48°N, 12°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 9          | 1          | 8          | -1         | 8           | -1          | 7          | 1          |
| 700 | 12         | -3         | 12         | 0          | 12          | -1          | 10         | -2         |
| 500 | 14         | -6         | 15         | 0          | 14          | -1          | 11         | -3         |
| 300 | 18         | -10        | 21         | 0          | 20          | -1          | 14         | -7         |
| 200 | 17         | -13        | 21         | -3         | 24          | -2          | 15         | -9         |
| 150 | 18         | -13        | 17         | -2         | 21          | 0           | 16         | -7         |
| 100 | 19         | -11        | 14         | -1         | 11          | 2           | 14         | -5         |

#153 Hannover (52°N, 10°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 8          | 2          | 9          | 0          | 11          | 1           | 10         | 2          |
| 700 | 9          | -2         | 11         | -1         | 13          | 1           | 13         | 0          |
| 500 | 12         | -6         | 16         | 0          | 17          | 2           | 17         | -2         |
| 300 | 18         | -12        | 21         | -2         | 23          | 2           | 24         | -5         |
| 200 | 20         | -12        | 18         | -4         | 22          | 2           | 24         | -7         |
| 150 | 20         | -11        | 14         | -3         | 16          | 3           | 20         | -5         |
| 100 | 23         | -11        | 12         | -2         | 9           | 3           | 16         | -4         |

#154 Berlin/Tempelhof (52°N, 13°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 6          | 0          | 7          | 0          | 9           | 0           | 10         | 0          |
| 700 | 8          | -2         | 11         | 0          | 11          | 1           | 14         | -3         |
| 500 | 11         | -5         | 15         | 1          | 14          | 2           | 18         | -5         |
| 300 | 14         | -9         | 20         | 1          | 19          | 3           | 22         | -8         |
| 200 | 17         | -12        | 19         | -1         | 19          | 2           | 22         | -9         |
| 150 | 19         | -11        | 13         | -1         | 14          | 3           | 20         | -7         |
| 100 | 21         | -11        | 11         | -1         | 7           | 3           | 15         | -5         |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#153 Schleierwig (55°N, 10°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 9   | 6   | 7   | 0   | 10   | 2   | 12  | 2   |
| 700 | 7   | -1  | 10  | 0   | 12   | 2   | 16  | 0   |
| 500 | 13  | 1   | 15  | -1  | 16   | 3   | 22  | -2  |
| 300 | 16  | -6  | 20  | -3  | 23   | 5   | 31  | -6  |
| 200 | 22  | -10 | 27  | -4  | 28   | 4   | 30  | -7  |
| 150 | 18  | -9  | 15  | -3  | 15   | 4   | 24  | -5  |
| 100 | 27  | -9  | 11  | -3  | 8    | 3   | 19  | -5  |

#163 Poprad (49°N, 20°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 6   | 2   | 4   | 2   | 2    | -1  | 7   | 2   |
| 700 | 6   | -1  | 3   | 3   | 6    | -1  | 8   | -2  |
| 500 | 11  | -4  | 12  | 4   | 8    | -2  | 11  | -3  |
| 300 | 14  | -3  | 16  | 4   | 11   | -2  | 13  | -5  |
| 200 | 15  | -6  | 17  | 2   | 16   | -1  | 13  | -7  |
| 150 | 15  | -7  | 14  | 2   | 16   | 4   | 14  | -6  |
| 100 | 18  | -8  | 12  | 2   | 9    | 4   | 14  | -4  |

#156 Enden (53°N, 7°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 7   | 2   | 7   | 0   | 10   | 2   | 11  | 2   |
| 700 | 8   | -1  | 10  | -1  | 13   | 2   | 14  | 2   |
| 500 | 12  | -5  | 15  | -2  | 16   | 3   | 20  | 0   |
| 300 | 20  | -9  | 21  | -6  | 24   | 3   | 28  | -3  |
| 200 | 20  | -11 | 17  | -5  | 22   | 3   | 28  | -5  |
| 150 | 21  | -10 | 14  | -4  | 16   | 3   | 22  | -4  |
| 100 | 23  | -9  | 10  | -2  | 8    | 3   | 16  | -4  |

#164 Budapest-Loring (47°N, 19°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 5   | 0   | 4   | 0   | 3    | -3  | 6   | 0   |
| 700 | 7   | -1  | 7   | 0   | 6    | -3  | 8   | -2  |
| 500 | 10  | -4  | 12  | 2   | 9    | -3  | 10  | -5  |
| 300 | 15  | -6  | 16  | 2   | 12   | -3  | 13  | -8  |
| 200 | 20  | -10 | 20  | 0   | 19   | -2  | 15  | -10 |
| 150 | 22  | -11 | 20  | 0   | 20   | 2   | 16  | -9  |
| 100 | 24  | -10 | 18  | 0   | 15   | 6   | 17  | -7  |

#161 Wien/Hofe Warte (48°N, 16°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 7   | -1  | 6   | -3  | 6    | -8  | 7   | -2  |
| 700 | 8   | -5  | 8   | -2  | 9    | -7  | 11  | -4  |
| 500 | 10  | -4  | 12  | 2   | 11   | -4  | 12  | -4  |
| 300 | 16  | -11 | 19  | 2   | 16   | -4  | 15  | -8  |
| 200 | 17  | -12 | 18  | 0   | 23   | -2  | 17  | -10 |
| 150 | 20  | -12 | 16  | 0   | 22   | 2   | 17  | -7  |
| 100 | 22  | -11 | 14  | 0   | 11   | 4   | 14  | -5  |

#167 North Front (36°N, 5°W)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 9   | 0   | 4   | -1  | 0    | 3   | 1   | 3   |
| 700 | 14  | -3  | 11  | -1  | 14   | 8   | 10  | 3   |
| 500 | 20  | -7  | 16  | -3  | 22   | 10  | 14  | 0   |
| 300 | 30  | -13 | 30  | -4  | 31   | 7   | 22  | -1  |
| 200 | 39  | -12 | 37  | -4  | 39   | 7   | 27  | -3  |
| 150 | 38  | -9  | 36  | -2  | 34   | 7   | 24  | -3  |
| 100 | 31  | -6  | 26  | -1  | 14   | 4   | 16  | -1  |

\*Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#174 Udine/Campoformido (46°N, 13°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 0              | 4              | 0               | 0              |
| 700 | 7              | 7              | 7               | -4             |
| 500 | 14             | 16             | 18              | 5              |
| 300 | 22             | 17             | 29              | 11             |
| 200 | 25             | -17            | -6              | 15             |
| 150 | 29             | -16            | -7              | 16             |
| 100 | 28             | -14            | -2              | 18             |
|     |                | 23             | 3               | 17             |

#177 Brindisi (41°N, 18°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 6              | 7              | 7               | 3              |
| 700 | 12             | 14             | 14              | 6              |
| 500 | 24             | 27             | 29              | 16             |
| 300 | 39             | 46             | 44              | 25             |
| 200 | 49             | 53             | 63              | 30             |
| 150 | 46             | 46             | 56              | 29             |
| 100 | 40             | 34             | 27              | 24             |

#175 Milano/Linate (45°N, 9°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -1             | -1             | 1               | 0              |
| 700 | 5              | -1             | 8               | -3             |
| 500 | 14             | -3             | 20              | -6             |
| 300 | 22             | -8             | 32              | -10            |
| 200 | 29             | -7             | 43              | -10            |
| 150 | 32             | -5             | 38              | -4             |
| 100 | 27             | -2             | 19              | 0              |

#178 Cagliari/Elmas (39°N, 9°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 14             | 11             | 10              | 4              |
| 700 | 21             | 18             | 20              | 10             |
| 500 | 27             | 27             | 32              | 15             |
| 300 | 38             | 39             | 45              | 20             |
| 200 | 42             | 46             | 54              | 25             |
| 150 | 40             | 42             | 47              | 25             |
| 100 | 34             | 32             | 24              | 20             |

#176 Roma/Fiumicino (42°N, 12°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 3              | 4              | 8               | 2              |
| 700 | 9              | 12             | 13              | 6              |
| 500 | 17             | -11            | 27              | -10            |
| 300 | 26             | -20            | 41              | -11            |
| 200 | 34             | -20            | 55              | -7             |
| 150 | 37             | -18            | 50              | 1              |
| 100 | 35             | -15            | 26              | 4              |

#180 Qrendi (36°N, 14°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 11             | 9              | 6               | 5              |
| 700 | 16             | 18             | 13              | 11             |
| 500 | 24             | 31             | 21              | 16             |
| 300 | 38             | 50             | 34              | 23             |
| 200 | 50             | 62             | 46              | 29             |
| 150 | 48             | 56             | 43              | 28             |
| 100 | 38             | 38             | 20              | 22             |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#181 Zagreb (46°N, 16°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 2   | 3   | 0    | 2   |
| 700 | 5   | 6   | 5    | 4   |
| 500 | 10  | 11  | 10   | 8   |
| 300 | 16  | 17  | 16   | 11  |
| 200 | 18  | 21  | 23   | 14  |
| 150 | 21  | 20  | 22   | 15  |
| 100 | 22  | 16  | 13   | 14  |

#190 Istanbul/Goztepe (41°N, 29°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | -3  | 6   | -7   | -2  |
| 700 | 6   | 10  | 3    | 2   |
| 500 | 12  | 14  | 13   | 13  |
| 300 | 22  | 23  | 38   | 23  |
| 200 | 33  | 30  | 49   | 29  |
| 150 | 37  | 29  | 44   | 31  |
| 100 | 38  | 27  | 28   | 28  |

#182 Beograd (45°N, 21°E)

| 850 | 700 | 500 | 300 | 200 | 150 | 100 |
|-----|-----|-----|-----|-----|-----|-----|
| 6   | 7   | 10  | 19  | 22  | 24  | 24  |
| 0   | -1  | -4  | -7  | -7  | -7  | -7  |
| 4   | 8   | 12  | 20  | 23  | 21  | 18  |
| 2   | 2   | 3   | 2   | 0   | 0   | 1   |
| 3   | 6   | 10  | 15  | 24  | 25  | 16  |
| -3  | -4  | -4  | -4  | -2  | 3   | 2   |
| 3   | 5   | 8   | 11  | 14  | 15  | 16  |
| 1   | -1  | -3  | -6  | -8  | -7  | -5  |

#191 Ankara (40°N, 33°E)

| 850 | 700 | 500 | 300 | 200 | 150 | 100 |
|-----|-----|-----|-----|-----|-----|-----|
| 0   | 10  | 16  | 26  | 42  | 40  | 37  |
| 3   | 3   | 3   | 1   | 5   | 1   | -1  |
| 3   | 10  | 15  | 21  | 30  | 30  | 27  |
| 3   | 4   | 4   | 0   | 0   | -3  | 1   |
| -8  | 6   | 16  | 43  | 59  | 51  | 31  |
| -6  | -4  | 2   | 20  | 28  | 24  | 21  |
| -2  | 5   | 10  | 21  | 29  | 32  | 26  |
| 1   | 1   | 5   | 6   | 4   | 5   | 5   |

#186 Bucuresti/Baneasa (44°N, 26°E)

| 850 | 700 | 500 | 300 | 200 | 150 | 100 |
|-----|-----|-----|-----|-----|-----|-----|
| 2   | 6   | 11  | 16  | 19  | 22  | 24  |
| 0   | 0   | -1  | -2  | -4  | -5  | -7  |
| 1   | 6   | 10  | 16  | 19  | 19  | 19  |
| 0   | 1   | 2   | 2   | 3   | 0   | 1   |
| -1  | 3   | 8   | 15  | 25  | 30  | 24  |
| -3  | -4  | -4  | -4  | 3   | 6   | 8   |
| 2   | 5   | 8   | 12  | 14  | 16  | 18  |
| -2  | -3  | -6  | -6  | -9  | -8  | -6  |

#193 Murmansk (69°N, 33°E)

| 850 | 700 | 500 | 300 | 200 | 150 | 100 |
|-----|-----|-----|-----|-----|-----|-----|
| 10  | 10  | 15  | 21  | 22  | 22  | 24  |
| -2  | -4  | -8  | -11 | -13 | -13 | -14 |
| 5   | 8   | 14  | 21  | 20  | 19  | 17  |
| 0   | -1  | -2  | -3  | -4  | -5  | -6  |
| 6   | 8   | 11  | 15  | 14  | 10  | 5   |
| 1   | 2   | 3   | 3   | 4   | 3   | 3   |
| 8   | 11  | 18  | 29  | 29  | 26  | 25  |
| -2  | -3  | -5  | -8  | -9  | -9  | -8  |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#195 Leningrad (60°N, 30°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 4              | 7              | 4               | 13             |
| 700 | 6              | 11             | 6               | 17             |
| 500 | 10             | 18             | 10              | 21             |
| 300 | 16             | 28             | 16              | 32             |
| 200 | 17             | 25             | 14              | 31             |
| 150 | 19             | 19             | 11              | 27             |
| 100 | 22             | 16             | 5               | 22             |

#200 Moscow (56°N, 38°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 7              | 6              | 4               | 12             |
| 700 | 10             | 11             | 6               | 16             |
| 500 | 14             | 16             | 10              | 23             |
| 300 | 18             | 24             | 15              | 31             |
| 200 | 20             | 22             | 17              | 30             |
| 150 | 21             | 21             | 15              | 26             |
| 100 | 25             | 18             | 8               | 22             |

#198 Vologda (59°N, 40°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 7              | 7              | 2               | 10             |
| 700 | 9              | 11             | 6               | 14             |
| 500 | 13             | 17             | 17              | 18             |
| 300 | 18             | 23             | 14              | 23             |
| 200 | 18             | 23             | 14              | 24             |
| 150 | 21             | 21             | 13              | 23             |
| 100 | 24             | 22             | 7               | 20             |

#203 Kiev (50°N, 30°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 4              | 3              | 2               | 9              |
| 700 | 8              | 8              | 5               | 13             |
| 500 | 12             | 13             | 6               | 17             |
| 300 | 17             | 16             | 7               | 20             |
| 200 | 18             | 16             | 6               | 20             |
| 150 | 20             | 17             | 5               | 21             |
| 100 | 21             | 16             | 11              | 19             |

#199 Kazan (56°N, 49°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 9              | 8              | 4               | 12             |
| 700 | 11             | 12             | 8               | 15             |
| 500 | 15             | 18             | 11              | 19             |
| 300 | 19             | 25             | 15              | 24             |
| 200 | 20             | 25             | 18              | 23             |
| 150 | 21             | 23             | 17              | 22             |
| 100 | 25             | 22             | 12              | 22             |

#204 Saratov (52°N, 46°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 5              | 3              | 4               | 11             |
| 700 | 9              | 7              | 8               | 16             |
| 500 | 13             | 13             | 10              | 22             |
| 300 | 16             | 18             | 16              | 28             |
| 200 | 20             | 20             | 22              | 30             |
| 150 | 22             | 22             | 24              | 28             |
| 100 | 22             | 19             | 17              | 28             |

\*Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#212 Tobruk (32°N, 24°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 14             | -2             | 5               | 6              |
| 700 | 20             | -2             | 8               | 10             |
| 500 | 33             | -3             | 14              | 18             |
| 300 | 59             | -5             | 34              | 31             |
| 200 | 78             | -2             | 32              | 42             |
| 150 | 74             | 0              | 27              | 40             |
| 100 | 55             | 0              | 10              | 28             |

#218 Malakal (10°N, 32°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -5             | 0              | 1               | -4             |
| 700 | -4             | -4             | -4              | -10            |
| 500 | -4             | -5             | -8              | -10            |
| 300 | 6              | 1              | -15             | -7             |
| 200 | 9              | 4              | -30             | -6             |
| 150 | 9              | 3              | -33             | -5             |
| 100 | 2              | 0              | -27             | -9             |

#216 Port Sudan (20°N, 37°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 0              | -5             | 8               | -9             |
| 700 | 14             | 7              | 6               | -6             |
| 500 | 30             | 20             | -1              | 0              |
| 300 | 60             | 1              | -20             | 14             |
| 200 | 67             | 5              | -26             | 20             |
| 150 | 60             | 6              | -40             | 14             |
| 100 | 32             | 2              | -46             | 2              |

#220 Dakar-Yoff (15°N, 18°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -6             | -3             | -7              | -10            |
| 700 | -1             | 1              | -19             | -14            |
| 500 | 12             | 6              | -20             | -5             |
| 300 | 36             | 12             | 7               | 12             |
| 200 | 48             | 4              | 12              | 18             |
| 150 | 41             | 6              | -21             | 22             |
| 100 | 19             | 5              | -24             | 9              |

#217 Khartoum (16°N, 33°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -1             | -2             | 6               | -6             |
| 700 | 9              | 4              | -4              | -5             |
| 500 | 14             | 7              | -7              | -3             |
| 300 | 36             | -1             | -13             | 0              |
| 200 | 44             | 10             | -24             | 2              |
| 150 | 40             | 4              | -32             | 7              |
| 100 | 22             | 2              | -32             | 3              |

#222 Abidjan (5°N, 4°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -7             | -5             | 1               | -8             |
| 700 | -15            | -2             | -1              | -17            |
| 500 | -10            | 0              | 0               | -10            |
| 300 | 11             | 5              | -3              | -12            |
| 200 | 24             | 5              | -14             | -10            |
| 150 | 23             | 12             | -10             | -1             |
| 100 | 3              | 10             | -10             | -6             |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#226 Fort-Lamy (12°N, 15°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | -4  | -6  | -6  | -5  | 0    | -1  | -6  | -4  |
| 700 | -1  | 2   | -8  | -1  | -10  | -4  | -11 | -2  |
| 500 | 3   | 3   | -7  | 1   | -11  | -3  | -8  | -1  |
| 300 | 24  | 4   | 6   | -2  | -14  | -1  | -3  | 0   |
| 200 | 22  | 14  | 13  | 4   | -22  | -1  | -1  | 1   |
| 150 | 22  | 13  | 12  | 4   | -26  | 3   | 9   | 7   |
| 100 | 13  | 7   | 3   | 4   | -30  | 2   | -9  | 9   |

#253 Syktyvkar (62°N, 51°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 8   | -3  | 9   | 1   | 3    | -3  | 9   | 0   |
| 700 | 10  | -4  | 15  | 1   | 6    | -2  | 11  | -1  |
| 500 | 15  | -6  | 21  | -1  | 11   | -3  | 16  | -3  |
| 300 | 17  | -8  | 28  | -2  | 14   | 0   | 21  | -7  |
| 200 | 21  | -8  | 26  | -2  | 16   | -1  | 22  | -8  |
| 150 | 21  | -10 | 24  | -4  | 13   | 0   | 22  | -9  |
| 100 | 24  | -10 | 22  | -6  | 7    | 0   | 20  | -8  |

#250 Naryn-Mar (68°N, 53°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 7   | -5  | 6   | -3  | 4    | -2  | 7   | -1  |
| 700 | 9   | -8  | 10  | -3  | 6    | 2   | 10  | -3  |
| 500 | 13  | -12 | 18  | -6  | 9    | 0   | 16  | -6  |
| 300 | 15  | -14 | 26  | -8  | 13   | 2   | 19  | -8  |
| 200 | 16  | -16 | 24  | -10 | 9    | 2   | 21  | -10 |
| 150 | 18  | -17 | 20  | -11 | 6    | 1   | 21  | -10 |
| 100 | 20  | -18 | 18  | -12 | 2    | 2   | 19  | -11 |

#256 Verkhhoiansk (68°N, 133°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 0   | 1   | 2   | 1   | 0    | -3  | 6   | 1   |
| 700 | -1  | 2   | 4   | 2   | 4    | -2  | 6   | 0   |
| 500 | -1  | 4   | 9   | 3   | 7    | -4  | 11  | -2  |
| 300 | 0   | 7   | 10  | 4   | 12   | -6  | 17  | -3  |
| 200 | 2   | 10  | 8   | 3   | 10   | -6  | 16  | -2  |
| 150 | 3   | 12  | 6   | 4   | 7    | -5  | 14  | 0   |
| 100 | 9   | 18  | 7   | 7   | 5    | -5  | 14  | 1   |

#252 Turukhansk (66°N, 88°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 5   | 1   | 7   | 0   | 2    | 5   | 4   | 6   |
| 700 | 9   | -1  | 9   | -2  | 6    | 5   | 7   | 3   |
| 500 | 12  | -5  | 14  | -2  | 8    | 8   | 10  | 3   |
| 300 | 13  | -8  | 16  | -5  | 10   | 10  | 11  | 2   |
| 200 | 12  | -7  | 17  | -4  | 8    | 11  | 11  | 2   |
| 150 | 15  | -5  | 15  | -4  | 3    | 12  | 10  | 2   |
| 100 | 18  | -4  | 14  | -4  | 4    | 6   | 11  | 2   |

#257 Tura (64°N, 100°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 8   | -4  | 8   | -1  | 1    | 0   | 12  | 2   |
| 700 | 9   | -5  | 13  | -3  | 2    | 1   | 14  | 0   |
| 500 | 11  | -5  | 16  | -7  | 5    | 3   | 17  | 1   |
| 300 | 11  | -6  | 18  | -5  | 9    | 7   | 24  | -5  |
| 200 | 14  | -3  | 20  | -4  | 0    | 8   | 23  | -1  |
| 150 | 13  | -8  | 17  | -5  | 3    | 2   | 19  | -3  |
| 100 | 15  | -5  | 17  | -6  | 1    | 1   | 15  | -1  |

\*Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#258 Yakutsk (62°N, 130°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 5          | -4         | 4          | 0          | 0           | 0           | 8          | -5         |
| 700 | 4          | -4         | 6          | 0          | 0           | 0           | 10         | -5         |
| 500 | 6          | -4         | 10         | 1          | 4           | -2          | 13         | -6         |
| 300 | 6          | -2         | 13         | 2          | 12          | -6          | 19         | -6         |
| 200 | 5          | 0          | 12         | 2          | 12          | -7          | 18         | -5         |
| 150 | 8          | 3          | 11         | 3          | 8           | -6          | 17         | -4         |
| 100 | 13         | 9          | 11         | 5          | 2           | -4          | 18         | -1         |

#263 Omsk (55°N, 73°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 12         | 2          | 9          | 0          | 3           | -5          | 13         | 5          |
| 700 | 16         | 0          | 15         | -4         | 5           | -2          | 19         | 2          |
| 500 | 21         | -1         | 24         | -7         | 8           | -2          | 25         | 2          |
| 300 | 27         | -4         | 35         | -8         | 11          | -1          | 31         | 1          |
| 200 | 30         | -3         | 36         | -8         | 13          | -5          | 32         | -1         |
| 150 | 31         | -4         | 34         | -7         | 12          | -3          | 27         | 2          |
| 100 | 45         | -6         | 31         | -7         | 7           | -3          | 28         | -2         |

#259 MYS Schmidt (69°N, 179°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | -4         | 1          | -          | -4         | 3           | 0           | 4          | -4         |
| 700 | -1         | 6          | 0          | 0          | 5           | 1           | 4          | -1         |
| 500 | 4          | 11         | 4          | 1          | 6           | 1           | 7          | 2          |
| 300 | 10         | 15         | 8          | 2          | 10          | 0           | 13         | 4          |
| 200 | 12         | 11         | 9          | 6          | 6           | -1          | 14         | 5          |
| 150 | 16         | 10         | 9          | 8          | 3           | -1          | 15         | 6          |
| 100 | 23         | 11         | 11         | 12         | 1           | 0           | 17         | 7          |

#264 Kustanay (53°N, 64°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 8          | 0          | 6          | 1          | 4           | -4          | 14         | 2          |
| 700 | 12         | 0          | 11         | 0          | 7           | -3          | 20         | 2          |
| 500 | 16         | -2         | 17         | 1          | 10          | -3          | 23         | 0          |
| 300 | 22         | -5         | 26         | 1          | 13          | -3          | 29         | -1         |
| 200 | 25         | -5         | 29         | 1          | 18          | -4          | 32         | -2         |
| 150 | 28         | -4         | 24         | 0          | 20          | -7          | 29         | -2         |
| 100 | 31         | -4         | 28         | 0          | 18          | 3           | 28         | -1         |

#262 Sverdlovsk (57°N, 61°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 12         | -2         | 10         | 1          | 4           | -3          | 14         | 1          |
| 700 | 14         | -1         | 15         | 1          | 6           | -2          | 16         | 2          |
| 500 | 18         | -4         | 21         | 0          | 8           | -1          | 20         | 2          |
| 300 | 24         | -6         | 29         | 0          | 11          | 0           | 27         | 3          |
| 200 | 26         | -5         | 28         | -1         | 13          | -1          | 27         | 1          |
| 150 | 28         | -5         | 28         | -1         | 11          | -2          | 26         | -1         |
| 100 | 32         | -3         | 27         | -2         | 7           | -1          | 24         | -1         |

#265 Kolpashev (58°N, 83°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 11         | 2          | 12         | -5         | 3           | -1          | 14         | 3          |
| 700 | 14         | 0          | 16         | -8         | 5           | -2          | 18         | 2          |
| 500 | 18         | -3         | 22         | -15        | 7           | -2          | 24         | 2          |
| 300 | 22         | -6         | 32         | -18        | 9           | 0           | 30         | -3         |
| 200 | 24         | -6         | 31         | -15        | 8           | -1          | 30         | -5         |
| 150 | 28         | -6         | 30         | -15        | 6           | 0           | 27         | -5         |
| 100 | 27         | -7         | 28         | -15        | 4           | 0           | 25         | -5         |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

| #266 Krasnoyarsk (56°N, 93°E) |            |            |            |            |             |             |            |            |  |
|-------------------------------|------------|------------|------------|------------|-------------|-------------|------------|------------|--|
| mb                            | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |  |
| 850                           | 16         | 5          | 14         | 0          | 1           | 0           | 13         | 4          |  |
| 700                           | 18         | 0          | 20         | -2         | 5           | 1           | 16         | 5          |  |
| 500                           | 24         | -3         | 26         | -6         | 7           | 4           | 18         | 3          |  |
| 300                           | 27         | -8         | 33         | -10        | 8           | 10          | 28         | 4          |  |
| 200                           | 28         | -7         | 31         | -9         | 8           | 9           | 27         | 2          |  |
| 150                           | 28         | -6         | 27         | -9         | 8           | 7           | 25         | 2          |  |
| 100                           | 32         | -5         | 24         | -8         | 6           | 5           | 24         | 1          |  |

| #267 Kirensk (58°N, 108°E) |            |            |            |            |             |             |            |            |  |
|----------------------------|------------|------------|------------|------------|-------------|-------------|------------|------------|--|
| mb                         | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |  |
| 850                        | 13         | 0          | 8          | -1         | -4          | -3          | 13         | 0          |  |
| 700                        | 15         | -6         | 11         | -4         | -1          | -2          | 16         | -3         |  |
| 500                        | 18         | -12        | 14         | -8         | 1           | 0           | 21         | -6         |  |
| 300                        | 19         | -12        | 19         | -11        | 5           | 3           | 24         | -8         |  |
| 200                        | 20         | -11        | 18         | -8         | 8           | 4           | 23         | -7         |  |
| 150                        | 22         | -9         | 20         | -9         | 6           | 4           | 24         | -6         |  |
| 100                        | 26         | -6         | 20         | -7         | 4           | 1           | 22         | -4         |  |

| #268 Chita (52°N, 113°E) |            |            |            |            |             |             |            |            |  |
|--------------------------|------------|------------|------------|------------|-------------|-------------|------------|------------|--|
| mb                       | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |  |
| 850                      | 9          | -7         | 7          | -6         | 0           | -1          | 6          | -5         |  |
| 700                      | 11         | -13        | 11         | -9         | 1           | -1          | 11         | -8         |  |
| 500                      | 16         | -16        | 20         | -13        | 4           | -1          | 18         | -11        |  |
| 300                      | 22         | -20        | 29         | -15        | 10          | -1          | 27         | -10        |  |
| 200                      | 26         | -14        | 29         | -13        | 15          | 2           | 29         | -11        |  |
| 150                      | 27         | -12        | 31         | -11        | 15          | 1           | 27         | -9         |  |
| 100                      | 30         | -5         | 28         | -8         | 9           | -1          | 27         | -5         |  |

| #270 Okhotsk (59°N, 143°E) |            |            |            |            |             |             |            |            |  |
|----------------------------|------------|------------|------------|------------|-------------|-------------|------------|------------|--|
| mb                         | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |  |
| 850                        | -1         | -4         | -2         | -2         | -3          | 3           | 2          | -3         |  |
| 700                        | 0          | -3         | 2          | 0          | -1          | -2          | 6          | -3         |  |
| 500                        | 1          | 0          | 6          | 3          | 4           | -3          | 11         | -2         |  |
| 300                        | 3          | 3          | 12         | 6          | 10          | -4          | 16         | 1          |  |
| 200                        | 5          | 8          | 12         | 6          | 11          | -6          | 18         | 1          |  |
| 150                        | 10         | 13         | 12         | 8          | 10          | -6          | 20         | 2          |  |
| 100                        | 14         | 18         | 11         | 10         | 3           | -5          | 20         | 4          |  |

| #271 Blagoveshchensk (50°N, 128°E) |            |            |            |            |             |             |            |            |  |
|------------------------------------|------------|------------|------------|------------|-------------|-------------|------------|------------|--|
| mb                                 | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |  |
| 850                                | 5          | -10        | 7          | -4         | 2           | 5           | 6          | -5         |  |
| 700                                | 9          | -10        | 10         | -3         | 4           | 2           | 11         | -5         |  |
| 500                                | 15         | -12        | 18         | -5         | 10          | 2           | 18         | -6         |  |
| 300                                | 21         | -11        | 28         | -6         | 18          | 3           | 25         | -7         |  |
| 200                                | 25         | -4         | 31         | -5         | 25          | 4           | 28         | -4         |  |
| 150                                | 29         | -4         | 31         | -3         | 22          | 2           | 29         | -3         |  |
| 100                                | 32         | 1          | 28         | -1         | 12          | -1          | 29         | 1          |  |

| #272 Khabarovsk (49°N, 135°E) |            |            |            |            |             |             |            |            |  |
|-------------------------------|------------|------------|------------|------------|-------------|-------------|------------|------------|--|
| mb                            | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |  |
| 350                           | 11         | -4         | 9          | 1          | 3           | 1           | 9          | 0          |  |
| 700                           | 10         | -8         | 14         | -1         | 4           | 0           | 13         | -1         |  |
| 500                           | 15         | -9         | 22         | -2         | 9           | -1          | 20         | -3         |  |
| 300                           | 25         | -7         | 32         | -2         | 22          | -2          | 31         | 0          |  |
| 200                           | 29         | -3         | 37         | 0          | 30          | -5          | 35         | 4          |  |
| 150                           | 32         | 0          | 30         | 4          | 37          | -6          | 35         | 6          |  |
| 100                           | 35         | 2          | 31         | 2          | 13          | -5          | 30         | 6          |  |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#276 Orenburg (52°N, 55°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 6 1            | 3 4            | 5 -2            | 12 3           |
| 700 | 10 -1          | 6 4            | 7 -2            | 16 1           |
| 500 | 13 0           | 12 5           | 11 -2           | 20 3           |
| 300 | 19 -4          | 20 1           | 16 -2           | 30 -1          |
| 200 | 23 -7          | 22 2           | 25 -2           | 30 -3          |
| 150 | 23 -4          | 22 1           | 27 -2           | 29 -4          |
| 100 | 27 -2          | 21 0           | 17 0            | 26 -3          |

#280 Tashkent (41°N, 69°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 2 4            | 2 0            | 3 -2            | 3 2            |
| 700 | 16 6           | 10 7           | 6 1             | 13 7           |
| 500 | 24 9           | 19 9           | 16 2            | 18 5           |
| 300 | 36 2           | 30 14          | 40 -7           | 33 -2          |
| 200 | 42 -1          | 37 9           | 51 -7           | 42 -6          |
| 150 | 36 0           | 36 7           | 53 -5           | 41 -7          |
| 100 | 39 -3          | 30 4           | 30 -5           | 34 -3          |

#278 Guryev (47°N, 52°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 4 0            | 0 3            | 3 -2            | 9 1            |
| 700 | 8 1            | 2 3            | 7 0             | 15 1           |
| 500 | 12 0           | 10 2           | 16 0            | 21 0           |
| 300 | 24 -4          | 19 4           | 31 1            | 29 0           |
| 200 | 28 -4          | 20 5           | 54 2            | 32 -2          |
| 150 | 29 -2          | 22 5           | 48 2            | 27 -4          |
| 100 | 30 -3          | 18 2           | 29 0            | 27 -1          |

#282 Hong Kong/King's Park (22°N, 114°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 2 2            | 3 6            | -2 6            | -10 -2         |
| 700 | 20 2           | 14 4           | -2 7            | -2 -1          |
| 500 | 43 3           | 24 5           | -5 3            | 6 0            |
| 300 | 65 8           | 42 5           | -10 -1          | 12 0           |
| 200 | 68 17          | 52 1           | -16 -6          | 18 0           |
| 150 | 61 18          | 45 0           | -23 -9          | 14 -3          |
| 100 | 40 7           | 22 0           | -34 -13         | 7 -3           |

#279 Alma-Ata (43°N, 77°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 2 1            | 3 0            | 2 0             | 0 0            |
| 700 | 7 3            | 7 2            | 12 1            | 8 3            |
| 500 | 26 5           | 22 0           | 19 3            | 21 4           |
| 300 | 36 7           | 36 3           | 36 3            | 31 -1          |
| 200 | 34 -2          | 40 2           | 50 2            | 37 -3          |
| 150 | 37 -3          | 38 -2          | 50 2            | 39 -3          |
| 100 | 35 2           | 31 0           | 35 3            | 35 -2          |

#284 Wakkanai (45°N, 142°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 10 -5          | 12 0           | 6 2             | 13 2           |
| 700 | 18 -4          | 18 -2          | 10 -2           | 18 1           |
| 500 | 29 -4          | 32 -4          | 18 -4           | 29 4           |
| 300 | 47 -1          | 52 0           | 30 -10          | 48 12          |
| 200 | 50 3           | 57 3           | 42 -12          | 60 18          |
| 150 | 51 6           | 50 3           | 35 -12          | 57 16          |
| 100 | 46 7           | 41 4           | 16 -8           | 46 13          |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#285 Sapporo (43°N, 141°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 13  | 11  | 6    | 3   |
| 700 | 23  | 20  | 11   | 1   |
| 500 | 39  | 36  | 20   | 6   |
| 300 | 60  | 61  | 34   | 17  |
| 200 | 63  | 65  | 48   | 22  |
| 150 | 61  | 59  | 39   | 19  |
| 100 | 53  | 44  | 18   | 14  |

#288 Sendai (38°N, 141°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 20  | 14  | 9    | 11  |
| 700 | 33  | 24  | 15   | 19  |
| 500 | 50  | 39  | 21   | 37  |
| 300 | 84  | 68  | 34   | 69  |
| 200 | 98  | 81  | 42   | 81  |
| 150 | 95  | 72  | 36   | 77  |
| 100 | 72  | 54  | 14   | 52  |

#286 Nemuro (43°N, 146°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 12  | 11  | 6    | 1   |
| 700 | 23  | 20  | 11   | 1   |
| 500 | 40  | 36  | 20   | 7   |
| 300 | 61  | 61  | 34   | 20  |
| 200 | 63  | 66  | 46   | 24  |
| 150 | 60  | 57  | 36   | 20  |
| 100 | 50  | 43  | 16   | 13  |

#289 Wajima (37°N, 137°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 16  | 12  | 12   | 8   |
| 700 | 28  | 20  | 16   | 17  |
| 500 | 53  | 40  | 21   | 37  |
| 300 | 92  | 69  | 32   | 69  |
| 200 | 104 | 82  | 39   | 84  |
| 150 | 95  | 73  | 33   | 76  |
| 100 | 74  | 54  | 11   | 53  |

#287 Akita (40°N, 140°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 20  | 19  | 10   | 12  |
| 700 | 33  | 26  | 16   | 21  |
| 500 | 52  | 42  | 22   | 38  |
| 300 | 80  | 62  | 37   | 68  |
| 200 | 86  | 79  | 48   | 82  |
| 150 | 85  | 71  | 41   | 74  |
| 100 | 71  | 54  | 18   | 52  |

#290 Tateno (36°N, 140°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 14  | 6   | 2    | 3   |
| 700 | 27  | 18  | 12   | 16  |
| 500 | 58  | 41  | 18   | 39  |
| 300 | 103 | 71  | 27   | 70  |
| 200 | 122 | 86  | 33   | 83  |
| 150 | 91  | 78  | 29   | 76  |
| 100 | 79  | 56  | 9    | 50  |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#291 Hachiojima (33°N, 140°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 19  | 10  | 11   | 2   |
| 700 | 35  | 21  | 13   | 14  |
| 500 | 66  | 40  | 14   | 35  |
| 300 | 116 | 65  | 15   | 56  |
| 200 | 136 | 81  | 16   | 69  |
| 150 | 123 | 77  | 14   | 63  |
| 100 | 83  | 53  | -1   | 41  |

#294 Fukuoka (34°N, 130°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 12  | 6   | 9    | 3   |
| 700 | 29  | 18  | 12   | 14  |
| 500 | 59  | 38  | 15   | 36  |
| 300 | 110 | 66  | 19   | 66  |
| 200 | 132 | 83  | 22   | 80  |
| 150 | 120 | 78  | 18   | 74  |
| 100 | 86  | 55  | 1    | 48  |

#292 Yonago (35°N, 133°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 15  | 7   | 10   | 4   |
| 700 | 29  | 19  | 14   | 15  |
| 500 | 59  | 40  | 18   | 36  |
| 300 | 102 | 69  | 25   | 69  |
| 200 | 122 | 86  | 30   | 83  |
| 150 | 106 | 78  | 26   | 77  |
| 100 | 83  | 56  | 6    | 51  |

#295 Nagoshima (32°N, 131°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 14  | 10  | 6    | 1   |
| 700 | 32  | 20  | 10   | 14  |
| 500 | 62  | 38  | 11   | 32  |
| 300 | 116 | 62  | 11   | 60  |
| 200 | 136 | 79  | 9    | 69  |
| 150 | 123 | 76  | 7    | 64  |
| 100 | 81  | 51  | -6   | 39  |

#293 Shionomisaki (33°N, 136°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 17  | 6   | 7    | 0   |
| 700 | 33  | 20  | 12   | 15  |
| 500 | 64  | 32  | 15   | 36  |
| 300 | 117 | 68  | 18   | 65  |
| 200 | 140 | 83  | 18   | 77  |
| 150 | 129 | 81  | 15   | 71  |
| 100 | 92  | 58  | 0    | 48  |

#296 Naze (29°N, 130°E)

| mb  | JAN | APR | JULY | OCT |
|-----|-----|-----|------|-----|
| E/W | N/S | E/W | N/S  | E/W |
| N/S | E/W | N/S | E/W  | N/S |
| 850 | 10  | 13  | 2    | 8   |
| 700 | 29  | 20  | 3    | 5   |
| 500 | 63  | 34  | 3    | 26  |
| 300 | 112 | 56  | 0    | 45  |
| 200 | 123 | 71  | -3   | 51  |
| 150 | 113 | 68  | -7   | 48  |
| 100 | 81  | 45  | -15  | 29  |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#299 Aleppo (36°N, 37°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 0 3            | 6 2            | 12 -8           | 3 3            |
| 700 | 10 5           | 11 4           | 6 1             | 7 7            |
| 500 | 20 4           | 20 4           | 16 4            | 19 9           |
| 300 | 39 5           | 35 4           | 37 17           | 34 17          |
| 200 | 56 8           | 46 4           | 43 24           | 46 21          |
| 150 | 57 8           | 44 5           | 41 25           | 48 20          |
| 100 | 47 5           | 36 6           | 26 20           | 36 14          |

#303 Muharraq (26°N, 51°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 9 -1           | 10 -1          | 6 -16           | 3 -6           |
| 700 | 21 1           | 18 1           | 3 -6            | 2 -4           |
| 500 | 45 1           | 30 4           | -7 0            | 10 1           |
| 300 | 80 2           | 53 6           | -12 -2          | 31 5           |
| 200 | 98 0           | 73 7           | -17 2           | 41 9           |
| 150 | 87 0           | 66 4           | -24 3           | 38 10          |
| 100 | 64 2           | 40 8           | -36 3           | 20 6           |

#300 Beyrouth/Khaldeh (34°N, 35°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 6 6            | 6 5            | 4 -1            | 3 4            |
| 700 | 13 4           | 15 4           | 10 0            | 9 5            |
| 500 | 27 4           | 29 3           | 16 8            | 20 7           |
| 300 | 52 3           | 51 2           | 30 13           | 40 10          |
| 200 | 71 5           | 66 3           | 28 18           | 50 16          |
| 150 | 69 4           | 66 0           | 23 19           | 46 16          |
| 100 | 52 3           | 33 3           | 9 18            | 31 12          |

#309 New Delhi/Safdarjung (29°N, 77°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 8 -4           | 10 -5          | 3 -1            | 6 -5           |
| 700 | 14 -2          | 16 -4          | 2 -4            | 9 -8           |
| 500 | 37 -1          | 25 -3          | 1 -1            | 17 -5          |
| 300 | 77 1           | 44 -3          | 0 2             | 46 0           |
| 200 | 92 6           | 59 -1          | -3 4            | 57 8           |
| 150 | 85 5           | 54 0           | -6 3            | 50 8           |
| 100 | 56 4           | 30 1           | -18 -3          | 27 2           |

#302 Mafrag Ap (32°N, 36°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 8 6            | 9 1            | 13 -7           | 5 2            |
| 700 | 16 4           | 17 3           | 12 2            | 10 10          |
| 500 | 34 3           | 29 3           | 16 5            | 22 11          |
| 300 | 61 5           | 52 2           | 23 13           | 42 17          |
| 200 | 84 6           | 68 1           | 23 17           | 56 22          |
| 150 | 83 5           | 65 4           | 20 21           | 57 20          |
| 100 | 64 4           | 49 2           | 7 18            | 43 17          |

#323 Chiang Mai (19°N, 99°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 2 4            | 6 1            | 8 1             | -5 3           |
| 700 | 12 0           | 7 1            | 11 1            | -6 2           |
| 500 | 26 -2          | 19 -1          | 1 2             | -2 3           |
| 300 | 47 6           | 35 2           | -16 -4          | -1 3           |
| 200 | 50 15          | 41 7           | -31 -8          | 0 1            |
| 150 | 44 14          | 33 3           | -43 -10         | -5 4           |
| 100 | 28 6           | 16 0           | -59 -12         | -12 3          |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#324 Ubon Ratchathani (15°N, 105°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 0              | 5              | 11              | -8             |
| 700 | 4              | 0              | 11              | -1             |
| 500 | 8              | 7              | 1               | -11            |
| 300 | 14             | 13             | -11             | -2             |
| 200 | 21             | 19             | -23             | -12            |
| 150 | 13             | 16             | -40             | -17            |
| 100 | 6              | 1              | -52             | -22            |

#327 Singapore (1°N, 104°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | 2              | 0              | 6               | 4              |
| 700 | 2              | -2             | 6               | 3              |
| 500 | -2             | -5             | -6              | 1              |
| 300 | -11            | -9             | -17             | -5             |
| 200 | -19            | -8             | -34             | -12            |
| 150 | -23            | -6             | -40             | -20            |
| 100 | -8             | -8             | -13             | -28            |

#325 Bangkok (14°N, 100°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -5             | 1              | 13              | -3             |
| 700 | -1             | -4             | 12              | -2             |
| 500 | 0              | 3              | 4               | 0              |
| 300 | 9              | 9              | -8              | -9             |
| 200 | 11             | 12             | -25             | -12            |
| 150 | 12             | 9              | -40             | -14            |
| 100 | 3              | -1             | -52             | -30            |

#329 Saigon/Tan-Son-Nhut (11°N, 107°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -7             | -4             | 14              | 0              |
| 700 | -8             | -1             | 10              | 0              |
| 500 | -6             | -5             | 1               | 2              |
| 300 | -3             | 2              | -11             | -4             |
| 200 | -1             | 12             | -24             | -8             |
| 150 | -7             | 16             | -36             | -13            |
| 100 | -9             | 5              | -42             | -27            |

#326 Sonkhla (7°N, 101°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -15            | -3             | 14              | 2              |
| 700 | -7             | 0              | 13              | -2             |
| 500 | -11            | 0              | 2               | 4              |
| 300 | -10            | 4              | -15             | -5             |
| 200 | -10            | 12             | -32             | -9             |
| 150 | -13            | 12             | -44             | -21            |
| 100 | -12            | 5              | -38             | -30            |

#351 Lihue, Kauai (22°N, 159°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -1             | 0              | -10             | -3             |
| 700 | 6              | 1              | -3              | 0              |
| 500 | 20             | -1             | 10              | 1              |
| 300 | 44             | -8             | 32              | 2              |
| 200 | 57             | -12            | 57              | 5              |
| 150 | 51             | -11            | 55              | 6              |
| 100 | 32             | -6             | 31              | 3              |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#352 Hilo/Gen. Lyman (20°N, 155°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -2             | 3              | -8              | -6             |
| 700 | 3              | 2              | -8              | -4             |
| 500 | 16             | 0              | 2               | 1              |
| 300 | 40             | -3             | 4               | 18             |
| 200 | 50             | -8             | 36              | 4              |
| 150 | 43             | -11            | 32              | 25             |
| 100 | 24             | -6             | 0               | 9              |

#355 Guam (14°N, 145°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -17            | -2             | -7              | 3              |
| 700 | -11            | 0              | -8              | 2              |
| 500 | -10            | 2              | -8              | 1              |
| 300 | -3             | 1              | -7              | -1             |
| 200 | 1              | 6              | -6              | 0              |
| 150 | -1             | 8              | -7              | -1             |
| 100 | -12            | 9              | -19             | -5             |

#353 Wake Island (19°N, 167°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -8             | -14            | -14             | -13            |
| 700 | 2              | -3             | -11             | -11            |
| 500 | 14             | -5             | -5              | -10            |
| 300 | 28             | -9             | -6              | -3             |
| 200 | 31             | -8             | 14              | -4             |
| 150 | 28             | -5             | 15              | -6             |
| 100 | 16             | -1             | -9              | -4             |

#356 Majuro (7°N, 171°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -16            | -4             | -15             | 0              |
| 700 | -11            | -1             | -8              | 1              |
| 500 | -16            | -3             | -2              | 1              |
| 300 | -5             | -3             | 9               | 3              |
| 200 | -3             | 5              | 15              | 6              |
| 150 | -5             | 2              | 16              | 1              |
| 100 | -15            | -5             | 9               | -3             |

#354 Johnston Island (17°N, 170°W)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -9             | -11            | -18             | -13            |
| 700 | -1             | -2             | -10             | -7             |
| 500 | 10             | -5             | 0               | -4             |
| 300 | 30             | -10            | 21              | 3              |
| 200 | 36             | -11            | 35              | 5              |
| 150 | 32             | -11            | 35              | 25             |
| 100 | 16             | -9             | 28              | 4              |

#357 Truk (7°N, 152°E)

| mb  | JAN<br>E/W N/S | APR<br>E/W N/S | JULY<br>E/W N/S | OCT<br>E/W N/S |
|-----|----------------|----------------|-----------------|----------------|
| 850 | -16            | -3             | -12             | -1             |
| 700 | -14            | -1             | -8              | 0              |
| 500 | -21            | 1              | -11             | 1              |
| 300 | -14            | 1              | -4              | 0              |
| 200 | -12            | 7              | -2              | 8              |
| 150 | -16            | 6              | -1              | 3              |
| 100 | -25            | 3              | -5              | -3             |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#3775 Ship Chaohe (33°N, 122°W)

| Date | JAN |     | APR |     | JUL |     | OCT |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|
|      | R/W | N/S | R/W | N/S | R/W | N/S | R/W | N/S |
| 450  | <1  | <1  | 2   | 3   | 4   | 3   | 3   | -2  |
| 700  | <1  | <1  | 7   | 7   | 7   | 7   | 7   | -3  |
| 900  | <1  | <1  | 22  | 22  | 22  | 22  | 22  | 3   |
| 300  | <1  | <1  | 24  | 24  | 24  | 24  | 24  | 4   |
| 200  | <1  | <1  | 27  | 27  | 27  | 27  | 27  | 7   |
| 150  | <1  | <1  | 31  | 31  | 31  | 31  | 31  | 7   |
| 100  | <1  | <1  | 34  | 34  | 34  | 34  | 34  | 3   |

#379 Ship Baxiao (31°N, 122°W)

| Date | JAN |     | APR |     | JUL |     | OCT |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|
|      | R/W | N/S | R/W | N/S | R/W | N/S | R/W | N/S |
| 450  | <1  | <1  | 2   | 3   | 4   | 3   | 3   | 3   |
| 700  | <1  | <1  | 7   | 7   | 7   | 7   | 7   | 3   |
| 900  | <1  | <1  | 22  | 22  | 22  | 22  | 22  | 4   |
| 300  | <1  | <1  | 24  | 24  | 24  | 24  | 24  | 7   |
| 200  | <1  | <1  | 27  | 27  | 27  | 27  | 27  | 7   |
| 150  | <1  | <1  | 31  | 31  | 31  | 31  | 31  | 4   |
| 100  | <1  | <1  | 34  | 34  | 34  | 34  | 34  | 4   |

#375 Ship Chaohe (33°N, 122°W)

| Date | JAN |     | APR |     | JUL |     | OCT |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|
|      | R/W | N/S | R/W | N/S | R/W | N/S | R/W | N/S |
| 450  | <1  | <1  | 2   | 3   | 4   | 3   | 3   | 7   |
| 700  | <1  | <1  | 7   | 7   | 7   | 7   | 7   | 4   |
| 900  | <1  | <1  | 22  | 22  | 22  | 22  | 22  | 3   |
| 300  | <1  | <1  | 24  | 24  | 24  | 24  | 24  | 3   |
| 200  | <1  | <1  | 27  | 27  | 27  | 27  | 27  | 9   |
| 150  | <1  | <1  | 31  | 31  | 31  | 31  | 31  | 3   |
| 100  | <1  | <1  | 34  | 34  | 34  | 34  | 34  | 3   |

#356 Kogoro (30°N, 122°E)

| Date | JAN |     | APR |     | JUL |     | OCT |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|
|      | R/W | N/S | R/W | N/S | R/W | N/S | R/W | N/S |
| 450  | <1  | <1  | 2   | 3   | 4   | 3   | 3   | 0   |
| 700  | <1  | <1  | 7   | 7   | 7   | 7   | 7   | 0   |
| 900  | <1  | <1  | 22  | 22  | 22  | 22  | 22  | 2   |
| 300  | <1  | <1  | 24  | 24  | 24  | 24  | 24  | 0   |
| 200  | <1  | <1  | 27  | 27  | 27  | 27  | 27  | -2  |
| 150  | <1  | <1  | 31  | 31  | 31  | 31  | 31  | 0   |
| 100  | <1  | <1  | 34  | 34  | 34  | 34  | 34  | -3  |

#350 Kogoro (30°N, 122°E)

| Date | JAN |     | APR |     | JUL |     | OCT |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|
|      | R/W | N/S | R/W | N/S | R/W | N/S | R/W | N/S |
| 450  | <1  | <1  | 2   | 3   | 4   | 3   | 3   | 2   |
| 700  | <1  | <1  | 7   | 7   | 7   | 7   | 7   | 0   |
| 900  | <1  | <1  | 22  | 22  | 22  | 22  | 22  | 0   |
| 300  | <1  | <1  | 24  | 24  | 24  | 24  | 24  | 0   |
| 200  | <1  | <1  | 27  | 27  | 27  | 27  | 27  | 0   |
| 150  | <1  | <1  | 31  | 31  | 31  | 31  | 31  | 0   |
| 100  | <1  | <1  | 34  | 34  | 34  | 34  | 34  | -3  |

#350 Yaso (30°N, 122°E)

| Date | JAN |     | APR |     | JUL |     | OCT |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|
|      | R/W | N/S | R/W | N/S | R/W | N/S | R/W | N/S |
| 450  | <1  | <1  | 2   | 3   | 4   | 3   | 3   | 0   |
| 700  | <1  | <1  | 7   | 7   | 7   | 7   | 7   | 0   |
| 900  | <1  | <1  | 22  | 22  | 22  | 22  | 22  | 2   |
| 300  | <1  | <1  | 24  | 24  | 24  | 24  | 24  | 0   |
| 200  | <1  | <1  | 27  | 27  | 27  | 27  | 27  | -2  |
| 150  | <1  | <1  | 31  | 31  | 31  | 31  | 31  | 0   |
| 100  | <1  | <1  | 34  | 34  | 34  | 34  | 34  | -3  |

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#376 Ship Delta (44°N, 41°W)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 20  | 4   | 17  | 12  | 15   | 5   | 16  | 1   |
| 700 | 27  | 6   | 22  | 12  | 17   | 2   | 21  | 0   |
| 500 | 30  | 11  | 30  | 18  | 23   | 1   | 30  | 0   |
| 300 | 32  | 10  | 42  | 15  | 27   | -2  | 42  | 1   |
| 200 | 47  | 5   | 43  | 12  | 26   | -5  | 45  | -2  |
| 150 | 43  | 3   | 31  | 8   | 22   | -5  | 36  | -2  |
| 100 | 36  | 2   | 20  | 3   | 10   | 0   | 21  | 0   |

#373 Ship Juliet (52°N, 20°W)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 11  | 0   | 8   | 1   | 14   | -1  | 14  | 2   |
| 700 | 15  | 10  | 10  | 1   | 16   | -1  | 17  | 7   |
| 500 | 20  | 12  | 14  | 0   | 24   | -2  | 24  | 8   |
| 300 | 30  | 14  | 22  | -1  | 32   | -4  | 34  | 6   |
| 200 | 31  | 10  | 20  | -3  | 31   | -6  | 35  | 3   |
| 150 | 29  | 9   | 16  | -3  | 23   | -3  | 28  | 2   |
| 100 | 24  | 7   | 11  | -2  | 12   | -1  | 20  | 1   |

#377 Ship Echo (55°N, 40°W)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 17  | 2   | 17  | 7   | 7    | 0   | 6   | 4   |
| 700 | 20  | 0   | 21  | 7   | 4    | -1  | 10  | 0   |
| 500 | 45  | -5  | 30  | 0   | 0    | -5  | 15  | -1  |
| 300 | 64  | -8  | 40  | 10  | 4    | -6  | 23  | -1  |
| 200 | 71  | -7  | 52  | 7   | 1    | -4  | 28  | -4  |
| 150 | 68  | -6  | 44  | 4   | 1    | -6  | 22  | -6  |
| 100 | 46  | -6  | 29  | 2   | -1   | -4  | 15  | -5  |

#331 Ship Mike (56°N, 2°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 8   | 4   | 4   | -2  | 5    | 4   | 10  | 2   |
| 700 | 12  | 4   | 7   | -2  | 7    | 6   | 16  | 2   |
| 500 | 18  | 2   | 12  | -4  | 12   | 8   | 24  | 1   |
| 300 | 26  | -1  | 17  | -6  | 16   | 9   | 37  | -1  |
| 200 | 31  | -3  | 17  | -7  | 16   | 8   | 38  | -3  |
| 150 | 30  | -7  | 15  | -6  | 13   | 6   | 32  | -2  |
| 100 | 23  | -8  | 13  | -7  | 7    | 6   | 26  | -4  |

#378 Ship India (50°N, 10°W)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 5   | 8   | 0   | 2   | 12   | 1   | 11  | 7   |
| 700 | 7   | 9   | 11  | 2   | 13   | 0   | 15  | 8   |
| 500 | 13  | 11  | 18  | 2   | 21   | 0   | 23  | 11  |
| 300 | 23  | 14  | 25  | 1   | 30   | -2  | 34  | 12  |
| 200 | 25  | 10  | 22  | -1  | 26   | -3  | 35  | 10  |
| 150 | 26  | 10  | 18  | -2  | 19   | -1  | 29  | 8   |
| 100 | 25  | 7   | 14  | -2  | 10   | 0   | 21  | 4   |

#332 Ship November (36°N, 140°W)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 2   | 7   | -1  | 2   | -6   | -3  | 5   | 6   |
| 700 | 8   | 5   | 4   | -1  | -4   | -2  | 1   | 1   |
| 500 | 18  | 5   | 12  | -2  | 2    | 1   | 8   | 1   |
| 300 | 37  | 4   | 23  | -1  | 14   | 3   | 17  | 1   |
| 200 | 32  | -1  | 22  | -1  | 21   | 9   | 24  | 0   |
| 150 | 46  | -4  | 36  | 1   | 19   | 12  | 23  | 2   |
| 100 | 34  | -6  | 26  | 0   | 5    | 8   | 14  | 2   |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#385 San Andres (13°N, 82°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | -17        | -7         | -14        | -4         | -21         | -2          | -9         | -2         |
| 700 | -11        | -2         | -9         | -2         | -17         | 1           | -6         | 1          |
| 500 | -6         | 1          | -4         | -1         | -14         | 5           | -8         | 1          |
| 300 | 18         | 7          | 10         | -1         | -3          | -1          | -6         | -2         |
| 200 | 26         | 16         | 18         | 6          | 4           | -2          | -3         | -3         |
| 150 | 25         | 12         | 17         | 3          | 4           | -3          | -4         | -3         |
| 100 | 5          | 6          | 1          | -2         | -10         | -1          | -3         | -1         |

#386 Bogota (5°N, 74°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | -6         | -2         | -5         | 1          | -9          | 4           | -5         | 1          |
| 700 | -8         | 0          | -6         | 1          | -13         | 4           | -4         | 1          |
| 500 | 6          | 4          | -2         | 4          | -14         | 0           | -3         | -1         |
| 300 | 14         | 12         | 1          | 8          | -6          | -11         | -3         | -2         |
| 150 | 20         | 5          | 10         | 3          | 1           | -6          | 2          | 1          |
| 100 | 2          | -3         | -1         | -1         | -3          | 1           | 3          | 0          |

#390 Uccle (51°N, 4°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 11         | 3          | 7          | -1         | 10          | 1           | 8          | 2          |
| 700 | 12         | 0          | 10         | -2         | 12          | 1           | 11         | 1          |
| 500 | 16         | -4         | 14         | -4         | 18          | 1           | 15         | -1         |
| 300 | 23         | -9         | 20         | -6         | 24          | 0           | 20         | -3         |
| 200 | 23         | -13        | 18         | -9         | 23          | 0           | 21         | -7         |
| 150 | 23         | -11        | 16         | -4         | 20          | 0           | 22         | -7         |
| 100 | 24         | -9         | 12         | -4         | 12          | 1           | 16         | -5         |

#416 Kwajalein (9°N, 168°E)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | -16        | -4         | -14        | 0          | -13         | 0           | -9         | 0          |
| 700 | -13        | -2         | -7         | 0          | -13         | 1           | -10        | 0          |
| 500 | -17        | -4         | -2         | -1         | -12         | 1           | -7         | 0          |
| 300 | -7         | -4         | 10         | 2          | -5          | 2           | -2         | 0          |
| 200 | -4         | 5          | 17         | 6          | 1           | 2           | 3          | -1         |
| 150 | -6         | 5          | 18         | 1          | 6           | 0           | 6          | -1         |
| 100 | -16        | -3         | 6          | -5         | -3          | 1           | -5         | -1         |

#417 Chihuahua (29°N, 106°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | -1         | 0          | 2          | 2          | -2          | -1          | -2         | 1          |
| 700 | 12         | 3          | 12         | 7          | -3          | 1           | 5          | 4          |
| 500 | 26         | 3          | 29         | 9          | -8          | 0           | 14         | 4          |
| 300 | 44         | 0          | 48         | 11         | -8          | 0           | 30         | 6          |
| 200 | 44         | -1         | 55         | 12         | -8          | -2          | 36         | 8          |
| 150 | 41         | 2          | 53         | 11         | -10         | -3          | 35         | 7          |
| 100 | 32         | 1          | 38         | 9          | -14         | -2          | 17         | 2          |

#422 Empalme (28°N, 111°W)

| mb  | JAN<br>E/W | JAN<br>N/S | APR<br>E/W | APR<br>N/S | JULY<br>E/W | JULY<br>N/S | OCT<br>E/W | OCT<br>N/S |
|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 850 | 2          | 0          | 3          | 1          | -2          | -1          | -1         | 0          |
| 700 | 9          | 0          | 12         | 5          | -6          | 0           | 3          | 5          |
| 500 | 22         | 1          | 29         | 8          | -8          | 3           | 12         | 2          |
| 300 | 43         | 2          | 52         | 13         | -10         | 6           | 31         | 5          |
| 200 | 58         | 4          | 68         | 16         | -11         | 3           | 42         | 8          |
| 150 | 50         | 2          | 62         | 14         | -14         | 2           | 37         | 7          |
| 100 | 36         | 3          | 39         | 10         | -16         | 2           | 20         | 2          |

\* Speed is in knots; winds from the west and south are positive

Table 2. Climatic Mean Monthly Observed East-West and North-South Winds\* (Cont.)

#439 Essen (51°N, 7°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 9   | 3   | 9   | 1   | 8    | 2   | 10  | 3   |
| 700 | 9   | -1  | 11  | 0   | 10   | 1   | 13  | 1   |
| 500 | 13  | -6  | 15  | -2  | 15   | 2   | 19  | -1  |
| 300 | 19  | -12 | 20  | -6  | 22   | 2   | 24  | -4  |
| 200 | 20  | -12 | 19  | -5  | 21   | 1   | 25  | -6  |
| 150 | 21  | -10 | 15  | -4  | 16   | 1   | 20  | -4  |
| 100 | 21  | -9  | 13  | -3  | 8    | 2   | 16  | -4  |

#446 Szeged (46°N, 20°E)

| mb  | JAN |     | APR |     | JULY |     | OCT |     |
|-----|-----|-----|-----|-----|------|-----|-----|-----|
|     | E/W | N/S | E/W | N/S | E/W  | N/S | E/W | N/S |
| 850 | 3   | 0   | 5   | 1   | 2    | -4  | 5   | -2  |
| 700 | 6   | -2  | 8   | 3   | 5    | -4  | 7   | -3  |
| 500 | 11  | -3  | 12  | 4   | 8    | -3  | 10  | -6  |
| 300 | 17  | -6  | 19  | 3   | 11   | -4  | 12  | -9  |
| 200 | 21  | -9  | 22  | 1   | 20   | 0   | 15  | -10 |
| 150 | 24  | -9  | 21  | 1   | 24   | 4   | 18  | -8  |
| 100 | 25  | -9  | 18  | 1   | 14   | 7   | 17  | -5  |

\* Speed is in knots; winds from the west and south are positive