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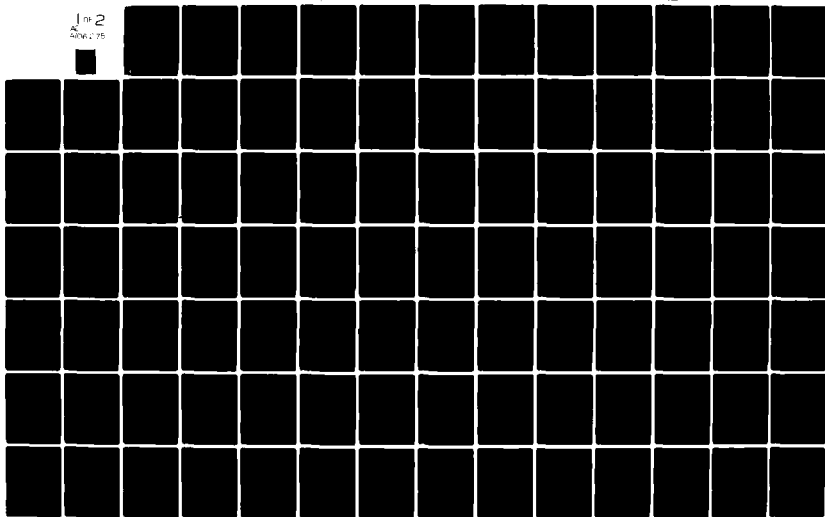
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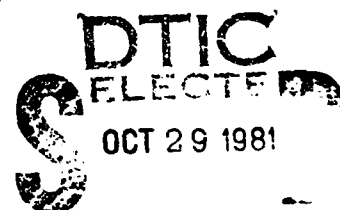
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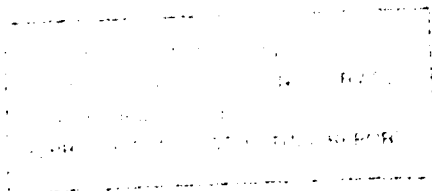
CLIMATIC CONDITIONS AT AIR FORCE BASES IN AUSTRALIA

Barry T. Murrell and John A. McRae



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REPORT

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CLIMATIC CONDITIONS AT AIR FORCE BASES IN AUSTRALIA

Barry T. Murrell and John A. McRae

ABSTRACT

The climatic conditions at ground level expected to be encountered at Air Force bases in the Australian Region are tabulated. Mean conditions for each season and the extremes for return periods up to 1000 years are given for temperature, humidity, wind speed and rainfall of various durations as well as information about solar radiation and a number of meteorological conditions including hail, snow, frost, fog, thunder, dust and haze.

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## CLIMATIC CONDITIONS AT AIR FORCE BASES IN AUSTRALIA

### INTRODUCTION

Air Force Research Request 10/76 (Annex A) asked that a survey be made of surface climatic conditions in areas of interest to the Air Force in the Australian region. This Report satisfies that request as far as has been possible.

Table 1 shows the geographical details of the stations for which data were available together with the periods of the records. Satisfactory data were obtained for most climatic factors at the majority of stations but solar radiation is measured at only seven of the stations and humidity was not available for Katherine (Tindall) and wind data were not complete at Katherine and Kimberley.

Two items of AFRR 10/76, (6) levels of sand and dust and (8) incidence of corrosive chemicals could not be reported. The likely levels of sand and dust are dependent not only on climatic factors but also on aspects such as ground cover that are not predictable and that are critically dependent on levels of human or animal activity. The incidence of corrosive chemicals is also largely a function of human activity and very little data on chemical fallout exist except in industrialized areas.

The Report has been set out with seasonal summaries for each station in Tables 2 to 20 and these are followed by detailed tables for each climatic factor in Tables 21 to 29. A comprehensive index has been included.

T A B L E 1

## DETAILS OF STATIONS USED IN THE STUDY AND THE PERIODS OF RECORDS AVAILABLE

| Station             | Met. Bureau<br>Number | Latitude<br>(South) | Longitude<br>(East) | Elevation AMSL<br>(metres) | Period of Record    |
|---------------------|-----------------------|---------------------|---------------------|----------------------------|---------------------|
| ADELAIDE R.O.       | 23000                 | 34°56'              | 138°35'             | 42.7                       | 1887-1977 (84 yrs)  |
| ALICE SPRINGS AERO. | 15002                 | 23°49'              | 133°53'             | 545.3                      | 1940-1977 (37 yrs)  |
| AMBERLEY AERO.      | 40004                 | 27°38'              | 152°43'             | 24.7                       | 1941-1977 (36 yrs)  |
| BROOME AERO.        | 03003                 | 17°57'              | 122°15'             | 11.9                       | 1940-1977 (37 yrs)  |
| CAIRNS AERO.        | 31011                 | 16°53'              | 145°45'             | 3.0                        | 1941-1977 (35 yrs)  |
| CANBERRA (A) M.O.   | 70014                 | 35°19'              | 149°12'             | 570.6                      | 1939-1977 (38 yrs)  |
| COCOS ISLAND        | 200284                | 12°11'              | 96°54'              | 3.0                        | 1952-1977 (25 yrs)  |
| DARWIN AERO.        | 14015                 | 12°26'              | 130°52'             | 28.7                       | 1941-1977 (36 yrs)  |
| EAST SALE AERO.     | 85072                 | 38°06'              | 147°08'             | 4.6                        | 1943-1977 (32 yrs)  |
| KATHERINE P.O.      | 14902                 | 14°28'              | 132°16'             | 107.0                      | 1957-1965 (8 yrs)   |
| KIMBERLEY RESEARCH  | 02014                 | 15°39'              | 128°43'             | 45.7                       | 1965-1977 (12 yrs)  |
| MELBOURNE R.O.      | 86071                 | 37°49'              | 144°58'             | 34.7                       | 1855-1977 (122 yrs) |
| ONSLow AERO.        | 05017                 | 21°40'              | 115°07'             | 3.0                        | 1941-1975 (34 yrs)  |
| PERTH R.O.          | 09034                 | 31°57'              | 115°51'             | 18.6                       | 1942-1977 (35 yrs)  |
| RICHMOND AERO.      | 67033                 | 33°36'              | 150°42'             | 18.9                       | 1939-1977 (28 yrs)  |
| TOWNSVILLE AERO.    | 32040                 | 19°15'              | 146°46'             | 3.4                        | 1940-1977 (37 yrs)  |
| WAGGA AERO.         | 74112                 | 35°10'              | 147°28'             | 214.3                      | 1941-1975 (33 yrs)  |
| WILLIAMTOWN AERO.   | 61078                 | 32°49'              | 151°50'             | 4.0                        | 1942-1977 (28 yrs)  |
| WOOMERA (A) M.O.    | 16001                 | 31°09'              | 136°48'             | 164.9                      | 1949-1977 (28 yrs)  |

TABLES 2-20

SUMMARIES OF SEASONAL EXTREME VALUES OF METEOROLOGICAL  
FACTORS FOR ALL STATIONS

NOTE

The values given are for each season and will therefore be higher (or lower) than the corresponding mean daily values. Monthly means of Temperature, Relative Humidity and Rainfall can be obtained from the Bureau of Meteorology publication "Climatic Averages - Australia, Metric Edition".

T A B L E 2

## SUMMARY OF METEOROLOGICAL DATA FOR ADELAIDE R.O.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                |          | Seasonal Rainfall (mm) |                 |                          |  |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|----------|------------------------|-----------------|--------------------------|--|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) |          | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |  |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Mean Min |                        |                 |                          |  |
| SUMMER                       | 41.0             | 45.8     | 9.3             | 6.8                        | 24.4     | 4.6            | 21       | 173                    | 4               | 14                       |  |
| AUTUMN                       | 36.2             | 41.5     | 5.6             | 2.9                        | 21.2     | 5.2            | 19       | 291                    | 36              | 27                       |  |
| WINTER                       | 22.3             | 29.1     | 2.7             | 0.6                        | 15.4     | 5.2            | 14       | 404                    | 61              | 47                       |  |
| SPRING                       | 36.3             | 42.7     | 4.4             | 2.0                        | 18.9     | 4.5            | 17       | 254                    | 34              | 32                       |  |
| ANNUAL                       | -                | 45.8     | -               | 0.6                        |          |                |          | 786                    | 289             | 120                      |  |

| Wind                 |                  |                 |                    | Solar Radiation                        |                                    |                                           |                                                 |
|----------------------|------------------|-----------------|--------------------|----------------------------------------|------------------------------------|-------------------------------------------|-------------------------------------------------|
| 10 Min Average Speed |                  |                 |                    | Mean Daily Total                       |                                    | Highest Recorded Intensity                |                                                 |
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Gust Speed (km/hr) | Mean Daily Total (kWh/m <sup>2</sup> ) | Max Intensity (kW/m <sup>2</sup> ) | Mean Daily Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |
| SUMMER               | 13.6             | 46.8            | 63.0               | 86.1                                   | 106                                | SW (13.9)                                 | SW (20.6)                                       |
| AUTUMN               | 11.1             | 47.8            | 66.7               | 86.8                                   | 124                                | NE (9.5)                                  | SW (16.6)                                       |
| WINTER               | 12.5             | 48.4            | 63.0               | 95.4                                   | 148                                | NE (11.0)                                 | NNW (19.2)                                      |
| SPRING               | 14.8             | 51.0            | 61.1               | 98.7                                   | 130                                | NE (15.0)                                 | SW (19.8)                                       |
| ANNUAL               | 13.0             | -               | 66.7               | -                                      | 148                                | - (12.4)                                  | - (19.1)                                        |

| Fog, Hail, Thunder      |                          |                             |                             | No Records Available    |                          |                             |                             |
|-------------------------|--------------------------|-----------------------------|-----------------------------|-------------------------|--------------------------|-----------------------------|-----------------------------|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean No. of Days of Thunder | Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean No. of Days of Thunder |
| SUMMER                  | 0.05                     | 0.14                        | 3.6                         | 0.05                    | 0.14                     | 3.6                         | 3.6                         |
| AUTUMN                  | 0.55                     | 0.77                        | 2.3                         | 0.55                    | 0.77                     | 2.3                         | 2.3                         |
| WINTER                  | 2.9                      | 1.5                         | 1.5                         | 2.9                     | 1.5                      | 1.5                         | 1.5                         |
| SPRING                  | 0.50                     | 1.7                         | 3.7                         | 0.50                    | 1.7                      | 3.7                         | 3.7                         |
| ANNUAL                  | 4.0                      | 4.1                         | 13.1                        | 4.0                     | 4.1                      | 13.1                        | 13.1                        |

T A B L E 3

## SUMMARY OF METEOROLOGICAL DATA FOR ALICE SPRINGS AERO.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                | Seasonal Rainfall (mm) |          |                          |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|------------------------|----------|--------------------------|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) | Highest Recorded       |          | Mean No. of Days of Rain |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Recorded               | Recorded |                          |
| SUMMER                       | 42.1             | 45.2     | 12.0            | 27.9                       | 2.7      | 23             | 537                    | 5        | 13                       |
| AUTUMN                       | 37.9             | 42.2     | 1.9             | 24.5                       | 3.0      | 21             | 226                    | 2        | 8                        |
| WINTER                       | 30.5             | 34.0     | -2.4            | 16.1                       | 3.0      | 14             | 183                    | 0.3      | 8                        |
| SPRING                       | 40.2             | 42.2     | 2.7             | 22.5                       | 2.1      | 19             | 145                    | 4        | 11                       |
| ANNUAL                       | -                | 45.2     | -               | -                          | -        | -              | 783                    | 82       | 40                       |

| 10 Min Average Speed |                  |                 |                  | Gust Speed       |                 | Prevailing Direction and Mean Speed (km/hr) |           | Mean No. of Days of Gales |
|----------------------|------------------|-----------------|------------------|------------------|-----------------|---------------------------------------------|-----------|---------------------------|
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Mean Max (km/hr) | Mean Max (km/hr) | Highest (km/hr) | 9 am                                        | 3 pm      |                           |
| SUMMER               | 11.4             | 49.6            | 74.1             | 84.0             | 132             | E (14.7)                                    | SE (18.7) | 0.31                      |
| AUTUMN               | 8.4              | 41.2            | 59.3             | 67.1             | 120             | SE (15.1)                                   | SE (17.8) | 0.03                      |
| WINTER               | 7.5              | 44.8            | 66.7             | 65.5             | 96              | SE (14.6)                                   | SE (16.6) | 0.08                      |
| SPRING               | 11.2             | 51.9            | 74.1             | 87.8             | 107             | E (15.9)                                    | SE (16.9) | 0.36                      |
| ANNUAL               | 9.6              | -               | 74.1             | -                | 132             | - (15.1)                                    | - (17.5)  | 0.78                      |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |      |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|------|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |      |
| SUMMER                  | 0.11                     | 0.08                        | 5.8                                    | 7.20                                          | 1.04                                            | 1.27 |
| AUTUMN                  | 0.28                     | 0.00                        | 1.5                                    | 5.70                                          | 0.86                                            | 1.21 |
| WINTER                  | 0.81                     | 0.03                        | 0.64                                   | 4.61                                          | 0.74                                            | 0.95 |
| SPRING                  | 0.28                     | 0.28                        | 5.9                                    | 6.77                                          | 0.99                                            | 1.24 |
| ANNUAL                  | 1.5                      | 0.39                        | 13.8                                   | 6.07                                          | 0.91                                            | 1.27 |

T A B L E 4

SUMMARY OF METEOROLOGICAL DATA FOR AMBERLEY AERO.

| Seasonal Temperatures        |                  |          |                 |          | Absolute Humidity          |          |                |          |                  | Seasonal Rainfall (mm) |                          |  |  |  |  |
|------------------------------|------------------|----------|-----------------|----------|----------------------------|----------|----------------|----------|------------------|------------------------|--------------------------|--|--|--|--|
| Extreme Air Temperatures (C) |                  |          |                 |          | Water Vapour Pressure (mb) |          | Dew Points (C) |          |                  |                        |                          |  |  |  |  |
| Mean                         | Highest Recorded | Mean Min | Lowest Recorded | Mean Max | Mean Min                   | Mean Max | Mean Min       | Mean Max | Highest Recorded | Lowest Recorded        | Mean No. of Days of Rain |  |  |  |  |
| SUMMER                       | 38.2             | 43.8     | 13.3            | 6.8      | 31.7                       | 8.3      | 25             | 4        | 801              | 174                    | 36                       |  |  |  |  |
| AUTUMN                       | 34.1             | 38.9     | 2.9             | -0.3     | 28.9                       | 5.5      | 24             | -1       | 448              | 33                     | 25                       |  |  |  |  |
| WINTER                       | 27.8             | 33.3     | -1.1            | -3.9     | 20.4                       | 3.9      | 18             | -5       | 427              | 16                     | 18                       |  |  |  |  |
| SPRING                       | 36.5             | 42.1     | 3.7             | 0.7      | 27.8                       | 4.2      | 23             | -5       | 410              | 52                     | 26                       |  |  |  |  |
| ANNUAL                       | -                | 43.8     | -               | -3.9     |                            |          |                |          | 1398             | 484                    | 105                      |  |  |  |  |

| Wind                 |                  |                 |                 |                  | Prevaling Direction and Mean Speed (km/hr) |                 |                 |  |           | Mean No. of Days of Gales |  |  |  |      |  |
|----------------------|------------------|-----------------|-----------------|------------------|--------------------------------------------|-----------------|-----------------|--|-----------|---------------------------|--|--|--|------|--|
| 10 Min Average Speed |                  |                 |                 |                  | Gust Speed                                 |                 |                 |  | 9 am 3 pm |                           |  |  |  |      |  |
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Highest (km/hr) | Mean Max (km/hr) | Highest (km/hr)                            | Highest (km/hr) | Highest (km/hr) |  |           |                           |  |  |  |      |  |
| SUMMER               | 9.8              | 42.9            | 74.1            | 86.9             | 135                                        | SE (12.9)       | ENE (20.5)      |  |           |                           |  |  |  | 0.46 |  |
| AUTUMN               | 6.7              | 37.8            | 55.6            | 66.6             | 85                                         | S (10.1)        | E (15.7)        |  |           |                           |  |  |  | 0.06 |  |
| WINTER               | 6.3              | 41.7            | 64.9            | 71.7             | 91                                         | W (14.8)        | W (19.2)        |  |           |                           |  |  |  | 0.06 |  |
| SPRING               | 9.0              | 41.5            | 55.6            | 84.2             | 152                                        | NW (11.3)       | ENE (20.6)      |  |           |                           |  |  |  | 0.06 |  |
| ANNUAL               | 8.0              | -               | 74.1            | -                | 152                                        | - (12.3)        | - (19.0)        |  |           |                           |  |  |  | 0.64 |  |

| Fog, Hail, Thunder      |                          |                             |                             | Solar Radiation                               |                                                 |  |  |
|-------------------------|--------------------------|-----------------------------|-----------------------------|-----------------------------------------------|-------------------------------------------------|--|--|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean No. of Days of Thunder | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |  |  |
| SUMMER                  | 3.8                      | 0.34                        | 11.2                        |                                               |                                                 |  |  |
| AUTUMN                  | 11.5                     | 0.06                        | 2.7                         |                                               |                                                 |  |  |
| WINTER                  | 13.7                     | 0.06                        | 1.1                         |                                               |                                                 |  |  |
| SPRING                  | 12.3                     | 0.36                        | 7.9                         |                                               |                                                 |  |  |
| ANNUAL                  | 41.3                     | 0.82                        | 22.9                        |                                               |                                                 |  |  |

No Records Available

No Records Available

T A B L E 5

## SUMMARY OF METEOROLOGICAL DATA FOR BROOME AERO.

|        | Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |          |          | Seasonal Rainfall (mm) |                 |                          |  |
|--------|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------|----------|------------------------|-----------------|--------------------------|--|
|        | Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          |          |          | Dew Points (C)         |                 |                          |  |
|        | Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max | Mean Min | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |  |
| SUMMER | 40.8                         | 44.8             | 20.5     | 15.2            | 38.7                       | 12.8     | 28       | 11       | 1077                   | 72              | 26                       |  |
| AUTUMN | 39.1                         | 42.2             | 12.8     | 8.4             | 37.5                       | 6.3      | 28       | 0        | 440                    | 7               | 13                       |  |
| WINTER | 35.0                         | 37.2             | 7.4      | 3.3             | 28.9                       | 4.0      | 24       | -5       | 217                    | 0               | 5                        |  |
| SPRING | 41.2                         | 44.3             | 12.9     | 8.9             | 34.6                       | 4.5      | 27       | -4       | 64                     | 0               | 3                        |  |
| ANNUAL | -                            | 44.8             | -        | 3.3             | -                          | -        | -        | -        | 1228                   | 139             | 47                       |  |

|        | Wind                 |                  |                 |                                             | Solar Radiation                        |                                    |                                                 |                           |
|--------|----------------------|------------------|-----------------|---------------------------------------------|----------------------------------------|------------------------------------|-------------------------------------------------|---------------------------|
|        | 10 Min Average Speed |                  |                 |                                             | Mean Daily                             |                                    |                                                 |                           |
|        | Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Prevailing Direction and Mean Speed (km/hr) | Mean Daily Total (kWh/m <sup>2</sup> ) | Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) | Mean No. of Days of Gales |
| SUMMER | 13.9                 | 52.0             | 85.2            | 161                                         | 101.7                                  | 161                                | W (14.1)                                        | W (20.7)                  |
| AUTUMN | 10.1                 | 44.4             | 79.7            | 115                                         | 80.2                                   | 115                                | E (16.4)                                        | W (17.3)                  |
| WINTER | 10.3                 | 40.5             | 55.6            | 85                                          | 62.0                                   | 85                                 | E (17.7)                                        | W (14.8)                  |
| SPRING | 12.7                 | 40.8             | 55.6            | 85                                          | 62.4                                   | 85                                 | W (13.5)                                        | W (21.7)                  |
| ANNUAL | 11.8                 | -                | 85.2            | 161                                         | -                                      | 161                                | - (15.4)                                        | - (18.6)                  |

|        | Fog, Hail, Thunder      |                          |                             |                             | No Records Available    |                          |                             |                             |
|--------|-------------------------|--------------------------|-----------------------------|-----------------------------|-------------------------|--------------------------|-----------------------------|-----------------------------|
|        | Mean No. of Days        |                          |                             |                             | Mean No. of Days        |                          |                             |                             |
|        | Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean No. of Days of Thunder | Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean No. of Days of Thunder |
| SUMMER | 0.17                    | 0.08                     | 17.4                        | 17.4                        | 0.17                    | 0.08                     | 17.4                        | 17.4                        |
| AUTUMN | 2.0                     | 0.00                     | 5.8                         | 5.8                         | 2.0                     | 0.00                     | 5.8                         | 5.8                         |
| WINTER | 9.5                     | 0.00                     | 0.10                        | 0.10                        | 9.5                     | 0.00                     | 0.10                        | 0.10                        |
| SPRING | 5.4                     | 0.03                     | 1.9                         | 1.9                         | 5.4                     | 0.03                     | 1.9                         | 1.9                         |
| ANNUAL | 17.1                    | 0.11                     | 25.2                        | 25.2                        | 17.1                    | 0.11                     | 25.2                        | 25.2                        |

T A B L E 6

## SUMMARY OF METEOROLOGICAL DATA FOR CAIRNS AERO.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                |          | Seasonal Rainfall (mm) |                  |                  |                  |                          |  |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|----------|------------------------|------------------|------------------|------------------|--------------------------|--|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) |          | Highest Recorded       |                  | Lowest Recorded  |                  | Mean No. of Days of Rain |  |
| Mean                         | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Mean Min | Highest Recorded       | Highest Recorded | Highest Recorded | Highest Recorded | Mean No. of Days of Rain |  |
| SUMMER                       | 36.2             | 40.4     | 19.8            | 17.1                       | 34.1     | 17.0           | 26       | 15                     | 1984             | 372              | 53               |                          |  |
| AUTUMN                       | 33.5             | 37.3     | 14.6            | 10.1                       | 32.7     | 11.7           | 26       | 9                      | 1448             | 213              | 55               |                          |  |
| WINTER                       | 29.1             | 30.6     | 10.5            | 6.2                        | 26.7     | 7.6            | 22       | 3                      | 258              | 21               | 28               |                          |  |
| SPRING                       | 33.9             | 37.2     | 14.4            | 11.1                       | 30.8     | 9.7            | 25       | 7                      | 428              | 21               | 25               |                          |  |
| ANNUAL                       | -                | 40.4     | -               | 6.2                        | -        | -              | -        | -                      | 3083             | 928              | 161              |                          |  |

| Wind*                |                  |                 |                    | Prevailing Direction and Mean Speed |           | Mean No. of Days of Gales |  |
|----------------------|------------------|-----------------|--------------------|-------------------------------------|-----------|---------------------------|--|
| 10 Min Average Speed |                  |                 |                    | 9 am                                |           | 3 pm                      |  |
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Gust Speed (km/hr) | 9 am                                | 3 pm      | Mean No. of Days of Gales |  |
| SUMMER               | 9.2              | 36.5            | 59.3               | 106                                 | NE (13.8) | 0.09                      |  |
| AUTUMN               | 12.9             | 41.2            | 74.1               | 111                                 | SE (20.6) | 0.14                      |  |
| WINTER               | 14.0             | 38.5            | 48.2               | 91                                  | SE (21.0) | 0.00                      |  |
| SPRING               | 11.7             | 39.3            | 53.7               | 91                                  | SE (23.3) | 0.00                      |  |
| ANNUAL               | 12.0             | -               | 74.1               | 111                                 | - (19.7)  | 0.23                      |  |

| Solar Radiation         |                          |                             |                                        | No Records Available                          |                                                 |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|
| Fog, Hail, Thunder      |                          |                             |                                        | No Records Available                          |                                                 |
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |
| SUMMER                  | 0.11                     | 0.00                        | 7.7                                    | -                                             | -                                               |
| AUTUMN                  | 0.26                     | 0.00                        | 1.8                                    | -                                             | -                                               |
| WINTER                  | 0.31                     | 0.00                        | 0.03                                   | -                                             | -                                               |
| SPRING                  | 0.23                     | 0.14                        | 1.9                                    | -                                             | -                                               |
| ANNUAL                  | 0.91                     | 0.14                        | 11.4                                   | -                                             | -                                               |

\* Does not include winds associated with tropical cyclones

T A B L E 7

## SUMMARY OF METEOROLOGICAL DATA FOR CANBERRA (A) M.O.

|        | Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |          |          | Seasonal Rainfall (mm) |                 |                  |                          |
|--------|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------|----------|------------------------|-----------------|------------------|--------------------------|
|        | Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          |          |          | Dew Points (C)         |                 |                  |                          |
|        | Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max | Mean Min | Highest Recorded       | Lowest Recorded | Highest Recorded | Mean No. of Days of Rain |
| SUMMER | 36.5                         | 42.2             | 3.7      | 1.1             | 23.0                       | 3.5      | 20       | -7       | 477                    | 40              | 477              | 23                       |
| AUTUMN | 30.8                         | 36.4             | -4.0     | -7.5            | 20.3                       | 3.8      | 18       | -6       | 468                    | 24              | 468              | 23                       |
| WINTER | 18.1                         | 21.7             | -6.5     | -10.5           | 13.3                       | 2.9      | 11       | -9       | 247                    | 40              | 247              | 32                       |
| SPRING | 30.9                         | 38.8             | -3.2     | -5.6            | 18.9                       | 3.4      | 17       | -7       | 304                    | 46              | 304              | 31                       |
| ANNUAL | -                            | 42.2             | -        | -10.5           | -                          | -        | -        | -        | 1063                   | 305             | 1063             | 109                      |

|        | Wind                 |                  |                 |                                                       | Solar Radiation                        |                                    |                                                 |                           |
|--------|----------------------|------------------|-----------------|-------------------------------------------------------|----------------------------------------|------------------------------------|-------------------------------------------------|---------------------------|
|        | 10 Min Average Speed |                  |                 |                                                       | Mean Daily                             |                                    |                                                 |                           |
|        | Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Prevailing Direction and Mean Speed (km/hr) 9 am 3 pm | Mean Daily Total (kWh/m <sup>2</sup> ) | Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) | Mean No. of Days of Gales |
| SUMMER | 9.8                  | 49.5             | 74.1            | NW (17.0)                                             | 120                                    | 120                                | NW (19.4)                                       | 0.37                      |
| AUTUMN | 8.1                  | 47.0             | 74.1            | NW (19.7)                                             | 111                                    | 111                                | NW (18.2)                                       | 0.14                      |
| WINTER | 10.3                 | 53.5             | 92.6            | NW (22.2)                                             | 113                                    | 113                                | NW (21.4)                                       | 0.45                      |
| SPRING | 11.2                 | 53.5             | 72.3            | NW (20.4)                                             | 128                                    | 128                                | NW (22.6)                                       | 0.39                      |
| ANNUAL | 9.9                  | -                | 92.6            | - (19.8)                                              | -                                      | -                                  | - (20.4)                                        | 1.4                       |

|        | Fog, Hail, Thunder |         |            |            | No Records Available |         |            |            |
|--------|--------------------|---------|------------|------------|----------------------|---------|------------|------------|
|        | Mean No. of Days   |         |            |            | Mean No. of Days     |         |            |            |
|        | of Fog             | of Hail | of Thunder | of Thunder | of Fog               | of Hail | of Thunder | of Thunder |
| SUMMER | 2.9                | 0.91    | 9.1        | 9.1        | 2.9                  | 0.91    | 9.1        | 9.1        |
| AUTUMN | 14.7               | 0.35    | 2.7        | 2.7        | 14.7                 | 0.35    | 2.7        | 2.7        |
| WINTER | 19.8               | 1.0     | 1.1        | 1.1        | 19.8                 | 1.0     | 1.1        | 1.1        |
| SPRING | 8.7                | 2.0     | 6.2        | 6.2        | 8.7                  | 2.0     | 6.2        | 6.2        |
| ANNUAL | 46.1               | 4.3     | 19.1       | 19.1       | 46.1                 | 4.3     | 19.1       | 19.1       |

T A B L E 8

SUMMARY OF METEOROLOGICAL DATA FOR COCOS ISLAND

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                |          | Seasonal Rainfall (mm) |                 |                          |   |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|----------|------------------------|-----------------|--------------------------|---|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) |          | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |   |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Mean Min |                        |                 |                          |   |
| SUMMER                       | 31.2             | 32.3     | 21.9            | 20.1                       | 33.4     | 19.9           | 26       | 18                     | 1037            | 86                       | - |
| AUTUMN                       | 31.1             | 32.2     | 21.8            | 19.4                       | 33.9     | 20.7           | 26       | 18                     | 1229            | 234                      | - |
| WINTER                       | 29.6             | 30.7     | 20.9            | 18.3                       | 32.5     | 18.3           | 26       | 16                     | 1375            | 132                      | - |
| SPRING                       | 30.1             | 31.1     | 21.1            | 19.3                       | 32.2     | 18.4           | 25       | 16                     | 1243            | 36                       | - |
| ANNUAL                       | -                | 32.3     | -               | 18.3                       |          |                |          |                        | 3289            | 1101                     | - |

| 10 Min Average Speed |                  |                 |                    | Wind |            | Mean No. of Days of Gales |
|----------------------|------------------|-----------------|--------------------|------|------------|---------------------------|
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Gust Speed (km/hr) | Mean | Direction  |                           |
| SUMMER               | 18.6             | 46.4            | 64.9               | 122  | SE (23.1)  | 0.40                      |
| AUTUMN               | 21.4             | 51.3            | 66.7               | 102  | SE (25.1)  | 0.52                      |
| WINTER               | 26.6             | 52.0            | 59.3               | 103  | SE (30.2)  | 0.04                      |
| SPRING               | 27.3             | 49.7            | 64.9               | 93   | ESE (29.6) | 0.16                      |
| ANNUAL               | 23.5             | -               | 66.7               | 122  | - (27.0)   | 1.1                       |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |  |  |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|--|--|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |  |  |
| SUMMER                  | 0.04                     | 0.00                        | 1.8                                    |                                               |                                                 |  |  |
| AUTUMN                  | 0.00                     | 0.00                        | 3.1                                    |                                               |                                                 |  |  |
| WINTER                  | 0.04                     | 0.00                        | 0.56                                   |                                               |                                                 |  |  |
| SPRING                  | 0.00                     | 0.00                        | 0.08                                   |                                               |                                                 |  |  |
| ANNUAL                  | 0.08                     | 0.00                        | 5.5                                    |                                               |                                                 |  |  |

N o R e c o r d s A v a i l a b l e

T A B L E 9

SUMMARY OF METEOROLOGICAL DATA FOR DARWIN AERO.

|        | Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |          |          | Seasonal Rainfall (mm) |                 |                          |  |
|--------|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------|----------|------------------------|-----------------|--------------------------|--|
|        | Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          |          |          | Dew Points (C)         |                 |                          |  |
|        | Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max | Mean Min | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |  |
| SUMMER | 35.1                         | 37.1             | 20.9     | 17.2            | 35.5                       | 18.7     | 27       | 16       | 1516                   | 531             | 49                       |  |
| AUTUMN | 34.8                         | 36.3             | 17.5     | 14.2            | 34.7                       | 9.4      | 27       | 6        | 687                    | 129             | 30                       |  |
| WINTER | 34.1                         | 37.0             | 14.3     | 10.4            | 29.1                       | 4.6      | 24       | -4       | 85                     | 0               | 2                        |  |
| SPRING | 36.1                         | 37.2             | 19.6     | 16.7            | 34.5                       | 6.2      | 27       | 0        | 548                    | 33              | 20                       |  |
| ANNUAL | -                            | 37.2             | -        | 10.4            | -                          | -        | -        | -        | 2644                   | 1025            | 101                      |  |

|        | Wind*                |                  |                 |                                                       | Solar Radiation                        |                                    |                                                 |                           |
|--------|----------------------|------------------|-----------------|-------------------------------------------------------|----------------------------------------|------------------------------------|-------------------------------------------------|---------------------------|
|        | 10 Min Average Speed |                  |                 |                                                       | Mean Daily                             |                                    |                                                 |                           |
|        | Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Prevailing Direction and Mean Speed (km/hr) 9 am 3 pm | Mean Daily Total (kWh/m <sup>2</sup> ) | Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) | Mean No. of Days of Gales |
| SUMMER | 11.3                 | 44.3             | 120.4           | W (15.2) NW (18.1)                                    | 106                                    | 0.95                               | 1.22                                            | 0.14                      |
| AUTUMN | 9.7                  | 42.7             | 64.9            | SE (12.2) NW (15.2)                                   | 91                                     | 0.89                               | 1.23                                            | 0.03                      |
| WINTER | 10.3                 | 38.9             | 55.6            | SE (14.0) NW (16.7)                                   | 67                                     | 0.83                               | 0.97                                            | 0.0                       |
| SPRING | 10.3                 | 38.0             | 51.9            | E (10.3) NW (19.2)                                    | 117                                    | 0.99                               | 1.25                                            | 0.03                      |
| ANNUAL | 10.4                 | -                | 120.4           | - (12.9) - (17.3)                                     | 117                                    | 0.92                               | 1.25                                            | 0.20                      |

|        | Fog, Hail, Thunder |         |            |            | Does not include winds associated with tropical cyclones |         |            |            |
|--------|--------------------|---------|------------|------------|----------------------------------------------------------|---------|------------|------------|
|        | Mean No. of Days   |         |            |            | Mean No. of Days                                         |         |            |            |
|        | of Fog             | of Hail | of Thunder | of Thunder | of Fog                                                   | of Hail | of Thunder | of Thunder |
| SUMMER | 0.14               | 0.03    | 28         | 28         | 0.14                                                     | 0.00    | 10         | 10         |
| AUTUMN | 0.14               | 0.00    | 10         | 10         | 0.14                                                     | 0.00    | 0.06       | 0.06       |
| WINTER | 1.5                | 0.00    | 0.06       | 0.06       | 1.5                                                      | 0.00    | 12         | 12         |
| SPRING | 0.3                | 0.03    | 12         | 12         | 0.3                                                      | 0.03    | 50.1       | 50.1       |
| ANNUAL | 2.1                | 0.06    | 50.1       | 50.1       | 2.1                                                      | 0.06    | 50.1       | 50.1       |

T A B L E 10

## SUMMARY OF METEOROLOGICAL DATA FOR EAST SALE AERO.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                | Seasonal Rainfall (mm) |                 |                          |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|------------------------|-----------------|--------------------------|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       |                        |                 |                          |
| SUMMER                       | 39.4             | 45.6     | 5.2             | 2.2                        | 25.2     | 6.9            | 21                     | 2               | 28                       |
| AUTUMN                       | 32.6             | 39.8     | 0.2             | -2.8                       | 22.5     | 6.2            | 19                     | 0               | 36                       |
| WINTER                       | 20.9             | 24.5     | -2.7            | -5.8                       | 14.9     | 4.7            | 13                     | -3              | 45                       |
| SPRING                       | 32.0             | 36.8     | -0.0            | -3.7                       | 20.4     | 5.5            | 18                     | -1              | 44                       |
| ANNUAL                       | -                | 45.6     | -               | -5.8                       | -        | -              | 943                    | 328             | 153                      |

| Wind                 |                  |                 |                 | Prevaling Direction and Mean Speed (km/hr) |                 |           | Mean No. of Days of Gales |
|----------------------|------------------|-----------------|-----------------|--------------------------------------------|-----------------|-----------|---------------------------|
| 10 Min Average Speed |                  |                 |                 | Gust Speed                                 |                 | 9 am 3 pm |                           |
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Highest (km/hr) | Mean Max (km/hr)                           | Highest (km/hr) |           |                           |
| SUMMER               | 13.9             | 58.8            | 88.9            | 97.4                                       | 122             | W (20.2)  | E (23.3)                  |
| AUTUMN               | 11.1             | 57.7            | 85.2            | 89.6                                       | 104             | W (17.2)  | E (16.8)                  |
| WINTER               | 11.6             | 60.6            | 92.6            | 97.3                                       | 132             | W (17.1)  | W (24.9)                  |
| SPRING               | 14.0             | 61.7            | 92.6            | 100.6                                      | 119             | W (23.3)  | W (29.3)                  |
| ANNUAL               | 12.7             | -               | 92.6            | -                                          | 132             | - (19.5)  | - (23.6)                  |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                                            |  |                                                 |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|------------------------------------------------------------|--|-------------------------------------------------|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Highest Recorded Intensity (kW/m <sup>2</sup> ) |  | Highest Recorded Intensity (kW/m <sup>2</sup> ) |
|                         |                          |                             |                                        | Max Intensity (kW/m <sup>2</sup> )                         |  |                                                 |
| SUMMER                  | 10.8                     | 0.15                        | 5.4                                    |                                                            |  |                                                 |
| AUTUMN                  | 22.5                     | 0.21                        | 1.8                                    |                                                            |  |                                                 |
| WINTER                  | 22.2                     | 0.53                        | 0.32                                   |                                                            |  |                                                 |
| SPRING                  | 15.8                     | 0.68                        | 2.9                                    |                                                            |  |                                                 |
| ANNUAL                  | 71.3                     | 1.6                         | 10.4                                   |                                                            |  |                                                 |

No Records Available

T A B L E 11

SUMMARY OF METEOROLOGICAL DATA FOR KATHERINE P.O.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |          |          | Seasonal Rainfall (mm) |                 |                  |                          |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------|----------|------------------------|-----------------|------------------|--------------------------|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          |          |          | Dew Points (C)         |                 |                  |                          |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max | Mean Min | Highest Recorded       | Lowest Recorded | Highest Recorded | Mean No. of Days of Rain |
| SUMMER                       | 39.9             | 43.3     | 19.4            | 16.7                       | 12.8     | 28       | 11       | 772                    | 294             | 772              | 39                       |
| AUTUMN                       | 37.2             | 39.2     | 10.4            | 7.2                        | 6.8      | 28       | 2        | 478                    | 17              | 478              | 13                       |
| WINTER                       | 35.9             | 37.3     | 5.7             | 2.8                        | 3.5      | 21       | -7       | 42                     | 0               | 42               | 0                        |
| SPRING                       | 41.3             | 45.6     | 13.3            | 9.8                        | 4.3      | 26       | -4       | 264                    | 17              | 264              | 11                       |
| ANNUAL                       | -                | 45.6     | -               | 2.8                        | -        | -        | -        | 1302                   | 407             | 1302             | 63                       |

| 10 Min Average Speed |                  |                 |                              | Wind       |                  |                 |                              | Prevaling Direction and Mean Speed (km/hr) |          |          |          | Mean No. of Days of Gales |      |      |      |
|----------------------|------------------|-----------------|------------------------------|------------|------------------|-----------------|------------------------------|--------------------------------------------|----------|----------|----------|---------------------------|------|------|------|
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | 10 Min Average Speed (km/hr) | Gust Speed | Mean Max (km/hr) | Highest (km/hr) | 10 Min Average Speed (km/hr) | 9 am                                       | 3 pm     | 9 am     | 3 pm     | 9 am                      | 3 pm | 9 am | 3 pm |
| SUMMER               | 4.1              | 32.5            | 46.3                         | -          | -                | -               | -                            | NW (8.7)                                   | NW (9.6) | NW (8.7) | NW (9.6) | 0.00                      | 0.00 | 0.00 | 0.00 |
| AUTUMN               | 6.5              | 34.8            | 46.3                         | -          | -                | -               | -                            | E (11.2)                                   | E (13.1) | E (11.2) | E (13.1) | 0.00                      | 0.00 | 0.00 | 0.00 |
| WINTER               | 7.1              | 40.3            | 55.6                         | -          | -                | -               | -                            | E (12.6)                                   | E (11.9) | E (12.6) | E (11.9) | 0.00                      | 0.00 | 0.00 | 0.00 |
| SPRING               | 5.5              | 31.5            | 46.3                         | -          | -                | -               | -                            | NW (7.9)                                   | E (11.3) | NW (7.9) | E (11.3) | 0.13                      | 0.13 | 0.13 | 0.13 |
| ANNUAL               | 5.8              | -               | 55.6                         | -          | -                | -               | -                            | - (10.1)                                   | - (11.5) | - (10.1) | - (11.5) | 0.13                      | 0.13 | 0.13 | 0.13 |

| Fog, Hail, Thunder      |                          |                             |                             | Solar Radiation                        |                                               |                                                 |                                                 |
|-------------------------|--------------------------|-----------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |
| SUMMER                  | 0.00                     | 0.00                        | 4.8                         | -                                      | -                                             | -                                               | -                                               |
| AUTUMN                  | 0.00                     | 0.00                        | 0.75                        | -                                      | -                                             | -                                               | -                                               |
| WINTER                  | 0.13                     | 0.00                        | 0.00                        | -                                      | -                                             | -                                               | -                                               |
| SPRING                  | 0.00                     | 0.00                        | 2.1                         | -                                      | -                                             | -                                               | -                                               |
| ANNUAL                  | 0.13                     | 0.00                        | 7.7                         | -                                      | -                                             | -                                               | -                                               |

No Records Available

T A B L E 12

## SUMMARY OF METEOROLOGICAL DATA FOR KIMBERLEY RESEARCH

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |          |          | Seasonal Rainfall (mm) |                 |                          |    |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------|----------|------------------------|-----------------|--------------------------|----|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          |          |          | Dew Points (C)         |                 |                          |    |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max | Mean Min | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |    |
| SUMMER                       | 41.8             | 43.4     | 19.9            | 16.8                       | 34.8     | 15.1     | 27       | 13                     | 793             | 266                      | 37 |
| AUTUMN                       | 38.2             | 40.5     | 11.7            | 8.1                        | 32.2     | 6.1      | 25       | 0                      | 414             | 49                       | 12 |
| WINTER                       | 36.6             | 38.4     | 8.1             | 4.4                        | 25.8     | 3.7      | 22       | -6                     | 78              | 0                        | 0  |
| SPRING                       | 42.2             | 44.4     | 13.5            | 10.6                       | 31.1     | 4.4      | 25       | -4                     | 331             | 19                       | 12 |
| ANNUAL                       | -                | 44.4     | -               | 4.4                        | -        | -        | -        | -                      | 1403            | 526                      | 61 |

| Wind                 |                  |                 |                 | Prevailing Direction and Mean Speed (km/hr) |                 |                  |                 | Mean No. of Days of Gales |      |
|----------------------|------------------|-----------------|-----------------|---------------------------------------------|-----------------|------------------|-----------------|---------------------------|------|
| 10 Min Average Speed |                  |                 |                 | Gust Speed                                  |                 |                  |                 |                           |      |
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Highest (km/hr) | Mean Max (km/hr)                            | Highest (km/hr) | Mean Max (km/hr) | Highest (km/hr) | 9 am                      | 3 pm |
| SUMMER               | 6.8              | 29.9            | 51.9            | -                                           | -               | -                | -               | NW (8.3)                  | -    |
| AUTUMN               | 10.0             | 40.6            | 51.9            | -                                           | -               | -                | -               | SE (14.1)                 | -    |
| WINTER               | 10.0             | 41.7            | 48.2            | -                                           | -               | -                | -               | SE (14.4)                 | -    |
| SPRING               | 9.8              | 37.4            | 50.0            | -                                           | -               | -                | -               | E (10.7)                  | -    |
| ANNUAL               | 9.2              | -               | 51.9            | -                                           | -               | -                | -               | - (11.9)                  | -    |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |  |  |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|--|--|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |  |  |
| SUMMER                  | 0.25                     | 0.17                        | 29.8                                   | -                                             | -                                               |  |  |
| AUTUMN                  | 0.17                     | 0.00                        | 8.3                                    | -                                             | -                                               |  |  |
| WINTER                  | 0.17                     | 0.00                        | 0.17                                   | -                                             | -                                               |  |  |
| SPRING                  | 0.08                     | 0.25                        | 9.9                                    | -                                             | -                                               |  |  |
| ANNUAL                  | 0.67                     | 0.42                        | 48.2                                   | -                                             | -                                               |  |  |

No Records Available

No Records Available

T A B L E 13

## SUMMARY OF METEOROLOGICAL DATA FOR MELBOURNE R.O.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                |          | Seasonal Rainfall (mm) |                 |                          |  |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|----------|------------------------|-----------------|--------------------------|--|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) |          | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |  |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Mean Min |                        |                 |                          |  |
| SUMMER                       | 40.2             | 45.6     | 7.5             | 4.4                        | 25.1     | 6.4            | 21       | 361                    | 46              | 27                       |  |
| AUTUMN                       | 34.7             | 41.7     | 2.7             | -1.1                       | 21.4     | 6.1            | 19       | 324                    | 58              | 35                       |  |
| WINTER                       | 20.6             | 25.0     | -0.3            | -2.7                       | 14.8     | 5.3            | 13       | 286                    | 75              | 45                       |  |
| SPRING                       | 34.0             | 40.9     | 2.0             | -0.5                       | 19.4     | 5.6            | 17       | 451                    | 68              | 41                       |  |
| ANNUAL                       | -                | 45.6     | -               | -2.7                       |          |                |          | 968                    | 332             | 148                      |  |

| 10 Min Average Speed |                  |                 |                 | Gust Speed       |                 | Prevailing Direction and Mean Speed (km/hr) |            | Mean No. of Days of Gales |
|----------------------|------------------|-----------------|-----------------|------------------|-----------------|---------------------------------------------|------------|---------------------------|
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Highest (km/hr) | Mean Max (km/hr) | Highest (km/hr) | 9 am                                        | 3 pm       |                           |
| SUMMER               | 12.2             | 43.5            | 51.9            | 83.8             | 95              | N (20.4)                                    | S (18.7)   | 0.09                      |
| AUTUMN               | 10.8             | 44.7            | 59.3            | 83.6             | 96              | N (16.5)                                    | S (14.6)   | 0.23                      |
| WINTER               | 12.4             | 47.3            | 59.3            | 94.5             | 107             | N (17.0)                                    | NNW (23.3) | 0.27                      |
| SPRING               | 12.9             | 47.0            | 66.7            | 91.0             | 111             | N (20.9)                                    | S (16.3)   | 0.32                      |
| ANNUAL               | 12.1             | -               | 66.7            | -                | 111             | - (18.7)                                    | - (18.3)   | 0.91                      |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |
| SUMMER                  | 0.59                     | 0.64                        | 4.1                                    | 0.91                                          | 1.16                                            |
| AUTUMN                  | 4.3                      | 0.55                        | 2.0                                    | 0.56                                          | 0.98                                            |
| WINTER                  | 8.4                      | 1.4                         | 0.82                                   | 0.41                                          | 0.70                                            |
| SPRING                  | 1.7                      | 1.6                         | 3.2                                    | 0.76                                          | 1.14                                            |
| ANNUAL                  | 15.0                     | 4.2                         | 10.1                                   | 0.66                                          | 1.16                                            |

T A B L E 14

## SUMMARY OF METEOROLOGICAL DATA FOR ONSLOW AERO.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |          |          | Seasonal Rainfall (mm) |                 |                          |  |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------|----------|------------------------|-----------------|--------------------------|--|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          |          |          | Dew Points (C)         |                 |                          |  |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max | Mean Min | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |  |
| SUMMER 45.7                  | 48.1             | 18.1     | 16.3            | 37.8                       | 6.3      | 31       | 0        | 616                    | 0               | 8                        |  |
| AUTUMN 42.3                  | 45.7             | 11.7     | 7.5             | 36.3                       | 6.7      | 29       | 1        | 429                    | 9               | 9                        |  |
| WINTER 31.2                  | 34.8             | 7.0      | 3.5             | 26.4                       | 4.3      | 24       | -4       | 312                    | 0.3             | 10                       |  |
| SPRING 41.6                  | 44.6             | 11.0     | 8.4             | 30.4                       | 3.9      | 29       | -6       | 62                     | 0               | 2                        |  |
| ANNUAL -                     | 48.1             | -        | 3.5             |                            |          |          |          | 1084                   | 26              | 29                       |  |

| Wind*                |                  |                 |                 | Prevaling Direction and Mean Speed (km/hr) |                 |                 |           | Mean No. of Days of Gales |  |
|----------------------|------------------|-----------------|-----------------|--------------------------------------------|-----------------|-----------------|-----------|---------------------------|--|
| 10 Min Average Speed |                  |                 |                 | Gust Speed                                 |                 |                 |           |                           |  |
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Highest (km/hr) | Mean Max (km/hr)                           | Highest (km/hr) | Highest (km/hr) | 9 am 3 pm |                           |  |
| SUMMER 18.6          | 56.1             | 107.5           | 150             | 88.8                                       | 150             | S (19.6)        | W (30.7)  | 2.0                       |  |
| AUTUMN 14.3          | 54.4             | 92.6            | 152             | 89.5                                       | 152             | SE (15.8)       | NW (17.5) | 1.0                       |  |
| WINTER 13.4          | 44.1             | 57.4            | 102             | 64.5                                       | 102             | SE (15.6)       | N (17.4)  | 0.09                      |  |
| SPRING 19.0          | 47.9             | 70.4            | 98              | 66.9                                       | 98              | S (21.8)        | W (29.6)  | 0.26                      |  |
| ANNUAL 16.3          | -                | 107.5           | 152             | -                                          | 152             | - (18.3)        | - (23.8)  | 3.3                       |  |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |  |  |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|--|--|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |  |  |
| SUMMER 0.14             | 0.03                     | 7.5                         |                                        |                                               |                                                 |  |  |
| AUTUMN 0.74             | 0.00                     | 4.0                         |                                        |                                               |                                                 |  |  |
| WINTER 0.99             | 0.00                     | 0.15                        |                                        |                                               |                                                 |  |  |
| SPRING 0.61             | 0.00                     | 0.55                        |                                        |                                               |                                                 |  |  |
| ANNUAL 2.5              | 0.03                     | 12.2                        |                                        |                                               |                                                 |  |  |

No Records Available

\* Does not include winds associated with tropical cyclones

T A B L E 15

## SUMMARY OF METEOROLOGICAL DATA FOR PERTH R.O.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                |          | Seasonal Rainfall (mm) |                 |                          |  |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|----------|------------------------|-----------------|--------------------------|--|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) |          |                        |                 |                          |  |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Mean Min | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |  |
| SUMMER                       | 40.5             | 44.7     | 11.0            | 8.6                        | 25.8     | 6.3            | 22       | 0                      | 180             | 1                        |  |
| AUTUMN                       | 37.3             | 41.0     | 6.6             | 3.0                        | 24.9     | 6.0            | 21       | 0                      | 372             | 64                       |  |
| WINTER                       | 24.1             | 28.1     | 3.7             | 1.6                        | 19.3     | 5.9            | 17       | -1                     | 957             | 260                      |  |
| SPRING                       | 35.3             | 39.9     | 5.3             | 2.6                        | 20.8     | 5.7            | 18       | -1                     | 364             | 35                       |  |
| ANNUAL                       | -                | 44.7     | -               | 1.6                        |          |                |          |                        | 1339            | 509                      |  |

| 10 Min Average Speed |                  |                 |                  | Gust Speed      |      | Prevailing Direction and Mean Speed (km/hr) |           | Mean No. of Days of Gales |
|----------------------|------------------|-----------------|------------------|-----------------|------|---------------------------------------------|-----------|---------------------------|
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Mean Max (km/hr) | Highest (km/hr) | 9 am | 3 pm                                        |           |                           |
| SUMMER               | 15.7             | 42.4            | 55.6             | 74.4            | 103  | E (19.1)                                    | SW (23.5) | 0.17                      |
| AUTUMN               | 12.4             | 46.0            | 74.1             | 91.4            | 119  | E (17.0)                                    | SW (18.5) | 0.66                      |
| WINTER               | 12.2             | 52.1            | 77.8             | 108.8           | 156  | NE (10.7)                                   | W (19.4)  | 2.0                       |
| SPRING               | 14.0             | 48.8            | 72.3             | 91.0            | 117  | E (16.2)                                    | SW (21.2) | 1.0                       |
| ANNUAL               | 13.6             | -               | 77.8             | -               | 156  | - (15.8)                                    | - (20.7)  | 3.8                       |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |      |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|------|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |      |
| SUMMER                  | 0.86                     | 0.06                        | 2.1                                    | 7.48                                          | 1.02                                            | 1.19 |
| AUTUMN                  | 3.5                      | 0.26                        | 3.8                                    | 4.50                                          | 0.72                                            | 0.99 |
| WINTER                  | 3.8                      | 1.5                         | 4.8                                    | 2.75                                          | 0.53                                            | 0.79 |
| SPRING                  | 2.1                      | 0.69                        | 2.2                                    | 5.79                                          | 0.89                                            | 1.13 |
| ANNUAL                  | 10.3                     | 2.5                         | 12.9                                   | 5.13                                          | 0.79                                            | 1.19 |

\* Does not include winds associated with tropical cyclones

T A B L E 16

## SUMMARY OF METEOROLOGICAL DATA FOR RICHMOND AERO.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                |          | Seasonal Rainfall (mm) |                 |                          |     |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|----------|------------------------|-----------------|--------------------------|-----|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) |          | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |     |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Mean Min |                        |                 |                          |     |
| SUMMER                       | 40.6             | 43.9     | 10.1            | 6.1                        | 28.9     | 6.5            | 24       | 1                      | 661             | 40                       | 41  |
| AUTUMN                       | 34.6             | 40.1     | 1.0             | -1.3                       | 26.1     | 5.6            | 22       | -1                     | 530             | 65                       | 27  |
| WINTER                       | 25.7             | 32.8     | -2.5            | -8.3                       | 17.1     | 3.8            | 15       | -6                     | 321             | 20                       | 23  |
| SPRING                       | 36.8             | 41.1     | 1.9             | -1.2                       | 24.2     | 4.1            | 21       | -5                     | 480             | 51                       | 32  |
| ANNUAL                       | -                | 43.9     | -               | -8.3                       | -        | -              | -        | -                      | 1466            | 308                      | 123 |

| Wind                 |                  |                 |                                             | Solar Radiation                    |                                        |                  |      |
|----------------------|------------------|-----------------|---------------------------------------------|------------------------------------|----------------------------------------|------------------|------|
| 10 Min Average Speed |                  |                 |                                             | Mean Daily                         |                                        | Highest Recorded |      |
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Prevailing Direction and Mean Speed (km/hr) | Max Intensity (kW/m <sup>2</sup> ) | Highest Intensity (kW/m <sup>2</sup> ) |                  |      |
| SUMMER               | 7.3              | 46.0            | 64.9                                        | 135                                | S (14.0)                               | SE (17.5)        | 0.62 |
| AUTUMN               | 5.5              | 42.5            | 59.3                                        | 122                                | SSW (14.7)                             | SE (15.5)        | 0.13 |
| WINTER               | 6.5              | 51.3            | 72.3                                        | 126                                | SSW (17.2)                             | W (25.0)         | 0.60 |
| SPRING               | 8.7              | 54.6            | 74.1                                        | 117                                | S (14.1)                               | SE (16.5)        | 0.43 |
| ANNUAL               | 7.0              | -               | 74.1                                        | 135                                | - (15.0)                               | - (18.6)         | 1.8  |

| Fog, Hail, Thunder      |                          |                             |                                        | No Records Available                          |                                                 |  |  |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|--|--|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |  |  |
| SUMMER                  | 6.0                      | 0.36                        | 7.4                                    |                                               |                                                 |  |  |
| AUTUMN                  | 21.0                     | 0.13                        | 2.6                                    |                                               |                                                 |  |  |
| WINTER                  | 20.5                     | 0.07                        | 0.93                                   |                                               |                                                 |  |  |
| SPRING                  | 12.6                     | 0.23                        | 6.3                                    |                                               |                                                 |  |  |
| ANNUAL                  | 60.1                     | 0.79                        | 17.2                                   |                                               |                                                 |  |  |

T A B L E 17

SUMMARY OF METEOROLOGICAL DATA FOR TOWNSVILLE AERO.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |          |          | Seasonal Rainfall (mm) |                 |                          |    |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------|----------|------------------------|-----------------|--------------------------|----|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          |          |          | Dew Points (C)         |                 |                          |    |
| Mean                         | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max | Mean Min | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |    |
| SUMMER                       | 35.9             | 42.7     | 20.0            | 17.9                       | 35.3     | 14.5     | 27       | 13                     | 1701            | 198                      | 43 |
| AUTUMN                       | 33.2             | 37.3     | 10.6            | 6.2                        | 33.2     | 7.3      | 26       | 3                      | 834             | 47                       | 29 |
| WINTER                       | 30.1             | 33.3     | 6.3             | 1.1                        | 26.1     | 4.1      | 22       | -5                     | 211             | 0.3                      | 10 |
| SPRING                       | 34.9             | 41.0     | 11.7            | 8.2                        | 31.1     | 5.0      | 25       | -3                     | 353             | 6                        | 13 |
| ANNUAL                       | -                | 42.7     | -               | 1.1                        | -        | -        | -        | -                      | 2196            | 464                      | 95 |

| 10 Min Average Speed |                  |                 |            | Wind*            |                 | Prevailing Direction and Mean Speed (km/hr) |           | Mean No. of Days of Gales |      |
|----------------------|------------------|-----------------|------------|------------------|-----------------|---------------------------------------------|-----------|---------------------------|------|
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Gust Speed | Mean Max (km/hr) | Highest (km/hr) | 9 am                                        | 3 pm      | 9 am                      | 3 pm |
| SUMMER               | 11.1             | 41.9            | 63.0       | 74.6             | 115             | SE (11.8)                                   | NE (20.4) | 0.11                      | 0.11 |
| AUTUMN               | 9.5              | 39.0            | 55.6       | 69.4             | 143             | SE (11.9)                                   | NE (18.9) | 0.11                      | 0.11 |
| WINTER               | 9.1              | 37.7            | 46.3       | 60.4             | 85              | SE (10.1)                                   | NE (18.8) | 0.06                      | 0.06 |
| SPRING               | 13.0             | 40.4            | 55.6       | 63.7             | 83              | E (17.2)                                    | NE (23.6) | 0.00                      | 0.00 |
| ANNUAL               | 10.7             | -               | 63.0       | -                | 143             | - (12.8)                                    | - (20.4)  | 0.28                      | 0.28 |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |  |  |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|--|--|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |  |  |
| SUMMER                  | 0.31                     | 0.08                        | 7.9                                    |                                               |                                                 |  |  |
| AUTUMN                  | 1.2                      | 0.03                        | 1.9                                    |                                               |                                                 |  |  |
| WINTER                  | 6.5                      | 0.00                        | 0.08                                   |                                               |                                                 |  |  |
| SPRING                  | 1.8                      | 0.06                        | 2.7                                    |                                               |                                                 |  |  |
| ANNUAL                  | 9.8                      | 0.17                        | 12.6                                   |                                               |                                                 |  |  |

No Records Available

\* Does not include winds associated with tropical cyclones

# SUMMARY OF METEOROLOGICAL DATA FOR WAGGA AERO.

|        | Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                |          | Seasonal Rainfall (mm) |                 |                          |  |
|--------|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|----------|------------------------|-----------------|--------------------------|--|
|        | Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) |          | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |  |
|        | Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Mean Min |                        |                 |                          |  |
| SUMMER | 40.2                         | 44.6             | 6.4      | 3.4             | 26.1                       | 3.7      | 22             | -6       | 262                    | 9               | 20                       |  |
| AUTUMN | 34.1                         | 39.3             | -0.3     | -4.4            | 22.1                       | 4.7      | 19             | -3       | 437                    | 38              | 22                       |  |
| WINTER | 20.2                         | 23.1             | -3.0     | -5.4            | 15.6                       | 4.4      | 14             | -4       | 238                    | 38              | 32                       |  |
| SPRING | 35.0                         | 41.6             | -0.8     | -3.8            | 21.2                       | 4.3      | 18             | -4       | 288                    | 20              | 30                       |  |
| ANNUAL | -                            | 44.6             | -        | -5.4            |                            |          |                |          | 989                    | 225             | 104                      |  |

|        | Wind                 |                  |                 |              | Prevailing Direction and Mean Speed (km/hr) |                 |            |      | Mean No. of Days of Gales |
|--------|----------------------|------------------|-----------------|--------------|---------------------------------------------|-----------------|------------|------|---------------------------|
|        | 10 Min Average Speed |                  |                 |              | Gust Speed                                  |                 | 3 pm       |      |                           |
|        | Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Mean (km/hr) | Mean Max (km/hr)                            | Highest (km/hr) | 9 am       | 3 pm |                           |
| SUMMER | 11.7                 | 48.8             | 74.1            | 86.4         | 135                                         | ENE (15.7)      | W (20.5)   | 0.12 |                           |
| AUTUMN | 8.3                  | 44.3             | 63.0            | 76.9         | 145                                         | E (10.4)        | W (16.1)   | 0.18 |                           |
| WINTER | 7.6                  | 45.6             | 64.9            | 79.1         | 150                                         | E (8.2)         | W (16.9)   | 0.21 |                           |
| SPRING | 10.6                 | 45.6             | 77.8            | 88.8         | 139                                         | E (10.9)        | WSW (21.2) | 0.48 |                           |
| ANNUAL | 9.6                  | -                | 77.8            | -            | 150                                         | - (11.3)        | - (18.7)   | 0.99 |                           |

|        | Fog, Hail, Thunder      |                          |                             |                             | Solar Radiation                     |                                            |                                                  |  |
|--------|-------------------------|--------------------------|-----------------------------|-----------------------------|-------------------------------------|--------------------------------------------|--------------------------------------------------|--|
|        | Mean No. of Days of Fog |                          | Mean No. of Days of Thunder |                             | Mean Daily                          |                                            | Highest Recorded                                 |  |
|        | Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean No. of Days of Thunder | Max Intensity (kWh/m <sup>2</sup> ) | Mean Daily Intensity (kWh/m <sup>2</sup> ) | Highest Recorded Intensity (kWh/m <sup>2</sup> ) |  |
| SUMMER | 0.15                    | 0.27                     | 6.1                         | 7.25                        | 1.00                                | 1.21                                       |                                                  |  |
| AUTUMN | 4.9                     | 0.06                     | 2.3                         | 4.08                        | 0.68                                | 1.07                                       |                                                  |  |
| WINTER | 16.7                    | 0.85                     | 1.1                         | 2.54                        | 0.49                                | 0.84                                       |                                                  |  |
| SPRING | 5.5                     | 0.91                     | 5.5                         | 5.66                        | 0.86                                | 1.31                                       |                                                  |  |
| ANNUAL | 27.3                    | 2.1                      | 15.0                        | 4.88                        | 0.76                                | 1.31                                       |                                                  |  |

T A B L E 19

SUMMARY OF METEOROLOGICAL DATA FOR WILLIAMTOWN AERO.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |                |          | Seasonal Rainfall (mm) |                 |                          |     |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------------|----------|------------------------|-----------------|--------------------------|-----|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          | Dew Points (C) |          | Highest Recorded       | Lowest Recorded | Mean No. of Days of Rain |     |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max       | Mean Min |                        |                 |                          |     |
| SUMMER                       | 39.1             | 44.1     | 10.7            | 8.3                        | 29.5     | 7.0            | 24       | 2                      | 644             | 101                      | 36  |
| AUTUMN                       | 33.3             | 39.4     | 4.1             | -0.6                       | 26.7     | 5.6            | 22       | -1                     | 959             | 57                       | 33  |
| WINTER                       | 24.9             | 29.6     | 0.5             | -3.9                       | 17.7     | 4.5            | 16       | -4                     | 651             | 52                       | 32  |
| SPRING                       | 36.0             | 42.6     | 3.7             | 1.1                        | 24.2     | 4.6            | 21       | -4                     | 383             | 42                       | 31  |
| ANNUAL                       | -                | 44.1     | -               | -3.9                       |          |                |          |                        | 1794            | 687                      | 132 |

| 10 Min Average Speed |                  |                 |                    | Wind |            | Mean No. of Days of Gales |
|----------------------|------------------|-----------------|--------------------|------|------------|---------------------------|
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Gust Speed (km/hr) | Mean | Speed      |                           |
| SUMMER               | 12.7             | 52.5            | 77.8               | 137  | S (19.9)   | 0.38                      |
| AUTUMN               | 10.5             | 53.3            | 74.1               | 148  | WNW (16.5) | 0.48                      |
| WINTER               | 13.3             | 64.6            | 114.9              | 154  | WNW (19.6) | 2.3                       |
| SPRING               | 13.2             | 61.7            | 83.4               | 109  | WNW (20.4) | 1.2                       |
| ANNUAL               | 12.4             | -               | 114.9              | 154  | - (19.1)   | 4.4                       |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |      |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|------|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) |      |
| SUMMER                  | 5.4                      | 0.34                        | 8.9                                    | 6.42                                          | 0.95                                            | 1.21 |
| AUTUMN                  | 10.4                     | 0.07                        | 3.5                                    | 4.16                                          | 0.71                                            | 1.07 |
| WINTER                  | 8.9                      | 0.17                        | 2.0                                    | 3.02                                          | 0.49                                            | 0.90 |
| SPRING                  | 7.0                      | 0.31                        | 6.9                                    | 5.37                                          | 0.84                                            | 1.20 |
| ANNUAL                  | 31.7                     | 0.89                        | 21.3                                   | 4.74                                          | 0.75                                            | 1.21 |

T A B L E 20

## SUMMARY OF METEOROLOGICAL DATA FOR WOOMERA (A) M.O.

| Seasonal Temperatures        |                  |          |                 | Absolute Humidity          |          |          |          | Seasonal Rainfall (mm) |                 |                  |                          |
|------------------------------|------------------|----------|-----------------|----------------------------|----------|----------|----------|------------------------|-----------------|------------------|--------------------------|
| Extreme Air Temperatures (C) |                  |          |                 | Water Vapour Pressure (mb) |          |          |          | Dew Points (C)         |                 |                  |                          |
| Mean Max                     | Highest Recorded | Mean Min | Lowest Recorded | Mean Max                   | Mean Min | Mean Max | Mean Min | Highest Recorded       | Lowest Recorded | Highest Recorded | Mean No. of Days of Rain |
| SUMMER                       | 43.4             | 47.6     | 10.9            | 8.3                        | 26.5     | 2.6      | 22       | -10                    | 169             | 1                | 8                        |
| AUTUMN                       | 37.5             | 42.5     | 4.4             | -0.3                       | 22.3     | 3.6      | 19       | -6                     | 160             | 1                | 11                       |
| WINTER                       | 26.9             | 32.2     | 1.1             | -1.4                       | 16.0     | 3.2      | 14       | -8                     | 142             | 7                | 17                       |
| SPRING                       | 40.0             | 44.4     | 4.0             | 1.8                        | 19.3     | 2.0      | 17       | -13                    | 125             | 4                | 13                       |
| ANNUAL                       | -                | 47.6     | -               | -1.4                       | -        | -        | -        | -                      | 493             | 92               | 49                       |

| 10 Min Average Speed |                  |                 |                    | Wind             |                 | Prevailing Direction and Mean Speed (km/hr) |           | Mean No. of Days of Gales |      |
|----------------------|------------------|-----------------|--------------------|------------------|-----------------|---------------------------------------------|-----------|---------------------------|------|
| Mean (km/hr)         | Mean Max (km/hr) | Highest (km/hr) | Gust Speed (km/hr) | Mean Max (km/hr) | Highest (km/hr) | 9 am                                        | 3 pm      | 9 am                      | 3 pm |
| SUMMER               | 17.6             | 56.4            | 70.4               | 96.4             | 115             | SE (20.7)                                   | S (21.7)  | 0.61                      | 0.61 |
| AUTUMN               | 13.0             | 51.6            | 83.4               | 74.5             | 111             | SE (17.4)                                   | SW (18.6) | 0.25                      | 0.25 |
| WINTER               | 12.7             | 54.5            | 66.7               | 85.8             | 126             | N (15.6)                                    | N (21.6)  | 0.29                      | 0.29 |
| SPRING               | 17.4             | 59.8            | 72.3               | 104.9            | 159             | SE (17.7)                                   | SW (23.8) | 1.5                       | 1.5  |
| ANNUAL               | 15.2             | -               | 83.4               | -                | 159             | - (17.9)                                    | - (21.4)  | 2.7                       | 2.7  |

| Fog, Hail, Thunder      |                          |                             |                                        | Solar Radiation                               |                                                 |                           |                          |
|-------------------------|--------------------------|-----------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|---------------------------|--------------------------|
| Mean No. of Days of Fog | Mean No. of Days of Hail | Mean No. of Days of Thunder | Mean Daily Total (kWh/m <sup>2</sup> ) | Mean Daily Max Intensity (kW/m <sup>2</sup> ) | Highest Recorded Intensity (kW/m <sup>2</sup> ) | Mean No. of Days of Gales | Mean No. of Days of Rain |
| SUMMER                  | 0.21                     | 0.07                        | 3.4                                    | 7.72                                          | 1.04                                            | 1.22                      | 1.22                     |
| AUTUMN                  | 1.3                      | 0.00                        | 1.4                                    | 4.81                                          | 0.75                                            | 1.14                      | 1.14                     |
| WINTER                  | 2.4                      | 0.14                        | 1.1                                    | 3.39                                          | 0.59                                            | 0.94                      | 0.94                     |
| SPRING                  | 0.18                     | 0.11                        | 3.5                                    | 6.37                                          | 0.91                                            | 1.18                      | 1.18                     |
| ANNUAL                  | 4.1                      | 0.32                        | 9.4                                    | 5.57                                          | 0.82                                            | 1.22                      | 1.22                     |

### EXTREME TEMPERATURES

Tables 21 and 22 give the daily maximum and minimum temperatures, respectively, that can be expected to be experienced once in the quoted return periods for all stations, together with the means of the maximum and minimum temperatures recorded in each season and the highest and lowest temperatures measured in the period of record (Table 1).

The probability (P) that a temperature corresponding to a return period of T years will be experienced any one year is given by:

$$P (\%) = (1 - 1/T) \times 100$$

The figures were obtained from daily maximum and minimum temperatures collected during the periods shown opposite each station in Table 1 using the Jenkinson equation (Annex B).

TABLES 21 AND 22

EXTREME TEMPERATURES LIKELY TO BE EXPERIENCED FOR EACH  
SEASON AND ANNUALLY FOR ALL STATIONS

NOTE

The temperatures given are those experienced once in each season or year and are therefore higher (or lower) than the corresponding mean daily values. Mean maximum and minimum temperatures for each month are available in the Bureau of Meteorology publication "Climatic Averages - Australia, Metric Edition".

T A B L E 21a

## EXTREME MAXIMUM TEMPERATURES (SUMMER)

Seasonal Maximum Temperatures ( $^{\circ}\text{C}$ ) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Max. | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|--------------|---------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |              |                     |
| ADELAIDE R.O.       | 40.9                    | 43.3    | 44.0    | 44.5    | 44.8     | 45.6      | 41.0         | 45.8                |
| ALICE SPRINGS AERO. | 42.1                    | 43.9    | 44.5    | 44.8    | 45.1     | 45.7      | 42.1         | 45.2                |
| AMBERLEY AERO.      | 37.9                    | 41.3    | 42.8    | 43.9    | 44.9     | 47.9      | 38.2         | 43.8                |
| BROOME AERO.        | 40.8                    | 42.9    | 44.1    | 45.0    | 45.9     | 48.8      | 40.8         | 44.8                |
| CAIRNS AERO.        | 36.1                    | 38.7    | 39.8    | 40.5    | 41.1     | 42.7      | 36.2         | 40.4                |
| CANBERRA (A) M.O.   | 36.5                    | 39.6    | 40.6    | 41.2    | 41.6     | 42.7      | 36.5         | 52.2                |
| COCOS ISLAND        | 31.1                    | 31.9    | 32.2    | 32.4    | 32.6     | 33.0      | 31.2         | 32.3                |
| DARWIN AERO.        | 35.1                    | 36.3    | 36.8    | 37.2    | 37.5     | 38.4      | 35.1         | 37.1                |
| EAST SALE AERO.     | 39.5                    | 42.5    | 43.5    | 44.1    | 44.6     | 45.6      | 39.4         | 45.6                |
| KATHERINE P.O.      | 39.6                    | 41.8    | 43.0    | 43.9    | 44.9     | 48.3      | 39.9         | 43.3                |
| KIMBERLEY RESEARCH  | 41.8                    | 43.2    | 43.8    | 44.1    | 44.4     | 45.2      | 41.8         | 43.4                |
| MELBOURNE R.O.      | 40.1                    | 42.8    | 43.8    | 44.4    | 44.9     | 46.0      | 40.2         | 45.6                |
| ONSLow AERO.        | 45.8                    | 47.3    | 47.6    | 47.8    | 47.9     | 48.1      | 45.7         | 48.1                |
| PERTH R.O.          | 40.5                    | 42.6    | 43.3    | 43.7    | 44.0     | 44.6      | 40.5         | 43.7                |
| RICHMOND AERO.      | 40.9                    | 43.2    | 43.8    | 44.0    | 44.2     | 44.4      | 40.6         | 43.9                |
| TOWNSVILLE AERO.    | 35.4                    | 38.9    | 40.8    | 42.3    | 43.8     | 46.1      | 35.9         | 42.7                |
| WAGGA AERO.         | 40.2                    | 43.0    | 43.9    | 44.4    | 44.8     | 45.7      | 40.2         | 44.6                |
| WILLIAMTOWN AERO.   | 39.3                    | 42.6    | 43.5    | 44.0    | 44.4     | 45.1      | 39.1         | 44.1                |
| WOOMERA (A) M.O.    | 43.4                    | 45.6    | 46.2    | 46.5    | 46.8     | 47.3      | 43.4         | 47.6                |

T A B L E 21b

## EXTREME MAXIMUM TEMPERATURES (AUTUMN)

Seasonal Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Max. | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|--------------|---------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |              |                     |
| ADELAIDE R.O.       | 36.0                    | 39.1    | 40.3    | 41.0    | 41.7     | 43.3      | 36.2         | 41.5                |
| ALICE SPRINGS AERO. | 38.0                    | 40.8    | 41.6    | 42.0    | 42.4     | 43.0      | 37.9         | 42.2                |
| AMBERLEY AERO.      | 33.9                    | 36.5    | 37.7    | 38.5    | 39.2     | 41.3      | 34.1         | 38.9                |
| BROOME AERO.        | 39.1                    | 40.8    | 41.4    | 41.8    | 42.1     | 42.7      | 39.1         | 42.2                |
| CAIRNS AERO.        | 33.3                    | 35.7    | 36.8    | 37.6    | 38.4     | 40.9      | 33.5         | 37.3                |
| CANBERRA (A) M.O.   | 30.6                    | 34.4    | 35.9    | 37.0    | 37.9     | 40.3      | 30.8         | 36.4                |
| COCOS ISLAND        | 31.1                    | 31.8    | 32.1    | 32.3    | 32.4     | 32.8      | 31.1         | 32.2                |
| DARWIN AERO.        | 34.8                    | 35.8    | 36.2    | 36.4    | 36.7     | 37.3      | 34.8         | 36.3                |
| EAST SALE AERO.     | 32.1                    | 35.9    | 38.1    | 39.9    | 41.9     | 49.7      | 32.6         | 39.8                |
| KATHERINE P.O.      | 37.2                    | 38.8    | 39.3    | 39.6    | 39.8     | 40.3      | 37.2         | 39.2                |
| KIMBERLEY RESEARCH  | 38.1                    | 40.1    | 40.8    | 41.2    | 41.6     | 42.5      | 38.2         | 40.5                |
| MELBOURNE R.O.      | 34.5                    | 38.0    | 39.5    | 40.5    | 41.4     | 43.8      | 34.7         | 41.7                |
| ONSLOW AERO.        | 42.2                    | 44.8    | 45.8    | 46.4    | 47.0     | 48.4      | 42.3         | 45.7                |
| PERTH R.O.          | 37.5                    | 40.2    | 41.0    | 41.4    | 41.6     | 42.1      | 37.3         | 41.0                |
| RICHMOND AERO.      | 34.4                    | 38.2    | 39.8    | 40.8    | 41.8     | 44.3      | 34.6         | 40.1                |
| TOWNSVILLE AERO.    | 32.9                    | 35.2    | 36.4    | 37.3    | 38.2     | 41.4      | 33.2         | 37.3                |
| WAGGA AERO.         | 33.9                    | 37.3    | 38.6    | 39.5    | 40.3     | 42.3      | 34.1         | 39.3                |
| WILLIAMTOWN AERO.   | 33.0                    | 36.3    | 38.0    | 39.2    | 40.5     | 44.5      | 33.3         | 39.4                |
| WOOMERA (A) M.O.    | 37.4                    | 40.3    | 41.4    | 42.1    | 42.7     | 44.1      | 37.5         | 42.5                |

T A B L E 21c

## EXTREME MAXIMUM TEMPERATURES (WINTER)

Seasonal Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

| Station             | 2 Year | R e t u r n P e r i o d |         |         |          |           | Mean<br>Max. | Highest<br>Recorded |
|---------------------|--------|-------------------------|---------|---------|----------|-----------|--------------|---------------------|
|                     |        | 10 Year                 | 25 Year | 50 Year | 100 Year | 1000 Year |              |                     |
| ADELAIDE R.O.       | 22.1   | 25.1                    | 26.5    | 27.4    | 28.3     | 30.9      | 22.3         | 29.1                |
| ALICE SPRINGS AERO. | 30.4   | 32.9                    | 33.8    | 34.4    | 34.9     | 36.0      | 30.5         | 34.0                |
| AMBERLEY AERO.      | 27.5   | 30.6                    | 32.2    | 33.4    | 34.6     | 38.6      | 27.8         | 33.3                |
| BROOME AERO.        | 35.0   | 36.5                    | 36.9    | 37.2    | 37.5     | 37.9      | 35.0         | 37.2                |
| CAIRNS AERO.        | 29.1   | 30.2                    | 30.5    | 30.7    | 30.8     | 31.1      | 29.1         | 30.6                |
| CANBERRA (A) M.O.   | 18.1   | 20.3                    | 21.1    | 21.5    | 21.8     | 22.6      | 18.1         | 21.7                |
| COCOS ISLAND        | 29.6   | 30.2                    | 30.6    | 30.9    | 31.1     | 32.0      | 29.6         | 30.7                |
| DARWIN AERO.        | 34.0   | 35.5                    | 36.1    | 36.5    | 36.9     | 38.0      | 34.1         | 37.0                |
| EAST SALE AERO.     | 20.8   | 23.2                    | 24.1    | 24.7    | 25.2     | 26.4      | 20.9         | 24.5                |
| KATHERINE P.O.      | 36.1   | 37.1                    | 37.3    | 37.3    | 37.4     | 37.5      | 35.9         | 37.3                |
| KIMBERLEY RESEARCH  | 36.7   | 37.9                    | 38.3    | 38.5    | 38.6     | 38.8      | 36.6         | 38.4                |
| MELBOURNE R.O.      | 20.5   | 22.7                    | 23.7    | 24.3    | 24.8     | 26.3      | 20.6         | 25.0                |
| ONSLow AERO.        | 31.1   | 33.2                    | 34.1    | 34.6    | 35.1     | 36.4      | 31.2         | 34.8                |
| PERTH R.O.          | 23.9   | 26.5                    | 27.5    | 28.2    | 28.8     | 30.2      | 24.1         | 28.1                |
| RICHMOND AERO.      | 25.4   | 29.6                    | 31.5    | 32.8    | 34.1     | 38.0      | 25.7         | 32.8                |
| TOWNSVILLE AERO.    | 30.0   | 31.7                    | 32.4    | 32.9    | 33.2     | 34.2      | 30.1         | 33.3                |
| WAGGA AERO.         | 20.3   | 22.1                    | 22.7    | 23.0    | 23.3     | 23.9      | 20.2         | 23.1                |
| WILLIAMTOWN AERO.   | 24.7   | 27.7                    | 28.9    | 29.7    | 30.3     | 32.0      | 24.9         | 29.6                |
| WOOMERA (A) M.O.    | 26.8   | 30.1                    | 31.3    | 32.0    | 32.6     | 33.9      | 26.9         | 32.2                |

T A B L E 21d

EXTREME MAXIMUM TEMPERATURES (SPRING)

Seasonal Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Max. | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|--------------|---------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |              |                     |
| ADELAIDE R.O.       | 36.1                    | 39.8    | 41.1    | 42.0    | 42.7     | 44.6      | 36.3         | 42.7                |
| ALICE SPRINGS AERO. | 40.3                    | 41.7    | 42.0    | 42.2    | 42.4     | 42.7      | 40.2         | 42.2                |
| AMBERLEY AERO.      | 36.3                    | 40.4    | 42.1    | 43.3    | 44.4     | 47.5      | 36.5         | 42.1                |
| BROOME AERO.        | 41.1                    | 43.0    | 43.7    | 44.2    | 44.6     | 45.7      | 41.2         | 44.3                |
| CAIRNS AERO.        | 33.7                    | 36.0    | 37.0    | 37.8    | 38.5     | 40.6      | 33.9         | 37.2                |
| CANBERRA (A) M.O.   | 30.6                    | 34.9    | 36.9    | 38.2    | 39.5     | 43.4      | 30.9         | 38.8                |
| COCOS ISLAND        | 30.1                    | 30.7    | 31.0    | 31.3    | 31.5     | 32.2      | 30.1         | 31.1                |
| DARWIN AERO.        | 36.2                    | 37.0    | 37.2    | 37.2    | 37.3     | 37.3      | 36.1         | 37.2                |
| EAST SALE AERO.     | 32.1                    | 35.4    | 36.4    | 37.0    | 37.5     | 38.4      | 32.0         | 36.8                |
| KATHERINE P.O.      | 41.0                    | 42.3    | 42.8    | 43.1    | 43.3     | 44.0      | 41.3         | 45.6                |
| KIMBERLEY RESEARCH  | 42.2                    | 44.0    | 44.6    | 45.0    | 45.3     | 46.0      | 42.2         | 44.4                |
| MELBOURNE R.O.      | 33.8                    | 37.7    | 39.2    | 40.1    | 40.9     | 42.7      | 34.0         | 40.9                |
| ONSLow AERO.        | 41.8                    | 43.9    | 44.5    | 44.7    | 44.9     | 45.2      | 41.6         | 44.6                |
| PERTH R.O.          | 35.3                    | 38.6    | 39.7    | 40.4    | 40.9     | 42.1      | 35.3         | 39.9                |
| RICHMOND AERO.      | 37.1                    | 40.2    | 40.9    | 41.3    | 41.6     | 42.0      | 36.8         | 41.1                |
| TOWNSVILLE AERO.    | 34.6                    | 37.4    | 38.8    | 39.8    | 40.9     | 44.4      | 34.9         | 41.0                |
| WAGGA AERO.         | 34.8                    | 39.1    | 40.9    | 42.1    | 43.2     | 46.3      | 35.0         | 41.6                |
| WILLIAMTOWN AERO.   | 36.2                    | 40.1    | 41.1    | 41.6    | 41.9     | 42.6      | 36.0         | 42.6                |
| WOOMERA (A) M.O.    | 39.8                    | 42.5    | 43.6    | 44.3    | 44.9     | 46.6      | 40.0         | 44.4                |

T A B L E 21e

EXTREME MAXIMUM TEMPERATURES (ANNUAL)

Annual (July-June) Maximum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean maximum and highest recorded temperatures for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Max. | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|--------------|---------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |              |                     |
| ADELAIDE R.O.       | 41.0                    | 43.3    | 44.0    | 44.3    | 44.6     | 45.2      | 41.0         | 45.8                |
| ALICE SPRINGS AERO. | 42.2                    | 43.8    | 44.5    | 44.9    | 45.3     | 46.4      | 42.2         | 45.2                |
| AMBERLEY AERO.      | 38.5                    | 41.9    | 43.3    | 44.2    | 45.0     | 47.3      | 38.7         | 43.8                |
| BROOME AERO.        | 41.6                    | 43.6    | 44.3    | 44.8    | 45.2     | 46.2      | 41.8         | 44.8                |
| CAIRNS AERO.        | 36.4                    | 38.6    | 39.7    | 40.4    | 41.0     | 43.0      | 36.5         | 40.4                |
| CANBERRA (A) M.O.   | 36.5                    | 39.5    | 40.5    | 41.0    | 41.5     | 42.5      | 36.5         | 42.2                |
| COCOS ISLAND        | 31.3                    | 32.0    | 32.3    | 32.4    | 32.6     | 32.9      | 31.3         | 32.3                |
| DARWIN AERO.        | 36.5                    | 37.1    | 37.3    | 37.4    | 37.5     | 37.7      | 36.3         | 37.2                |
| EAST SALE AERO.     | 39.5                    | 42.5    | 43.5    | 44.1    | 44.6     | 45.8      | 39.5         | 45.6                |
| KATHERINE P.O.      | 41.2                    | 43.2    | 44.2    | 45.1    | 45.9     | 49.1      | 41.4         | 45.6                |
| KIMBERLEY RESEARCH  | 42.6                    | 44.1    | 44.4    | 44.6    | 44.7     | 45.0      | 42.6         | 44.4                |
| MELBOURNE R.O.      | 40.2                    | 42.8    | 43.8    | 44.3    | 44.8     | 45.9      | 40.2         | 45.6                |
| ONSLow AERO.        | 45.9                    | 47.3    | 47.6    | 47.8    | 47.9     | 48.0      | 45.7         | 48.1                |
| PERTH R.O.          | 40.7                    | 42.6    | 43.6    | 44.3    | 45.1     | 47.5      | 40.9         | 44.7                |
| RICHMOND AERO.      | 41.0                    | 44.0    | 45.1    | 45.8    | 46.4     | 48.0      | 41.2         | 47.8                |
| TOWNSVILLE AERO.    | 36.2                    | 39.3    | 41.2    | 42.6    | 44.2     | 46.5      | 36.6         | 42.7                |
| WAGGA AERO.         | 40.2                    | 42.9    | 43.8    | 44.4    | 44.8     | 45.6      | 40.1         | 44.6                |
| WILLIAMTOWN AERO.   | 39.7                    | 42.7    | 43.5    | 44.0    | 44.3     | 44.9      | 39.6         | 44.1                |
| WOOMERA (A) M.O.    | 43.4                    | 45.5    | 46.2    | 46.5    | 46.8     | 47.5      | 43.4         | 47.6                |

TABLE 22a

## EXTREME MINIMUM TEMPERATURES (SUMMER)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

| Station             | Return Period |         |         |         |          |           |      | Mean<br>Min | Highest<br>Recorded |
|---------------------|---------------|---------|---------|---------|----------|-----------|------|-------------|---------------------|
|                     | 2 Year        | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year | Year |             |                     |
| ADELAIDE R.O.       | 9.3           | 7.9     | 7.3     | 6.9     | 6.6      | 5.7       | 9.3  | 6.8         |                     |
| ALICE SPRINGS AERO. | 12.1          | 9.9     | 9.1     | 8.5     | 8.0      | 6.7       | 12.0 | 8.5         |                     |
| AMBERLEY AERO.      | 13.7          | 10.5    | 8.6     | 7.1     | 5.4      | -1.2      | 13.3 | 6.8         |                     |
| BROOME AERO.        | 20.9          | 18.3    | 16.7    | 15.3    | 13.8     | 7.4       | 20.5 | 15.2        |                     |
| CAIRNS AERO.        | 20.0          | 18.3    | 17.4    | 16.8    | 16.1     | 13.8      | 19.8 | 17.1        |                     |
| CANBERRA (A) M.O.   | 3.6           | 1.8     | 1.4     | 1.2     | 1.0      | 0.7       | 3.7  | 1.1         |                     |
| COCOS ISLAND        | 22.0          | 21.0    | 20.4    | 20.0    | 19.5     | 17.9      | 21.9 | 20.1        |                     |
| DARWIN AERO.        | 21.2          | 19.3    | 18.1    | 16.9    | 15.6     | 9.2       | 20.9 | 17.2        |                     |
| EAST SALE AERO.     | 5.3           | 3.5     | 2.7     | 2.1     | 1.6      | 0.0       | 5.2  | 2.2         |                     |
| KATHERINE P.O.      | 19.7          | 17.4    | 16.3    | 15.4    | 14.6     | 11.7      | 19.4 | 16.7        |                     |
| KIMBERLEY RESEARCH  | 20.2          | 18.0    | 16.3    | 14.6    | 12.5     | 10.4      | 19.9 | 16.8        |                     |
| MELBOURNE R.O.      | 7.5           | 5.8     | 5.3     | 4.9     | 4.7      | 4.1       | 7.5  | 4.4         |                     |
| ONSLow AERO.        | 18.1          | 16.9    | 16.5    | 16.3    | 16.2     | 15.9      | 18.1 | 16.3        |                     |
| PERTH R.O.          | 10.9          | 9.3     | 8.8     | 8.5     | 8.3      | 8.0       | 11.0 | 8.6         |                     |
| RICHMOND AERO.      | 10.2          | 8.0     | 7.2     | 6.7     | 6.3      | 5.3       | 10.1 | 6.1         |                     |
| TOWNSVILLE AERO.    | 20.0          | 18.7    | 18.2    | 17.8    | 17.5     | 16.8      | 20.0 | 17.9        |                     |
| WAGGA AERO.         | 6.3           | 4.3     | 3.7     | 3.4     | 3.2      | 2.9       | 6.4  | 3.4         |                     |
| WILLIAMTOWN AERO.   | 10.6          | 8.8     | 8.3     | 8.0     | 7.7      | 7.2       | 10.7 | 8.3         |                     |
| WOOMERA (A) M.O.    | 11.0          | 9.2     | 8.5     | 8.1     | 7.7      | 6.8       | 10.9 | 8.3         |                     |

T A B L E 22b

## EXTREME MINIMUM TEMPERATURES (AUTUMN)

Seasonal Minimum Temperatures ( $^{\circ}\text{C}$ ) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Min | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|-------------|---------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |             |                     |
| ADELAIDE R.O.       | 5.6                     | 4.0     | 3.5     | 3.2     | 2.9      | 2.4       | 5.6         | 2.9                 |
| ALICE SPRINGS AERO. | 1.9                     | -1.2    | -2.3    | -2.8    | -3.3     | -4.3      | 1.9         | -2.5                |
| AMBERLEY AERO.      | 2.6                     | 0.5     | 0.0     | -0.2    | -0.3     | -0.5      | 2.9         | -0.3                |
| BROOME AERO.        | 12.6                    | 9.8     | 9.0     | 8.6     | 8.3      | 7.8       | 12.8        | 8.4                 |
| CAIRNS AERO.        | 14.7                    | 11.7    | 10.5    | 9.8     | 9.2      | 7.7       | 14.6        | 10.1                |
| CANBERRA (A) M.O.   | -3.9                    | -6.0    | -6.8    | -7.3    | -7.7     | -8.6      | -4.0        | -7.5                |
| COCOS ISLAND        | 22.1                    | 20.6    | 19.5    | 18.6    | 17.6     | 12.7      | 21.8        | 19.4                |
| DARWIN AERO.        | 17.6                    | 15.7    | 15.0    | 14.6    | 14.3     | 13.6      | 17.5        | 14.2                |
| EAST SALE AERO.     | 0.0                     | -1.6    | -2.1    | -2.3    | -2.4     | -2.7      | 0.2         | -2.8                |
| KATHERINE P.O.      | 10.4                    | 8.2     | 7.5     | 7.1     | 6.7      | 6.0       | 10.4        | 7.2                 |
| KIMBERLEY RESEARCH  | 11.2                    | 8.8     | 8.0     | 7.5     | 7.1      | 6.2       | 11.7        | 8.1                 |
| MELBOURNE R.O.      | 2.8                     | 0.9     | 0.2     | -0.3    | -0.7     | -1.8      | 2.7         | -1.1                |
| ONSLow AERO.        | 11.8                    | 9.4     | 8.4     | 7.8     | 7.3      | 5.9       | 11.7        | 7.5                 |
| PERTH R.O.          | 6.7                     | 4.3     | 3.3     | 2.7     | 2.2      | 0.8       | 6.6         | 3.0                 |
| RICHMOND AERO.      | 1.0                     | -0.8    | -1.4    | -1.8    | -2.1     | -2.7      | 1.0         | -1.3                |
| TOWNSVILLE AERO.    | 10.5                    | 7.3     | 6.4     | 6.0     | 5.6      | 5.0       | 10.6        | 6.2                 |
| WAGGA AERO.         | -0.1                    | -2.3    | -3.2    | -3.7    | -4.3     | -5.6      | -0.3        | -4.4                |
| WILLIAMTOWN AERO.   | 4.4                     | 1.7     | 0.3     | -0.8    | -1.9     | -5.8      | 4.1         | -0.6                |
| WOOMERA (A) M.O.    | 4.5                     | 2.4     | 1.4     | 0.7     | 0.0      | -2.2      | 4.4         | -0.3                |

T A B L E 22c

## EXTREME MINIMUM TEMPERATURES (WINTER)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Min | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|-------------|---------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |             |                     |
| ADELAIDE R.O.       | 2.8                     | 1.6     | 1.0     | 0.7     | 0.3      | -0.6      | 2.7         | 0.6                 |
| ALICE SPRINGS AERO. | -2.3                    | -4.8    | -5.8    | -6.5    | -7.1     | -8.7      | -2.4        | -7.5                |
| AMBERLEY AERO.      | -1.2                    | -3.1    | -3.6    | -3.9    | -4.1     | -4.6      | -1.1        | -3.9                |
| BROOME AERO.        | 7.3                     | 5.0     | 4.3     | 4.0     | 3.7      | 3.2       | 7.4         | 3.3                 |
| CAIRNS AERO.        | 10.6                    | 8.1     | 7.0     | 6.3     | 5.7      | 4.1       | 10.5        | 6.2                 |
| CANBERRA (A) M.O.   | -6.4                    | -8.2    | -8.9    | -9.3    | -9.6     | -10.5     | -6.5        | -10.0               |
| COCOS ISLAND        | 21.1                    | 20.0    | 19.0    | 18.1    | 16.9     | 10.2      | 20.9        | 18.3                |
| DARWIN AERO.        | 14.6                    | 12.4    | 11.3    | 10.5    | 9.8      | 7.3       | 14.3        | 10.4                |
| EAST SALE AERO.     | -2.6                    | -4.6    | -5.4    | -5.9    | -6.3     | -7.4      | -2.7        | -5.8                |
| KATHERINE P.O.      | 5.6                     | 3.4     | 2.7     | 2.4     | 2.1      | 1.6       | 5.7         | 2.8                 |
| KIMBERLEY RESEARCH  | 8.3                     | 5.4     | 4.2     | 3.3     | 2.6      | 0.5       | 8.1         | 4.4                 |
| MELBOURNE R.O.      | -0.3                    | -1.5    | -2.0    | -2.3    | -2.6     | -3.2      | -0.3        | -2.7                |
| ONSLow AERO.        | 7.1                     | 5.0     | 4.1     | 3.4     | 2.8      | 0.9       | 7.0         | 3.5                 |
| PERTH R.O.          | 3.7                     | 2.2     | 1.8     | 1.5     | 1.3      | 1.0       | 3.7         | 1.6                 |
| RICHMOND AERO.      | -2.1                    | -4.4    | -6.2    | -8.0    | -8.3     | -12.5     | -2.5        | -8.3                |
| TOWNSVILLE AERO.    | 6.4                     | 4.1     | 3.2     | 2.6     | 2.1      | 0.9       | 6.3         | 1.1                 |
| WAGGA AERO.         | -2.9                    | -4.4    | -5.0    | -5.4    | -5.7     | -6.4      | -3.0        | -5.4                |
| WILLIAMTOWN AERO.   | 0.8                     | -1.4    | -2.7    | -3.8    | -5.0     | -9.9      | 0.5         | -3.9                |
| WOOMERA (A) M.O.    | 1.3                     | -0.2    | -0.9    | -1.4    | -1.9     | -3.4      | 1.1         | -1.4                |

T A B L E 22d

## EXTREME MINIMUM TEMPERATURES (SPRING)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           |      | Mean<br>Min | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|------|-------------|---------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year | Year |             |                     |
| ADELAIDE R.O.       | 4.5                     | 3.1     | 2.6     | 2.3     | 2.1      | 1.5       | 4.4  | 2.0         |                     |
| ALICE SPRINGS AERO. | 2.8                     | 0.2     | -0.8    | -1.5    | -2.1     | -3.7      | 2.7  | -1.0        |                     |
| AMBERLEY AERO.      | 3.8                     | 1.9     | 1.2     | 0.7     | 0.3      | -0.6      | 3.7  | 0.7         |                     |
| BROOME AERO.        | 12.9                    | 10.2    | 9.3     | 8.8     | 8.3      | 7.3       | 12.9 | 8.9         |                     |
| CAIRNS AERO.        | 14.4                    | 12.1    | 11.4    | 11.0    | 10.6     | 9.9       | 14.4 | 11.1        |                     |
| CANBERRA (A) M.O.   | -3.1                    | -4.7    | -5.3    | -5.7    | -6.0     | -6.7      | -3.2 | -5.6        |                     |
| COCOS ISLAND        | 21.2                    | 20.3    | 19.7    | 19.2    | 18.8     | 16.8      | 21.1 | 19.3        |                     |
| DARWIN AERO.        | 19.7                    | 17.8    | 17.1    | 16.6    | 16.2     | 15.1      | 19.6 | 16.7        |                     |
| EAST SALE AERO.     | 0.2                     | -2.1    | -3.2    | -4.0    | -4.7     | -7.0      | -0.0 | -3.7        |                     |
| KATHERINE P.O.      | 13.2                    | 10.3    | 9.5     | 9.1     | 8.8      | 8.3       | 13.3 | 9.8         |                     |
| KIMBERLEY RESEARCH  | 13.3                    | 11.0    | 10.5    | 10.2    | 10.1     | 9.8       | 13.5 | 10.6        |                     |
| MELBOURNE R.O.      | 2.0                     | 0.6     | 0.1     | -0.1    | -0.3     | -0.8      | 2.0  | -0.5        |                     |
| ONSLOW AERO.        | 11.0                    | 9.5     | 9.0     | 8.6     | 8.3      | 7.4       | 11.0 | 8.4         |                     |
| PERTH R.O.          | 5.4                     | 3.8     | 3.1     | 2.6     | 2.2      | 1.0       | 5.3  | 2.6         |                     |
| RICHMOND AERO.      | 1.8                     | 0.1     | -0.4    | -0.6    | -0.8     | -1.1      | 1.9  | -1.2        |                     |
| TOWNSVILLE AERO.    | 11.7                    | 9.1     | 8.2     | 7.7     | 7.3      | 6.3       | 11.7 | 8.2         |                     |
| WAGGA AERO.         | -0.6                    | -2.2    | -3.1    | -3.8    | -4.5     | -7.0      | -0.8 | -3.8        |                     |
| WILLIAMTOWN AERO.   | 3.5                     | 1.9     | 1.6     | 1.4     | 1.3      | 1.2       | 3.7  | 1.1         |                     |
| WOOMERA (A) M.O.    | 4.1                     | 2.5     | 1.9     | 1.5     | 1.2      | 0.2       | 4.0  | 1.8         |                     |

T A B L E 22e

## EXTREME MINIMUM TEMPERATURES (ANNUAL)

Seasonal Minimum Temperatures (°C) that can be expected to be exceeded once in the given return periods together with mean minimum and lowest recorded temperatures for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           |      | Mean<br>Min | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|------|-------------|---------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year | Year |             |                     |
| ADELAIDE R.O.       | 2.7                     | 1.5     | 1.1     | 0.8     | 0.5      | -0.3      | 2.7  | 0.6         |                     |
| ALICE SPRINGS AERO. | -2.3                    | -4.8    | -5.8    | -6.4    | -7.0     | -8.7      | -2.4 | -7.5        |                     |
| AMBERLEY AERO.      | -1.2                    | -3.0    | -3.6    | -4.0    | -4.3     | -5.1      | -1.0 | -3.9        |                     |
| BROOME AERO.        | 7.3                     | 5.0     | 4.3     | 4.0     | 3.7      | 3.2       | 7.4  | 3.3         |                     |
| CAIRNS AERO.        | 10.5                    | 8.1     | 7.2     | 6.6     | 6.1      | 4.6       | 10.4 | 6.2         |                     |
| CANBERRA (A) M.O.   | -6.5                    | -8.2    | -8.8    | -9.1    | -9.4     | -10.3     | -6.4 | -10.0       |                     |
| COCOS ISLAND        | 20.7                    | 19.5    | 18.9    | 18.5    | 18.1     | 17.0      | 20.6 | 18.3        |                     |
| DARWIN AERO.        | 14.6                    | 12.4    | 11.3    | 10.5    | 9.8      | 7.3       | 14.3 | 10.4        |                     |
| EAST SALE AERO.     | -2.3                    | -4.0    | -4.7    | -5.3    | -5.7     | -7.1      | -2.4 | -5.8        |                     |
| KATHERINE P.O.      | 5.4                     | 3.6     | 3.2     | 3.0     | 2.9      | 2.7       | 5.7  | 2.8         |                     |
| KIMBERLEY RESEARCH  | 8.3                     | 5.4     | 4.2     | 3.3     | 2.6      | 0.5       | 8.1  | 4.4         |                     |
| MELBOURNE R.O.      | -0.3                    | -1.6    | -2.0    | -2.3    | -2.5     | -3.1      | -0.3 | -2.7        |                     |
| ONSLow AERO.        | 7.1                     | 5.0     | 4.1     | 3.4     | 2.8      | 0.9       | 7.0  | 3.5         |                     |
| PERTH R.O.          | 3.5                     | 2.2     | 1.8     | 1.5     | 1.3      | 0.7       | 3.5  | 1.6         |                     |
| RICHMOND AERO.      | -2.4                    | -5.1    | -6.5    | -7.6    | -8.8     | -13.0     | -2.6 | -8.3        |                     |
| TOWNSVILLE AERO.    | 6.3                     | 4.1     | 3.3     | 2.8     | 2.3      | 1.1       | 6.3  | 1.1         |                     |
| WAGGA AERO.         | -3.0                    | -4.4    | -5.0    | -5.3    | -5.6     | -6.3      | -3.0 | -5.4        |                     |
| WILLIAMTOWN AERO.   | 0.8                     | -1.5    | -2.5    | -3.3    | -4.0     | -6.2      | 0.5  | -3.9        |                     |
| WOOMERA (A) M.O.    | 1.2                     | -0.3    | -0.9    | -1.2    | -1.6     | -2.5      | 1.1  | -1.4        |                     |

#### EXTREME ABSOLUTE HUMIDITIES

Table 23 gives the extreme absolute humidity likely to be experienced once in the quoted period for all stations for each season together with the means of the maximum and minimum humidities recorded in each season.

The probability (P) that a humidity corresponding to a return period T years will be experienced in any one year is given by:

$$P (\%) = (1 - 1/T) \times 100$$

The figures were obtained using three hourly readings of wet and dry bulb temperatures from each station and calculating the extreme values for each return period from the Jenkinson equation (Annex B).

TABLE 23

EXTREME ABSOLUTE HUMIDITIES LIKELY TO BE EXPERIENCED IN  
EACH SEASON FOR ALL STATIONS

NOTE

The figures are given as water vapour pressures  
(in mb) with the corresponding dew point (°C) in  
brackets.

T A B L E 23a

## EXTREME HUMIDITIES (SUMMER)

Maximum Seasonal Water Vapour Pressures (mb) and Dew Points ( $^{\circ}\text{C}$ ) (in brackets) that can be expected to be exceeded once in the given return periods together with mean maximum and mean minimum humidities for each station.

| Station             | R e t u r n P e r i o d |                                 |         |         |          |           | Mean<br>Maximum | Mean<br>Minimum |           |
|---------------------|-------------------------|---------------------------------|---------|---------|----------|-----------|-----------------|-----------------|-----------|
|                     | 2 Year                  | 10 Year                         | 25 Year | 50 Year | 100 Year | 1000 Year |                 |                 |           |
| ADELAIDE            | 24 (20)                 | 30 (24)                         | 32 (25) | 34 (26) | 36 (27)  | 43 (30)   | 24.4 (21)       | 4.6 (-4)        |           |
| ALICE SPRINGS AERO. | 28 (23)                 | 35 (27)                         | 38 (28) | 41 (29) | 43 (30)  | 51 (33)   | 27.9 (23)       | 2.7 (-10)       |           |
| AMBERLEY AERO.      | 31 (25)                 | 35 (27)                         | 37 (28) | 39 (29) | 40 (29)  | 45 (31)   | 31.7 (25)       | 8.3 (4)         |           |
| BROOME AERO.        | 39 (29)                 | 43 (30)                         | 45 (31) | 47 (32) | 49 (32)  | 55 (35)   | 38.7 (28)       | 12.8 (11)       |           |
| CAIRNS AERO.        | 34 (26)                 | 36 (27)                         | 37 (28) | 38 (28) | 39 (29)  | 42 (30)   | 34.1 (26)       | 17.0 (15)       |           |
| CANBERRA (A) M.O.   | 23 (20)                 | 28 (23)                         | 30 (24) | 32 (25) | 34 (26)  | 39 (29)   | 23.0 (20)       | 3.5 (-7)        |           |
| COCOS ISLAND        | 33 (26)                 | 35 (27)                         | 36 (27) | 37 (28) | 37 (28)  | 39 (29)   | 33.4 (26)       | 19.9 (17)       |           |
| DARWIN AERO.        | 36 (27)                 | 40 (29)                         | 42 (30) | 44 (31) | 45 (31)  | 50 (33)   | 35.5 (27)       | 18.7 (16)       |           |
| EAST SALE AERO.     | 25 (21)                 | 29 (23)                         | 32 (25) | 33 (26) | 35 (27)  | 41 (29)   | 25.2 (21)       | 6.9 (2)         |           |
| KATHERINE P.O.      |                         | I n s u f f i c i e n t D a t a |         |         |          |           |                 | 37.0 (28)       | 12.8 (11) |
| KIMBERLEY RESEARCH  | 35 (27)                 | 38 (28)                         | 40 (29) | 42 (30) | 43 (30)  | 47 (32)   | 34.8 (27)       | 15.1 (13)       |           |
| MELBOURNE R.O.      | 25 (21)                 | 30 (24)                         | 32 (25) | 34 (26) | 36 (27)  | 42 (30)   | 25.1 (21)       | 6.4 (1)         |           |
| ONSLow AERO.        | 37 (28)                 | 43 (30)                         | 46 (31) | 48 (32) | 50 (33)  | 57 (35)   | 37.8 (28)       | 6.3 (0)         |           |
| PERTH R.O.          | 26 (22)                 | 28 (23)                         | 30 (24) | 31 (25) | 32 (25)  | 35 (27)   | 25.8 (22)       | 6.3 (0)         |           |
| RICHMOND AERO.      | 29 (24)                 | 32 (25)                         | 34 (26) | 35 (27) | 36 (27)  | 40 (29)   | 28.9 (23)       | 6.5 (1)         |           |
| TOWNSVILLE AERO.    | 35 (27)                 | 39 (29)                         | 41 (29) | 42 (30) | 43 (30)  | 48 (32)   | 35.3 (27)       | 14.5 (12)       |           |
| WAGGA AERO.         | 26 (22)                 | 30 (24)                         | 32 (25) | 33 (26) | 35 (27)  | 39 (29)   | 26.1 (22)       | 3.7 (-7)        |           |
| WILLIAMTOWN AERO.   | 30 (24)                 | 33 (26)                         | 34 (26) | 36 (27) | 37 (28)  | 41 (29)   | 29.5 (24)       | 7.0 (2)         |           |
| WOOMERA (A) M.O.    | 27 (22)                 | 33 (26)                         | 36 (27) | 39 (29) | 41 (29)  | 50 (33)   | 26.5 (22)       | 2.6 (-12)       |           |

## EXTREME HUMIDITIES (AUTUMN)

Maximum Seasonal Water Vapour Pressures (mb) and Dew Points (°C) (in brackets) that can be expected to be exceeded once in the given return periods together with mean maximum and mean minimum humidities for each station.

| Station             | R e t u r n P e r i o d |                                 |         |         |          |           | Mean      |           |
|---------------------|-------------------------|---------------------------------|---------|---------|----------|-----------|-----------|-----------|
|                     | 2 Year                  | 10 Year                         | 25 Year | 50 Year | 100 Year | 1000 Year | Maximum   | Minimum   |
| ADELAIDE            | 21 (18)                 | 24 (20)                         | 26 (22) | 27 (22) | 29 (23)  | 33 (26)   | 21.2 (18) | 5.2 (-2)  |
| ALICE SPRINGS AERO. | 25 (21)                 | 32 (25)                         | 36 (27) | 39 (29) | 41 (29)  | 50 (33)   | 24.5 (21) | 3.0 (-9)  |
| AMBERLEY AERO.      | 29 (24)                 | 33 (26)                         | 35 (27) | 37 (28) | 38 (28)  | 43 (30)   | 28.9 (23) | 5.5 (-2)  |
| BROOME AERO.        | 38 (28)                 | 41 (29)                         | 43 (30) | 44 (31) | 46 (31)  | 50 (33)   | 37.5 (28) | 6.3 (0)   |
| CAIRNS AERO.        | 33 (26)                 | 35 (27)                         | 37 (28) | 38 (28) | 39 (29)  | 43 (30)   | 32.7 (26) | 11.7 (9)  |
| CANBERRA (A) M.O.   | 20 (18)                 | 25 (21)                         | 27 (22) | 29 (23) | 31 (25)  | 36 (27)   | 20.3 (18) | 3.8 (-6)  |
| COCOS ISLAND        | 34 (26)                 | 36 (27)                         | 37 (28) | 37 (28) | 38 (28)  | 40 (29)   | 33.9 (26) | 20.7 (18) |
| DARWIN AERO.        | 34 (26)                 | 40 (29)                         | 42 (30) | 44 (31) | 46 (31)  | 51 (33)   | 34.7 (27) | 9.4 (6)   |
| EAST SALE AERO.     | 22 (19)                 | 26 (22)                         | 28 (23) | 29 (23) | 31 (25)  | 35 (27)   | 22.5 (19) | 6.2 (0)   |
| KATHERINE P.O.      |                         | I n s u f f i c i e n t D a t a |         |         |          |           |           | 6.8 (1)   |
| KIMBERLEY RESEARCH  | 33 (26)                 | 37 (28)                         | 40 (29) | 42 (30) | 44 (31)  | 50 (33)   | 32.2 (25) | 6.1 (0)   |
| MELBOURNE R.O.      | 21 (18)                 | 24 (20)                         | 25 (21) | 26 (22) | 27 (22)  | 31 (25)   | 21.4 (19) | 6.1 (0)   |
| ONSLow AERO.        | 36 (27)                 | 40 (29)                         | 42 (30) | 44 (31) | 45 (31)  | 50 (33)   | 36.3 (27) | 6.7 (1)   |
| PERTH R.O.          | 25 (21)                 | 28 (23)                         | 29 (23) | 30 (24) | 31 (25)  | 35 (27)   | 24.9 (21) | 6.0 (0)   |
| RICHMOND AERO.      | 26 (22)                 | 30 (24)                         | 32 (25) | 34 (26) | 36 (27)  | 41 (29)   | 26.1 (22) | 5.6 (-1)  |
| TOWNSVILLE AERO.    | 33 (26)                 | 36 (27)                         | 38 (28) | 39 (29) | 40 (29)  | 44 (31)   | 33.2 (26) | 7.3 (2)   |
| WAGGA AERO.         | 22 (19)                 | 26 (22)                         | 28 (23) | 30 (24) | 31 (25)  | 36 (27)   | 22.1 (19) | 4.7 (-4)  |
| WILLIAMTOWN AERO.   | 26 (22)                 | 31 (25)                         | 33 (26) | 35 (27) | 37 (28)  | 42 (30)   | 26.7 (22) | 5.6 (-1)  |
| WOOMERA (A) M.O.    | 21 (18)                 | 27 (22)                         | 30 (24) | 32 (25) | 34 (26)  | 40 (29)   | 22.3 (19) | 3.6 (-7)  |

T A B L E 23c

## EXTREME HUMIDITIES (WINTER)

Maximum Seasonal Water Vapour Pressures (mb) and Dew Points ( $^{\circ}\text{C}$ ) (in brackets) that can be expected to be exceeded once in the given return periods together with mean maximum and mean minimum humidities for each station.

| Station             | R e t u r n P e r i o d |                                 |         |         |          |           |      | M e a n   |           |
|---------------------|-------------------------|---------------------------------|---------|---------|----------|-----------|------|-----------|-----------|
|                     | 2 Year                  | 10 Year                         | 25 Year | 50 Year | 100 Year | 1000 Year | Year | Maximum   | Minimum   |
| ADELAIDE            | 15 (13)                 | 17 (15)                         | 18 (16) | 19 (17) | 19 (17)  | 22 (19)   |      | 15.4 (13) | 5.2 (-2)  |
| ALICE SPRINGS AERO. | 16 (14)                 | 21 (18)                         | 23 (20) | 25 (21) | 27 (22)  | 33 (26)   |      | 16.1 (14) | 3.0 (-9)  |
| AMBERLEY AERO.      | 21 (18)                 | 23 (20)                         | 24 (20) | 26 (22) | 27 (22)  | 30 (24)   |      | 20.4 (18) | 3.9 (-6)  |
| BROOME AERO.        | 28 (23)                 | 35 (27)                         | 38 (28) | 40 (29) | 42 (30)  | 50 (33)   |      | 28.9 (23) | 4.0 (-6)  |
| CAIRNS AERO.        | 26 (22)                 | 30 (24)                         | 32 (25) | 33 (26) | 35 (27)  | 39 (29)   |      | 26.7 (22) | 7.6 (3)   |
| CANBERRA (A) M.O.   | 13 (11)                 | 16 (14)                         | 17 (15) | 18 (16) | 19 (17)  | 23 (20)   |      | 13.3 (11) | 2.9 (-10) |
| COCOS ISLAND        | 32 (25)                 | 35 (27)                         | 36 (27) | 37 (28) | 37 (28)  | 40 (29)   |      | 32.5 (26) | 18.3 (16) |
| DARWIN AERO.        | 29 (23)                 | 34 (26)                         | 36 (27) | 37 (28) | 39 (29)  | 44 (32)   |      | 29.1 (24) | 4.6 (-4)  |
| EAST SALE AERO.     | 15 (13)                 | 17 (15)                         | 18 (16) | 19 (17) | 19 (17)  | 22 (19)   |      | 14.9 (13) | 4.7 (-3)  |
| KATHERINE P.O.      |                         | I n s u f f i c i e n t D a t a |         |         |          |           |      |           | 3.5 (-7)  |
| KIMBERLEY RESEARCH  | 26 (22)                 | 32 (25)                         | 36 (27) | 39 (29) | 41 (29)  | 50 (33)   |      | 25.8 (21) | 3.7 (-7)  |
| MELBOURNE R.O.      | 15 (13)                 | 16 (14)                         | 17 (15) | 18 (16) | 19 (17)  | 21 (18)   |      | 14.8 (13) | 5.3 (-2)  |
| ONSLow AERO.        | 26 (22)                 | 29 (23)                         | 30 (24) | 31 (25) | 32 (25)  | 36 (27)   |      | 26.4 (22) | 4.3 (-5)  |
| PERTH R.O.          | 19 (17)                 | 21 (18)                         | 22 (19) | 23 (20) | 24 (20)  | 26 (22)   |      | 19.3 (17) | 5.9 (-1)  |
| RICHMOND AERO.      | 17 (15)                 | 19 (17)                         | 21 (18) | 21 (18) | 22 (19)  | 25 (21)   |      | 17.1 (15) | 3.8 (-6)  |
| TOWNSVILLE AERO.    | 25 (21)                 | 30 (24)                         | 32 (25) | 34 (26) | 36 (27)  | 41 (29)   |      | 25.1 (22) | 4.1 (-6)  |
| WAGGA AERO.         | 15 (13)                 | 17 (15)                         | 19 (17) | 20 (18) | 21 (18)  | 24 (20)   |      | 15.6 (14) | 4.4 (-5)  |
| WILLIAMTOWN AERO.   | 18 (16)                 | 20 (18)                         | 21 (18) | 22 (19) | 23 (20)  | 26 (22)   |      | 17.7 (15) | 4.5 (-4)  |
| WOOMERA (A) M.O.    | 16 (14)                 | 20 (18)                         | 22 (19) | 23 (20) | 24 (20)  | 29 (23)   |      | 16.0 (14) | 3.2 (-9)  |

T A B L E 23d

EXTREME HUMIDITIES (SPRING)

Maximum Seasonal Water Vapour Pressures (mb) and Dew Points ( $^{\circ}\text{C}$ ) (in brackets) that can be expected to be exceeded once in the given return periods together with mean maximum and mean minimum humidities for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Maximum | Mean<br>Minimum |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|-----------------|-----------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |                 |                 |
| ADELAIDE            | 19 (17)                 | 22 (19) | 23 (20) | 24 (20) | 25 (21)  | 29 (23)   | 18.9 (17)       | 4.5 (-4)        |
| ALICE SPRINGS AERO. | 23 (20)                 | 28 (23) | 31 (25) | 33 (26) | 35 (27)  | 41 (29)   | 22.5 (19)       | 2.1 (-14)       |
| AMBERLEY AERO.      | 28 (23)                 | 31 (25) | 33 (26) | 35 (27) | 36 (27)  | 41 (29)   | 27.8 (23)       | 4.2 (-5)        |
| BROOME AERO.        | 34 (26)                 | 38 (28) | 41 (29) | 42 (30) | 44 (31)  | 49 (32)   | 34.6 (26)       | 4.5 (-4)        |
| CAIRNS AERO.        | 31 (25)                 | 33 (26) | 35 (27) | 36 (27) | 36 (27)  | 40 (29)   | 30.8 (24)       | 9.7 (6)         |
| CANBERRA (A) M.O.   | 19 (17)                 | 22 (19) | 23 (20) | 25 (21) | 26 (22)  | 30 (24)   | 18.9 (17)       | 3.4 (-8)        |
| COCOS ISLAND        | 32 (25)                 | 35 (27) | 36 (27) | 37 (28) | 38 (28)  | 41 (29)   | 32.2 (25)       | 18.4 (16)       |
| DARWIN AERO.        | 34 (26)                 | 38 (28) | 40 (29) | 41 (29) | 43 (30)  | 47 (32)   | 34.5 (26)       | 6.2 (0)         |
| EAST SALE AERO.     | 20 (18)                 | 24 (20) | 26 (22) | 27 (22) | 28 (23)  | 33 (26)   | 20.4 (18)       | 5.5 (-1)        |
| KATHERINE P.O.      |                         |         |         |         |          |           | 32.8 (26)       | 4.3 (-5)        |
| KIMBERLEY RESEARCH  | 31 (25)                 | 33 (26) | 34 (26) | 35 (27) | 36 (27)  | 39 (29)   | 31.1 (25)       | 4.4 (-4)        |
| MELBOURNE R.O.      | 19 (17)                 | 22 (19) | 24 (20) | 25 (21) | 26 (22)  | 30 (24)   | 19.4 (17)       | 5.6 (-1)        |
| ONSLow AERO.        | 30 (24)                 | 36 (27) | 39 (29) | 41 (29) | 43 (30)  | 50 (33)   | 30.4 (24)       | 3.9 (-6)        |
| PERTH R.O.          | 21 (18)                 | 24 (20) | 25 (21) | 26 (22) | 27 (22)  | 31 (25)   | 20.8 (18)       | 5.7 (-1)        |
| RICHMOND AERO.      | 24 (20)                 | 28 (23) | 30 (24) | 32 (25) | 34 (26)  | 39 (29)   | 24.2 (21)       | 4.1 (-6)        |
| TOWNSVILLE AERO.    | 31 (25)                 | 34 (26) | 35 (27) | 37 (28) | 38 (28)  | 41 (29)   | 31.1 (25)       | 5.0 (-3)        |
| WAGGA AERO.         | 21 (18)                 | 25 (21) | 26 (22) | 28 (23) | 29 (23)  | 33 (26)   | 21.2 (18)       | 4.3 (-5)        |
| WILLIAMTOWN AERO.   | 24 (20)                 | 27 (22) | 29 (23) | 30 (24) | 31 (25)  | 35 (27)   | 24.2 (21)       | 4.6 (-4)        |
| WOOMERA (A) M.O.    | 20 (18)                 | 23 (20) | 25 (21) | 27 (22) | 28 (23)  | 33 (26)   | 19.3 (17)       | 2.0 (-14)       |

I n s u f f i c i e n t D a t a

## EXTREME RAINFALL

Tables 24(a)-(e) give the expected return periods for maximum rainfalls in periods from one calendar year to six minutes together with the period of records and the highest recorded amounts where these are known.

The figures in Tables 24a-e were obtained from a number of sources and by various methods. Annual rainfalls were estimated by fitting the Jenkinson equation (Annex B) to values obtained from cumulative frequency distributions either supplied by the Bureau of Meteorology or from "Review of Australia's Water Resources - Monthly Rainfall and Evaporation", Bureau of Meteorology, 1968. Monthly and daily maximum rainfalls were similarly obtained from daily meteorological summaries supplied by the Bureau of Meteorology. The shorter period rainfalls were extracted from an analysis supplied by the Bureau of Meteorology.

For stations north of 30°S latitude the occurrence of tropical cyclones causes difficulties in prediction of daily and monthly maximum rainfalls. Except for Onslow, where 12 exceptionally heavy rainfalls can be attributed to the passage of tropical cyclones, the occurrence of high rainfalls in short periods associated with tropical cyclones is too infrequent to be statistically significant. For the stations listed below where the greatest recorded rainfall exceeded the next highest by more than 20% and where the greatest recorded rainfall coincided with the listed passage of a tropical cyclone (from "Tropical Cyclones in the Australian Region - July 1909 to June 1976", Bureau of Meteorology, 1977) these rainfalls were excluded from the analysis and the highest recorded rainfall associated with a tropical cyclone is given in parenthesis.

The stations concerned and the rainfalls were:

| <u>Station</u> | <u>Date</u> | <u>Cyclone</u> | <u>Rainfall (mm)</u> |         |
|----------------|-------------|----------------|----------------------|---------|
|                |             |                | 1 Day                | 1 Month |
| Amberley       | Jan. 1974   | Wanda          | 240                  | 635     |
| Broome         | Jan. 1974   | Fiona-Gwenda   | 351                  | 825     |
| Cairns         | Mar. 1967   | Elaine         | 403                  | -       |
| Darwin         | Feb. 1955   | -              | 250                  | -       |
|                | Dec. 1974   | Tracy          | 277                  | -       |
| Townsville     | Mar. 1946   | -              | 367                  | -       |
|                | Feb. 1953   | -              | 347                  | -       |

TABLE 24

EXTREME RAINFALLS LIKELY TO BE EXPERIENCED IN PERIODS FROM  
ONE YEAR TO SIX MINUTES FOR ALL STATIONS

T A B L E 24a

## ANNUAL TOTAL RAINFALL

Annual Rainfalls (mm) of given stations that can be expected to be exceeded once in the given return period with the highest recorded fall.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Highest Recorded | Period of Record (yr) |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|------------------|-----------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |                  |                       |
| ADELAIDE R.O.       | 530                     | 675     | 725     | 750     | 775      | 825       | 786              | 137                   |
| ALICE SPRINGS AERO. | 250                     | 450     | 575     | 650     | 750      | 1100      | 783              | 102                   |
| AMBERLEY AERO.      | 925                     | 1250    | 1400    | 1525    | 1650     | 2100      | 1398             | 35                    |
| BROOME AERO.        | 550                     | 900     | 1050    | 1150    | 1250     | 1500      | 1228             | 86                    |
| CAIRNS AERO.        | 2125                    | 3200    | 3750    | 4125    | 4500     | 5600      | 4433             | 84                    |
| CANBERRA (A) M.O.   | 640                     | 925     | 1025    | 1075    | 1150     | 1300      | 1063             | 36                    |
| COCOS ISLAND        | 2000                    | 2900    | 3100    | 3250    | 3400     | 3900      | 3289             | 69                    |
| DARWIN AERO.        | 1525                    | 2050    | 2300    | 2450    | 2600     | 3000      | 2644             | 106                   |
| EAST SALE AERO.     | 640                     | 850     | 925     | 975     | 1000     | 1100      | 943              | 33                    |
| KATHERINE P.O.      | 950                     | 1300    | 1400    | 1475    | 1550     | 1700      | 1519             | 103                   |
| KIMBERLEY RESEARCH  | 850                     | 1300    | 1525    | 1700    | 1800     | 2400      | 1403             | 14                    |
| MELBOURNE R.O.      | 650                     | 825     | 900     | 925     | 950      | 1010      | 968              | 121                   |
| ONSLow AERO.        | 230                     | 550     | 650     | 750     | 925      | 1150      | 1084             | 90                    |
| PERTH R.O.          | 900                     | 1125    | 1200    | 1250    | 1275     | 1350      | 1339             | 101                   |
| RICHMOND AERO.      | 825                     | 1050    | 1250    | 1325    | 1400     | 1600      | 1466             | 38                    |
| TOWNSVILLE AERO.    | 1190                    | 1850    | 2100    | 2250    | 2400     | 2800      | 2196             | 36                    |
| WAGGA AERO.         | 560                     | 800     | 875     | 925     | 1000     | 1100      | 989              | 32                    |
| WILLIAMTOWN AERO.   | 1150                    | 1450    | 1550    | 1650    | 2000     | 2700      | 1794             | 27                    |
| WOOMERA (A) M.O.    | 180                     | 400     | 550     | 700     | 950      | 1500      | 493              | 20                    |

T A B L E 24b

## MONTHLY TOTAL RAINFALL

Extreme Monthly Rainfalls (mm) of given stations that can be expected to be exceeded once in the given return periods with the highest recorded fall.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Highest*<br>Recorded | Period of<br>Record (yr.) |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|----------------------|---------------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |                      |                           |
| ADELAIDE            | 100                     | 140     | 165     | 180     | 200      | 250       | 218                  | 138                       |
| ALICE SPRINGS AERO. | 85                      | 190     | 245     | 285     | 320      | 450       | 241                  | 37                        |
| AMBERLEY AERO.      | 215                     | 335     | 400     | 450     | 500      | 675       | 434 (635)            | 36                        |
| BROOME AERO.        | 236                     | 390     | 450     | 490     | 520      | 600       | 439 (825)            | 37                        |
| CAIRNS AERO.        | 625                     | 940     | 1100    | 1200    | 1325     | 1700      | 1128                 | 35                        |
| CANBERRA (A) M.O.   | 115                     | 190     | 235     | 275     | 325      | 525       | 312                  | 38                        |
| COCOS ISLAND        | 385                     | 640     | 765     | 855     | 950      | 1250      | 886                  | 74                        |
| DARWIN AERO.        | 465                     | 700     | 815     | 900     | 980      | 1250      | 815                  | 36                        |
| EAST SALE AERO.     | 125                     | 175     | 190     | 205     | 215      | 235       | 200                  | 33                        |
| KATHERINE P.O.      | 420                     | 560     | 625     | 710     | 770      | -         | 744                  | 104                       |
| KIMBERLEY RESEARCH  | 225                     | 475     | 590     | 680     | 765      | 1050      | 504                  | 12                        |
| MELBOURNE R.O.      | 115                     | 175     | 200     | 225     | 250      | 330       | 238                  | 121                       |
| ONSLow AERO.        | 140                     | 290     | 366     | 420     | 480      | 670       | 375                  | 35                        |
| PERTH R.O.          | 215                     | 345     | 405     | 450     | 490      | 640       | 476                  | 101                       |
| RICHMOND AERO.      | 215                     | 340     | 390     | 425     | 450      | 525       | 415                  | 42                        |
| TOWNSVILLE AERO.    | 460                     | 860     | 1060    | 1210    | 1350     | 1850      | 1142                 | 37                        |
| WAGGA AERO.         | 115                     | 180     | 220     | 245     | 275      | 360       | 249                  | 32                        |
| WILLIAMTOWN AERO.   | 240                     | 360     | 425     | 475     | 520      | 680       | 428                  | 29                        |
| WOOMERA (A) M.O.    | 55                      | 95      | 115     | 130     | 145      | 195       | 121                  | 26                        |

\* Figures in brackets are maximum monthly rainfalls associated with tropical cyclones

T A B L E 24c

## RAINFALL IN ONE DAY

One Day Rainfalls (mm) of given stations that can be expected to be exceeded once  
in the given return periods with the highest recorded fall.  
(Figures rounded to nearest 5 mm)

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Highest*<br>Recorded | Period of<br>Record (yr) |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|----------------------|--------------------------|
|                     | 2 Year                  | 10 Year | 25 Year | 50 Year | 100 Year | 1000 Year |                      |                          |
| ADELAIDE            | 45                      | 65      | 80      | 90      | 100      | 150       | 81.0                 | 22                       |
| ALICE SPRINGS AERO. | 45                      | 75      | 95      | 105     | 120      | 150       | 100.4                | 36                       |
| AMBERLEY AERO.      | 85                      | 125     | 140     | 150     | 175      | 200       | 170.2 (240.0)        | 34                       |
| BROOME AERO.        | 95                      | 165     | 200     | 220     | 250      | 300       | 210.1 (350.8)        | 35                       |
| CAIRNS AERO.        | 155                     | 250     | 295     | 335     | 375      | 500       | 368.3 (402.8)        | 33                       |
| CANBERRA (A) M.O.   | 65                      | 90      | 105     | 120     | 140      | 175       | 104.9                | 37                       |
| COCOS ISLAND        | 130                     | 215     | 260     | 295     | 350      | 475       | 287.5                | 23                       |
| DARWIN AERO.        | 105                     | 150     | 170     | 190     | 200      | 250       | 194 (277.0)          | 33                       |
| EAST SALE AERO.     | 45                      | 80      | 100     | 115     | 125      | 200       | 112.8                | 33                       |
| KATHERINE P.O.      | 100                     | 135     | 150     | 170     | 185      | -         | 234                  | 104                      |
| KIMBERLEY RESEARCH  | 85                      | 145     | 180     | 210     | 250      | 375       | 166.1                | 11                       |
| MELBOURNE R.O.      | 60                      | 85      | 100     | 115     | 125      | 225       | 108.0                | 21                       |
| ONSLow AERO.        | 85                      | 200     | 265     | 320     | 375      | 600       | 283.0                | 34                       |
| PERTH R.O.          | 60                      | 75      | 80      | 90      | 95       | 150       | 87.1                 | 34                       |
| RICHMOND AERO.      | 115                     | 160     | 180     | 210     | 230      | 300       | 172.2                | 29                       |
| TOWNSVILLE AERO.    | 140                     | 220     | 260     | 315     | 350      | 400       | 233.4 (366.5)        | 34                       |
| WAGGA AERO.         | 60                      | 85      | 100     | 120     | 130      | 200       | 104.1                | 32                       |
| WILLIAMTOWN AERO.   | 85                      | 120     | 130     | 140     | 145      | 150       | 129.0                | 30                       |
| WOOMERA (A) M.O.    | 30                      | 55      | 75      | 90      | 100      | 200       | 85.4                 | 27                       |

\* Figures in brackets are maximum daily rainfalls associated with tropical cyclones

T A B L E    24d  
RAINFALL IN A ONE HOUR PERIOD

One Hour Period Rainfalls (mm) of given stations that can be expected  
to be exceeded once in the given return periods.

| Station             | (Figures rounded to nearest 5 mm)       |         |         |         |          |
|---------------------|-----------------------------------------|---------|---------|---------|----------|
|                     | R e t u r n   P e r i o d               |         |         |         |          |
|                     | 2 Year                                  | 10 Year | 25 Year | 50 Year | 100 Year |
| ADELAIDE R.O.       | 15                                      | 25      | 30      | 35      | 40       |
| ALICE SPRINGS AERO. | 15                                      | 30      | 35      | 45      | 50       |
| AMBERLEY AERO.      | 40                                      | 60      | 75      | 85      | 100      |
| BROOME AERO.        | 40                                      | 65      | 70      | 90      | 100      |
| CAIRNS AERO.        | 55                                      | 75      | 80      | 100     | 115      |
| CANBERRA (A) M.O.   | 20                                      | 35      | 40      | 45      | 50       |
| COCOS ISLAND        | N o   R e c o r d s   A v a i l a b l e |         |         |         |          |
| DARWIN AERO.        | 60                                      | 75      | 85      | 90      | 95       |
| EAST SALE AERO.     | 15                                      | 20      | 25      | 26      | 30       |
| KATHERINE           | 45                                      | 65      | 75      | 85      | 95       |
| KIMBERLEY           | 50                                      | 80      | 95      | 110     | 125      |
| MELBOURNE R.O.      | 20                                      | 30      | 35      | 40      | 45       |
| ONSLow AERO.        | 30                                      | 75      | 110     | 140     | 175      |
| PERTH               | 20                                      | 30      | 35      | 40      | 45       |
| RICHMOND AERO.      | 30                                      | 45      | 55      | 65      | 70       |
| TOWNSVILLE AERO.    | 50                                      | 75      | 85      | 100     | 110      |
| WAGGA AERO.         | 25                                      | 35      | 37      | 40      | 45       |
| WILLIAMTOWN AERO.   | 30                                      | 40      | 45      | 50      | 55       |
| WOOMERA (A) M.O.    | 15                                      | 25      | 30      | 35      | 40       |

T A B L E    24e

RAINFALL IN A SIX MINUTE PERIOD

Six Minute Period Rainfalls (mm) of given stations that can be expected  
to be exceeded once in the given return periods.

| Station             | R e t u r n   P e r i o d |         |         |         |          |
|---------------------|---------------------------|---------|---------|---------|----------|
|                     | 2 Year                    | 10 Year | 25 Year | 50 Year | 100 Year |
| ADELAIDE R.O.       | 5                         | 8       | 10      | 11      | 12       |
| ALICE SPRINGS AERO. | 5                         | 9       | 12      | 14      | 17       |
| AMBERLEY AERO.      | 13                        | 21      | 26      | 29      | 32       |
| BROOME AERO.        | 12                        | 19      | 24      | 27      | 30       |
| CAIRNS AERO.        | 16                        | 24      | 26      | 31      | 35       |
| CANBERRA (A) M.O.   | 7                         | 10      | 12      | 14      | 16       |
| COCOS ISLAND        | 17                        | 21      | 23      | 26      | 28       |
| DARWIN AERO.        | 19                        | 21      | 24      | 26      | 28       |
| EAST SALE AERO.     | 5                         | 6       | 7       | 8       | 9        |
| KATHERINE           | 14                        | 20      | 24      | 27      | 30       |
| KIMBERLEY           | 15                        | 21      | 27      | 35      | 38       |
| MELBOURNE R.O.      | 7                         | 10      | 12      | 13      | 15       |
| ONSLow AERO.        | 10                        | 24      | 34      | 43      | 54       |
| PERTH               | 7                         | 10      | 11      | 13      | 14       |
| RICHMOND AERO.      | 8                         | 11      | 18      | 15      | 17       |
| TOWNSVILLE AERO.    | 15                        | 22      | 25      | 30      | 33       |
| WAGGA AERO.         | 8                         | 11      | 13      | 14      | 15       |
| WILLIAMTOWN AERO.   | 9                         | 12      | 14      | 15      | 16       |
| WOOMERA (A) M.O.    | 4                         | 8       | 9       | 12      | 13       |

### EXTREME WIND GUST SPEEDS

Tables 25(a)-(d) give the extreme wind gust speed likely to be experienced once in the quoted period for all stations for each season. The mean maximum seasonal gust speed and the highest recorded readings are also given.

The probability (P) that a gust speed corresponding to a return period T years will be experienced in any one year is given by:

$$P (\%) = (1-1/T) \times 100$$

The values in the tables were obtained by fitting the Jenkinson equation (Annex B) to the annual seasonal maxima extracted from daily meteorological summaries. No corrections for anemometer heights or terrain factors were made. The occurrence of tropical cyclones causes problems in predicting extreme gust speeds for coastal stations north of latitude 30°S as was discussed under Extreme Rainfall. As was done with very high rainfall figures, gust speeds that were more than 20% higher than the next highest recorded and which coincided with the recorded passage of a tropical cyclone were omitted from the analysis except for Autumn at Onslow where the number of tropical cyclones was statistically significant. The tables therefore show maximum gust speeds that can be expected when the station is not close to the centre of a tropical cyclone. Australian Standard 1170 Part 2 1975 "SAA Loading Code Part 2 - Wind Forces" gives gust speeds for all areas subject to tropical cyclones of:

|                   | RETURN PERIOD |           |            |
|-------------------|---------------|-----------|------------|
|                   | <u>25</u>     | <u>50</u> | <u>100</u> |
| Gust Speed (km/h) | 180           | 200       | 220        |

Therefore in using the tables, if the possible occurrence of a tropical cyclone has to be taken into account, the figures from AS 1170 should be used for those stations marked as subject to tropical cyclones.

Other meteorological phenomena that can cause extreme gust speeds are "willi-willies" in hot dry areas and tornadic squalls that occur occasionally in southern areas. These are highly localized, infrequent events and the likelihood of damage is very low and not predictable.

The extreme seasonal wind gust speeds given in Tables 25(a)-(d) are generally lower than the extreme annual wind gust speeds in AS 1170 - Part 2. The latter figures should be used for situations such as design of permanent buildings where extreme annual wind gust is the relevant parameter.

TABLE 25

EXTREME WIND GUSTS LIKELY TO BE EXPERIENCED IN  
EACH SEASON FOR ALL STATIONS

T A B L E 25a

## EXTREME WIND GUSTS (SUMMER)

Maximum seasonal wind gusts (km/h) that can be expected to be exceeded once in the given return periods with mean maximum and highest recorded for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Max. | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|--------------|---------------------|
|                     | 2 year                  | 10 year | 25 year | 50 year | 100 year | 1000 year |              |                     |
| ADELAIDE R.O.       | 85                      | 105     | 115     | 125     | 135      | 160       | 86.1         | 121                 |
| ALICE SPRINGS AERO. | 80                      | 100     | 115     | 120     | 130      | 160       | 84.0         | 132                 |
| AMBERLEY AERO.      | 85                      | 115     | 135     | 150     | 160      | 200       | 86.9         | 135                 |
| * BROOME AERO.      | 100                     | 135     | 155     | 170     | 180      | 225       | 101.7        | 161                 |
| * CAIRNS AERO.      | 65                      | 85      | 90      | 100     | 105      | 125       | 66.6         | 106                 |
| CANBERRA (A) M.O.   | 90                      | 105     | 115     | 120     | 130      | 150       | 88.1         | 120                 |
| * COCOS ISLAND      | 75                      | 110     | 125     | 140     | 150      | 190       | 78.2         | 122                 |
| * DARWIN AERO.      | 85                      | 105     | 115     | 125     | 130      | 160       | 83.2         | 106                 |
| EAST SALE AERO.     | 100                     | 120     | 130     | 140     | 150      | 175       | 97.4         | 122                 |
| KATHERINE P.O.      |                         |         |         |         |          |           |              |                     |
| KIMBERLEY RESEARCH  |                         |         |         |         |          |           |              |                     |
| MELBOURNE R.O.      | 85                      | 100     | 105     | 110     | 115      | 130       | 83.8         | 119                 |
| * ONSLOW AERO.      | 85                      | 120     | 135     | 150     | 160      | 200       | 88.8         | 150                 |
| PERTH R.O.          | 75                      | 90      | 100     | 105     | 110      | 125       | 74.8         | 103                 |
| RICHMOND AERO.      | 85                      | 125     | 140     | 160     | 170      | 220       | 89.3         | 135                 |
| * TOWNSVILLE AERO.  | 70                      | 95      | 110     | 120     | 130      | 160       | 74.6         | 115                 |
| WAGGA AERO.         | 85                      | 105     | 110     | 120     | 125      | 145       | 86.4         | 135                 |
| WILLIAMTOWN AERO.   | 85                      | 120     | 135     | 145     | 160      | 190       | 90.1         | 137                 |
| WOOMERA (A) M.O.    | 100                     | 115     | 130     | 140     | 145      | 175       | 96.4         | 115                 |

\* Tropical cyclone area

T A B L E 25b  
EXTREME WIND GUSTS (AUTUMN)

Maximum seasonal wind gusts (km/h) that can be expected to be exceeded once in the given return periods with mean maximum and highest recorded for each station.

| Station             | R e t u r n P e r i o d         |         |         |         |          | 1000 year | Mean Max. | Highest Recorded |
|---------------------|---------------------------------|---------|---------|---------|----------|-----------|-----------|------------------|
|                     | 2 year                          | 10 year | 25 year | 50 year | 100 year |           |           |                  |
| ADELAIDE R.O.       | 85                              | 110     | 120     | 130     | 140      | 170       | 86.8      | 130              |
| ALICE SPRINGS AERO. | 65                              | 80      | 85      | 90      | 95       | 110       | 67.1      | 87               |
| AMBERLEY AERO.      | 65                              | 85      | 90      | 100     | 105      | 125       | 66.6      | 85               |
| * BROOME AERO.      | 80                              | 110     | 120     | 130     | 140      | 180       | 80.2      | 115              |
| * CAIRNS AERO.      | 65                              | 80      | 90      | 95      | 100      | 120       | 67.2      | 85               |
| CANBERRA (A) M.O.   | 80                              | 100     | 110     | 115     | 125      | 150       | 80.1      | 111              |
| * COCOS ISLAND      | 75                              | 100     | 110     | 115     | 125      | 150       | 77.9      | 102              |
| * DARWIN AERO.      | 75                              | 90      | 100     | 105     | 110      | 130       | 72.4      | 91               |
| EAST SALE AERO.     | 90                              | 105     | 110     | 115     | 125      | 140       | 89.6      | 104              |
| KATHERINE P.O.      | I n s u f f i c i e n t D a t a |         |         |         |          |           |           |                  |
| KIMBERLEY RESEARCH  | I n s u f f i c i e n t D a t a |         |         |         |          |           |           |                  |
| MELBOURNE R.O.      | 85                              | 95      | 100     | 105     | 110      | 125       | 83.6      | 96               |
| * ONSLOW AERO.      | 85                              | 130     | 155     | 175     | 190      | 250       | 89.5      | 152              |
| PERTH R.O.          | 90                              | 115     | 130     | 140     | 150      | 180       | 91.4      | 119              |
| RICHMOND AERO.      | 75                              | 105     | 120     | 130     | 140      | 180       | 75.0      | 122              |
| * TOWNSVILLE AERO.  | 65                              | 100     | 110     | 120     | 135      | 170       | 69.4      | 143              |
| WAGGA AERO.         | 75                              | 100     | 110     | 120     | 130      | 160       | 76.9      | 145              |
| WILLIAMTOWN AERO.   | 95                              | 135     | 160     | 170     | 190      | 240       | 97.0      | 148              |
| WOOMERA (A) M.O.    | 70                              | 100     | 110     | 120     | 130      | 160       | 74.5      | 111              |

\* Tropical cyclone area

T A B L E 25c

## EXTREME WIND GUSTS (WINTER)

Maximum seasonal wind gusts (km/h) that can be expected to be exceeded once in the given return periods with mean maximum and highest recorded for each station.

| Station             | Return Period |         |         |         |          | Mean<br>Max. | Highest<br>Recorded |
|---------------------|---------------|---------|---------|---------|----------|--------------|---------------------|
|                     | 2 year        | 10 year | 25 year | 50 year | 100 year | 1000 year    |                     |
| ADELAIDE R.O.       | 90            | 105     | 120     | 130     | 140      | 170          | 148                 |
| ALICE SPRINGS AERO. | 65            | 80      | 85      | 90      | 95       | 110          | 96                  |
| AMBERLEY AERO.      | 70            | 90      | 100     | 105     | 110      | 130          | 91                  |
| BROOME AERO.        | 60            | 75      | 80      | 85      | 90       | 105          | 85                  |
| CAIRNS AERO.        | 60            | 80      | 90      | 95      | 100      | 120          | 91                  |
| CANBERRA (A) M.O.   | 85            | 100     | 110     | 115     | 125      | 145          | 113                 |
| COCOS ISLAND        | 80            | 100     | 115     | 120     | 130      | 160          | 130                 |
| DARWIN AERO.        | 55            | 63      | 66      | 68      | 70       | 80           | 67                  |
| EAST SALE AERO.     | 95            | 120     | 130     | 140     | 150      | 180          | 132                 |
| KATHERINE P.O.      |               |         |         |         |          |              |                     |
| KIMBERLEY RESEARCH  |               |         |         |         |          |              |                     |
| MELBOURNE R.O.      | 95            | 110     | 120     | 125     | 130      | 150          | 107                 |
| ONSLOW AERO.        | 65            | 80      | 85      | 90      | 100      | 120          | 102                 |
| PERTH R.O.          | 110           | 135     | 145     | 155     | 160      | 190          | 156                 |
| RICHMOND AERO.      | 80            | 110     | 125     | 135     | 150      | 180          | 126                 |
| TOWNSVILLE AERO.    | 60            | 70      | 75      | 80      | 85       | 100          | 85                  |
| WAGGA AERO.         | 75            | 100     | 105     | 110     | 115      | 130          | 150                 |
| WILLIAMTOWN AERO.   | 95            | 125     | 145     | 155     | 170      | 210          | 154                 |
| WOOMERA (A) M.O.    | 85            | 105     | 120     | 130     | 135      | 165          | 126                 |

Insufficient Data

Insufficient Data

T A B L E 25d

EXTREME WIND GUSTS (SPRING)

Maximum seasonal wind gusts (km/h) that can be expected to be exceeded once in the given return periods with mean maximum and highest recorded for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          | 1000 year | Mean<br>Max. | Highest<br>Recorded |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|--------------|---------------------|
|                     | 2 year                  | 10 year | 25 year | 50 year | 100 year |           |              |                     |
| ADELAIDE R.O.       | 95                      | 110     | 120     | 125     | 130      | 150       | 98.7         | 130                 |
| ALICE SPRINGS AERO. | 90                      | 110     | 120     | 125     | 130      | 160       | 86.6         | 107                 |
| AMBERLEY AERO.      | 80                      | 120     | 135     | 150     | 170      | 210       | 84.2         | 152                 |
| * BROOME AERO.      | 60                      | 80      | 85      | 90      | 100      | 115       | 62.4         | 85                  |
| * CAIRNS AERO.      | 60                      | 75      | 80      | 85      | 90       | 110       | 63.8         | 91                  |
| CANBERRA (A) M.O.   | 95                      | 110     | 120     | 130     | 140      | 160       | 92.1         | 128                 |
| * COCOS ISLAND      | 75                      | 90      | 95      | 100     | 110      | 130       | 73.2         | 93                  |
| * DARWIN AERO.      | 75                      | 95      | 105     | 115     | 120      | 150       | 78.0         | 117                 |
| EAST SALE AERO.     | 100                     | 115     | 125     | 130     | 140      | 160       | 100.6        | 119                 |
| KATHERINE P.O.      |                         |         |         |         |          |           |              |                     |
| KIMBERLEY RESEARCH  |                         |         |         |         |          |           |              |                     |
| MELBOURNE R.O.      | 90                      | 100     | 105     | 110     | 115      | 125       | 91.0         | 111                 |
| * ONSLOW AERO.      | 65                      | 80      | 90      | 95      | 100      | 120       | 66.9         | 98                  |
| PERTH R.O.          | 90                      | 110     | 120     | 125     | 135      | 160       | 91.0         | 117                 |
| RICHMOND AERO.      | 90                      | 115     | 125     | 135     | 145      | 170       | 92.9         | 117                 |
| * TOWNSVILLE AERO.  | 60                      | 75      | 80      | 85      | 90       | 105       | 63.7         | 83                  |
| WAGGA AERO.         | 85                      | 115     | 130     | 140     | 150      | 180       | 88.8         | 139                 |
| WILLIAMTOWN AERO.   | 95                      | 110     | 115     | 120     | 130      | 150       | 94.0         | 109                 |
| WOOMERA (A) M.O.    | 100                     | 135     | 150     | 160     | 180      | 220       | 104.9        | 159                 |

I n s u f f i c i e n t D a t a

I n s u f f i c i e n t D a t a

\* Tropical cyclone area

### EXTREME 10 MINUTE WIND SPEEDS

Tables 26(a)-(d) give the extreme 10 minute average wind speed that is likely to be experienced once in the quoted return period for all stations for each season. The mean seasonal maximum, the highest recorded and the mean of all readings are also given.

The probability (P) that a 10 minute average wind speed corresponding to a return period T years will be experienced in any one year is given by:

$$P (\%) = (1 - 1/T) \times 100$$

The highest 10 minute average wind speed in each season was extracted from three-hourly surface observations and fitted to the Jenkinson equation (Annex B).

The problems of prediction caused by tropical cyclones are the same as for extreme rainfall and extreme wind gusts and the same procedure of omitting readings which are more than 20% higher than the next highest recording has been followed. In the absence of alternative estimates for 10 minute average wind speeds during tropical cyclones the highest recorded 10 minute average wind speed associated with a tropical cyclone is given in parenthesis after the highest recorded reading and the readings omitted are given below.

| <u>STATION</u> | <u>DATE</u> | <u>CYCLONE</u> | <u>WIND SPEED (km/h)</u> |
|----------------|-------------|----------------|--------------------------|
| Broome         | Mar. 1943   | -              | 122                      |
| Cocos Island   | Jan. 1967   | Edith          | 139                      |
| Darwin         | Dec. 1975   | Tracy          | 120                      |
| Onslow         | Mar. 1956   | -              | 109                      |
|                | Feb. 1975   | Trixie         | 167                      |

TABLE 26

EXTREME 10 MINUTE AVERAGE WIND SPEEDS FOR EACH  
SEASON FOR ALL STATIONS

T A B L E 26a

## EXTREME 10 MINUTE AVERAGE WIND SPEEDS (SUMMER)

Maximum seasonal 10 minute average wind speeds (km/h) that can be expected to be exceeded once in the given return periods with mean maximum, highest recorded and mean wind speed for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          |           | Mean<br>Max. | Highest<br>Recorded | Mean<br>Speed |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|--------------|---------------------|---------------|
|                     | 2 year                  | 10 year | 25 year | 50 year | 100 year | 1000 year |              |                     |               |
| ADELAIDE R.O.       | 45                      | 55      | 60      | 65      | 70       | 80        | 46.8         | 63                  | 13.6          |
| ALICE SPRINGS AERO. | 50                      | 65      | 75      | 80      | 85       | 110       | 49.6         | 74                  | 11.4          |
| AMBERLEY AERO.      | 40                      | 60      | 65      | 70      | 80       | 100       | 42.9         | 74                  | 9.8           |
| BROOME AERO.        | 50                      | 70      | 80      | 85      | 95       | 115       | 52.0         | 85                  | 13.9          |
| CAIRNS AERO.        | 35                      | 45      | 55      | 60      | 65       | 75        | 36.5         | 59                  | 9.2           |
| CANBERRA (A) M.O.   | 45                      | 65      | 70      | 75      | 85       | 105       | 49.5         | 74                  | 9.8           |
| * COCOS ISLAND      | 45                      | 60      | 65      | 70      | 80       | 95        | 46.4         | 65 (139)            | 18.6          |
| * DARWIN AERO.      | 45                      | 65      | 75      | 80      | 90       | 115       | 47.1         | 89 (120)            | 11.3          |
| EAST SALE AERO.     | 55                      | 75      | 85      | 90      | 95       | 115       | 58.8         | 89                  | 13.9          |
| KATHERINE P.O.      | 35                      | 55      | 65      | 75      | 85       | 115       | 32.5         | 46                  | 4.1           |
| KIMBERLEY RESEARCH  | 30                      | 50      | 65      | 70      | 80       | 110       | 29.9         | 52                  | 6.8           |
| MELBOURNE R.O.      | 45                      | 55      | 60      | 62      | 65       | 80        | 43.5         | 52                  | 12.2          |
| * ONSLOW AERO.      | 55                      | 80      | 95      | 105     | 115      | 150       | 56.1         | 108 (167)           | 18.6          |
| PERTH R.O.          | 45                      | 55      | 60      | 65      | 70       | 85        | 42.4         | 56                  | 15.7          |
| RICHMOND AERO.      | 45                      | 60      | 65      | 70      | 75       | 95        | 46.0         | 65                  | 7.3           |
| * TOWNSVILLE AERO.  | 40                      | 55      | 60      | 65      | 70       | 80        | 41.9         | 63 (120)            | 11.1          |
| WAGGA AERO.         | 45                      | 65      | 70      | 75      | 80       | 100       | 48.8         | 74                  | 11.7          |
| WILLIAMTOWN AERO.   | 50                      | 70      | 75      | 85      | 90       | 110       | 52.5         | 78                  | 12.7          |
| WOOMERA (A)         | 55                      | 65      | 70      | 75      | 80       | 95        | 56.4         | 70                  | 17.6          |

\* Winds associated with tropical cyclone shown in parenthesis

T A B L E 26b

EXTREME 10 MINUTE AVERAGE WIND SPEEDS (AUTUMN)

Maximum seasonal 10 minute average wind speeds (km/h) that can be expected to be exceeded once in the given return periods with mean maximum, highest recorded and mean wind speed for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          | Mean<br>Max. | Highest<br>Recorded | Mean<br>Speed |
|---------------------|-------------------------|---------|---------|---------|----------|--------------|---------------------|---------------|
|                     | 2 year                  | 10 year | 25 year | 50 year | 100 year |              |                     |               |
| ADELAIDE R.O.       | 45                      | 60      | 70      | 75      | 80       | 47.8         | 67                  | 11.1          |
| ALICE SPRINGS AERO. | 40                      | 55      | 60      | 65      | 70       | 41.2         | 59                  | 8.4           |
| AMBERLEY AERO.      | 35                      | 50      | 55      | 60      | 60       | 37.8         | 56                  | 6.7           |
| * BROOME AERO.      | 40                      | 60      | 70      | 80      | 85       | 44.4         | 80 (122)            | 10.1          |
| CAIRNS AERO.        | 40                      | 55      | 60      | 70      | 75       | 41.2         | 74                  | 12.9          |
| CANBERRA (A) M.O.   | 45                      | 60      | 65      | 70      | 75       | 47.0         | 74                  | 8.1           |
| COCOS ISLAND        | 50                      | 65      | 70      | 75      | 80       | 51.3         | 67                  | 21.4          |
| DARWIN AERO.        | 40                      | 55      | 65      | 70      | 75       | 42.7         | 65                  | 9.7           |
| EAST SALE AERO.     | 55                      | 75      | 85      | 90      | 100      | 57.7         | 85                  | 11.1          |
| KATHERINE P.O.      | 35                      | 50      | 60      | 65      | 70       | 34.8         | 46                  | 6.5           |
| KIMBERLEY RESEARCH  | 45                      | 55      | 65      | 75      | 80       | 40.6         | 52                  | 10.0          |
| MELBOURNE R.O.      | 45                      | 55      | 60      | 65      | 70       | 44.7         | 59                  | 10.8          |
| * ONSLOW AERO.      | 50                      | 80      | 90      | 100     | 110      | 54.4         | 93 (109)            | 14.3          |
| PERTH R.O.          | 45                      | 60      | 70      | 75      | 80       | 46.0         | 74                  | 12.4          |
| RICHMOND AERO.      | 45                      | 55      | 65      | 70      | 75       | 42.5         | 59                  | 5.5           |
| TOWNSVILLE AERO.    | 35                      | 50      | 55      | 60      | 65       | 39.0         | 56                  | 9.5           |
| WAGGA AERO.         | 45                      | 60      | 65      | 70      | 75       | 44.3         | 63                  | 8.3           |
| WILLIAMTOWN AERO.   | 50                      | 65      | 75      | 80      | 85       | 53.3         | 74                  | 10.5          |
| WOOMERA (A) M.O.    | 45                      | 70      | 75      | 85      | 90       | 51.6         | 83                  | 13.0          |

\* Winds associated with tropical cyclones shown in parenthesis

## EXTREME 10 MINUTE AVERAGE WIND SPEEDS (WINTER)

Maximum seasonal 10 minute average wind speeds (km/h) that can be expected to be exceeded once in the given return periods with mean maximum, highest recorded and mean wind speed for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          | Mean<br>Max. | Highest<br>Recorded | Mean<br>Speed |
|---------------------|-------------------------|---------|---------|---------|----------|--------------|---------------------|---------------|
|                     | 2 year                  | 10 year | 25 year | 50 year | 100 year | 1000 year    |                     |               |
| ADELAIDE R.O.       | 45                      | 60      | 65      | 70      | 75       | 90           | 63                  | 12.5          |
| ALICE SPRINGS AERO. | 45                      | 60      | 70      | 75      | 80       | 100          | 67                  | 7.5           |
| AMBERLEY AERO.      | 40                      | 55      | 60      | 65      | 70       | 90           | 65                  | 6.3           |
| BROOME AERO.        | 40                      | 50      | 55      | 60      | 65       | 75           | 56                  | 10.3          |
| CAIRNS AERO.        | 35                      | 45      | 50      | 55      | 57       | 65           | 48                  | 14.0          |
| CANBERRA (A) M.O.   | 50                      | 70      | 80      | 90      | 95       | 120          | 93                  | 10.3          |
| COCOS ISLAND        | 50                      | 60      | 65      | 67      | 70       | 80           | 59                  | 26.6          |
| DARWIN AERO.        | 35                      | 50      | 55      | 57      | 60       | 75           | 56                  | 10.3          |
| EAST SALE AERO.     | 60                      | 75      | 85      | 90      | 100      | 120          | 93                  | 11.6          |
| KATHERINE P.O.      | 35                      | 60      | 75      | 80      | 90       | 120          | 56                  | 7.1           |
| KIMBERLEY RESEARCH  | 40                      | 50      | 55      | 60      | 65       | 75           | 48                  | 10.0          |
| MELBOURNE R.O.      | 45                      | 55      | 60      | 65      | 70       | 80           | 59                  | 12.4          |
| ONSLow AERO.        | 45                      | 55      | 60      | 62      | 65       | 80           | 57                  | 13.4          |
| PERTH R.O.          | 50                      | 70      | 80      | 85      | 90       | 115          | 78                  | 12.2          |
| RICHMOND AERO.      | 50                      | 65      | 70      | 80      | 85       | 100          | 72                  | 6.5           |
| TOWNSVILLE AERO.    | 35                      | 45      | 50      | 55      | 60       | 70           | 46                  | 9.1           |
| WAGGA AERO.         | 45                      | 55      | 65      | 70      | 75       | 90           | 65                  | 7.6           |
| WILLIAMTOWN AERO.   | 60                      | 90      | 105     | 120     | 130      | 165          | 115                 | 13.3          |
| WOOMERA (A) M.O.    | 55                      | 65      | 70      | 75      | 80       | 95           | 67                  | 12.7          |

T A B L E 26d

## EXTREME 10 MINUTE AVERAGE WIND SPEEDS (SPRING)

Maximum seasonal 10 minute average wind speeds (km/h) that can be expected to be exceeded once in the given return periods with mean maximum, highest recorded and mean wind speed for each station.

| Station             | R e t u r n P e r i o d |         |         |         |          | 1000 year | Mean Max. | Highest Recorded | Mean Speed |
|---------------------|-------------------------|---------|---------|---------|----------|-----------|-----------|------------------|------------|
|                     | 2 year                  | 10 year | 25 year | 50 year | 100 year |           |           |                  |            |
| ADELAIDE R.O.       | 50                      | 60      | 65      | 70      | 70       | 83        | 51.0      | 61               | 14.8       |
| ALICE SPRINGS AERO. | 50                      | 70      | 80      | 85      | 95       | 116       | 51.9      | 74               | 11.2       |
| AMBERLEY AERO.      | 40                      | 50      | 55      | 60      | 65       | 76        | 41.5      | 56               | 9.0        |
| BROOME AERO.        | 40                      | 50      | 55      | 60      | 65       | 77        | 40.8      | 56               | 12.7       |
| CAIRNS AERO.        | 40                      | 50      | 55      | 57      | 60       | 74        | 39.3      | 54               | 11.7       |
| CANBERRA (A) M.O.   | 55                      | 65      | 70      | 72      | 75       | 91        | 53.5      | 72               | 11.2       |
| * COCOS ISLAND      | 50                      | 60      | 65      | 70      | 75       | 88        | 49.7      | 65 (89)          | 27.3       |
| DARWIN AERO.        | 35                      | 45      | 50      | 55      | 60       | 72        | 38.0      | 52               | 10.3       |
| EAST SALE AERO.     | 60                      | 75      | 85      | 90      | 100      | 118       | 61.7      | 93               | 14.0       |
| KATHERINE P.O.      | 30                      | 50      | 60      | 65      | 75       | 96        | 31.5      | 46               | 5.5        |
| KIMBERLEY RESEARCH  | 40                      | 60      | 70      | 75      | 85       | 112       | 37.4      | 50               | 9.8        |
| MELBOURNE R.O.      | 45                      | 60      | 65      | 70      | 75       | 91        | 47.0      | 67               | 12.9       |
| ONSLow R.O.         | 45                      | 60      | 65      | 70      | 75       | 94        | 47.9      | 70               | 19.0       |
| PERTH R.O.          | 50                      | 60      | 70      | 75      | 80       | 97        | 48.8      | 72               | 14.0       |
| RICHMOND AERO.      | 50                      | 70      | 80      | 85      | 90       | 110       | 54.6      | 74               | 8.7        |
| TOWNSVILLE AERO.    | 40                      | 50      | 52      | 55      | 60       | 68        | 40.4      | 56               | 13.0       |
| WAGGA AERO.         | 50                      | 65      | 75      | 80      | 90       | 111       | 50.5      | 78               | 10.6       |
| WILLIAMTOWN AERO.   | 60                      | 75      | 85      | 90      | 95       | 117       | 61.7      | 83               | 13.2       |
| WOOMERA (A) M.O.    | 60                      | 70      | 75      | 80      | 85       | 100       | 59.8      | 72               | 17.4       |

\* Winds associated with tropical cyclones in parenthesis

### MEAN WIND DATA ON A DIURNAL AND SEASONAL BASIS

Tables 27(a)-(s) give, for each station (i) the mean wind speed over the period of record for each of the sixteen directions at each three-hourly recording and (ii) the percentage of the total time that the wind blew from the given direction for each three-hourly recording. It is possible by combining the two figures to get mean wind run for any period, i.e.

$$R = \frac{V \times P \times H}{100}$$

where R = wind run (km)  
V = mean velocity (km/h)  
P = percentage time  
H = number of hours in the period

The data was extracted from three-hourly surface observations. Most stations collect only seven three-hourly readings each day missing either the 2100 or the 2400 readings and where less than 100 readings were available the row is left blank. Katherine and Kimberley had only 0900 and 1500 readings.

TABLE 27

MEAN WIND SPEEDS AND PERCENTAGE TIME WIND BLEW  
FROM EACH DIRECTION BY TIME OF DAY AND SEASON

TABLE 27a(1)

ADELAIDE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 10.1 | 10.6 | 11.4 | 12.8 | 14.8 | 13.0 | 12.3 | 9.8  | 11.7 | 12.6 | 19.1 | 16.1 | 16.6 | 13.7 | 9.9  | 6.1  |
|        | 0600 | 11.2 | 10.3 | 11.3 | 11.5 | 11.8 | 11.2 | 9.9  | 10.2 | 11.1 | 13.6 | 15.4 | 17.1 | 16.4 | 16.5 | 16.1 | 7.0  |
|        | 0900 | 13.8 | 11.9 | 12.1 | 10.8 | 14.3 | 13.3 | 15.8 | 13.3 | 15.2 | 13.9 | 15.6 | 13.4 | 13.3 | 11.0 | 11.0 | 11.4 |
|        | 1200 | 14.1 | 11.9 | 14.0 | 10.5 | 13.3 | 14.5 | 17.7 | 16.9 | 17.1 | 18.7 | 17.4 | 15.6 | 15.3 | 18.4 | 18.5 | 15.2 |
|        | 1500 | 11.4 | 12.4 | 15.8 | 13.7 | 15.8 | 15.7 | 20.3 | 19.6 | 18.7 | 20.6 | 19.3 | 17.7 | 16.5 | 19.7 | 21.4 | 21.0 |
|        | 1800 | 14.8 | 15.1 | 15.6 | 14.0 | 16.2 | 18.7 | 19.3 | 19.2 | 17.2 | 17.3 | 18.1 | 17.1 | 12.9 | 14.2 | 14.5 | 13.2 |
|        | 2100 | 11.6 | 10.1 | 10.7 | 10.3 | 12.4 | 15.3 | 13.9 | 13.9 | 14.0 | 14.0 | 17.7 | 23.8 | 26.8 | 15.9 | 6.3  | 8.8  |
|        | 2400 | 8.8  | 10.3 | 11.3 | 12.6 | 15.2 | 15.0 | 13.4 | 12.6 | 11.6 | 12.9 | 16.1 | 18.8 | 18.6 | 8.4  | 7.0  | 7.2  |
| AUTUMN | 0300 | 10.3 | 10.1 | 10.0 | 10.1 | 10.7 | 11.0 | 9.2  | 8.8  | 11.2 | 15.0 | 18.0 | 18.5 | 16.6 | 13.8 | 18.0 | 9.7  |
|        | 0600 | 10.2 | 9.4  | 9.9  | 9.1  | 9.8  | 8.8  | 7.8  | 8.3  | 11.3 | 15.5 | 21.6 | 22.3 | 16.5 | 16.4 | 12.5 | 10.2 |
|        | 0900 | 11.4 | 9.5  | 9.9  | 10.6 | 11.4 | 12.5 | 11.7 | 11.8 | 12.3 | 14.3 | 15.7 | 18.6 | 18.7 | 14.8 | 10.6 | 11.2 |
|        | 1200 | 13.4 | 11.8 | 11.8 | 9.6  | 12.1 | 14.1 | 14.7 | 12.4 | 15.2 | 17.2 | 17.5 | 15.5 | 16.9 | 16.6 | 16.2 | 13.0 |
|        | 1500 | 12.2 | 11.7 | 10.7 | 10.0 | 13.7 | 15.6 | 16.7 | 16.4 | 15.7 | 16.6 | 16.6 | 13.8 | 16.4 | 17.7 | 18.0 | 14.5 |
|        | 1800 | 12.0 | 8.5  | 8.4  | 11.0 | 9.8  | 12.3 | 15.1 | 13.0 | 10.7 | 12.0 | 17.5 | 16.6 | 15.6 | 13.8 | 11.2 | 9.8  |
|        | 2100 | 12.9 | 9.6  | 9.1  | 8.2  | 9.3  | 10.3 | 9.7  | 9.9  | 11.1 | 14.5 | 18.9 | 19.0 | 17.4 | 15.7 | 15.9 | 11.3 |
|        | 2400 | 11.4 | 10.2 | 9.6  | 9.1  | 9.4  | 11.0 | 10.1 | 9.8  | 8.4  | 11.6 | 17.1 | 18.7 | 17.6 | 17.4 | 12.2 | 9.9  |
| WINTER | 0300 | 12.6 | 11.2 | 10.1 | 9.0  | 7.3  | 6.5  | 10.9 | 7.1  | 9.4  | 16.3 | 18.9 | 16.9 | 16.4 | 18.4 | 14.9 | 13.3 |
|        | 0600 | 12.8 | 11.4 | 10.5 | 8.9  | 9.0  | 6.1  | 8.3  | 7.8  | 10.8 | 17.2 | 20.7 | 21.1 | 17.7 | 15.9 | 16.8 | 13.2 |
|        | 0900 | 14.0 | 11.0 | 10.4 | 9.5  | 8.6  | 7.4  | 14.0 | 9.1  | 12.3 | 16.5 | 21.3 | 18.3 | 20.5 | 19.2 | 15.9 | 14.4 |
|        | 1200 | 16.0 | 14.4 | 12.0 | 9.6  | 11.6 | 12.6 | 14.0 | 15.8 | 16.6 | 19.8 | 19.9 | 18.3 | 18.8 | 20.1 | 18.9 | 16.8 |
|        | 1500 | 15.7 | 13.9 | 11.1 | 13.9 | 13.2 | 13.3 | 14.6 | 16.8 | 17.5 | 17.0 | 17.7 | 16.8 | 17.9 | 18.7 | 19.2 | 17.1 |
|        | 1800 | 12.4 | 10.4 | 9.2  | 8.5  | 8.3  | 7.8  | 8.4  | 8.9  | 9.4  | 11.8 | 16.9 | 16.3 | 15.0 | 13.8 | 12.8 | 11.7 |
|        | 2100 | 14.5 | 11.4 | 9.9  | 8.6  | 7.4  | 7.5  | 6.5  | 8.6  | 9.5  | 15.8 | 18.6 | 18.8 | 16.6 | 16.3 | 15.1 | 12.0 |
|        | 2400 | 12.6 | 10.8 | 9.8  | 9.6  | 8.5  | 7.3  | 6.9  | 6.8  | 9.4  | 15.5 | 19.9 | 15.3 | 19.2 | 17.6 | 12.5 | 12.9 |
| SPRING | 0300 | 12.7 | 11.6 | 12.7 | 12.6 | 11.5 | 10.8 | 11.0 | 9.4  | 11.3 | 14.9 | 22.1 | 22.0 | 20.3 | 19.2 | 19.3 | 12.2 |
|        | 0600 | 11.8 | 13.1 | 12.6 | 11.9 | 11.3 | 9.1  | 9.7  | 9.7  | 11.7 | 17.2 | 20.8 | 20.6 | 22.4 | 17.1 | 14.8 | 12.6 |
|        | 0900 | 15.3 | 15.0 | 14.2 | 14.6 | 14.1 | 14.9 | 15.4 | 14.2 | 16.0 | 17.9 | 19.8 | 21.2 | 19.5 | 18.9 | 14.2 | 13.8 |
|        | 1200 | 16.9 | 17.4 | 15.3 | 15.9 | 13.0 | 14.3 | 17.9 | 19.2 | 19.6 | 19.7 | 19.5 | 19.9 | 20.6 | 20.8 | 23.4 | 17.1 |
|        | 1500 | 18.3 | 16.6 | 17.6 | 15.9 | 13.9 | 15.4 | 18.4 | 20.5 | 18.4 | 19.8 | 20.6 | 19.3 | 19.5 | 20.2 | 21.6 | 19.1 |
|        | 1800 | 13.9 | 12.9 | 13.4 | 11.7 | 13.2 | 17.1 | 18.4 | 15.7 | 14.6 | 15.6 | 17.8 | 19.8 | 18.1 | 12.3 | 16.3 | 13.2 |
|        | 2100 | 17.9 | 12.5 | 11.0 | 10.5 | 11.4 | 11.0 | 11.6 | 12.0 | 12.5 | 15.8 | 20.4 | 20.6 | 21.9 | 14.8 | 16.0 | 15.3 |
|        | 2400 | 14.2 | 11.7 | 11.3 | 12.5 | 12.2 | 12.2 | 11.2 | 11.2 | 11.6 | 14.4 | 21.3 | 21.5 | 21.1 | 18.5 | 12.0 | 11.2 |

TABLE 27a(11)

ADELAIDE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW | NW   | NNW  | N    |
|--------|------|------|------|------|------|-----|------|------|------|------|------|------|------|-----|------|------|------|
| SUMMER | 0300 | 2.8  | 7.5  | 9.0  | 14.3 | 7.4 | 11.2 | 9.0  | 12.1 | 7.3  | 5.4  | 3.7  | 4.3  | 1.5 | 1.8  | 1.2  | 1.3  |
|        | 0600 | 3.4  | 12.4 | 11.8 | 10.8 | 6.0 | 7.8  | 7.5  | 13.0 | 6.4  | 6.8  | 4.6  | 4.2  | 1.5 | 1.2  | 0.6  | 1.8  |
|        | 0900 | 7.5  | 7.2  | 4.1  | 5.1  | 2.7 | 5.3  | 6.1  | 8.6  | 7.0  | 11.7 | 8.7  | 8.7  | 2.5 | 3.5  | 4.1  | 7.1  |
|        | 1200 | 2.5  | 2.7  | 1.5  | 2.4  | 1.5 | 4.2  | 4.5  | 5.6  | 5.8  | 16.4 | 20.6 | 14.5 | 5.4 | 5.5  | 3.2  | 3.6  |
|        | 1500 | 0.7  | 1.4  | 0.7  | 2.1  | 1.3 | 3.9  | 6.0  | 7.9  | 7.9  | 28.8 | 21.7 | 9.3  | 3.0 | 3.1  | 1.3  | 1.0  |
|        | 1800 | 0.8  | 0.8  | 1.0  | 2.0  | 3.0 | 9.2  | 13.7 | 14.7 | 10.1 | 25.9 | 11.0 | 4.2  | 0.9 | 1.2  | 0.5  | 0.8  |
|        | 2100 | 0.8  | 1.9  | 2.9  | 6.7  | 8.8 | 16.6 | 13.7 | 20.3 | 10.5 | 8.7  | 5.3  | 2.2  | 0.6 | 0.3  | 0.4  | 0.4  |
|        | 2400 | 2.1  | 5.4  | 5.4  | 11.6 | 9.5 | 14.3 | 10.5 | 13.1 | 8.8  | 7.1  | 3.4  | 4.2  | 1.6 | 1.5  | 0.6  | 0.9  |
| AUTUMN | 0300 | 6.1  | 16.9 | 15.4 | 12.2 | 5.0 | 6.4  | 5.9  | 6.8  | 4.2  | 4.2  | 3.7  | 5.1  | 2.6 | 2.1  | 1.0  | 2.3  |
|        | 0600 | 6.1  | 21.2 | 17.5 | 9.6  | 4.6 | 5.6  | 4.3  | 7.0  | 3.4  | 4.1  | 3.1  | 4.3  | 2.9 | 2.0  | 1.3  | 3.1  |
|        | 0900 | 11.7 | 19.5 | 9.1  | 5.2  | 3.6 | 4.8  | 4.2  | 6.3  | 4.2  | 5.9  | 3.6  | 6.1  | 3.3 | 3.1  | 2.2  | 7.2  |
|        | 1200 | 6.9  | 4.6  | 2.3  | 2.1  | 1.7 | 5.0  | 3.8  | 4.7  | 4.1  | 9.4  | 11.2 | 10.2 | 5.3 | 9.3  | 8.3  | 10.9 |
|        | 1500 | 3.0  | 2.6  | 1.7  | 1.7  | 1.7 | 4.9  | 4.5  | 5.7  | 5.3  | 16.9 | 16.5 | 12.6 | 6.1 | 7.5  | 5.2  | 4.1  |
|        | 1800 | 3.2  | 5.1  | 3.0  | 3.1  | 2.8 | 8.9  | 10.3 | 13.2 | 9.5  | 15.4 | 8.4  | 5.4  | 3.0 | 2.8  | 2.6  | 3.2  |
|        | 2100 | 3.7  | 7.9  | 10.5 | 12.3 | 6.9 | 9.9  | 10.7 | 11.4 | 6.0  | 4.8  | 4.0  | 5.1  | 2.6 | 1.5  | 1.2  | 1.6  |
|        | 2400 | 4.3  | 12.9 | 12.9 | 13.3 | 7.2 | 8.2  | 6.8  | 6.7  | 4.4  | 6.3  | 3.5  | 4.3  | 2.7 | 2.2  | 1.4  | 2.7  |
| WINTER | 0300 | 10.7 | 20.1 | 19.0 | 11.0 | 1.2 | 2.7  | 1.2  | 2.9  | 2.0  | 3.5  | 2.9  | 5.1  | 3.0 | 3.9  | 3.4  | 7.4  |
|        | 0600 | 11.8 | 25.7 | 17.4 | 7.8  | 1.5 | 1.5  | 1.2  | 3.1  | 2.5  | 4.4  | 3.1  | 2.9  | 3.7 | 3.9  | 3.3  | 6.1  |
|        | 0900 | 15.9 | 25.0 | 13.1 | 5.7  | 0.8 | 0.9  | 0.8  | 2.8  | 2.2  | 4.7  | 3.6  | 4.0  | 2.7 | 4.9  | 3.5  | 9.5  |
|        | 1200 | 12.2 | 7.5  | 1.9  | 1.3  | 1.3 | 1.7  | 1.6  | 2.6  | 2.4  | 7.0  | 6.8  | 6.7  | 6.0 | 10.1 | 12.9 | 18.1 |
|        | 1500 | 7.4  | 4.2  | 1.7  | 1.0  | 0.7 | 1.8  | 1.7  | 2.1  | 2.5  | 9.7  | 11.1 | 11.9 | 8.5 | 11.7 | 12.6 | 11.3 |
|        | 1800 | 7.5  | 10.4 | 5.9  | 3.3  | 1.7 | 2.5  | 4.0  | 8.8  | 5.6  | 8.0  | 6.2  | 7.1  | 7.0 | 6.5  | 5.4  | 10.1 |
|        | 2100 | 7.9  | 15.4 | 16.9 | 9.6  | 3.7 | 3.3  | 2.4  | 4.5  | 3.8  | 5.1  | 3.2  | 5.2  | 4.3 | 5.5  | 3.5  | 5.6  |
|        | 2400 | 10.0 | 21.6 | 13.9 | 12.1 | 1.9 | 3.0  | 2.6  | 4.0  | 2.5  | 4.6  | 1.5  | 4.5  | 4.1 | 3.5  | 2.6  | 7.6  |
| SPRING | 0300 | 5.2  | 11.6 | 12.1 | 11.8 | 4.8 | 6.0  | 4.3  | 8.1  | 5.8  | 6.9  | 5.6  | 7.4  | 3.4 | 2.4  | 1.4  | 3.2  |
|        | 0600 | 6.2  | 17.1 | 13.0 | 9.0  | 3.1 | 4.4  | 4.8  | 7.3  | 5.2  | 8.1  | 5.5  | 6.5  | 3.1 | 2.8  | 1.2  | 2.7  |
|        | 0900 | 10.4 | 11.5 | 6.2  | 3.9  | 1.7 | 3.0  | 2.6  | 5.5  | 6.1  | 9.4  | 7.6  | 9.0  | 4.7 | 4.3  | 4.8  | 9.3  |
|        | 1200 | 6.3  | 5.8  | 2.7  | 1.7  | 1.0 | 2.5  | 2.5  | 3.8  | 3.6  | 12.7 | 15.1 | 13.1 | 7.5 | 9.1  | 6.3  | 6.2  |
|        | 1500 | 3.6  | 3.4  | 1.8  | 1.7  | 1.2 | 2.3  | 2.6  | 4.2  | 5.6  | 18.9 | 18.0 | 14.7 | 7.8 | 7.1  | 4.0  | 3.2  |
|        | 1800 | 2.1  | 4.1  | 3.5  | 3.1  | 2.1 | 4.1  | 6.6  | 10.7 | 10.6 | 20.3 | 13.1 | 8.1  | 3.6 | 2.6  | 2.2  | 3.1  |
|        | 2100 | 1.9  | 6.4  | 9.3  | 9.4  | 5.3 | 10.1 | 7.9  | 12.6 | 8.3  | 8.0  | 8.1  | 6.1  | 2.4 | 2.1  | 0.8  | 1.2  |
|        | 2400 | 4.1  | 9.9  | 10.6 | 11.3 | 6.6 | 8.8  | 5.9  | 8.9  | 5.4  | 8.4  | 5.2  | 5.9  | 2.6 | 2.6  | 1.2  | 2.7  |

TABLE 27b(1)

ALICE SPRINGS MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 15.3 | 10.8 | 9.4  | 10.4 | 12.9 | 13.0 | 13.8 | 13.5 | 12.7 | 14.1 | 9.5  | 8.1  | 13.3 | 15.6 | 15.5 |      |
|        | 0600 | 12.4 | 11.5 | 13.2 | 9.4  | 11.1 | 12.3 | 13.2 | 11.3 | 9.5  | 10.1 | 8.6  | 5.9  | 8.2  | 13.8 | 15.4 | 13.2 |
|        | 0900 | 15.4 | 12.9 | 12.1 | 14.7 | 16.4 | 18.7 | 18.4 | 16.7 | 14.4 | 10.8 | 13.0 | 10.4 | 12.6 | 14.8 | 17.5 | 15.2 |
|        | 1200 | 14.4 | 13.3 | 14.4 | 16.5 | 18.4 | 19.2 | 18.3 | 15.3 | 12.5 | 13.3 | 11.2 | 11.8 | 16.0 | 17.8 | 15.7 | 15.4 |
|        | 1500 | 14.7 | 12.8 | 15.0 | 16.1 | 18.1 | 18.7 | 18.5 | 16.4 | 13.7 | 12.6 | 14.7 | 14.3 | 16.4 | 14.6 | 14.2 | 13.9 |
|        | 1800 | 14.8 | 14.0 | 15.0 | 16.8 | 17.6 | 19.3 | 19.7 | 17.7 | 17.3 | 16.1 | 18.0 | 16.0 | 12.6 | 17.0 | 12.2 | 16.1 |
|        | 2100 | 14.0 | 13.4 | 11.8 | 12.2 | 13.6 | 13.3 | 15.4 | 15.2 | 17.7 | 15.3 | 13.1 | 14.3 | 9.4  | 12.7 | 14.7 | 13.7 |
|        | 2400 | 13.2 | 11.8 | 9.9  | 9.9  | 10.3 | 12.4 | 12.1 | 14.0 | 16.3 | 17.6 | 8.8  | 7.4  | 17.6 | 11.3 | 11.4 | 11.5 |
| AUTUMN | 0300 | 7.7  | 9.7  | 7.5  | 9.4  | 10.6 | 11.6 | 11.6 | 12.3 | 13.0 | 8.4  | 6.9  | 5.6  | 4.6  | 8.7  | 10.7 | 13.0 |
|        | 0600 | 11.3 | 9.6  | 9.5  | 8.4  | 10.2 | 11.5 | 10.0 | 10.3 | 9.0  | 6.3  | 4.9  | 5.1  | 5.7  | 10.0 | 12.7 | 12.1 |
|        | 0900 | 11.5 | 10.9 | 11.5 | 11.8 | 13.4 | 15.1 | 15.4 | 13.2 | 12.7 | 6.5  | 7.0  | 6.1  | 8.3  | 13.5 | 15.5 | 13.3 |
|        | 1200 | 12.0 | 11.4 | 13.3 | 15.2 | 17.0 | 18.1 | 17.7 | 15.0 | 13.7 | 9.5  | 14.0 | 10.9 | 10.9 | 17.2 | 18.6 | 13.4 |
|        | 1500 | 10.3 | 11.5 | 10.9 | 15.0 | 16.7 | 17.8 | 17.4 | 14.5 | 12.8 | 11.1 | 14.2 | 11.7 | 15.3 | 15.7 | 13.8 | 12.4 |
|        | 1800 | 9.4  | 10.3 | 11.7 | 13.7 | 15.4 | 16.4 | 17.2 | 14.8 | 15.5 | 13.5 | 8.0  | 12.8 | 10.9 | 10.5 | 10.9 | 11.6 |
|        | 2100 | 8.8  | 7.8  | 8.4  | 8.8  | 10.2 | 10.6 | 11.6 | 10.7 | 14.6 | 11.7 | 10.5 | 9.3  | 21.3 | 12.3 | 10.6 | 9.9  |
|        | 2400 | 16.0 | 6.9  | 11.4 | 9.9  | 10.3 | 8.3  | 9.1  | 12.3 | 7.8  | 4.4  | 3.8  | 6.2  | 3.7  | 7.4  | 13.6 | 14.2 |
| WINTER | 0300 | 9.5  | 8.0  | 7.4  | 8.2  | 9.7  | 10.8 | 10.6 | 8.6  | 10.0 | 10.6 | 8.0  | 6.7  | 7.4  | 9.3  | 11.5 | 13.4 |
|        | 0600 | 10.2 | 9.8  | 7.3  | 9.1  | 9.9  | 11.3 | 12.7 | 9.5  | 11.0 | 8.6  | 8.0  | 5.6  | 6.4  | 8.5  | 14.7 | 12.1 |
|        | 0900 | 16.5 | 10.1 | 8.4  | 11.1 | 12.2 | 14.6 | 12.9 | 12.6 | 11.4 | 9.3  | 8.2  | 6.3  | 7.1  | 11.5 | 17.2 | 13.8 |
|        | 1200 | 14.0 | 10.5 | 13.2 | 15.0 | 16.4 | 17.9 | 16.0 | 15.3 | 15.2 | 14.1 | 13.0 | 12.0 | 12.9 | 17.2 | 17.8 | 16.5 |
|        | 1500 | 12.1 | 9.7  | 11.7 | 13.6 | 15.7 | 16.6 | 15.1 | 11.9 | 14.0 | 13.2 | 16.1 | 14.7 | 19.8 | 17.5 | 16.6 | 13.4 |
|        | 1800 | 9.5  | 7.9  | 10.2 | 11.6 | 12.7 | 14.3 | 14.5 | 12.9 | 11.8 | 11.6 | 14.0 | 13.5 | 14.6 | 14.1 | 12.3 | 11.6 |
|        | 2100 | 8.3  | 8.6  | 6.7  | 8.2  | 8.6  | 9.6  | 10.1 | 8.3  | 10.8 | 9.4  | 9.4  | 9.8  | 9.1  | 10.6 | 10.5 | 10.0 |
|        | 2400 | 7.8  | 5.6  | 7.4  | 7.7  | 8.6  | 11.8 | 7.2  | 7.2  | 12.8 | 10.7 | 6.4  | 8.6  | 9.1  | 9.4  | 12.7 | 10.2 |
| SPRING | 0300 | 13.7 | 11.6 | 8.4  | 9.8  | 10.0 | 11.5 | 14.2 | 12.9 | 12.9 | 11.3 | 11.5 | 8.7  | 10.9 | 15.9 | 17.7 | 18.4 |
|        | 0600 | 14.6 | 11.1 | 10.0 | 8.7  | 9.7  | 12.1 | 12.4 | 12.2 | 12.4 | 9.5  | 8.0  | 7.0  | 9.2  | 14.3 | 18.2 | 17.4 |
|        | 0900 | 16.7 | 13.5 | 13.0 | 15.9 | 17.6 | 21.0 | 20.0 | 17.6 | 17.8 | 16.5 | 20.2 | 13.0 | 13.3 | 19.8 | 21.6 | 20.7 |
|        | 1200 | 14.4 | 11.8 | 14.0 | 16.3 | 18.7 | 19.1 | 17.9 | 16.6 | 15.4 | 17.0 | 16.1 | 15.4 | 19.9 | 20.9 | 22.5 | 20.4 |
|        | 1500 | 11.7 | 12.3 | 11.8 | 14.5 | 16.4 | 16.9 | 17.3 | 14.9 | 15.1 | 15.3 | 17.7 | 17.3 | 21.7 | 22.1 | 20.5 | 16.0 |
|        | 1800 | 11.7 | 10.2 | 11.5 | 13.2 | 15.0 | 16.3 | 15.6 | 15.3 | 16.3 | 15.8 | 16.8 | 17.6 | 21.4 | 19.0 | 17.3 | 14.3 |
|        | 2100 | 11.8 | 9.6  | 10.8 | 9.4  | 10.7 | 11.3 | 12.3 | 13.1 | 17.3 | 18.4 | 14.0 | 14.4 | 14.7 | 13.6 | 14.1 | 11.7 |
|        | 2400 | 18.0 | 10.6 | 7.7  | 9.5  | 8.7  | 11.9 | 13.8 | 11.6 | 7.4  | 10.1 | 11.7 | 10.5 | 16.7 | 13.6 | 14.5 | 16.1 |

TABLE 27b(11)

ALICE SPRINGS PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE  | ENE | E    | ESE  | SE   | SSE  | S    | SSW | SW  | WSW | W    | WNW | NW  | NNW | N    |
|--------|------|-----|-----|-----|------|------|------|------|------|-----|-----|-----|------|-----|-----|-----|------|
| SUMMER | 0300 | 2.8 | 4.5 | 5.6 | 14.9 | 11.2 | 23.8 | 7.9  | 6.5  | 1.8 | 3.3 | 1.3 | 3.1  | 0.8 | 2.5 | 3.7 | 6.5  |
|        | 0600 | 2.2 | 3.1 | 2.9 | 13.3 | 9.5  | 24.0 | 9.2  | 7.1  | 1.8 | 3.9 | 2.2 | 3.9  | 2.1 | 3.3 | 4.2 | 7.1  |
|        | 0900 | 2.6 | 5.4 | 6.8 | 22.6 | 14.0 | 20.3 | 5.3  | 4.3  | 0.8 | 1.4 | 0.9 | 1.9  | 1.0 | 3.6 | 3.3 | 5.9  |
|        | 1200 | 2.3 | 5.2 | 5.8 | 18.5 | 14.5 | 22.4 | 7.7  | 4.4  | 0.9 | 1.8 | 0.7 | 1.7  | 1.4 | 4.2 | 3.6 | 4.8  |
|        | 1500 | 1.6 | 3.9 | 3.2 | 13.2 | 12.4 | 26.9 | 11.3 | 8.5  | 2.4 | 2.8 | 1.3 | 2.7  | 1.5 | 3.7 | 1.7 | 3.0  |
|        | 1800 | 1.2 | 2.8 | 2.9 | 10.3 | 13.1 | 32.2 | 14.0 | 9.1  | 2.3 | 2.6 | 1.0 | 2.2  | 0.6 | 2.1 | 1.4 | 2.2  |
|        | 2100 | 1.2 | 2.9 | 3.5 | 10.9 | 13.5 | 37.2 | 13.2 | 6.7  | 1.1 | 1.7 | 1.1 | 1.1  | 0.8 | 1.6 | 1.3 | 2.4  |
|        | 2400 | 2.0 | 4.6 | 3.8 | 16.5 | 10.9 | 25.2 | 12.2 | 7.1  | 1.3 | 2.5 | 1.0 | 2.0  | 0.5 | 2.0 | 2.8 | 5.3  |
| AUTUMN | 0300 | 1.1 | 3.1 | 3.3 | 11.9 | 11.3 | 27.5 | 8.6  | 9.7  | 2.3 | 2.8 | 2.3 | 4.8  | 1.1 | 3.9 | 1.8 | 4.5  |
|        | 0600 | 1.8 | 2.4 | 2.6 | 6.8  | 9.3  | 23.8 | 8.2  | 8.8  | 2.4 | 4.4 | 4.7 | 9.5  | 3.3 | 3.9 | 3.3 | 4.7  |
|        | 0900 | 0.9 | 3.2 | 4.0 | 18.5 | 14.3 | 24.5 | 7.3  | 6.3  | 1.9 | 2.7 | 1.7 | 3.7  | 1.1 | 2.1 | 2.9 | 5.3  |
|        | 1200 | 1.7 | 3.9 | 6.3 | 23.9 | 18.6 | 21.3 | 6.6  | 4.2  | 1.2 | 1.1 | 0.5 | 1.0  | 1.3 | 2.9 | 2.0 | 3.5  |
|        | 1500 | 1.2 | 2.3 | 3.4 | 16.9 | 18.2 | 27.1 | 10.2 | 6.6  | 1.7 | 2.0 | 1.0 | 2.0  | 1.2 | 3.0 | 1.4 | 1.7  |
|        | 1800 | 0.7 | 1.0 | 1.9 | 11.9 | 16.0 | 40.1 | 12.1 | 6.5  | 2.0 | 1.7 | 0.6 | 1.2  | 0.6 | 1.8 | 0.8 | 1.2  |
|        | 2100 | 0.8 | 1.4 | 2.4 | 12.9 | 13.7 | 42.3 | 12.7 | 7.1  | 1.7 | 0.6 | 0.2 | 0.4  | 0.1 | 1.1 | 0.9 | 1.7  |
|        | 2400 | 1.4 | 3.7 | 2.8 | 15.9 | 14.0 | 22.4 | 12.6 | 10.7 | 1.9 | 1.4 | 1.9 | 1.4  | 1.4 | 1.4 | 1.4 | 5.6  |
| WINTER | 0300 | 2.2 | 2.8 | 1.7 | 8.7  | 4.8  | 14.8 | 6.1  | 7.9  | 3.1 | 6.2 | 5.0 | 13.0 | 3.8 | 8.1 | 4.3 | 7.5  |
|        | 0600 | 1.5 | 2.6 | 1.4 | 6.9  | 4.3  | 11.3 | 4.7  | 7.4  | 3.6 | 7.3 | 6.6 | 13.4 | 3.5 | 7.7 | 7.2 | 8.5  |
|        | 0900 | 1.4 | 2.3 | 1.8 | 12.5 | 9.3  | 13.5 | 6.2  | 8.5  | 3.4 | 5.5 | 5.1 | 7.0  | 2.6 | 6.6 | 4.8 | 9.4  |
|        | 1200 | 1.6 | 3.3 | 5.4 | 21.7 | 13.8 | 17.8 | 5.6  | 5.2  | 2.5 | 3.0 | 1.7 | 2.0  | 1.6 | 5.6 | 4.0 | 5.2  |
|        | 1500 | 0.9 | 2.1 | 3.2 | 15.5 | 13.5 | 20.4 | 7.9  | 6.8  | 3.1 | 4.3 | 1.9 | 3.2  | 3.3 | 6.5 | 3.5 | 4.0  |
|        | 1800 | 0.7 | 0.8 | 1.2 | 12.1 | 14.2 | 29.8 | 10.0 | 8.1  | 2.6 | 3.8 | 1.4 | 3.1  | 2.2 | 5.1 | 2.2 | 2.7  |
|        | 2100 | 1.2 | 2.4 | 3.1 | 14.2 | 11.0 | 26.1 | 11.7 | 10.2 | 2.7 | 2.1 | 1.1 | 1.6  | 1.4 | 4.2 | 2.7 | 4.4  |
|        | 2400 | 2.1 | 2.9 | 3.7 | 9.5  | 9.1  | 14.4 | 7.4  | 9.5  | 4.1 | 3.3 | 3.7 | 5.8  | 5.8 | 6.6 | 4.9 | 7.4  |
| SPRING | 0300 | 2.1 | 3.9 | 5.1 | 12.7 | 8.1  | 15.6 | 6.4  | 7.9  | 3.7 | 4.7 | 3.5 | 5.9  | 1.6 | 5.6 | 5.1 | 7.9  |
|        | 0600 | 2.9 | 4.2 | 3.5 | 10.0 | 5.6  | 14.2 | 7.3  | 9.6  | 3.6 | 5.3 | 3.7 | 6.6  | 2.0 | 6.4 | 4.8 | 10.5 |
|        | 0900 | 2.7 | 5.9 | 7.5 | 22.1 | 10.7 | 15.7 | 5.2  | 5.4  | 1.7 | 2.5 | 1.3 | 1.6  | 1.0 | 3.6 | 4.4 | 8.9  |
|        | 1200 | 2.6 | 5.2 | 4.8 | 18.3 | 11.1 | 15.7 | 5.8  | 5.0  | 1.8 | 2.3 | 1.2 | 2.3  | 2.2 | 7.6 | 7.2 | 6.9  |
|        | 1500 | 1.8 | 2.8 | 3.4 | 12.0 | 9.4  | 19.7 | 7.9  | 7.2  | 3.4 | 4.3 | 2.2 | 4.3  | 3.9 | 8.5 | 4.7 | 4.5  |
|        | 1800 | 1.1 | 2.0 | 2.2 | 11.1 | 11.8 | 24.6 | 10.2 | 8.8  | 3.2 | 4.4 | 1.8 | 3.3  | 3.6 | 6.1 | 2.9 | 2.9  |
|        | 2100 | 1.4 | 2.9 | 3.5 | 13.2 | 12.3 | 28.0 | 9.8  | 8.6  | 1.9 | 2.1 | 1.0 | 2.4  | 1.6 | 3.4 | 2.7 | 5.1  |
|        | 2400 | 1.8 | 5.3 | 5.6 | 14.4 | 10.6 | 14.7 | 7.6  | 8.9  | 1.3 | 2.3 | 3.8 | 3.8  | 2.0 | 4.3 | 6.8 | 6.8  |

TABLE 27c(i)  
AMBERLEY MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 7.4  | 10.5 | 8.9  | 9.1  | 7.8  | 9.3  | 9.4  | 7.7  | 6.0  | 6.7  | 7.1  | 10.7 | 8.8  | 7.8  | 5.6  | 8.9  |
|        | 0600 | 10.6 | 8.6  | 10.0 | 9.7  | 9.7  | 9.3  | 9.1  | 7.3  | 6.6  | 6.3  | 9.3  | 7.6  | 7.9  | 8.2  | 11.1 | 8.3  |
|        | 0900 | 8.1  | 9.4  | 11.2 | 12.3 | 14.4 | 12.9 | 14.1 | 12.1 | 9.1  | 7.1  | 8.5  | 9.3  | 9.9  | 10.1 | 10.2 | 8.8  |
|        | 1200 | 10.2 | 13.3 | 14.1 | 15.1 | 16.4 | 14.9 | 16.1 | 13.0 | 12.0 | 10.3 | 9.8  | 12.6 | 12.4 | 10.9 | 11.7 | 9.1  |
|        | 1500 | 15.2 | 18.7 | 20.5 | 18.2 | 17.7 | 16.9 | 17.3 | 15.2 | 11.6 | 13.6 | 16.8 | 14.5 | 14.2 | 12.2 | 13.8 | 10.9 |
|        | 1800 | 18.2 | 21.3 | 22.1 | 18.6 | 16.7 | 16.1 | 17.4 | 16.2 | 14.7 | 16.3 | 13.6 | 14.5 | 12.6 | 12.1 | 12.2 | 13.8 |
|        | 2100 | 5.3  | 11.7 | 12.1 | 10.4 | 11.1 | 11.5 | 11.7 | 13.0 | 13.4 | 12.9 | 9.8  | 10.1 | 12.2 | 9.3  | 9.3  | 10.3 |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| AUTUMN | 0300 | 6.9  | 9.1  | 6.7  | 11.2 | 15.2 | 9.7  | 8.5  | 7.2  | 7.1  | 7.4  | 7.6  | 12.0 | 8.8  | 8.4  | 6.2  | 5.6  |
|        | 0600 | 3.7  | 6.3  | 7.6  | 11.9 | 7.1  | 9.0  | 8.2  | 7.4  | 6.9  | 6.3  | 7.6  | 10.7 | 10.0 | 7.8  | 8.7  | 6.6  |
|        | 0900 | 4.8  | 9.9  | 10.0 | 11.8 | 13.3 | 13.0 | 12.7 | 10.1 | 8.6  | 7.9  | 11.6 | 12.8 | 10.8 | 7.4  | 9.1  | 6.8  |
|        | 1200 | 7.9  | 10.0 | 12.5 | 13.6 | 15.1 | 15.6 | 15.7 | 13.6 | 12.1 | 12.1 | 14.4 | 14.7 | 14.0 | 10.6 | 9.7  | 7.7  |
|        | 1500 | 10.6 | 13.6 | 15.3 | 15.7 | 16.8 | 15.6 | 15.7 | 14.4 | 11.2 | 13.6 | 18.4 | 17.2 | 13.3 | 10.1 | 11.5 | 8.4  |
|        | 1800 | 10.3 | 14.7 | 14.7 | 13.0 | 13.4 | 12.1 | 12.7 | 11.4 | 11.2 | 9.6  | 11.9 | 11.4 | 9.2  | 8.9  | 6.6  | 8.4  |
|        | 2100 | 6.0  | 8.8  | 8.6  | 8.5  | 10.4 | 9.0  | 10.4 | 8.1  | 8.7  | 8.8  | 9.7  | 10.3 | 8.8  | 7.8  | 8.3  | 9.6  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| WINTER | 0300 | 3.3  | 7.4  | 7.1  | 14.2 | 12.7 | 11.0 | 7.9  | 8.1  | 6.8  | 8.9  | 14.1 | 12.7 | 11.1 | 9.2  | 7.6  | 7.5  |
|        | 0600 | 9.3  | 7.2  | 7.4  | 13.6 | 10.6 | 10.0 | 7.4  | 7.3  | 7.1  | 8.3  | 10.5 | 12.5 | 10.2 | 9.4  | 9.4  | 7.7  |
|        | 0900 | 9.1  | 6.5  | 9.4  | 13.2 | 12.3 | 9.8  | 11.8 | 10.3 | 8.8  | 8.2  | 14.1 | 14.8 | 12.9 | 10.4 | 8.2  | 6.5  |
|        | 1200 | 10.2 | 8.1  | 12.3 | 13.1 | 14.5 | 14.2 | 15.3 | 13.3 | 11.6 | 12.9 | 19.2 | 17.7 | 14.9 | 11.5 | 10.9 | 9.1  |
|        | 1500 | 10.9 | 11.7 | 13.6 | 14.2 | 15.5 | 14.0 | 15.4 | 12.6 | 12.0 | 16.0 | 20.3 | 19.2 | 15.4 | 11.1 | 10.8 | 9.0  |
|        | 1800 | 9.9  | 11.7 | 11.7 | 11.2 | 11.2 | 11.7 | 11.4 | 10.4 | 10.3 | 11.1 | 12.8 | 11.9 | 10.9 | 8.0  | 7.4  | 6.5  |
|        | 2100 | 7.6  | 8.0  | 7.9  | 7.7  | 12.4 | 8.8  | 8.8  | 9.4  | 7.1  | 11.0 | 12.1 | 10.9 | 9.5  | 7.9  | 7.4  | 5.4  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| SPRING | 0300 | 5.6  | 8.9  | 7.5  | 7.9  | 10.1 | 8.8  | 7.7  | 7.9  | 6.8  | 8.3  | 7.9  | 11.6 | 12.0 | 8.5  | 9.7  | 7.5  |
|        | 0600 | 6.6  | 7.6  | 8.7  | 7.0  | 8.4  | 9.4  | 8.3  | 7.0  | 6.3  | 8.3  | 11.1 | 9.9  | 10.5 | 9.9  | 8.3  | 8.4  |
|        | 0900 | 8.3  | 9.9  | 9.9  | 11.3 | 12.5 | 12.6 | 12.6 | 11.6 | 10.6 | 10.9 | 14.2 | 13.7 | 12.7 | 11.3 | 13.0 | 10.0 |
|        | 1200 | 12.0 | 12.2 | 14.1 | 12.8 | 14.3 | 12.3 | 13.6 | 12.8 | 10.9 | 15.1 | 21.2 | 17.8 | 15.8 | 13.2 | 14.2 | 10.5 |
|        | 1500 | 16.4 | 20.3 | 20.6 | 17.4 | 16.2 | 14.3 | 16.3 | 14.1 | 13.8 | 18.5 | 22.9 | 20.5 | 16.9 | 13.3 | 15.9 | 11.8 |
|        | 1800 | 16.2 | 19.5 | 20.2 | 17.7 | 15.2 | 14.7 | 16.0 | 13.6 | 14.6 | 13.2 | 14.7 | 12.5 | 12.8 | 11.2 | 13.4 | 10.2 |
|        | 2100 | 9.5  | 10.8 | 10.7 | 9.4  | 8.5  | 8.4  | 9.9  | 9.5  | 11.2 | 10.0 | 10.6 | 11.1 | 10.1 | 8.7  | 7.8  | 13.5 |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |

TABLE 27c(ii)  
AMBERLEY PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW | N   |
|--------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|
| SUMMER | 0300 | 0.9 | 3.6  | 4.9  | 7.4  | 4.2  | 13.4 | 10.7 | 28.4 | 8.8  | 6.8  | 1.4  | 1.8  | 1.8  | 3.4  | 1.4 | 1.4 |
|        | 0600 | 1.0 | 4.9  | 3.7  | 6.6  | 3.3  | 10.3 | 10.8 | 31.0 | 6.7  | 6.6  | 1.3  | 3.4  | 2.1  | 5.9  | 1.3 | 1.1 |
|        | 0900 | 2.0 | 5.6  | 7.4  | 12.0 | 9.9  | 14.4 | 8.4  | 10.2 | 2.1  | 2.0  | 1.1  | 3.5  | 4.0  | 10.4 | 3.3 | 3.8 |
|        | 1200 | 3.3 | 10.7 | 11.3 | 18.2 | 9.5  | 9.9  | 5.8  | 5.1  | 1.2  | 1.6  | 1.3  | 3.9  | 3.1  | 7.5  | 3.1 | 4.6 |
|        | 1500 | 3.2 | 22.7 | 22.5 | 16.9 | 7.1  | 6.9  | 3.9  | 3.0  | 0.8  | 0.9  | 1.2  | 1.7  | 1.3  | 3.3  | 2.0 | 2.5 |
|        | 1800 | 1.8 | 24.4 | 33.3 | 20.5 | 5.2  | 4.6  | 2.9  | 1.9  | 0.5  | 0.7  | 0.9  | 0.7  | 0.4  | 0.5  | 0.6 | 0.8 |
|        | 2100 | 0.4 | 14.0 | 28.8 | 26.6 | 8.5  | 7.2  | 4.0  | 4.9  | 1.1  | 1.2  | 0.8  | 0.8  | 0.3  | 0.5  | 0.5 | 0.5 |
|        | 2400 | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   |
| AUTUMN | 0300 | 0.5 | 1.2  | 1.5  | 3.2  | 1.8  | 5.4  | 9.2  | 27.9 | 10.8 | 8.7  | 3.1  | 7.2  | 7.2  | 8.7  | 2.2 | 1.5 |
|        | 0600 | 0.4 | 1.0  | 1.3  | 3.5  | 1.6  | 5.5  | 9.6  | 24.0 | 12.6 | 9.4  | 2.5  | 8.2  | 7.1  | 7.9  | 1.7 | 3.6 |
|        | 0900 | 0.6 | 1.1  | 1.8  | 3.9  | 4.2  | 12.3 | 14.7 | 21.6 | 5.6  | 4.8  | 2.9  | 6.6  | 5.9  | 10.6 | 1.9 | 1.5 |
|        | 1200 | 1.6 | 5.1  | 6.4  | 13.3 | 10.1 | 12.8 | 8.0  | 7.9  | 1.8  | 3.5  | 3.3  | 8.2  | 4.7  | 6.8  | 3.1 | 3.5 |
|        | 1500 | 2.4 | 10.4 | 13.7 | 16.1 | 9.0  | 9.2  | 5.9  | 5.2  | 1.0  | 3.2  | 3.8  | 7.5  | 2.8  | 4.6  | 2.2 | 2.9 |
|        | 1800 | 1.6 | 17.0 | 25.0 | 17.1 | 7.0  | 5.6  | 5.3  | 5.0  | 0.7  | 2.0  | 3.1  | 5.5  | 2.5  | 1.4  | 0.4 | 0.7 |
|        | 2100 | 1.0 | 6.4  | 16.1 | 17.0 | 7.0  | 9.5  | 6.3  | 12.4 | 3.7  | 3.0  | 3.3  | 8.0  | 2.1  | 2.4  | 0.8 | 1.0 |
|        | 2400 | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   |
| WINTER | 0300 | 0.5 | 1.0  | 0.8  | 1.9  | 1.0  | 2.5  | 3.9  | 16.5 | 7.4  | 9.2  | 6.2  | 17.6 | 10.1 | 14.3 | 4.4 | 2.6 |
|        | 0600 | 0.8 | 1.3  | 0.9  | 1.8  | 0.9  | 2.3  | 3.7  | 15.9 | 5.7  | 8.2  | 3.6  | 18.0 | 13.7 | 17.1 | 4.6 | 1.6 |
|        | 0900 | 0.7 | 0.6  | 0.8  | 1.0  | 1.3  | 2.3  | 5.5  | 17.2 | 6.3  | 5.4  | 5.8  | 17.6 | 12.5 | 16.3 | 3.6 | 3.2 |
|        | 1200 | 1.7 | 2.6  | 3.0  | 5.6  | 3.9  | 6.0  | 6.2  | 8.9  | 3.7  | 6.5  | 7.4  | 16.2 | 8.3  | 12.4 | 3.6 | 3.9 |
|        | 1500 | 2.5 | 5.6  | 6.2  | 6.6  | 3.9  | 6.4  | 5.1  | 5.6  | 2.0  | 5.8  | 10.3 | 17.2 | 6.1  | 8.0  | 3.6 | 5.3 |
|        | 1800 | 2.2 | 12.9 | 14.5 | 7.7  | 2.6  | 4.3  | 4.4  | 5.3  | 1.5  | 5.0  | 9.6  | 17.9 | 5.2  | 4.4  | 1.1 | 1.4 |
|        | 2100 | 1.2 | 5.5  | 6.9  | 6.3  | 1.1  | 3.3  | 4.8  | 11.0 | 5.0  | 6.2  | 9.9  | 19.3 | 8.1  | 8.3  | 1.9 | 1.5 |
|        | 2400 | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   |
| SPRING | 0300 | 0.6 | 2.6  | 3.1  | 6.6  | 2.8  | 5.1  | 6.6  | 21.7 | 5.7  | 11.4 | 5.1  | 8.0  | 7.1  | 8.6  | 3.1 | 2.0 |
|        | 0600 | 1.5 | 2.9  | 2.2  | 4.3  | 2.1  | 4.6  | 5.1  | 20.8 | 9.0  | 7.6  | 3.0  | 10.8 | 7.1  | 11.5 | 4.6 | 2.9 |
|        | 0900 | 2.1 | 5.2  | 5.4  | 8.0  | 4.8  | 7.2  | 6.5  | 8.8  | 3.6  | 4.0  | 3.8  | 8.4  | 6.2  | 14.9 | 6.2 | 5.0 |
|        | 1200 | 3.9 | 11.1 | 9.3  | 9.8  | 4.3  | 5.9  | 2.9  | 3.8  | 1.6  | 4.1  | 5.2  | 9.7  | 5.2  | 11.2 | 5.6 | 6.3 |
|        | 1500 | 3.5 | 19.5 | 20.3 | 10.6 | 3.6  | 3.6  | 1.9  | 2.6  | 0.9  | 3.8  | 5.8  | 8.3  | 3.6  | 5.2  | 3.2 | 3.7 |
|        | 1800 | 2.3 | 22.5 | 35.4 | 13.8 | 2.6  | 1.8  | 1.1  | 1.5  | 1.1  | 4.9  | 4.6  | 4.2  | 1.2  | 0.8  | 0.9 | 1.2 |
|        | 2100 | 1.4 | 13.3 | 23.5 | 24.7 | 6.5  | 4.4  | 4.3  | 4.9  | 2.3  | 3.9  | 2.5  | 3.9  | 1.4  | 1.4  | 0.8 | 0.8 |
|        | 2400 | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   |

TABLE 27d(i)  
BROOME MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 8.1  | 9.8  | 13.5 | 14.3 | 12.9 | 19.2 | 13.8 | 13.1 | 10.5 | 11.2 | 12.3 | 13.0 | 13.5 | 14.2 | 13.8 | 9.4  |
|        | 0600 | 8.4  | 8.8  | 10.3 | 12.3 | 14.5 | 13.0 | 15.8 | 11.3 | 10.0 | 10.3 | 12.4 | 12.0 | 13.5 | 13.8 | 13.2 | 9.2  |
|        | 0900 | 14.4 | 13.7 | 16.6 | 14.6 | 14.5 | 11.6 | 10.3 | 9.9  | 13.2 | 14.3 | 15.1 | 14.1 | 14.6 | 15.7 | 16.8 | 13.4 |
|        | 1200 | 17.8 | 17.9 | 19.8 | 20.6 | 18.8 | 12.6 | 12.9 | 9.4  | 12.1 | 14.7 | 17.4 | 17.0 | 18.2 | 20.6 | 23.1 | 21.7 |
|        | 1500 | 16.9 | 17.8 | 19.7 | 20.8 | 20.6 | 14.9 | 16.9 | 9.8  | 14.1 | 17.4 | 20.7 | 20.7 | 21.4 | 23.1 | 25.0 | 20.1 |
|        | 1800 | 15.0 | 14.4 | 17.0 | 19.1 | 18.7 | 20.4 | 21.9 | 11.9 | 13.2 | 16.1 | 16.5 | 16.5 | 17.8 | 19.0 | 20.9 | 14.1 |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 9.3  | 12.6 | 14.1 | 16.3 | 15.2 | 21.2 | 9.3  | 13.3 | 12.1 | 10.0 | 10.8 | 12.6 | 13.5 | 13.3 | 15.8 | 11.2 |
| AUTUMN | 0300 | 6.4  | 6.7  | 8.8  | 9.1  | 13.5 | 16.7 | 14.6 | 9.2  | 7.6  | 8.9  | 8.4  | 9.3  | 11.0 | 11.2 | 10.6 | 7.6  |
|        | 0600 | 7.3  | 6.3  | 9.0  | 8.4  | 11.2 | 13.5 | 12.0 | 8.7  | 9.5  | 8.4  | 8.8  | 8.9  | 12.2 | 12.9 | 7.4  | 9.9  |
|        | 0900 | 13.2 | 10.6 | 14.8 | 16.4 | 15.4 | 11.5 | 9.3  | 10.2 | 12.4 | 12.7 | 12.0 | 13.7 | 14.0 | 15.1 | 13.4 | -    |
|        | 1200 | 17.3 | 16.8 | 18.2 | 19.1 | 18.8 | 13.8 | 11.0 | 8.8  | 11.4 | 11.5 | 14.1 | 14.0 | 14.4 | 17.9 | 21.6 | 14.1 |
|        | 1500 | 18.1 | 15.0 | 15.9 | 15.3 | 16.3 | 13.3 | 11.3 | 9.5  | 11.5 | 15.3 | 16.8 | 17.3 | 18.6 | 19.2 | 23.0 | 21.4 |
|        | 1800 | 12.1 | 11.0 | 11.0 | 9.3  | 11.6 | 10.2 | 14.2 | 8.0  | 9.3  | 10.5 | 11.8 | 11.2 | 12.6 | 13.1 | 13.3 | 13.2 |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 6.7  | 8.1  | 10.1 | 10.2 | 13.6 | 17.5 | 14.4 | 9.4  | 8.5  | 7.5  | 8.9  | 8.9  | 11.1 | 10.2 | 7.4  | 7.3  |
| WINTER | 0300 | 4.8  | 6.1  | 5.5  | 7.9  | 12.0 | 16.6 | 13.0 | 7.7  | 9.9  | 5.7  | 6.2  | 4.3  | 9.3  | 5.0  | 3.7  | 6.4  |
|        | 0600 | 4.0  | 4.6  | 7.0  | 9.0  | 11.6 | 13.0 | 11.3 | 8.4  | 7.5  | 5.6  | 5.9  | 6.6  | 1.9  | 5.6  | 12.4 | 7.4  |
|        | 0900 | 7.7  | 11.3 | 15.0 | 17.7 | 17.1 | 12.0 | 9.2  | 8.8  | 12.1 | 12.6 | 11.9 | 8.7  | 10.9 | 11.3 | 10.9 | 15.2 |
|        | 1200 | 11.3 | 16.7 | 19.4 | 20.8 | 20.1 | 15.1 | 10.7 | 9.0  | 10.0 | 12.0 | 13.8 | 12.3 | 13.1 | 16.0 | 20.7 | 20.4 |
|        | 1500 | 12.2 | 12.8 | 15.5 | 15.8 | 17.6 | 15.3 | 12.2 | 10.8 | 11.7 | 14.7 | 16.0 | 14.8 | 17.4 | 19.3 | 21.1 | 17.6 |
|        | 1800 | 5.3  | 5.7  | 9.0  | 9.4  | 10.5 | 11.8 | 10.7 | 8.9  | 8.9  | 11.0 | 10.5 | 8.4  | 9.6  | 9.4  | 9.5  | 8.1  |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 3.8  | 4.2  | 7.5  | 8.2  | 12.9 | 15.5 | 12.4 | 8.1  | 7.7  | 5.8  | 5.9  | 6.1  | 6.4  | 4.4  | 4.9  | 4.2  |
| SPRING | 0300 | 4.5  | 5.2  | 6.8  | 8.1  | 14.1 | 16.3 | 14.1 | 9.1  | 10.3 | 8.2  | 9.5  | 9.8  | 11.9 | 10.4 | 9.3  | 6.4  |
|        | 0600 | 6.9  | 5.2  | 8.1  | 8.5  | 10.8 | 11.8 | 12.0 | 8.7  | 10.0 | 8.3  | 9.7  | 10.5 | 11.1 | 8.1  | 8.6  | 4.7  |
|        | 0900 | 10.3 | 9.9  | 15.1 | 19.8 | 18.6 | 12.9 | 9.3  | 10.5 | 12.9 | 14.2 | 15.2 | 13.5 | 12.7 | 13.1 | 14.2 | 9.2  |
|        | 1200 | 19.0 | 17.0 | 21.1 | 21.0 | 19.2 | 16.2 | 13.7 | 11.2 | 11.9 | 16.1 | 18.0 | 17.5 | 18.1 | 20.5 | 21.3 | 12.1 |
|        | 1500 | 24.7 | 18.0 | 15.3 | 15.5 | 18.1 | 15.0 | 14.5 | 13.0 | 15.5 | 20.3 | 22.3 | 21.7 | 22.7 | 25.3 | 26.3 | 22.6 |
|        | 1800 | 13.4 | 17.3 | 18.9 | 16.0 | 13.5 | 15.2 | 14.2 | 12.1 | 14.2 | 15.8 | 16.9 | 14.8 | 15.5 | 16.4 | 19.1 | 14.3 |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 3.7  | 6.6  | 8.8  | 7.7  | 15.4 | 17.0 | 16.0 | 8.5  | 8.9  | 8.5  | 8.6  | 9.3  | 9.9  | 11.6 | 8.7  | 7.6  |

TABLE 27d(ii)  
BROOME PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE  | ENE | E    | ESE  | SE   | SSE  | S    | SSW | SW   | WSW  | W    | WNW  | NW   | NNW | N   |
|--------|------|-----|-----|-----|------|------|------|------|------|-----|------|------|------|------|------|-----|-----|
| SUMMER | 0300 | 2.0 | 3.9 | 2.5 | 3.1  | 2.0  | 2.7  | 1.0  | 2.1  | 2.8 | 8.8  | 12.6 | 27.4 | 13.1 | 10.6 | 2.6 | 2.8 |
|        | 0600 | 1.9 | 4.9 | 2.8 | 5.3  | 2.8  | 4.1  | 1.9  | 5.1  | 3.9 | 10.9 | 13.6 | 22.7 | 9.0  | 6.0  | 2.4 | 2.6 |
|        | 0900 | 2.0 | 3.3 | 2.4 | 4.8  | 3.5  | 7.6  | 4.2  | 6.0  | 4.7 | 9.9  | 9.7  | 17.3 | 9.9  | 9.7  | 3.2 | 2.0 |
|        | 1200 | 1.0 | 2.2 | 1.4 | 2.9  | 1.7  | 5.1  | 2.5  | 4.4  | 1.7 | 5.7  | 10.3 | 28.9 | 17.6 | 11.5 | 2.0 | 1.1 |
|        | 1500 | 0.7 | 1.3 | 1.4 | 1.6  | 1.3  | 1.1  | 0.9  | 1.9  | 0.9 | 4.3  | 10.3 | 34.8 | 20.8 | 13.9 | 2.7 | 2.0 |
|        | 1800 | 1.3 | 1.2 | 1.4 | 1.3  | 0.6  | 0.8  | 0.6  | 0.7  | 4.3 | 9.7  | 32.6 | 20.4 | 18.1 | 4.0  | 2.2 | -   |
|        | 2100 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -    | -    | -    | -    | -   | -   |
|        | 2400 | 2.3 | 2.8 | 1.7 | 2.9  | 0.3  | 1.8  | 0.2  | 1.2  | 1.7 | 6.8  | 10.7 | 31.2 | 15.2 | 13.7 | 4.1 | 3.3 |
| AUTUMN | 0300 | 1.5 | 3.2 | 4.4 | 14.2 | 10.9 | 13.5 | 3.9  | 5.7  | 3.2 | 10.4 | 7.8  | 11.3 | 4.9  | 2.9  | 0.9 | 1.5 |
|        | 0600 | 1.6 | 3.2 | 4.4 | 20.6 | 15.8 | 15.0 | 4.2  | 7.7  | 4.4 | 6.3  | 5.3  | 6.2  | 2.0  | 1.8  | 0.4 | 1.2 |
|        | 0900 | 0.7 | 2.6 | 6.0 | 21.9 | 15.4 | 17.2 | 6.2  | 7.4  | 3.1 | 4.5  | 2.9  | 4.6  | 2.4  | 2.8  | 1.0 | 1.3 |
|        | 1200 | 0.7 | 3.1 | 7.5 | 13.6 | 9.5  | 13.1 | 5.7  | 7.1  | 2.9 | 5.7  | 6.1  | 13.3 | 6.8  | 3.4  | 1.0 | 0.6 |
|        | 1500 | 0.7 | 1.6 | 3.0 | 5.9  | 6.3  | 10.5 | 6.2  | 5.2  | 2.5 | 5.2  | 9.2  | 25.9 | 10.4 | 5.3  | 1.1 | 0.9 |
|        | 1800 | 1.2 | 1.1 | 1.9 | 4.7  | 4.1  | 5.0  | 1.9  | 2.3  | 2.1 | 9.7  | 13.0 | 22.7 | 12.5 | 12.3 | 3.5 | 1.9 |
|        | 2100 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -    | -    | -    | -    | -   | -   |
|        | 2400 | 2.2 | 3.5 | 3.0 | 7.9  | 9.3  | 10.8 | 2.7  | 2.9  | 3.9 | 8.1  | 8.4  | 17.4 | 7.9  | 6.5  | 2.1 | 3.3 |
| WINTER | 0300 | 0.9 | 1.3 | 2.4 | 18.0 | 24.2 | 26.8 | 7.2  | 8.2  | 3.1 | 3.4  | 1.1  | 1.5  | 0.3  | 0.3  | 0.3 | 1.0 |
|        | 0600 | 0.5 | 2.5 | 4.1 | 28.5 | 28.0 | 20.4 | 5.1  | 5.8  | 1.6 | 1.3  | 0.5  | 0.6  | 0.0  | 0.1  | 0.1 | 0.8 |
|        | 0900 | 0.4 | 1.4 | 5.9 | 30.2 | 24.2 | 23.4 | 4.6  | 5.0  | 1.2 | 0.9  | 0.4  | 0.6  | 0.3  | 0.5  | 0.5 | 0.5 |
|        | 1200 | 0.5 | 2.5 | 7.8 | 17.3 | 13.3 | 20.9 | 9.4  | 9.6  | 2.3 | 3.9  | 2.5  | 5.1  | 2.1  | 1.9  | 0.6 | 0.2 |
|        | 1500 | 0.3 | 0.8 | 2.2 | 4.7  | 7.3  | 13.6 | 10.3 | 12.0 | 4.5 | 8.1  | 9.6  | 17.8 | 5.1  | 3.0  | 0.4 | 0.1 |
|        | 1800 | 0.3 | 0.3 | 1.0 | 5.1  | 6.7  | 8.6  | 3.2  | 4.7  | 5.4 | 19.4 | 13.4 | 15.0 | 6.0  | 7.6  | 2.6 | 0.6 |
|        | 2100 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -    | -    | -    | -    | -   | -   |
|        | 2400 | 1.4 | 2.0 | 1.4 | 9.7  | 17.8 | 28.6 | 8.6  | 11.4 | 4.4 | 5.6  | 2.1  | 2.2  | 1.1  | 1.8  | 0.8 | 1.0 |
| SPRING | 0300 | 0.8 | 1.5 | 0.9 | 2.5  | 4.3  | 7.0  | 3.3  | 6.3  | 6.2 | 15.8 | 15.9 | 20.2 | 7.8  | 4.5  | 1.6 | 1.3 |
|        | 0600 | 1.4 | 2.8 | 1.8 | 6.3  | 7.3  | 10.3 | 3.9  | 9.4  | 6.8 | 14.4 | 12.1 | 13.7 | 4.4  | 2.8  | 1.1 | 1.7 |
|        | 0900 | 0.4 | 1.1 | 1.9 | 8.0  | 8.8  | 12.2 | 5.1  | 9.2  | 6.3 | 9.3  | 7.6  | 13.7 | 5.8  | 7.6  | 2.3 | 0.7 |
|        | 1200 | 0.1 | 0.7 | 1.3 | 2.7  | 3.9  | 7.8  | 5.6  | 4.5  | 1.6 | 4.2  | 9.3  | 32.4 | 15.8 | 9.0  | 1.0 | 0.2 |
|        | 1500 | 0.1 | 0.3 | 0.3 | 0.5  | 0.6  | 1.8  | 2.9  | 4.3  | 2.1 | 5.1  | 13.0 | 36.6 | 19.5 | 11.4 | 1.3 | 0.2 |
|        | 1800 | 0.3 | 0.2 | 0.2 | 0.4  | 0.4  | 0.9  | 0.9  | 0.9  | 1.5 | 9.2  | 16.7 | 29.9 | 16.6 | 17.3 | 4.0 | 0.7 |
|        | 2100 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -    | -    | -    | -    | -   | -   |
|        | 2400 | 0.6 | 0.9 | 0.6 | 1.6  | 1.9  | 4.7  | 1.8  | 4.0  | 4.5 | 11.8 | 15.4 | 26.4 | 12.2 | 9.4  | 2.9 | 1.4 |

TABLE 27e(i)

CAIRNS MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 8.7  | 25.9 | 3.7  | 10.4 | 9.7  | 8.4  | 8.7  | 10.5 | 11.6 | 9.0  | 7.0  | 10.7 | 7.6  | 7.7  | 7.8  | 11.2 |
|        | 0600 | 8.1  | 8.4  | 9.3  | 10.8 | 10.2 | 8.9  | 9.4  | 10.5 | 11.0 | 9.9  | 13.8 | 10.6 | 8.0  | 8.8  | 6.7  | 9.9  |
|        | 0900 | 9.6  | 8.0  | 10.1 | 7.0  | 7.9  | 9.8  | 10.6 | 10.9 | 10.9 | 9.3  | 11.9 | 19.0 | 10.6 | 9.6  | 11.1 | 10.8 |
|        | 1200 | 13.2 | 12.6 | 12.0 | 12.8 | 15.0 | 16.8 | 16.7 | 14.6 | 13.6 | 10.1 | 11.1 | 11.1 | 10.4 | 13.9 | 13.4 | 14.7 |
|        | 1500 | 13.2 | 13.8 | 15.2 | 15.7 | 18.9 | 20.2 | 17.4 | 15.0 | 13.2 | 12.5 | 19.4 | 10.7 | 13.4 | 12.6 | 14.5 | 14.2 |
|        | 1800 | 8.5  | 8.0  | 9.0  | 10.6 | 14.7 | 16.9 | 16.4 | 13.2 | 11.4 | 9.5  | 8.9  | 12.4 | 10.3 | 10.0 | 9.4  | 9.6  |
|        | 2100 | 8.3  | 6.9  | 7.7  | 11.8 | 10.4 | 12.1 | 11.5 | 10.6 | 10.1 | 8.6  | 12.6 | 11.8 | 10.0 | 8.4  | 9.7  | 11.0 |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| AUTUMN | 0300 | 9.3  | 5.6  | 3.7  | 10.5 | 9.3  | 9.8  | 11.0 | 13.9 | 13.9 | 12.8 | 14.2 | 16.1 | 5.1  | 12.9 | 13.7 | 15.4 |
|        | 0600 | 9.3  | 0.0  | 0.0  | 9.3  | 14.5 | 10.0 | 11.9 | 14.3 | 14.0 | 12.9 | 0.0  | 13.9 | 0.0  | 10.2 | 8.8  | 10.2 |
|        | 0900 | 3.7  | 3.7  | 11.1 | 10.2 | 7.6  | 12.2 | 14.3 | 14.9 | 14.5 | 12.8 | 11.1 | 11.1 | 3.7  | 13.3 | 14.5 | 9.5  |
|        | 1200 | 10.8 | 10.0 | 9.9  | 9.6  | 15.4 | 19.7 | 19.4 | 16.7 | 15.4 | 13.0 | 7.5  | 9.7  | 10.9 | 18.1 | 12.5 | 11.6 |
|        | 1500 | 10.2 | 12.0 | 12.7 | 12.2 | 17.5 | 20.6 | 20.6 | 17.4 | 15.3 | 10.3 | 27.8 | 7.4  | 21.3 | 22.0 | 11.0 | 12.0 |
|        | 1800 | 6.8  | 6.7  | 8.0  | 8.3  | 14.3 | 15.2 | 15.4 | 14.3 | 12.9 | 9.1  | 6.9  | 11.1 | 21.5 | 9.9  | 8.4  | 8.8  |
|        | 2100 | 17.9 | 13.0 | 19.5 | 14.8 | 8.5  | 13.6 | 14.0 | 14.2 | 12.6 | 11.0 | 11.1 | 8.1  | 11.6 | 20.0 | 5.3  | 9.0  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| WINTER | 0300 | 0.0  | 14.8 | 0.0  | 0.0  | 9.0  | 11.1 | 13.5 | 14.9 | 14.8 | 13.4 | 18.5 | 0.0  | 0.0  | 0.0  | 0.0  | 16.7 |
|        | 0600 | 7.4  | 11.1 | 0.0  | 9.3  | 9.5  | 11.3 | 13.2 | 15.3 | 14.9 | 13.5 | 0.0  | 0.0  | 0.0  | 0.0  | 6.5  | 12.0 |
|        | 0900 | 0.0  | 7.4  | 0.0  | 13.0 | 10.8 | 11.9 | 14.9 | 16.3 | 15.4 | 14.1 | 7.5  | 11.1 | 14.8 | 10.6 | 18.5 | 5.6  |
|        | 1200 | 10.1 | 10.3 | 9.4  | 9.5  | 15.2 | 21.0 | 19.5 | 17.7 | 15.1 | 12.3 | 9.3  | 0.0  | 0.0  | 5.6  | 15.3 | 11.0 |
|        | 1500 | 10.6 | 12.8 | 13.5 | 14.1 | 18.1 | 20.4 | 21.0 | 18.3 | 16.2 | 13.6 | 5.6  | 0.0  | 0.0  | 10.2 | 12.3 | 11.6 |
|        | 1800 | 5.0  | 6.0  | 7.7  | 8.1  | 12.0 | 15.8 | 15.5 | 13.8 | 11.9 | 8.4  | 5.2  | 5.1  | 7.9  | 7.6  | 6.6  | 4.9  |
|        | 2100 | 0.0  | 0.0  | 18.5 | 0.0  | 11.6 | 12.9 | 14.6 | 14.7 | 13.2 | 11.6 | 8.3  | 1.9  | 0.0  | 3.7  | 0.0  | 9.3  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| SPRING | 0300 | 10.5 | 4.3  | 0.0  | 8.6  | 12.4 | 9.8  | 10.0 | 11.1 | 11.5 | 10.2 | 10.5 | 5.6  | 5.3  | 7.2  | 9.8  | 8.9  |
|        | 0600 | 3.8  | 10.2 | 0.0  | 1.9  | 10.9 | 9.9  | 9.9  | 12.0 | 11.8 | 10.0 | 14.8 | 8.3  | 8.8  | 7.0  | 5.6  | 6.5  |
|        | 0900 | 11.2 | 8.0  | 5.9  | 7.0  | 10.0 | 12.7 | 13.2 | 13.0 | 12.0 | 10.4 | 0.0  | 3.7  | 5.2  | 9.6  | 9.4  | 11.3 |
|        | 1200 | 14.4 | 14.6 | 14.7 | 14.8 | 18.8 | 21.7 | 21.0 | 17.2 | 15.9 | 11.4 | 7.5  | 3.7  | 0.0  | 15.8 | 18.2 | 16.2 |
|        | 1500 | 14.6 | 16.0 | 17.5 | 18.6 | 21.2 | 23.3 | 23.3 | 18.4 | 17.4 | 10.5 | 0.0  | 18.5 | 19.5 | 15.4 | 15.4 | 14.4 |
|        | 1800 | 7.1  | 7.8  | 8.6  | 10.9 | 15.4 | 17.5 | 17.4 | 14.0 | 11.8 | 11.3 | 0.0  | 13.0 | 12.4 | 8.9  | 7.7  | 7.8  |
|        | 2100 | 5.9  | 6.1  | 5.2  | 5.7  | 6.6  | 12.8 | 12.0 | 10.9 | 9.7  | 8.0  | 9.3  | 3.3  | 4.2  | 7.3  | 6.6  | 7.0  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |

TABLE 27e(ii)

CAIRNS PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE | E    | ESE  | SE   | SSE  | S    | SSW  | SW  | WSW | W   | WNW | NW  | NNW | N    |
|--------|------|------|------|-----|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|------|
| SUMMER | 0300 | 0.2  | 0.1  | 0.2 | 0.3  | 0.2  | 4.6  | 10.6 | 51.4 | 20.9 | 5.6 | 0.8 | 0.7 | 0.7 | 1.7 | 0.7 | 1.3  |
|        | 0600 | 0.2  | 0.1  | 0.1 | 0.5  | 0.2  | 5.8  | 12.4 | 51.0 | 19.9 | 5.7 | 0.6 | 0.6 | 0.7 | 1.1 | 0.5 | 0.8  |
|        | 0900 | 1.5  | 1.3  | 0.4 | 1.3  | 1.3  | 11.5 | 16.4 | 42.7 | 12.2 | 3.1 | 0.6 | 0.3 | 0.6 | 2.6 | 1.2 | 2.9  |
|        | 1200 | 9.5  | 17.1 | 7.6 | 6.8  | 7.9  | 19.3 | 6.1  | 7.2  | 2.1  | 1.0 | 0.2 | 0.4 | 0.5 | 1.8 | 1.8 | 10.7 |
|        | 1500 | 11.5 | 16.7 | 6.1 | 8.1  | 9.3  | 16.3 | 4.5  | 6.3  | 2.3  | 0.9 | 0.4 | 0.4 | 0.4 | 1.1 | 2.3 | 13.2 |
|        | 1800 | 5.5  | 7.2  | 4.5 | 7.5  | 6.2  | 23.3 | 7.3  | 14.1 | 4.4  | 2.0 | 0.2 | 0.5 | 0.4 | 2.5 | 2.7 | 11.8 |
|        | 2100 | 0.8  | 0.7  | 0.4 | 1.3  | 0.7  | 4.9  | 6.9  | 42.8 | 21.6 | 7.3 | 0.7 | 1.3 | 1.0 | 3.9 | 1.5 | 4.3  |
|        | 2400 | -    | -    | -   | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -   | -    |
| AUTUMN | 0300 | 0.1  | 0.1  | 0.0 | 0.1  | 0.5  | 7.7  | 13.0 | 54.4 | 19.2 | 3.8 | 0.1 | 0.1 | 0.2 | 0.4 | 0.2 | 0.1  |
|        | 0600 | 0.0  | 0.0  | 0.0 | 0.2  | 0.4  | 7.5  | 14.0 | 53.0 | 19.9 | 4.1 | 0.0 | 0.2 | 0.0 | 0.5 | 0.2 | 0.2  |
|        | 0900 | 0.1  | 0.0  | 0.0 | 0.1  | 0.3  | 8.3  | 17.9 | 53.3 | 15.9 | 2.8 | 0.0 | 0.1 | 0.0 | 0.5 | 0.2 | 0.4  |
|        | 1200 | 2.8  | 5.4  | 2.8 | 3.8  | 7.6  | 34.7 | 16.2 | 17.4 | 3.7  | 1.2 | 0.1 | 0.1 | 0.2 | 0.4 | 0.4 | 3.0  |
|        | 1500 | 3.9  | 7.4  | 3.7 | 5.1  | 11.7 | 34.1 | 12.9 | 10.9 | 3.4  | 0.8 | 0.0 | 0.0 | 0.1 | 0.4 | 1.0 | 4.7  |
|        | 1800 | 0.8  | 1.4  | 0.7 | 1.6  | 2.4  | 25.4 | 20.0 | 30.6 | 9.5  | 3.0 | 0.3 | 0.0 | 0.2 | 0.9 | 0.7 | 2.5  |
|        | 2100 | 0.1  | 0.0  | 0.1 | 0.2  | 0.3  | 2.5  | 9.0  | 53.2 | 27.4 | 5.5 | 0.0 | 0.1 | 0.2 | 0.4 | 0.3 | 0.6  |
|        | 2400 | -    | -    | -   | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -   | -    |
| WINTER | 0300 | 0.0  | 0.0  | 0.0 | 0.0  | 0.3  | 7.6  | 12.5 | 53.7 | 21.2 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
|        | 0600 | 0.0  | 0.0  | 0.0 | 0.1  | 0.3  | 8.0  | 14.5 | 52.4 | 19.6 | 5.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1  |
|        | 0900 | 0.0  | 0.0  | 0.0 | 0.1  | 0.3  | 9.1  | 18.2 | 54.3 | 14.4 | 3.4 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0  |
|        | 1200 | 2.1  | 4.6  | 2.2 | 5.2  | 7.8  | 36.9 | 18.9 | 16.8 | 2.7  | 0.6 | 0.1 | 0.0 | 0.0 | 0.1 | 0.2 | 1.8  |
|        | 1500 | 3.8  | 8.6  | 3.9 | 7.7  | 13.8 | 36.3 | 11.9 | 7.8  | 1.7  | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 | 3.3  |
|        | 1800 | 0.5  | 1.1  | 0.6 | 1.6  | 2.4  | 22.2 | 23.6 | 31.2 | 9.7  | 4.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 1.5  |
|        | 2100 | 0.0  | 0.0  | 0.0 | 0.0  | 0.2  | 1.8  | 6.2  | 53.7 | 30.0 | 7.9 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  |
|        | 2400 | -    | -    | -   | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -   | -    |
| SPRING | 0300 | 0.1  | 0.3  | 0.0 | 0.1  | 0.4  | 9.0  | 15.5 | 49.7 | 18.5 | 3.8 | 0.1 | 0.1 | 0.4 | 0.7 | 0.5 | 0.7  |
|        | 0600 | 0.1  | 0.1  | 0.0 | 0.0  | 0.3  | 9.4  | 15.4 | 53.0 | 16.7 | 3.6 | 0.0 | 0.2 | 0.3 | 0.4 | 0.2 | 0.3  |
|        | 0900 | 1.2  | 1.7  | 0.4 | 1.9  | 3.1  | 17.1 | 18.3 | 40.5 | 9.5  | 2.2 | 0.0 | 0.1 | 0.2 | 0.6 | 0.8 | 2.4  |
|        | 1200 | 10.1 | 18.6 | 7.2 | 7.4  | 14.0 | 26.7 | 4.7  | 3.2  | 0.7  | 0.2 | 0.1 | 0.0 | 0.0 | 0.1 | 0.6 | 6.3  |
|        | 1500 | 11.6 | 17.6 | 6.1 | 11.3 | 14.9 | 22.9 | 3.4  | 2.3  | 0.8  | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.8 | 8.2  |
|        | 1800 | 6.2  | 8.2  | 4.4 | 7.6  | 8.0  | 30.5 | 11.4 | 8.4  | 2.6  | 1.0 | 0.0 | 0.1 | 0.1 | 1.1 | 2.0 | 8.7  |
|        | 2100 | 0.6  | 0.6  | 0.3 | 0.9  | 0.5  | 4.4  | 8.9  | 48.0 | 26.0 | 5.7 | 0.2 | 0.2 | 0.2 | 0.9 | 0.7 | 1.9  |
|        | 2400 | -    | -    | -   | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -   | -    |

TABLE 27f(i)  
CANBERRA MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 6.3  | 7.1  | 7.8  | 7.4  | 7.2  | 8.2  | 9.7  | 10.4 | 10.7 | 21.3 | 19.0 | 17.8 | 16.1 | 14.0 | 14.8 | 8.1  |
|        | 0600 | 5.3  | 6.9  | 6.3  | 6.6  | 8.0  | 7.9  | 9.3  | 11.6 | 8.2  | 7.7  | 16.7 | 14.8 | 18.7 | 16.5 | 15.1 | 7.9  |
|        | 0900 | 6.9  | 7.9  | 9.4  | 10.1 | 11.2 | 12.6 | 12.9 | 13.0 | 8.3  | 6.7  | 8.7  | 15.3 | 17.1 | 17.0 | 15.0 | 7.5  |
|        | 1200 | 7.8  | 10.0 | 12.0 | 12.9 | 16.1 | 14.9 | 15.7 | 15.4 | 12.0 | 7.3  | 13.3 | 18.8 | 21.1 | 18.9 | 14.5 | 9.4  |
|        | 1500 | 10.1 | 13.0 | 15.2 | 17.9 | 17.6 | 16.2 | 16.3 | 15.5 | 14.7 | 13.3 | 18.3 | 22.4 | 22.4 | 19.4 | 15.4 | 10.7 |
|        | 1800 | 12.5 | 15.5 | 20.0 | 21.5 | 21.4 | 16.8 | 17.4 | 16.2 | 13.9 | 15.7 | 17.0 | 20.2 | 18.2 | 15.0 | 13.7 | 12.4 |
|        | 2100 | 9.3  | 10.9 | 13.1 | 12.9 | 13.0 | 11.0 | 13.0 | 10.6 | 9.0  | 17.8 | 11.9 | 15.1 | 12.6 | 11.5 | 11.1 | 7.9  |
|        | 2400 | 6.6  | 8.1  | 6.9  | 8.8  | 8.2  | 8.7  | 10.6 | 10.8 | 9.3  | 15.5 | 16.7 | 16.3 | 13.7 | 14.5 | 14.4 | 8.0  |
| AUTUMN | 0300 | 6.6  | 5.8  | 6.6  | 6.8  | 7.2  | 7.8  | 10.3 | 13.0 | 10.4 | 9.8  | 12.5 | 18.1 | 19.3 | 19.4 | 15.9 | 10.4 |
|        | 0600 | 6.7  | 7.3  | 6.3  | 6.9  | 7.0  | 7.7  | 11.0 | 12.5 | 8.6  | 6.5  | 0.0  | 20.7 | 20.5 | 19.3 | 16.5 | 10.3 |
|        | 0900 | 7.0  | 8.1  | 9.3  | 7.3  | 9.2  | 8.7  | 12.3 | 14.2 | 11.3 | 6.7  | 13.1 | 19.2 | 19.4 | 19.7 | 18.3 | 9.8  |
|        | 1200 | 8.7  | 9.1  | 10.5 | 11.5 | 13.0 | 13.2 | 15.6 | 15.9 | 10.6 | 7.9  | 8.9  | 17.2 | 20.1 | 18.7 | 14.3 | 8.7  |
|        | 1500 | 8.9  | 10.4 | 13.3 | 14.7 | 14.6 | 14.9 | 17.6 | 16.0 | 12.6 | 10.4 | 15.3 | 19.9 | 21.6 | 18.2 | 13.9 | 10.5 |
|        | 1800 | 7.4  | 9.5  | 13.3 | 14.9 | 13.3 | 12.1 | 15.5 | 14.3 | 11.5 | 9.1  | 13.4 | 16.2 | 16.2 | 16.0 | 11.5 | 8.7  |
|        | 2100 | 6.4  | 7.4  | 9.9  | 9.5  | 10.4 | 10.4 | 13.0 | 13.7 | 9.5  | 8.3  | 9.3  | 16.0 | 18.2 | 16.6 | 13.4 | 8.6  |
|        | 2400 | 7.8  | 7.0  | 6.8  | 7.1  | 8.3  | 7.3  | 8.6  | 11.8 | 13.0 | 7.4  | 23.0 | 19.1 | 20.4 | 17.7 | 15.5 | 9.0  |
| WINTER | 0300 | 7.8  | 6.3  | 9.7  | 5.7  | 7.7  | 8.1  | 12.9 | 16.4 | 13.2 | 6.8  | 11.7 | 19.9 | 22.7 | 20.7 | 17.7 | 12.1 |
|        | 0600 | 8.5  | 7.6  | 7.8  | 8.5  | 7.3  | 9.2  | 12.8 | 14.0 | 10.0 | 8.4  | 10.2 | 21.3 | 21.3 | 22.2 | 18.4 | 12.5 |
|        | 0900 | 6.7  | 10.3 | 9.9  | 8.2  | 8.6  | 8.5  | 14.1 | 16.2 | 11.1 | 8.4  | 8.4  | 20.4 | 22.9 | 22.2 | 20.7 | 12.0 |
|        | 1200 | 13.6 | 11.1 | 13.9 | 14.3 | 17.4 | 15.0 | 16.3 | 18.9 | 12.3 | 6.2  | 11.4 | 19.9 | 24.2 | 23.1 | 18.9 | 10.4 |
|        | 1500 | 10.0 | 11.3 | 10.2 | 13.6 | 14.3 | 16.3 | 17.3 | 19.9 | 17.4 | 8.3  | 13.5 | 22.1 | 23.6 | 21.4 | 18.0 | 12.5 |
|        | 1800 | 7.9  | 7.0  | 8.6  | 11.0 | 9.8  | 11.4 | 13.5 | 14.8 | 14.2 | 13.7 | 14.5 | 17.9 | 19.1 | 18.6 | 15.4 | 10.1 |
|        | 2100 | 6.9  | 7.7  | 8.7  | 9.6  | 8.7  | 9.1  | 12.6 | 15.4 | 12.7 | 8.0  | 17.8 | 18.6 | 18.6 | 19.7 | 16.6 | 9.4  |
|        | 2400 | 8.4  | 6.9  | 22.2 | 8.4  | 8.4  | 9.3  | 9.4  | 15.3 | 6.2  | 4.7  | 21.6 | 21.3 | 21.4 | 20.9 | 17.0 | 9.9  |
| SPRING | 0300 | 6.9  | 7.2  | 5.7  | 8.1  | 7.6  | 8.0  | 10.2 | 13.6 | 10.9 | 8.0  | 13.0 | 17.0 | 19.5 | 18.8 | 15.8 | 10.3 |
|        | 0600 | 7.0  | 7.3  | 5.7  | 7.4  | 6.9  | 7.9  | 10.7 | 14.6 | 7.7  | 6.7  | 6.8  | 20.2 | 20.8 | 19.3 | 15.6 | 10.6 |
|        | 0900 | 5.4  | 8.9  | 11.1 | 9.8  | 10.4 | 11.7 | 15.3 | 16.3 | 12.7 | 6.7  | 10.5 | 20.7 | 20.8 | 20.4 | 17.1 | 8.7  |
|        | 1200 | 8.5  | 10.0 | 12.6 | 14.5 | 14.9 | 14.2 | 15.2 | 18.5 | 14.5 | 10.3 | 16.9 | 24.6 | 26.0 | 21.5 | 17.2 | 10.8 |
|        | 1500 | 8.2  | 12.5 | 14.1 | 15.4 | 16.1 | 17.4 | 16.0 | 19.2 | 16.3 | 11.8 | 18.3 | 26.9 | 26.8 | 22.6 | 18.9 | 12.3 |
|        | 1800 | 10.5 | 11.4 | 15.8 | 17.0 | 15.5 | 14.9 | 15.8 | 19.7 | 11.6 | 11.1 | 20.5 | 20.6 | 19.0 | 16.7 | 12.9 | 10.8 |
|        | 2100 | 8.3  | 8.8  | 11.1 | 12.3 | 11.6 | 9.5  | 11.2 | 13.1 | 12.5 | 8.2  | 13.2 | 16.9 | 16.1 | 15.2 | 13.6 | 9.5  |
|        | 2400 | 8.0  | 7.7  | 7.7  | 7.3  | 6.9  | 9.2  | 11.6 | 10.7 | 7.2  | 9.8  | 16.3 | 20.2 | 16.3 | 17.8 | 16.2 | 9.3  |

TABLE 27f(ii)  
CANBERRA PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE  | ENE  | E    | ESE  | SE   | SSE  | S    | SSW | SW  | WSW | W    | WNW  | NW   | NNW  | N   |
|--------|------|-----|-----|------|------|------|------|------|------|-----|-----|-----|------|------|------|------|-----|
| SUMMER | 0300 | 1.9 | 3.8 | 5.1  | 17.6 | 11.9 | 19.5 | 8.9  | 7.9  | 0.8 | 0.2 | 0.3 | 2.8  | 4.6  | 6.4  | 4.6  | 3.5 |
|        | 0600 | 2.2 | 5.5 | 4.4  | 13.7 | 9.0  | 17.9 | 10.3 | 8.3  | 1.0 | 0.5 | 0.5 | 2.5  | 4.8  | 7.8  | 6.3  | 5.3 |
|        | 0900 | 2.2 | 6.8 | 5.1  | 9.6  | 6.7  | 10.5 | 6.0  | 6.5  | 1.2 | 1.7 | 0.9 | 7.7  | 9.8  | 16.4 | 5.0  | 3.9 |
|        | 1200 | 3.6 | 6.4 | 4.7  | 7.1  | 4.2  | 5.0  | 1.7  | 2.7  | 0.9 | 1.4 | 2.1 | 10.9 | 14.7 | 22.0 | 7.6  | 5.1 |
|        | 1500 | 3.1 | 6.6 | 5.3  | 8.7  | 5.0  | 3.6  | 1.6  | 2.1  | 0.6 | 1.2 | 2.7 | 15.1 | 13.3 | 18.6 | 6.8  | 5.7 |
|        | 1800 | 2.3 | 7.3 | 11.2 | 17.9 | 6.2  | 4.2  | 1.2  | 2.0  | 0.3 | 1.1 | 2.5 | 15.4 | 9.5  | 11.2 | 4.6  | 3.0 |
|        | 2100 | 2.9 | 9.9 | 10.9 | 26.6 | 12.2 | 9.4  | 2.8  | 2.1  | 0.3 | 0.4 | 1.2 | 5.2  | 4.7  | 5.3  | 2.7  | 3.4 |
|        | 2400 | 2.1 | 4.9 | 5.5  | 26.1 | 13.4 | 14.2 | 5.5  | 3.9  | 0.5 | 0.7 | 0.2 | 4.7  | 4.7  | 5.4  | 2.9  | 5.2 |
| AUTUMN | 0300 | 1.6 | 1.9 | 1.3  | 5.9  | 4.6  | 13.0 | 10.5 | 8.4  | 1.0 | 1.0 | 0.4 | 3.6  | 7.5  | 23.8 | 9.9  | 5.7 |
|        | 0600 | 1.8 | 2.4 | 1.6  | 4.0  | 5.7  | 14.0 | 8.5  | 9.2  | 1.2 | 1.1 | 0.0 | 2.5  | 8.4  | 22.1 | 11.1 | 6.4 |
|        | 0900 | 1.3 | 2.0 | 2.3  | 4.8  | 5.3  | 16.0 | 10.7 | 11.2 | 1.2 | 1.1 | 0.7 | 4.6  | 7.9  | 19.7 | 8.3  | 3.0 |
|        | 1200 | 2.1 | 3.6 | 3.3  | 5.1  | 3.2  | 5.3  | 3.9  | 7.2  | 1.2 | 2.1 | 2.2 | 9.2  | 13.6 | 26.6 | 7.6  | 3.7 |
|        | 1500 | 2.1 | 4.1 | 3.6  | 6.5  | 3.6  | 3.8  | 3.2  | 4.6  | 1.0 | 1.3 | 1.8 | 11.6 | 15.3 | 24.8 | 8.9  | 3.8 |
|        | 1800 | 3.0 | 5.8 | 7.9  | 12.9 | 4.1  | 4.6  | 2.7  | 3.3  | 0.4 | 0.5 | 1.0 | 9.1  | 11.8 | 18.4 | 8.6  | 5.9 |
|        | 2100 | 4.1 | 5.8 | 5.3  | 15.3 | 8.5  | 7.0  | 4.2  | 5.0  | 0.4 | 0.4 | 0.5 | 5.1  | 7.8  | 16.9 | 6.9  | 6.8 |
|        | 2400 | 2.2 | 3.0 | 2.5  | 8.6  | 6.8  | 10.6 | 6.8  | 7.0  | 0.3 | 0.3 | 1.0 | 5.8  | 9.1  | 21.8 | 8.3  | 6.0 |
| WINTER | 0300 | 1.3 | 1.9 | 1.0  | 1.0  | 1.9  | 7.7  | 5.4  | 8.2  | 0.6 | 0.4 | 0.5 | 4.7  | 11.8 | 30.7 | 15.4 | 7.7 |
|        | 0600 | 2.1 | 1.8 | 0.7  | 1.4  | 1.7  | 7.4  | 5.2  | 8.9  | 1.2 | 0.6 | 0.1 | 4.1  | 10.0 | 29.6 | 17.1 | 7.9 |
|        | 0900 | 0.8 | 0.9 | 0.4  | 1.3  | 1.6  | 9.4  | 6.5  | 9.8  | 1.0 | 0.8 | 0.7 | 4.2  | 9.2  | 33.6 | 14.4 | 5.4 |
|        | 1200 | 0.7 | 1.2 | 0.5  | 1.4  | 1.6  | 4.8  | 3.6  | 10.9 | 2.2 | 2.6 | 1.7 | 10.8 | 15.6 | 31.6 | 8.4  | 2.3 |
|        | 1500 | 0.9 | 1.6 | 0.9  | 1.8  | 2.4  | 3.7  | 3.0  | 6.6  | 1.6 | 1.0 | 2.0 | 13.2 | 15.4 | 30.6 | 12.0 | 3.4 |
|        | 1800 | 3.8 | 2.9 | 1.9  | 2.9  | 3.3  | 4.2  | 4.0  | 5.6  | 0.5 | 0.8 | 0.8 | 8.4  | 13.9 | 28.5 | 10.2 | 8.2 |
|        | 2100 | 4.1 | 3.9 | 1.5  | 2.0  | 2.7  | 5.6  | 4.2  | 6.2  | 0.4 | 0.4 | 0.4 | 5.1  | 12.2 | 28.5 | 13.4 | 9.6 |
|        | 2400 | 3.1 | 2.5 | 0.3  | 1.6  | 1.7  | 5.1  | 4.1  | 8.3  | 1.0 | 0.4 | 0.3 | 6.1  | 11.6 | 30.7 | 15.4 | 7.3 |
| SPRING | 0300 | 2.0 | 3.4 | 1.9  | 6.0  | 4.6  | 9.1  | 5.9  | 6.5  | 1.2 | 0.7 | 1.4 | 6.3  | 10.5 | 20.4 | 12.8 | 7.3 |
|        | 0600 | 2.4 | 2.6 | 2.0  | 6.0  | 4.9  | 9.4  | 6.2  | 6.4  | 1.0 | 0.6 | 0.2 | 4.4  | 8.6  | 24.1 | 12.1 | 9.1 |
|        | 0900 | 1.3 | 3.6 | 2.2  | 4.0  | 3.2  | 6.7  | 5.5  | 7.6  | 1.5 | 1.6 | 1.8 | 9.8  | 12.8 | 25.7 | 8.5  | 4.2 |
|        | 1200 | 2.3 | 3.4 | 1.8  | 3.1  | 2.1  | 2.9  | 1.8  | 4.0  | 1.3 | 1.3 | 1.6 | 10.6 | 15.1 | 31.1 | 12.3 | 5.1 |
|        | 1500 | 2.0 | 3.1 | 2.5  | 4.0  | 2.2  | 2.4  | 1.6  | 3.2  | 0.6 | 0.7 | 1.5 | 14.1 | 16.2 | 28.2 | 12.8 | 5.0 |
|        | 1800 | 1.7 | 3.6 | 5.5  | 7.6  | 3.3  | 2.6  | 1.4  | 2.1  | 0.6 | 0.6 | 1.9 | 14.6 | 16.2 | 22.9 | 10.1 | 5.3 |
|        | 2100 | 5.4 | 8.3 | 7.6  | 10.6 | 4.5  | 4.8  | 2.0  | 3.2  | 0.4 | 0.2 | 1.1 | 7.8  | 11.4 | 14.5 | 8.2  | 9.9 |
|        | 2400 | 4.5 | 4.0 | 3.0  | 7.7  | 6.7  | 5.0  | 4.3  | 6.8  | 0.9 | 0.8 | 1.1 | 7.9  | 11.2 | 16.9 | 12.0 | 7.4 |

TABLE 27g(i)

COCOS ISLAND MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 20.4 | 16.7 | 14.1 | 19.6 | 19.5 | 21.1 | 17.4 | 13.9 | 10.4 | 21.9 | 16.7 | 29.4 | 0.0  | 14.1 | 8.4  | 20.9 |
|        | 0600 | 19.5 | 18.0 | 17.8 | 16.9 | 20.5 | 21.0 | 19.6 | 14.2 | 15.9 | 20.0 | 20.9 | 20.9 | 21.0 | 17.4 | 18.8 | 19.7 |
|        | 0900 | 16.1 | 14.4 | 16.5 | 17.4 | 22.7 | 23.2 | 20.5 | 13.6 | 14.3 | 18.5 | 17.6 | 15.8 | 14.5 | 19.1 | 23.0 | 20.2 |
|        | 1200 | 17.0 | 15.6 | 15.4 | 18.2 | 23.3 | 23.7 | 20.4 | 14.3 | 12.6 | 17.2 | 15.9 | 17.2 | 21.1 | 20.0 | 21.2 | 19.1 |
|        | 1500 | 19.7 | 13.2 | 16.1 | 19.0 | 22.6 | 23.1 | 19.5 | 14.7 | 12.9 | 16.2 | 16.5 | 20.6 | 21.0 | 18.4 | 16.5 | 17.7 |
|        | 1800 | 15.9 | 17.1 | 13.4 | 19.2 | 20.6 | 21.2 | 18.4 | 14.2 | 16.0 | 18.0 | 19.9 | 23.2 | 14.3 | 20.1 | 17.2 | 15.2 |
|        | 2100 | 14.3 | 19.1 | 13.4 | 17.9 | 21.1 | 20.8 | 17.4 | 16.1 | 11.1 | 18.9 | 16.3 | 24.6 | 23.1 | 15.5 | 28.6 | 17.7 |
|        | 2400 | 8.6  | 15.5 | 12.0 | 18.8 | 20.2 | 19.5 | 16.7 | 15.5 | 15.4 | 18.3 | 12.6 | 28.3 | 14.8 | 17.1 | 23.6 | 17.9 |
| AUTUMN | 0300 | 13.0 | 15.2 | 18.0 | 20.1 | 22.0 | 24.3 | 21.9 | 18.4 | 20.4 | 14.2 | 13.0 | 22.9 | 12.0 | 12.2 | 16.7 | 21.6 |
|        | 0600 | 16.2 | 16.2 | 18.0 | 20.8 | 23.8 | 24.6 | 21.1 | 17.7 | 16.8 | 17.6 | 27.0 | 24.8 | 15.7 | 18.8 | 26.1 | 16.3 |
|        | 0900 | 17.1 | 13.4 | 16.0 | 22.2 | 25.4 | 25.9 | 24.2 | 17.1 | 14.7 | 18.0 | 21.8 | 15.9 | 13.5 | 19.8 | 20.4 | 18.0 |
|        | 1200 | 17.4 | 14.9 | 15.9 | 23.1 | 26.0 | 26.2 | 24.3 | 15.7 | 15.8 | 13.0 | 19.2 | 13.9 | 17.6 | 17.7 | 21.4 | 19.4 |
|        | 1500 | 15.6 | 14.5 | 17.2 | 22.1 | 25.5 | 25.1 | 23.0 | 15.7 | 14.8 | 14.6 | 10.4 | 15.0 | 16.1 | 15.4 | 19.3 | 16.0 |
|        | 1800 | 18.5 | 14.2 | 17.4 | 21.6 | 22.5 | 23.9 | 22.5 | 18.1 | 15.3 | 19.6 | 14.8 | 11.9 | 16.8 | 12.5 | 22.1 | 12.4 |
|        | 2100 | 14.2 | 14.6 | 18.0 | 22.0 | 23.5 | 23.8 | 21.7 | 22.0 | 23.4 | 17.6 | 17.6 | 34.3 | 17.8 | 11.5 | 19.5 | 22.2 |
|        | 2400 | 24.7 | 14.4 | 16.7 | 20.8 | 22.4 | 23.2 | 20.7 | 15.6 | 13.0 | 24.7 | 19.5 | 18.3 | 11.7 | 14.4 | 27.8 | 17.1 |
| WINTER | 0300 | 17.9 | 17.4 | 19.2 | 24.1 | 26.8 | 28.7 | 26.7 | 18.8 | 9.3  | 0.0  | 0.0  | 0.0  | 0.0  | 5.6  | 20.4 | 20.1 |
|        | 0600 | 14.8 | 16.4 | 20.2 | 24.4 | 27.7 | 29.5 | 28.0 | 25.4 | 29.7 | 12.0 | 0.0  | 14.8 | 27.8 | 9.3  | 28.8 | 18.4 |
|        | 0900 | 14.9 | 16.0 | 18.9 | 25.6 | 29.9 | 30.8 | 30.3 | 23.9 | 14.8 | 10.8 | 18.5 | 48.2 | 0.0  | 13.0 | 17.6 | 22.6 |
|        | 1200 | 16.2 | 17.2 | 19.6 | 26.5 | 30.3 | 31.0 | 30.0 | 24.5 | 12.7 | 15.4 | 17.9 | 12.9 | 7.4  | 21.0 | 19.8 | 20.8 |
|        | 1500 | 16.9 | 14.7 | 19.7 | 26.6 | 29.6 | 30.2 | 29.3 | 20.0 | 16.7 | 17.7 | 41.4 | 18.5 | 11.1 | 17.0 | 17.2 | 20.0 |
|        | 1800 | 19.1 | 16.3 | 19.0 | 24.5 | 27.6 | 29.5 | 28.8 | 20.8 | 24.5 | 3.7  | 9.3  | 5.6  | 8.5  | 7.8  | 21.9 | 13.9 |
|        | 2100 | 18.6 | 18.5 | 19.8 | 24.1 | 27.9 | 31.5 | 29.0 | 18.3 | 25.0 | 0.0  | 0.0  | 0.0  | 0.0  | 36.1 | 18.5 | 26.3 |
|        | 2400 | 20.0 | 19.2 | 17.4 | 24.0 | 26.0 | 28.0 | 28.0 | 23.6 | 14.8 | 23.2 | 0.0  | 14.8 | 5.6  | 14.8 | 0.0  | 24.5 |
| SPRING | 0300 | 23.2 | 16.1 | 14.0 | 25.0 | 25.7 | 26.3 | 25.9 | 22.3 | 18.5 | 1.9  | 0.0  | 55.6 | 0.0  | 0.0  | 0.0  | 23.5 |
|        | 0600 | 22.7 | 18.7 | 20.8 | 23.8 | 26.8 | 27.4 | 25.1 | 18.4 | 30.3 | 11.1 | 24.1 | 43.5 | 22.2 | 0.0  | 27.8 | 21.3 |
|        | 0900 | 27.8 | 18.8 | 20.7 | 26.7 | 30.2 | 29.6 | 26.7 | 20.4 | 0.0  | 17.6 | 1.9  | 25.3 | 0.0  | 37.7 | 22.2 | 20.9 |
|        | 1200 | 26.1 | 19.0 | 20.1 | 27.3 | 30.4 | 29.9 | 26.9 | 21.5 | 20.8 | 11.1 | 0.0  | 22.2 | 17.6 | 51.0 | 19.5 | 19.7 |
|        | 1500 | 26.1 | 19.5 | 21.0 | 27.2 | 29.6 | 29.0 | 26.9 | 20.9 | 19.5 | 8.3  | 18.5 | 30.3 | 30.3 | 18.2 | 17.3 | 16.1 |
|        | 1800 | 22.0 | 19.1 | 17.9 | 25.9 | 27.5 | 27.9 | 26.9 | 23.4 | 15.8 | 25.9 | 21.6 | 79.7 | 11.2 | 13.4 | 0.0  | 17.5 |
|        | 2100 | 16.7 | 24.7 | 15.9 | 26.3 | 27.9 | 28.3 | 28.6 | 18.0 | 13.0 | 0.0  | 13.0 | 83.4 | 15.5 | 9.3  | 3.7  | 19.5 |
|        | 2400 | 19.5 | 15.3 | 16.9 | 25.5 | 26.4 | 26.7 | 25.7 | 17.0 | 13.0 | 0.0  | 0.0  | 55.6 | 0.0  | 0.0  | 0.0  | 22.2 |

TABLE 27g(ii)

COCOS ISLAND PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE  | ENE | E    | ESE  | SE   | SSE  | S   | SSW | SW  | WSW | W   | WNW | NW  | NNW | N   |
|--------|------|-----|-----|-----|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| SUMMER | 0300 | 1.8 | 0.8 | 1.3 | 10.6 | 19.9 | 38.3 | 11.4 | 5.4 | 2.8 | 1.3 | 1.3 | 1.6 | 0.0 | 1.3 | 1.0 | 1.0 |
|        | 0600 | 0.9 | 1.3 | 1.6 | 8.7  | 20.4 | 38.5 | 11.4 | 5.7 | 2.2 | 1.7 | 1.1 | 1.5 | 0.8 | 1.7 | 0.7 | 1.7 |
|        | 0900 | 1.5 | 2.2 | 1.6 | 9.3  | 19.7 | 35.5 | 11.8 | 7.4 | 1.6 | 1.8 | 1.4 | 1.5 | 1.0 | 1.2 | 0.9 | 1.4 |
|        | 1200 | 1.5 | 2.4 | 2.4 | 8.2  | 20.0 | 33.0 | 10.1 | 8.8 | 2.3 | 2.2 | 1.7 | 2.2 | 0.8 | 1.5 | 1.4 | 1.5 |
|        | 1500 | 1.3 | 2.0 | 1.9 | 7.5  | 18.1 | 33.4 | 12.4 | 9.5 | 2.0 | 2.3 | 2.0 | 2.1 | 1.1 | 1.7 | 1.1 | 1.6 |
|        | 1800 | 1.1 | 1.6 | 1.9 | 7.2  | 19.8 | 37.4 | 12.1 | 6.9 | 1.9 | 1.6 | 1.8 | 1.9 | 1.1 | 1.0 | 1.2 | 1.5 |
|        | 2100 | 0.9 | 2.6 | 1.5 | 8.9  | 21.6 | 38.1 | 9.5  | 5.0 | 1.1 | 1.6 | 1.9 | 2.1 | 1.0 | 2.0 | 0.9 | 1.1 |
|        | 2400 | 1.1 | 1.1 | 2.8 | 9.5  | 23.1 | 37.7 | 9.9  | 4.4 | 2.5 | 1.2 | 1.1 | 1.8 | 0.9 | 0.7 | 1.2 | 1.1 |
| AUTUMN | 0300 | 0.9 | 2.3 | 1.6 | 18.8 | 27.1 | 32.4 | 7.6  | 3.7 | 0.5 | 0.7 | 0.5 | 0.7 | 0.9 | 1.2 | 0.5 | 0.7 |
|        | 0600 | 1.0 | 2.2 | 2.3 | 19.4 | 27.7 | 31.5 | 7.4  | 2.8 | 1.3 | 0.8 | 0.6 | 0.6 | 0.6 | 0.4 | 0.4 | 1.0 |
|        | 0900 | 1.2 | 2.0 | 3.7 | 21.2 | 25.0 | 29.8 | 7.3  | 3.7 | 1.2 | 1.1 | 0.4 | 0.7 | 0.6 | 0.7 | 0.3 | 1.2 |
|        | 1200 | 1.5 | 3.4 | 4.1 | 19.0 | 23.9 | 28.7 | 7.5  | 4.5 | 1.4 | 1.2 | 0.5 | 1.2 | 0.9 | 0.5 | 0.6 | 1.2 |
|        | 1500 | 1.5 | 2.8 | 3.2 | 16.8 | 23.7 | 30.1 | 8.6  | 5.1 | 1.3 | 1.3 | 0.6 | 1.2 | 0.5 | 0.8 | 0.7 | 1.7 |
|        | 1800 | 1.1 | 1.4 | 2.3 | 18.3 | 25.1 | 33.3 | 8.4  | 4.0 | 1.1 | 1.0 | 0.2 | 1.0 | 0.7 | 0.5 | 0.5 | 1.0 |
|        | 2100 | 1.2 | 2.1 | 2.3 | 18.8 | 29.1 | 31.7 | 7.5  | 2.7 | 0.7 | 0.5 | 0.8 | 0.3 | 0.7 | 0.8 | 0.5 | 0.3 |
|        | 2400 | 0.5 | 3.1 | 1.9 | 19.2 | 26.7 | 30.0 | 9.8  | 4.0 | 0.5 | 0.5 | 0.3 | 1.0 | 0.5 | 0.7 | 0.5 | 0.7 |
| WINTER | 0300 | 0.6 | 2.2 | 3.3 | 22.6 | 27.3 | 32.2 | 7.1  | 2.6 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.4 | 1.2 |
|        | 0600 | 0.6 | 1.2 | 4.9 | 23.8 | 29.0 | 30.5 | 7.3  | 1.4 | 0.1 | 0.3 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.6 |
|        | 0900 | 1.0 | 1.9 | 4.2 | 26.0 | 26.0 | 29.9 | 7.7  | 1.7 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.1 | 0.2 | 0.6 |
|        | 1200 | 1.1 | 2.1 | 5.7 | 24.6 | 25.8 | 28.7 | 7.6  | 2.2 | 0.3 | 0.3 | 0.1 | 0.2 | 0.0 | 0.1 | 0.1 | 0.8 |
|        | 1500 | 1.2 | 1.9 | 4.9 | 24.1 | 24.7 | 30.4 | 7.9  | 2.8 | 0.2 | 0.4 | 0.1 | 0.0 | 0.1 | 0.2 | 0.3 | 0.8 |
|        | 1800 | 0.9 | 1.9 | 3.6 | 21.3 | 27.5 | 31.4 | 9.2  | 2.3 | 0.4 | 0.0 | 0.1 | 0.0 | 0.2 | 0.2 | 0.3 | 0.6 |
|        | 2100 | 0.6 | 1.4 | 3.9 | 20.4 | 28.5 | 33.8 | 8.5  | 1.4 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.6 |
|        | 2400 | 1.2 | 1.2 | 4.2 | 25.1 | 27.1 | 28.6 | 9.4  | 1.7 | 0.2 | 0.3 | 0.0 | 0.2 | 0.2 | 0.2 | 0.0 | 0.6 |
| SPRING | 0300 | 0.4 | 1.3 | 2.0 | 24.1 | 41.1 | 25.2 | 3.8  | 0.9 | 0.2 | 0.2 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.7 |
|        | 0600 | 0.4 | 1.6 | 1.8 | 20.8 | 36.8 | 34.3 | 3.0  | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.3 |
|        | 0900 | 0.3 | 2.0 | 2.4 | 20.3 | 36.4 | 33.0 | 4.1  | 0.6 | 0.0 | 0.3 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.3 |
|        | 1200 | 0.5 | 2.6 | 2.4 | 19.3 | 36.7 | 32.5 | 4.2  | 0.8 | 0.2 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 |
|        | 1500 | 0.4 | 1.7 | 2.9 | 16.1 | 38.0 | 34.7 | 4.1  | 0.8 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.3 | 0.1 | 0.3 |
|        | 1800 | 0.5 | 1.3 | 2.3 | 15.8 | 39.6 | 34.5 | 4.5  | 0.5 | 0.1 | 0.0 | 0.1 | 0.0 | 0.2 | 0.2 | 0.0 | 0.3 |
|        | 2100 | 0.2 | 1.0 | 1.7 | 17.8 | 39.7 | 33.8 | 3.4  | 0.8 | 0.1 | 0.0 | 0.1 | 0.1 | 0.3 | 0.1 | 0.1 | 0.5 |
|        | 2400 | 0.6 | 2.6 | 1.4 | 22.7 | 39.5 | 27.3 | 4.3  | 0.8 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.5 |

TABLE 27h(1)

DARWIN MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 13.7 | 9.6  | 10.2 | 11.4 | 9.5  | 8.3  | 9.1  | 9.9  | 10.7 | 11.3 | 11.9 | 13.5 | 15.4 | 14.2 | 14.1 | 10.6 |
|        | 0600 | 10.5 | 9.2  | 9.4  | 9.4  | 8.5  | 7.8  | 9.8  | 9.5  | 13.3 | 10.4 | 13.2 | 13.4 | 14.2 | 15.3 | 12.0 | 11.1 |
|        | 0900 | 9.6  | 9.4  | 9.0  | 10.1 | 9.5  | 8.8  | 8.3  | 9.1  | 8.1  | 11.6 | 13.2 | 15.2 | 16.5 | 15.6 | 13.5 | 12.1 |
|        | 1200 | 11.8 | 11.9 | 13.6 | 12.1 | 12.2 | 9.1  | 11.7 | 10.3 | 10.6 | 13.6 | 14.9 | 17.0 | 17.1 | 15.7 | 14.9 | 12.6 |
|        | 1500 | 15.0 | 15.8 | 15.9 | 15.3 | 17.2 | 11.9 | 14.4 | 13.3 | 13.8 | 14.8 | 18.2 | 19.8 | 20.6 | 18.1 | 16.8 | 14.9 |
|        | 1800 | 14.4 | 14.9 | 14.2 | 13.2 | 13.8 | 13.6 | 15.5 | 12.1 | 11.6 | 14.7 | 16.7 | 17.4 | 17.2 | 15.4 | 14.9 | 12.4 |
|        | 2100 | 11.1 | 10.4 | 17.0 | 14.0 | 12.1 | 13.7 | 12.7 | 11.3 | 9.6  | 10.4 | 11.1 | 12.0 | 14.2 | 12.6 | 12.7 | 10.1 |
|        | 2400 | 7.9  | 10.3 | 9.8  | 10.3 | 11.4 | 9.2  | 10.2 | 7.1  | 9.4  | 7.9  | 7.7  | 12.0 | 14.0 | 13.1 | 11.7 | 12.5 |
| AUTUMN | 0300 | 11.4 | 9.9  | 8.8  | 10.4 | 10.0 | 9.3  | 8.8  | 8.1  | 7.6  | 8.2  | 8.8  | 11.7 | 13.7 | 12.1 | 13.7 | 10.2 |
|        | 0600 | 11.4 | 8.7  | 11.0 | 9.6  | 9.8  | 9.3  | 9.2  | 8.3  | 7.0  | 9.1  | 11.9 | 11.9 | 14.4 | 14.1 | 14.0 | 13.2 |
|        | 0900 | 10.9 | 9.7  | 10.7 | 12.7 | 12.9 | 12.2 | 11.6 | 8.3  | 8.7  | 9.5  | 12.1 | 12.4 | 15.4 | 14.4 | 13.7 | 13.0 |
|        | 1200 | 13.3 | 14.9 | 17.4 | 19.6 | 20.2 | 18.7 | 15.3 | 11.6 | 10.8 | 11.0 | 12.5 | 13.9 | 14.3 | 12.9 | 12.9 | 13.9 |
|        | 1500 | 15.6 | 16.6 | 18.0 | 18.3 | 18.5 | 17.7 | 16.6 | 14.1 | 13.2 | 13.4 | 15.8 | 16.8 | 17.1 | 15.2 | 15.6 | 14.7 |
|        | 1800 | 13.6 | 13.5 | 12.6 | 12.9 | 12.7 | 13.7 | 11.3 | 11.3 | 10.5 | 12.2 | 14.7 | 14.5 | 14.2 | 12.9 | 11.9 | 11.8 |
|        | 2100 | 8.9  | 8.3  | 8.8  | 9.6  | 10.6 | 9.5  | 10.4 | 10.7 | 6.8  | 7.5  | 7.4  | 9.2  | 10.9 | 10.0 | 10.0 | 8.2  |
|        | 2400 | 5.8  | 5.4  | 7.0  | 10.9 | 9.1  | 10.2 | 7.5  | 6.2  | 5.4  | 5.5  | 6.0  | 10.1 | 13.4 | 12.1 | 11.9 | 10.6 |
| WINTER | 0300 | 7.1  | 7.2  | 7.5  | 7.9  | 9.3  | 9.6  | 8.2  | 6.9  | 6.6  | 6.0  | 4.6  | 6.3  | 6.1  | 5.9  | 8.1  | 4.9  |
|        | 0600 | 5.8  | 8.1  | 8.4  | 8.4  | 9.3  | 9.7  | 9.6  | 7.5  | 8.5  | 5.6  | 6.5  | 6.9  | 7.0  | 3.7  | 3.3  | 7.2  |
|        | 0900 | 7.0  | 8.4  | 10.9 | 13.1 | 13.5 | 14.0 | 13.4 | 8.4  | 6.1  | 5.6  | 8.4  | 8.1  | 7.1  | 4.4  | 5.8  | 6.9  |
|        | 1200 | 10.6 | 15.5 | 17.8 | 20.1 | 21.2 | 21.1 | 18.6 | 12.1 | 9.4  | 9.2  | 9.5  | 8.9  | 13.8 | 11.4 | 9.3  | 12.7 |
|        | 1500 | 17.4 | 19.1 | 18.5 | 18.3 | 18.0 | 17.8 | 17.4 | 15.3 | 12.2 | 12.6 | 13.4 | 13.8 | 15.8 | 16.7 | 17.4 | 18.4 |
|        | 1800 | 15.4 | 16.9 | 15.3 | 13.7 | 13.3 | 13.4 | 11.9 | 12.3 | 12.0 | 11.4 | 9.3  | 12.1 | 13.6 | 12.6 | 13.0 | 13.5 |
|        | 2100 | 8.8  | 9.4  | 8.1  | 7.9  | 7.1  | 8.5  | 8.9  | 7.8  | 6.5  | 5.8  | 5.8  | 6.3  | 6.3  | 7.4  | 6.0  | 7.3  |
|        | 2400 | 6.4  | 6.2  | 4.7  | 7.3  | 6.9  | 9.0  | 7.6  | 5.9  | 4.4  | 4.8  | 5.2  | 6.6  | 7.6  | 8.2  | 9.3  | 5.8  |
| SPRING | 0300 | 7.3  | 8.4  | 8.2  | 8.8  | 9.0  | 8.6  | 9.7  | 7.9  | 8.9  | 6.5  | 6.7  | 8.8  | 10.1 | 9.4  | 9.0  | 8.1  |
|        | 0600 | 6.8  | 7.7  | 7.6  | 7.3  | 7.2  | 8.0  | 9.0  | 7.8  | 8.1  | 6.9  | 7.1  | 8.2  | 9.2  | 9.5  | 7.9  | 7.3  |
|        | 0900 | 8.6  | 9.0  | 9.8  | 10.3 | 10.2 | 9.9  | 10.1 | 8.4  | 9.0  | 8.4  | 9.6  | 10.7 | 11.0 | 10.8 | 9.9  | 9.4  |
|        | 1200 | 14.4 | 14.5 | 16.4 | 17.0 | 19.0 | 16.1 | 13.1 | 10.8 | 10.3 | 10.8 | 11.5 | 11.9 | 13.6 | 14.6 | 14.5 | 13.0 |
|        | 1500 | 21.6 | 21.4 | 21.7 | 17.9 | 19.3 | 17.0 | 16.9 | 13.9 | 12.1 | 13.3 | 16.1 | 17.3 | 20.0 | 19.2 | 19.4 | 19.8 |
|        | 1800 | 18.3 | 19.4 | 21.0 | 14.5 | 16.9 | 16.6 | 14.0 | 12.4 | 13.5 | 12.6 | 15.8 | 16.0 | 17.1 | 16.2 | 14.7 | 15.7 |
|        | 2100 | 9.8  | 10.2 | 10.7 | 11.5 | 12.0 | 10.9 | 10.6 | 9.3  | 7.7  | 9.0  | 8.9  | 10.9 | 12.6 | 12.6 | 12.6 | 9.5  |
|        | 2400 | 8.8  | 7.0  | 7.7  | 8.8  | 8.7  | 11.1 | 6.9  | 6.4  | 4.5  | 6.3  | 6.8  | 8.5  | 10.3 | 10.5 | 11.3 | 9.9  |

TABLE 27h(11)

DARWIN PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW | SW  | WSW | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|-----|-----|-----|------|------|------|------|------|
| SUMMER | 0300 | 2.3  | 5.9  | 2.3  | 5.2  | 2.8  | 5.2  | 2.2  | 3.5  | 1.0 | 4.0 | 6.0 | 20.7 | 12.8 | 16.0 | 5.1  | 4.9  |
|        | 0600 | 2.1  | 5.8  | 2.7  | 6.8  | 4.1  | 8.2  | 4.1  | 3.7  | 1.3 | 5.2 | 4.6 | 20.5 | 10.8 | 12.3 | 4.0  | 3.8  |
|        | 0900 | 2.3  | 4.9  | 2.9  | 6.5  | 4.2  | 7.7  | 3.3  | 6.2  | 2.5 | 6.8 | 7.2 | 18.1 | 9.2  | 10.5 | 3.8  | 4.1  |
|        | 1200 | 2.2  | 4.3  | 2.9  | 3.7  | 1.5  | 2.3  | 1.7  | 3.8  | 2.9 | 6.4 | 5.0 | 17.4 | 15.2 | 19.0 | 6.5  | 5.0  |
|        | 1500 | 2.0  | 4.0  | 1.9  | 1.8  | 0.7  | 1.4  | 0.8  | 1.8  | 1.2 | 3.7 | 3.8 | 18.0 | 20.1 | 26.7 | 6.8  | 5.1  |
|        | 1800 | 2.7  | 3.9  | 1.9  | 1.4  | 0.9  | 0.8  | 0.8  | 1.6  | 1.4 | 3.9 | 4.9 | 23.4 | 17.7 | 22.5 | 5.9  | 6.3  |
|        | 2100 | 2.1  | 4.4  | 1.7  | 2.7  | 1.3  | 2.4  | 1.3  | 3.4  | 1.4 | 5.4 | 6.8 | 26.1 | 12.8 | 18.7 | 4.4  | 5.2  |
|        | 2400 | 1.4  | 2.6  | 2.9  | 4.0  | 3.0  | 4.2  | 1.5  | 3.0  | 1.8 | 2.8 | 4.7 | 26.6 | 14.2 | 16.7 | 6.2  | 4.5  |
| AUTUMN | 0300 | 1.6  | 4.5  | 3.5  | 9.3  | 7.4  | 21.5 | 12.0 | 10.3 | 3.0 | 4.4 | 2.6 | 7.7  | 4.2  | 4.4  | 0.9  | 2.8  |
|        | 0600 | 1.1  | 3.5  | 3.6  | 12.0 | 13.2 | 28.7 | 11.2 | 7.4  | 1.6 | 2.5 | 1.7 | 6.0  | 2.7  | 2.5  | 0.9  | 1.4  |
|        | 0900 | 1.2  | 3.6  | 3.7  | 18.1 | 13.7 | 26.4 | 10.2 | 6.0  | 1.6 | 2.2 | 1.9 | 5.6  | 2.3  | 2.0  | 0.7  | 1.3  |
|        | 1200 | 1.7  | 5.5  | 8.5  | 22.8 | 12.5 | 12.5 | 3.6  | 4.4  | 2.0 | 3.3 | 2.8 | 6.4  | 3.9  | 6.3  | 1.5  | 2.1  |
|        | 1500 | 1.9  | 7.0  | 7.4  | 14.2 | 9.1  | 8.2  | 3.8  | 2.2  | 0.8 | 1.5 | 2.3 | 7.4  | 9.4  | 14.7 | 6.1  | 4.0  |
|        | 1800 | 8.1  | 12.3 | 6.1  | 8.4  | 4.3  | 5.4  | 2.4  | 1.5  | 0.6 | 1.7 | 2.3 | 8.8  | 7.5  | 12.3 | 7.4  | 11.0 |
|        | 2100 | 6.0  | 17.4 | 6.4  | 8.7  | 3.8  | 7.4  | 2.8  | 3.2  | 1.5 | 3.2 | 5.2 | 13.7 | 6.0  | 7.0  | 1.7  | 5.8  |
|        | 2400 | 2.0  | 6.1  | 4.3  | 8.8  | 4.5  | 13.5 | 10.7 | 9.0  | 2.7 | 6.4 | 3.5 | 11.0 | 5.7  | 4.6  | 2.4  | 4.6  |
| WINTER | 0300 | 1.6  | 4.0  | 4.1  | 8.2  | 9.0  | 29.1 | 19.3 | 13.8 | 4.1 | 2.3 | 0.4 | 1.6  | 0.5  | 0.9  | 0.3  | 0.8  |
|        | 0600 | 0.7  | 3.7  | 4.0  | 14.5 | 14.0 | 36.8 | 16.2 | 6.6  | 1.3 | 0.7 | 0.1 | 0.3  | 0.2  | 0.1  | 0.2  | 0.6  |
|        | 0900 | 0.8  | 4.3  | 5.8  | 19.3 | 16.9 | 35.3 | 11.0 | 4.1  | 0.6 | 0.4 | 0.1 | 0.3  | 0.2  | 0.2  | 0.3  | 0.5  |
|        | 1200 | 1.3  | 5.6  | 10.4 | 26.2 | 19.7 | 18.4 | 3.9  | 2.0  | 1.0 | 1.8 | 0.6 | 2.3  | 1.8  | 2.7  | 1.2  | 1.1  |
|        | 1500 | 2.9  | 6.1  | 7.0  | 13.0 | 10.3 | 11.3 | 5.2  | 3.2  | 1.0 | 0.9 | 0.6 | 2.7  | 6.6  | 15.4 | 8.9  | 4.9  |
|        | 1800 | 16.4 | 11.3 | 3.6  | 4.6  | 2.1  | 4.6  | 2.3  | 1.5  | 0.3 | 0.3 | 0.2 | 1.7  | 4.3  | 11.5 | 12.5 | 22.8 |
|        | 2100 | 12.1 | 26.7 | 6.6  | 3.8  | 1.8  | 6.2  | 4.4  | 2.9  | 1.5 | 5.8 | 5.7 | 7.8  | 2.7  | 4.1  | 1.9  | 6.1  |
|        | 2400 | 1.3  | 4.2  | 2.4  | 1.7  | 3.2  | 14.3 | 17.3 | 23.4 | 8.1 | 6.8 | 2.9 | 4.2  | 2.2  | 3.7  | 1.8  | 2.4  |
| SPRING | 0300 | 7.8  | 10.0 | 3.4  | 5.1  | 3.4  | 5.5  | 2.5  | 2.7  | 1.4 | 3.4 | 2.9 | 10.8 | 7.9  | 15.5 | 6.4  | 11.1 |
|        | 0600 | 5.9  | 13.5 | 6.4  | 12.1 | 6.4  | 10.2 | 4.3  | 4.3  | 1.4 | 2.4 | 1.4 | 7.5  | 5.9  | 8.3  | 3.1  | 7.0  |
|        | 0900 | 6.2  | 12.9 | 9.3  | 13.6 | 5.3  | 10.2 | 4.1  | 5.2  | 2.2 | 2.5 | 2.1 | 6.6  | 3.9  | 7.0  | 3.8  | 5.2  |
|        | 1200 | 2.7  | 6.8  | 5.1  | 8.5  | 4.3  | 5.4  | 1.8  | 2.5  | 1.3 | 2.9 | 1.8 | 8.4  | 12.5 | 22.9 | 8.0  | 5.2  |
|        | 1500 | 4.9  | 4.1  | 1.7  | 1.8  | 1.1  | 1.9  | 0.4  | 1.3  | 0.5 | 0.8 | 1.0 | 5.5  | 13.4 | 32.3 | 15.9 | 13.3 |
|        | 1800 | 13.3 | 8.7  | 0.9  | 0.5  | 0.3  | 0.7  | 0.6  | 1.0  | 0.4 | 1.6 | 1.6 | 10.8 | 15.0 | 22.6 | 8.4  | 13.6 |
|        | 2100 | 4.7  | 7.7  | 1.4  | 1.8  | 0.7  | 1.6  | 0.7  | 2.0  | 1.6 | 5.3 | 6.1 | 26.5 | 14.8 | 15.8 | 4.6  | 4.9  |
|        | 2400 | 3.5  | 2.9  | 1.7  | 2.0  | 1.3  | 2.2  | 1.9  | 1.5  | 1.3 | 2.7 | 5.2 | 18.1 | 15.5 | 22.4 | 8.6  | 9.3  |

TABLE 271(i)  
EAST SALE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 8.2  | 8.9  | 12.7 | 21.3 | 15.5 | 10.4 | 11.0 | 9.5  | 10.5 | 12.9 | 16.0 | 14.4 | 10.7 | 6.9  | 12.2 | 7.9  |
|        | 0600 | 6.8  | 8.6  | 12.5 | 18.3 | 15.7 | 11.8 | 11.5 | 8.7  | 9.6  | 11.8 | 16.4 | 13.4 | 10.4 | 7.6  | 7.4  | 8.0  |
|        | 0900 | 8.0  | 10.0 | 15.4 | 17.6 | 13.7 | 13.0 | 12.3 | 10.5 | 11.0 | 15.4 | 21.5 | 20.2 | 15.8 | 10.5 | 8.7  | 8.7  |
|        | 1200 | 7.8  | 8.9  | 16.2 | 20.2 | 16.8 | 14.6 | 13.5 | 11.9 | 14.7 | 18.6 | 24.5 | 24.3 | 24.6 | 19.4 | 13.8 | 14.7 |
|        | 1500 | 14.6 | 10.3 | 22.7 | 23.3 | 20.5 | 18.0 | 16.9 | 18.7 | 17.2 | 23.5 | 30.8 | 30.4 | 25.1 | 24.7 | 22.4 | 19.3 |
|        | 1800 | 11.6 | 12.6 | 18.3 | 21.0 | 18.4 | 15.4 | 14.3 | 17.6 | 17.9 | 22.4 | 28.4 | 26.7 | 23.4 | 20.1 | 12.6 | 13.5 |
|        | 2100 | 11.0 | 8.9  | 14.1 | 16.3 | 13.1 | 9.7  | 8.5  | 10.6 | 10.2 | 13.6 | 18.7 | 18.5 | 16.3 | 14.9 | 10.2 | 9.8  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| AUTUMN | 0300 | 7.3  | 8.3  | 16.7 | 16.4 | 16.9 | 11.1 | 12.5 | 12.0 | 12.0 | 13.9 | 15.3 | 15.6 | 12.3 | 10.8 | 7.6  | 9.6  |
|        | 0600 | 8.9  | 8.3  | 13.2 | 20.6 | 20.9 | 12.0 | 15.1 | 10.5 | 9.6  | 12.8 | 15.6 | 15.2 | 11.9 | 9.8  | 9.3  | 9.7  |
|        | 0900 | 8.9  | 9.9  | 15.3 | 17.3 | 15.9 | 15.4 | 14.4 | 11.1 | 12.5 | 16.3 | 19.2 | 17.2 | 13.4 | 11.6 | 10.5 | 8.3  |
|        | 1200 | 10.2 | 9.3  | 12.1 | 15.9 | 15.5 | 14.7 | 12.5 | 12.9 | 13.9 | 16.7 | 23.7 | 23.0 | 21.2 | 21.5 | 11.5 | 8.0  |
|        | 1500 | 10.0 | 7.9  | 14.8 | 16.8 | 16.8 | 15.5 | 15.3 | 15.5 | 13.7 | 20.5 | 23.7 | 26.2 | 23.6 | 24.0 | 15.9 | 10.7 |
|        | 1800 | 8.3  | 9.5  | 11.4 | 14.4 | 13.5 | 11.0 | 12.3 | 12.2 | 13.1 | 16.4 | 19.8 | 20.9 | 18.1 | 18.2 | 16.5 | 9.6  |
|        | 2100 | 6.0  | 9.3  | 11.8 | 15.3 | 11.5 | 9.1  | 9.8  | 9.2  | 8.6  | 12.1 | 17.1 | 17.8 | 14.9 | 12.5 | 15.8 | 11.0 |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| WINTER | 0300 | 7.3  | 7.7  | 10.9 | 11.7 | 17.1 | 17.2 | 20.9 | 10.8 | 13.2 | 12.2 | 16.7 | 17.1 | 14.1 | 12.8 | 10.2 | 9.6  |
|        | 0600 | 7.7  | 6.9  | 12.2 | 13.7 | 19.2 | 14.6 | 16.9 | 19.6 | 14.8 | 12.7 | 17.1 | 16.3 | 13.9 | 13.0 | 13.0 | 10.4 |
|        | 0900 | 9.0  | 9.3  | 11.3 | 13.4 | 17.6 | 15.4 | 18.7 | 19.3 | 21.6 | 12.7 | 17.8 | 17.1 | 14.3 | 14.7 | 16.2 | 9.5  |
|        | 1200 | 12.5 | 9.3  | 13.3 | 13.8 | 16.4 | 19.0 | 17.7 | 17.8 | 16.1 | 17.0 | 22.6 | 23.3 | 21.3 | 24.8 | 16.6 | 12.0 |
|        | 1500 | 12.4 | 10.3 | 12.9 | 13.0 | 13.4 | 13.7 | 13.6 | 15.3 | 16.7 | 17.7 | 21.9 | 24.9 | 26.1 | 26.9 | 20.3 | 13.8 |
|        | 1800 | 11.5 | 8.6  | 11.4 | 9.9  | 10.5 | 9.4  | 13.8 | 9.4  | 11.9 | 12.7 | 15.9 | 18.5 | 18.4 | 18.9 | 16.4 | 11.3 |
|        | 2100 | 7.8  | 8.3  | 10.5 | 11.9 | 10.5 | 16.1 | 13.2 | 19.3 | 10.7 | 12.4 | 14.3 | 16.0 | 16.2 | 15.2 | 14.7 | 8.9  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| SPRING | 0300 | 6.4  | 8.7  | 11.9 | 14.5 | 13.1 | 13.7 | 11.6 | 9.3  | 10.6 | 15.5 | 16.9 | 17.6 | 12.7 | 10.6 | 12.1 | 8.4  |
|        | 0600 | 10.9 | 9.2  | 14.2 | 16.9 | 10.4 | 14.5 | 12.8 | 10.5 | 10.9 | 12.6 | 17.6 | 16.1 | 12.5 | 9.7  | 11.0 | 10.0 |
|        | 0900 | 12.4 | 9.0  | 13.8 | 15.0 | 12.9 | 15.9 | 14.7 | 11.4 | 12.8 | 14.6 | 22.8 | 23.3 | 18.6 | 15.4 | 13.8 | 10.2 |
|        | 1200 | 11.0 | 8.6  | 13.5 | 16.5 | 14.6 | 14.6 | 13.7 | 15.3 | 16.1 | 20.0 | 25.4 | 27.0 | 26.0 | 26.6 | 17.9 | 14.7 |
|        | 1500 | 11.7 | 11.8 | 17.0 | 18.6 | 16.9 | 15.8 | 15.2 | 17.0 | 16.9 | 22.4 | 28.7 | 29.3 | 30.5 | 29.1 | 24.7 | 17.7 |
|        | 1800 | 13.5 | 10.9 | 13.9 | 14.9 | 13.5 | 11.4 | 12.1 | 13.5 | 17.1 | 18.5 | 23.5 | 24.2 | 21.7 | 19.5 | 20.4 | 15.1 |
|        | 2100 | 9.0  | 9.0  | 10.9 | 12.3 | 12.4 | 10.3 | 8.8  | 10.3 | 11.6 | 11.5 | 16.6 | 18.4 | 18.0 | 13.7 | 12.6 | 10.5 |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |

TABLE 271(ii)  
EAST SALE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE  | ENE | E    | ESE  | SE   | SSE | S   | SSW | SW  | WSW  | W    | WNW  | NW   | NNW | N   |
|--------|------|-----|-----|-----|------|------|------|-----|-----|-----|-----|------|------|------|------|-----|-----|
| SUMMER | 0300 | 1.3 | 3.9 | 5.2 | 8.3  | 4.8  | 5.6  | 1.9 | 1.8 | 2.1 | 6.2 | 16.2 | 27.1 | 8.4  | 4.8  | 1.2 | 1.3 |
|        | 0600 | 1.4 | 4.1 | 4.5 | 6.1  | 3.5  | 3.0  | 1.6 | 1.7 | 1.5 | 6.3 | 14.7 | 28.5 | 10.9 | 8.7  | 2.3 | 1.2 |
|        | 0900 | 1.1 | 4.0 | 6.4 | 12.8 | 5.7  | 3.6  | 1.5 | 1.9 | 1.7 | 5.8 | 15.2 | 25.4 | 7.8  | 4.2  | 1.7 | 1.4 |
|        | 1200 | 0.6 | 1.6 | 4.1 | 17.0 | 12.5 | 6.9  | 3.1 | 2.9 | 2.3 | 7.3 | 15.6 | 14.8 | 4.8  | 4.4  | 1.4 | 0.8 |
|        | 1500 | 0.3 | 0.6 | 2.8 | 19.9 | 19.0 | 15.2 | 5.2 | 3.3 | 2.0 | 5.3 | 11.8 | 8.7  | 2.3  | 2.5  | 0.6 | 0.5 |
|        | 1800 | 0.1 | 1.0 | 4.4 | 22.9 | 19.5 | 15.4 | 4.9 | 3.2 | 2.0 | 5.8 | 10.0 | 7.4  | 1.0  | 1.4  | 0.5 | 0.5 |
|        | 2100 | 1.2 | 2.9 | 6.1 | 20.2 | 15.0 | 10.7 | 4.1 | 4.4 | 2.7 | 7.9 | 9.1  | 10.4 | 2.6  | 1.2  | 0.7 | 0.8 |
|        | 2400 | -   | -   | -   | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -   | -   |
| AUTUMN | 0300 | 0.8 | 2.0 | 2.0 | 3.8  | 2.2  | 2.7  | 1.5 | 1.4 | 1.0 | 4.8 | 12.2 | 35.1 | 14.9 | 10.8 | 3.2 | 2.4 |
|        | 0600 | 0.6 | 1.6 | 1.6 | 2.7  | 1.3  | 1.8  | 1.0 | 1.8 | 0.8 | 4.3 | 12.2 | 33.6 | 16.1 | 14.9 | 3.2 | 2.5 |
|        | 0900 | 0.8 | 2.7 | 2.4 | 3.8  | 1.8  | 1.2  | 1.5 | 1.7 | 0.9 | 3.9 | 12.1 | 36.5 | 15.4 | 10.9 | 2.6 | 1.6 |
|        | 1200 | 0.9 | 2.3 | 3.5 | 10.7 | 5.1  | 3.5  | 2.2 | 2.4 | 1.8 | 6.2 | 14.9 | 25.4 | 10.2 | 8.1  | 1.6 | 1.3 |
|        | 1500 | 0.3 | 1.0 | 3.3 | 17.6 | 10.0 | 7.0  | 3.7 | 3.1 | 2.2 | 6.0 | 14.6 | 17.1 | 5.9  | 5.5  | 1.5 | 1.1 |
|        | 1800 | 0.6 | 1.5 | 3.8 | 18.6 | 12.7 | 10.8 | 3.5 | 3.1 | 2.2 | 6.1 | 12.7 | 13.8 | 4.3  | 4.3  | 1.3 | 0.7 |
|        | 2100 | 1.3 | 3.4 | 3.8 | 10.2 | 6.3  | 6.1  | 3.4 | 3.1 | 2.1 | 5.4 | 11.8 | 23.8 | 9.0  | 6.5  | 1.9 | 1.8 |
|        | 2400 | -   | -   | -   | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -   | -   |
| WINTER | 0300 | 1.6 | 1.4 | 1.4 | 3.1  | 1.2  | 1.1  | 1.0 | 0.7 | 0.5 | 1.2 | 10.1 | 33.0 | 19.0 | 17.8 | 4.4 | 2.4 |
|        | 0600 | 1.2 | 1.6 | 1.3 | 1.8  | 1.3  | 1.2  | 0.9 | 1.0 | 0.2 | 2.3 | 8.6  | 32.9 | 22.0 | 17.6 | 4.0 | 2.0 |
|        | 0900 | 1.7 | 1.9 | 1.5 | 1.8  | 1.3  | 1.2  | 0.6 | 0.9 | 0.1 | 2.0 | 7.9  | 33.7 | 22.7 | 17.7 | 3.0 | 2.0 |
|        | 1200 | 1.3 | 2.1 | 2.8 | 4.6  | 1.6  | 1.8  | 1.0 | 1.3 | 0.8 | 2.8 | 13.4 | 33.5 | 15.8 | 13.1 | 2.6 | 1.5 |
|        | 1500 | 0.6 | 1.4 | 2.4 | 11.5 | 5.4  | 3.5  | 1.9 | 2.0 | 1.0 | 4.3 | 14.4 | 27.1 | 10.0 | 11.3 | 2.2 | 0.9 |
|        | 1800 | 0.9 | 1.8 | 2.3 | 10.0 | 6.2  | 5.2  | 1.6 | 2.5 | 1.2 | 4.9 | 11.5 | 25.1 | 11.2 | 10.5 | 3.6 | 1.7 |
|        | 2100 | 1.5 | 3.5 | 2.6 | 5.1  | 2.6  | 2.2  | 1.3 | 1.4 | 0.7 | 3.6 | 10.0 | 28.2 | 15.7 | 13.5 | 4.7 | 3.3 |
|        | 2400 | -   | -   | -   | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -   | -   |
| SPRING | 0300 | 0.9 | 3.3 | 3.6 | 4.3  | 1.2  | 2.3  | 1.3 | 1.5 | 1.1 | 3.6 | 13.2 | 33.1 | 13.2 | 11.5 | 3.2 | 2.7 |
|        | 0600 | 1.2 | 2.9 | 1.9 | 3.4  | 1.7  | 2.1  | 1.4 | 1.5 | 0.8 | 3.9 | 13.4 | 32.0 | 14.9 | 13.0 | 3.8 | 2.1 |
|        | 0900 | 1.2 | 2.8 | 4.6 | 7.4  | 2.7  | 2.5  | 1.3 | 1.8 | 1.2 | 4.2 | 14.5 | 30.5 | 11.9 | 9.0  | 2.3 | 2.0 |
|        | 1200 | 0.9 | 1.8 | 3.9 | 11.5 | 7.1  | 5.2  | 1.7 | 2.2 | 1.6 | 6.2 | 16.2 | 23.7 | 7.9  | 7.0  | 1.7 | 1.3 |
|        | 1500 | 0.5 | 0.4 | 2.1 | 15.3 | 13.1 | 10.1 | 3.5 | 2.9 | 1.9 | 5.3 | 14.8 | 17.8 | 5.1  | 5.2  | 1.1 | 0.8 |
|        | 1800 | 0.5 | 1.2 | 4.1 | 18.8 | 11.7 | 10.5 | 4.1 | 3.2 | 1.7 | 5.6 | 13.9 | 15.6 | 3.3  | 4.4  | 1.0 | 0.5 |
|        | 2100 | 2.6 | 4.9 | 7.0 | 12.0 | 6.2  | 5.3  | 2.0 | 3.1 | 1.3 | 5.1 | 11.9 | 22.4 | 7.4  | 5.7  | 1.7 | 1.4 |
|        | 2400 | -   | -   | -   | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -   | -   |

TABLE 27j(i)

KATHERINE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW  | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|
| SUMMER | 0300 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 0600 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 0900 | 6.8  | 7.5  | 5.8  | 8.8  | 25.9 | 5.8  | 9.3  | 10.2 | 9.7  | 7.8  | 7.4  | 9.9  | 14.1 | 8.7 | 8.7  | 6.3  |
|        | 1200 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 1500 | 6.0  | 12.6 | 7.6  | 11.6 | 0.0  | 10.2 | 10.2 | 11.4 | 8.2  | 8.6  | 9.9  | 9.5  | 17.4 | 9.6 | 15.2 | 9.8  |
|        | 1800 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
| AUTUMN | 0300 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 0600 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 0900 | 8.0  | 10.9 | 10.6 | 11.2 | 14.2 | 9.9  | 22.6 | 12.1 | 7.4  | 7.9  | 5.9  | 11.1 | 12.0 | 7.9 | 10.2 | 7.4  |
|        | 1200 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 1500 | 8.9  | 13.3 | 16.5 | 13.1 | 14.4 | 10.4 | 18.7 | 13.1 | 8.2  | 9.0  | 5.6  | 11.7 | 17.6 | 7.4 | 10.4 | 11.3 |
|        | 1800 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
| WINTER | 0300 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 0600 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 0900 | 8.7  | 10.4 | 7.2  | 12.6 | 11.5 | 11.9 | 11.8 | 17.6 | 5.1  | 10.6 | 3.7  | 9.3  | 16.7 | 7.9 | 14.2 | 7.8  |
|        | 1200 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 1500 | 9.8  | 11.9 | 16.2 | 11.9 | 17.4 | 11.4 | 6.8  | 14.0 | 13.7 | 11.4 | 11.1 | 9.5  | 0.0  | 9.6 | 5.1  | 7.4  |
|        | 1800 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
| SPRING | 0300 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 0600 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 0900 | 6.4  | 7.7  | 9.2  | 9.5  | 12.8 | 10.5 | 9.9  | 6.8  | 9.3  | 6.7  | 13.4 | 8.0  | 11.1 | 7.9 | 11.4 | 7.2  |
|        | 1200 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 1500 | 10.7 | 9.8  | 11.8 | 11.3 | 15.0 | 14.6 | 16.0 | 11.0 | 11.1 | 9.9  | 9.3  | 7.7  | 16.1 | 9.0 | 7.7  | 7.3  |
|        | 1800 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -    | -    |

TABLE 27j(ii)

KATHERINE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE   | ENE | E    | ESE | SE   | SSE | S    | SSW | SW  | WSW | W    | WNW | NW   | NNW | N    |
|--------|------|-----|------|-----|------|-----|------|-----|------|-----|-----|-----|------|-----|------|-----|------|
| SUMMER | 0300 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 0600 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 0900 | 3.9 | 6.6  | 3.9 | 3.9  | 0.4 | 3.5  | 0.4 | 7.0  | 1.8 | 4.4 | 1.3 | 20.6 | 4.4 | 22.8 | 4.4 | 10.5 |
|        | 1200 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 1500 | 1.5 | 12.8 | 3.6 | 9.2  | 0.0 | 3.0  | 1.2 | 12.8 | 3.6 | 8.6 | 2.7 | 12.5 | 4.5 | 12.8 | 1.5 | 9.8  |
|        | 1800 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 2100 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 2400 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
| AUTUMN | 0300 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 0600 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 0900 | 5.1 | 14.2 | 9.2 | 26.4 | 4.7 | 9.8  | 1.7 | 8.5  | 1.7 | 4.1 | 1.7 | 4.4  | 2.0 | 2.7  | 0.7 | 3.1  |
|        | 1200 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 1500 | 5.9 | 12.5 | 7.4 | 26.6 | 6.1 | 10.4 | 1.8 | 12.3 | 1.4 | 4.1 | 0.6 | 2.7  | 1.2 | 3.5  | 1.6 | 1.8  |
|        | 1800 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 2100 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 2400 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
| WINTER | 0300 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 0600 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 0900 | 2.8 | 13.5 | 4.6 | 38.5 | 5.2 | 15.9 | 0.9 | 8.3  | 1.2 | 3.1 | 0.3 | 0.6  | 0.3 | 1.2  | 0.9 | 2.8  |
|        | 1200 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 1500 | 3.0 | 14.5 | 7.5 | 31.9 | 5.6 | 14.3 | 1.2 | 11.3 | 1.0 | 3.8 | 1.0 | 1.8  | 0.0 | 1.2  | 0.8 | 1.2  |
|        | 1800 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 2100 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 2400 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
| SPRING | 0300 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 0600 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 0900 | 2.7 | 8.5  | 5.5 | 13.7 | 3.0 | 7.0  | 0.9 | 6.4  | 0.6 | 2.4 | 1.5 | 8.2  | 3.4 | 22.3 | 4.0 | 9.8  |
|        | 1200 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 1500 | 5.1 | 12.8 | 6.2 | 24.7 | 4.5 | 8.3  | 1.9 | 12.6 | 1.1 | 3.6 | 0.2 | 4.7  | 1.5 | 5.3  | 1.3 | 6.2  |
|        | 1800 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 2100 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |
|        | 2400 | -   | -    | -   | -    | -   | -    | -   | -    | -   | -   | -   | -    | -   | -    | -   | -    |

TABLE 27k(i)  
KIMBERLEY MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE | NE  | ENE  | E    | ESE  | SE   | SSE  | S   | SSW | SW  | WSW | W   | WNW  | NW  | NNW | N   |
|--------|------|-----|-----|------|------|------|------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|
| SUMMER | 0300 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 0600 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 0900 | 7.1 | 8.3 | 7.0  | 8.4  | 10.5 | 6.6  | 7.3  | 6.1 | 4.6 | 5.7 | 7.2 | 6.8 | 10.2 | 8.3 | 7.1 | 5.6 |
|        | 1200 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 1500 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 1800 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 2100 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 2400 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
| AUTUMN | 0300 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 0600 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 0900 | 8.1 | 7.7 | 8.9  | 10.7 | 14.9 | 14.1 | 13.4 | 6.8 | 7.0 | 7.4 | 7.9 | 4.3 | 6.4  | 5.1 | 3.9 | 5.1 |
|        | 1200 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 1500 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 1800 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 2100 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 2400 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
| WINTER | 0300 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 0600 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 0900 | 5.2 | 5.6 | 7.0  | 8.9  | 13.6 | 14.4 | 11.1 | 7.2 | 6.7 | 3.9 | 5.0 | 4.3 | 6.0  | 7.8 | 4.8 | 3.8 |
|        | 1200 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 1500 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 1800 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 2100 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 2400 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
| SPRING | 0300 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 0600 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 0900 | 8.5 | 6.9 | 11.0 | 10.7 | 12.3 | 13.5 | 14.7 | 9.0 | 6.9 | 6.1 | 5.3 | 5.2 | 9.5  | 6.0 | 5.8 | 6.5 |
|        | 1200 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 1500 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 1800 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 2100 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |
|        | 2400 | -   | -   | -    | -    | -    | -    | -    | -   | -   | -   | -   | -   | -    | -   | -   | -   |

TABLE 27k(ii)  
KIMBERLEY PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE  | ENE | E    | ESE  | SE   | SSE  | S    | SSW | SW   | WSW | W   | WNW | NW   | NNW | N   |
|--------|------|-----|-----|-----|------|------|------|------|------|-----|------|-----|-----|-----|------|-----|-----|
| SUMMER | 0300 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 0600 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 0900 | 4.5 | 6.8 | 1.6 | 5.4  | 1.5  | 6.9  | 4.3  | 11.5 | 5.4 | 11.7 | 3.2 | 7.7 | 2.0 | 15.2 | 4.4 | 7.8 |
|        | 1200 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 1500 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 1800 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 2100 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 2400 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
| AUTUMN | 0300 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 0600 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 0900 | 2.2 | 4.5 | 4.2 | 11.2 | 14.8 | 20.1 | 7.4  | 13.4 | 6.1 | 6.0  | 1.0 | 1.5 | 0.7 | 3.1  | 1.1 | 2.6 |
|        | 1200 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 1500 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 1800 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 2100 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 2400 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
| WINTER | 0300 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 0600 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 0900 | 1.6 | 3.1 | 2.0 | 7.2  | 12.9 | 25.8 | 14.9 | 15.7 | 5.7 | 5.0  | 0.6 | 1.2 | 0.4 | 1.2  | 0.5 | 2.4 |
|        | 1200 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 1500 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 1800 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 2100 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 2400 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
| SPRING | 0300 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 0600 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 0900 | 4.2 | 8.4 | 4.1 | 12.9 | 6.8  | 11.5 | 4.4  | 7.4  | 2.1 | 5.2  | 0.7 | 5.7 | 1.5 | 9.7  | 6.3 | 9.0 |
|        | 1200 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 1500 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 1800 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 2100 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |
|        | 2400 | -   | -   | -   | -    | -    | -    | -    | -    | -   | -    | -   | -   | -   | -    | -   | -   |

TABLE 271(i)  
MELBOURNE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 9.3  | 7.5  | 6.6  | 5.4  | 6.0  | 8.6  | 11.2 | 11.6 | 13.9 | 12.3 | 11.3 | 8.2  | 7.9  | 7.1  | 9.7  | 8.8  |
|        | 0600 | 9.8  | 7.0  | 6.4  | 4.1  | 5.3  | 9.0  | 10.1 | 12.1 | 15.0 | 11.0 | 11.3 | 8.4  | 7.7  | 7.8  | 12.6 | 12.7 |
|        | 0900 | 14.6 | 7.4  | 4.8  | 6.7  | 9.2  | 12.1 | 12.5 | 13.6 | 14.1 | 14.1 | 13.9 | 14.0 | 13.2 | 12.7 | 20.9 | 20.4 |
|        | 1200 | 18.2 | 10.1 | 6.1  | 12.6 | 10.8 | 13.5 | 14.0 | 15.6 | 16.5 | 15.8 | 16.9 | 17.9 | 15.9 | 20.4 | 23.3 | 22.6 |
|        | 1500 | 17.3 | 12.6 | 7.7  | 11.8 | 13.7 | 15.6 | 17.6 | 18.7 | 20.5 | 19.4 | 22.7 | 18.8 | 19.4 | 20.2 | 21.7 | 20.5 |
|        | 1800 | 15.3 | 12.7 | 10.3 | 12.4 | 14.1 | 15.6 | 17.6 | 18.6 | 20.0 | 18.0 | 18.1 | 21.2 | 18.0 | 15.5 | 17.4 | 16.7 |
|        | 2100 | 9.1  | 9.2  | 7.5  | 7.8  | 10.0 | 11.3 | 13.0 | 14.1 | 15.9 | 13.3 | 14.8 | 11.9 | 12.9 | 11.0 | 13.6 | 11.6 |
|        | 2400 | 9.5  | 8.5  | 7.1  | 5.5  | 7.9  | 8.8  | 10.7 | 11.7 | 13.8 | 12.3 | 11.6 | 9.0  | 7.2  | 9.0  | 10.2 | 11.3 |
| AUTUMN | 0300 | 8.7  | 7.3  | 6.7  | 5.9  | 5.5  | 8.0  | 9.8  | 13.4 | 12.7 | 10.8 | 11.8 | 9.6  | 9.7  | 9.8  | 14.9 | 12.6 |
|        | 0600 | 9.0  | 8.2  | 4.9  | 5.8  | 6.3  | 7.9  | 11.1 | 13.6 | 14.8 | 12.2 | 12.6 | 9.7  | 9.4  | 10.6 | 14.2 | 12.4 |
|        | 0900 | 11.4 | 8.1  | 8.5  | 7.4  | 9.3  | 12.1 | 12.2 | 13.7 | 15.6 | 13.0 | 13.1 | 12.7 | 12.3 | 14.3 | 17.7 | 16.5 |
|        | 1200 | 17.4 | 9.1  | 5.6  | 7.0  | 10.3 | 12.1 | 13.6 | 12.9 | 14.7 | 15.3 | 16.3 | 15.7 | 18.6 | 16.7 | 21.7 | 20.8 |
|        | 1500 | 18.2 | 11.0 | 7.4  | 7.5  | 10.2 | 12.0 | 13.8 | 14.6 | 16.6 | 16.0 | 18.4 | 17.5 | 18.4 | 19.0 | 20.8 | 19.2 |
|        | 1800 | 13.0 | 10.4 | 4.2  | 6.5  | 9.5  | 10.3 | 12.9 | 13.9 | 14.9 | 15.4 | 13.9 | 13.4 | 13.8 | 13.7 | 15.2 | 14.9 |
|        | 2100 | 10.7 | 7.4  | 5.9  | 6.1  | 7.5  | 8.8  | 10.3 | 12.4 | 13.3 | 12.2 | 12.5 | 10.4 | 11.1 | 9.6  | 15.4 | 13.3 |
|        | 2400 | 10.0 | 8.1  | 6.6  | 5.4  | 5.9  | 8.4  | 10.7 | 11.7 | 12.7 | 10.3 | 11.1 | 10.2 | 8.8  | 9.9  | 14.3 | 12.3 |
| WINTER | 0300 | 9.4  | 8.0  | 7.0  | 7.4  | 8.3  | 8.6  | 13.6 | 8.3  | 14.7 | 11.1 | 11.9 | 9.7  | 10.7 | 12.6 | 17.9 | 15.6 |
|        | 0600 | 10.2 | 8.3  | 7.1  | 6.9  | 8.2  | 8.6  | 13.1 | 13.0 | 14.3 | 12.7 | 11.9 | 10.2 | 11.1 | 13.8 | 17.2 | 15.8 |
|        | 0900 | 11.2 | 8.3  | 8.4  | 7.1  | 6.7  | 9.1  | 12.0 | 16.7 | 16.2 | 13.2 | 12.3 | 11.9 | 12.6 | 14.7 | 19.9 | 17.0 |
|        | 1200 | 16.9 | 8.0  | 7.2  | 11.6 | 9.8  | 11.9 | 12.9 | 11.9 | 15.4 | 14.1 | 17.4 | 17.3 | 17.0 | 18.8 | 23.5 | 21.9 |
|        | 1500 | 18.7 | 12.7 | 8.7  | 11.1 | 11.6 | 11.4 | 11.3 | 13.4 | 14.4 | 17.5 | 18.1 | 16.2 | 18.2 | 20.2 | 23.3 | 20.8 |
|        | 1800 | 13.9 | 9.3  | 7.2  | 7.4  | 9.0  | 8.8  | 7.7  | 9.6  | 11.4 | 11.3 | 12.7 | 12.8 | 13.8 | 14.6 | 18.1 | 16.5 |
|        | 2100 | 11.7 | 7.0  | 6.4  | 7.9  | 7.0  | 8.1  | 9.3  | 9.5  | 13.5 | 12.3 | 11.4 | 10.7 | 11.1 | 12.7 | 18.1 | 15.3 |
|        | 2400 | 10.9 | 8.0  | 7.1  | 8.6  | 8.5  | 8.7  | 8.9  | 12.3 | 14.4 | 11.8 | 10.2 | 10.4 | 10.9 | 12.4 | 18.3 | 15.3 |
| SPRING | 0300 | 10.6 | 8.1  | 7.2  | 6.7  | 7.5  | 9.4  | 10.0 | 14.6 | 14.3 | 12.7 | 11.7 | 10.5 | 9.0  | 10.0 | 16.6 | 14.1 |
|        | 0600 | 10.4 | 7.4  | 5.6  | 5.9  | 7.9  | 8.9  | 10.5 | 15.6 | 13.3 | 11.9 | 11.2 | 10.6 | 10.8 | 10.2 | 16.0 | 14.8 |
|        | 0900 | 14.3 | 9.6  | 5.6  | 7.0  | 13.4 | 11.6 | 13.0 | 15.2 | 15.0 | 15.3 | 16.1 | 16.1 | 14.6 | 16.7 | 20.6 | 20.9 |
|        | 1200 | 21.8 | 14.7 | 7.2  | 9.9  | 17.1 | 13.6 | 14.1 | 14.8 | 15.8 | 16.6 | 20.4 | 19.0 | 19.7 | 21.0 | 24.1 | 24.5 |
|        | 1500 | 20.6 | 14.1 | 11.3 | 10.8 | 14.2 | 13.6 | 15.8 | 16.3 | 17.1 | 18.3 | 21.4 | 21.5 | 21.5 | 21.4 | 23.4 | 23.1 |
|        | 1800 | 15.4 | 11.4 | 8.4  | 12.7 | 12.9 | 12.0 | 13.9 | 16.3 | 15.9 | 16.7 | 19.8 | 17.7 | 14.2 | 16.1 | 17.8 | 17.8 |
|        | 2100 | 11.7 | 8.3  | 5.5  | 6.0  | 8.5  | 9.4  | 10.0 | 13.4 | 13.9 | 13.6 | 14.9 | 12.8 | 13.4 | 12.1 | 15.1 | 14.2 |
|        | 2400 | 10.0 | 8.2  | 8.2  | 5.7  | 7.4  | 8.3  | 10.0 | 13.5 | 15.0 | 11.7 | 12.1 | 11.9 | 8.8  | 9.8  | 12.7 | 13.6 |

TABLE 271(ii)  
MELBOURNE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE | E   | ESE | SE   | SSE  | S    | SSW  | SW   | WSW | W    | WNW | NW   | NNW  | N    |
|--------|------|------|------|-----|-----|-----|------|------|------|------|------|-----|------|-----|------|------|------|
| SUMMER | 0300 | 7.3  | 5.3  | 0.7 | 3.2 | 5.0 | 15.3 | 8.3  | 7.1  | 3.2  | 6.9  | 7.7 | 8.7  | 3.8 | 5.7  | 4.4  | 7.3  |
|        | 0600 | 8.9  | 9.1  | 0.9 | 2.5 | 4.1 | 13.4 | 7.1  | 5.0  | 2.9  | 5.3  | 8.5 | 8.9  | 3.7 | 4.4  | 5.4  | 9.9  |
|        | 0900 | 6.8  | 5.5  | 1.7 | 2.3 | 3.9 | 10.4 | 9.0  | 9.7  | 6.4  | 9.5  | 7.6 | 5.6  | 1.9 | 4.2  | 5.1  | 10.5 |
|        | 1200 | 3.8  | 2.3  | 0.9 | 0.9 | 1.4 | 7.3  | 11.7 | 25.6 | 11.2 | 6.7  | 3.7 | 3.6  | 1.9 | 3.8  | 6.4  | 9.0  |
|        | 1500 | 2.5  | 1.3  | 0.3 | 0.8 | 1.2 | 8.1  | 16.2 | 33.6 | 11.6 | 4.9  | 2.5 | 2.2  | 1.3 | 3.7  | 4.3  | 5.5  |
|        | 1800 | 2.3  | 1.0  | 0.8 | 2.0 | 3.6 | 11.5 | 17.9 | 31.8 | 10.2 | 5.8  | 2.3 | 1.5  | 1.1 | 2.3  | 2.3  | 3.6  |
|        | 2100 | 2.2  | 2.8  | 1.0 | 4.3 | 6.6 | 21.1 | 17.7 | 17.5 | 6.6  | 6.5  | 4.4 | 2.7  | 1.0 | 0.9  | 1.6  | 3.0  |
|        | 2400 | 4.0  | 3.7  | 0.7 | 2.5 | 7.0 | 18.0 | 13.2 | 9.6  | 5.0  | 5.6  | 8.6 | 8.7  | 2.8 | 4.6  | 2.6  | 3.4  |
| AUTUMN | 0300 | 12.0 | 9.0  | 1.0 | 2.4 | 2.9 | 6.2  | 4.8  | 3.1  | 1.7  | 4.1  | 7.1 | 10.0 | 5.0 | 8.9  | 8.9  | 12.7 |
|        | 0600 | 15.1 | 12.3 | 1.1 | 1.9 | 2.6 | 6.3  | 3.9  | 2.1  | 1.4  | 3.5  | 7.5 | 8.2  | 3.7 | 8.2  | 9.9  | 12.5 |
|        | 0900 | 11.3 | 10.8 | 1.3 | 1.8 | 2.4 | 6.2  | 4.2  | 3.3  | 2.2  | 5.3  | 7.4 | 7.5  | 4.3 | 8.7  | 11.2 | 12.1 |
|        | 1200 | 5.1  | 3.5  | 1.0 | 1.5 | 1.9 | 6.2  | 6.9  | 11.5 | 6.4  | 8.8  | 6.2 | 5.4  | 4.2 | 7.9  | 12.2 | 11.4 |
|        | 1500 | 4.2  | 1.8  | 0.8 | 1.2 | 1.8 | 6.5  | 10.5 | 19.4 | 9.0  | 7.4  | 3.6 | 4.7  | 3.7 | 6.9  | 9.9  | 8.6  |
|        | 1800 | 4.4  | 2.7  | 0.6 | 1.9 | 3.3 | 11.6 | 13.2 | 14.8 | 6.0  | 6.4  | 5.2 | 3.2  | 3.0 | 5.5  | 8.8  | 9.4  |
|        | 2100 | 6.6  | 4.1  | 1.3 | 3.5 | 6.2 | 14.3 | 7.6  | 7.5  | 4.1  | 4.9  | 5.8 | 6.9  | 4.3 | 5.4  | 7.9  | 9.7  |
|        | 2400 | 9.3  | 6.1  | 1.2 | 3.1 | 3.3 | 9.6  | 5.3  | 3.3  | 1.8  | 5.8  | 7.7 | 9.1  | 5.5 | 9.1  | 8.0  | 11.9 |
| WINTER | 0300 | 14.0 | 9.4  | 1.1 | 1.7 | 1.2 | 2.3  | 1.6  | 1.3  | 0.9  | 3.1  | 4.8 | 9.0  | 6.5 | 11.3 | 15.0 | 17.0 |
|        | 0600 | 15.4 | 11.3 | 1.8 | 1.3 | 0.5 | 2.2  | 1.4  | 1.3  | 0.7  | 2.8  | 5.1 | 7.8  | 5.4 | 10.5 | 15.3 | 17.2 |
|        | 0900 | 13.3 | 9.5  | 1.7 | 1.5 | 0.9 | 1.8  | 2.3  | 1.1  | 0.9  | 3.1  | 5.1 | 8.9  | 5.2 | 10.9 | 16.3 | 17.5 |
|        | 1200 | 6.8  | 4.2  | 1.2 | 1.1 | 1.1 | 2.6  | 3.0  | 4.8  | 3.1  | 6.9  | 8.8 | 9.3  | 4.8 | 10.8 | 18.5 | 13.1 |
|        | 1500 | 4.3  | 2.7  | 0.7 | 1.0 | 1.3 | 3.7  | 5.6  | 8.1  | 7.0  | 8.1  | 7.5 | 6.5  | 4.9 | 9.3  | 16.2 | 13.0 |
|        | 1800 | 6.4  | 3.5  | 0.9 | 1.4 | 2.6 | 5.1  | 6.0  | 6.0  | 4.5  | 6.3  | 6.8 | 6.8  | 4.7 | 9.2  | 15.7 | 14.1 |
|        | 2100 | 10.2 | 5.7  | 1.2 | 1.7 | 2.7 | 4.4  | 3.0  | 2.5  | 1.5  | 4.2  | 6.1 | 7.9  | 6.5 | 10.4 | 16.5 | 15.4 |
|        | 2400 | 10.6 | 7.8  | 1.3 | 1.0 | 1.4 | 3.1  | 1.7  | 1.2  | 1.0  | 3.4  | 5.5 | 9.9  | 6.0 | 12.7 | 15.8 | 17.6 |
| SPRING | 0300 | 9.5  | 7.2  | 1.3 | 1.3 | 2.2 | 4.9  | 4.1  | 4.4  | 3.0  | 7.3  | 9.0 | 11.8 | 5.7 | 8.3  | 9.0  | 11.0 |
|        | 0600 | 12.5 | 8.7  | 1.0 | 2.0 | 2.3 | 5.1  | 3.3  | 3.7  | 2.7  | 6.3  | 9.0 | 9.6  | 5.6 | 7.5  | 9.2  | 11.5 |
|        | 0900 | 7.5  | 5.6  | 0.7 | 1.8 | 1.6 | 5.7  | 4.5  | 5.7  | 5.2  | 11.1 | 8.1 | 9.2  | 4.1 | 7.1  | 10.5 | 11.6 |
|        | 1200 | 3.6  | 1.8  | 0.5 | 0.5 | 1.0 | 4.4  | 7.2  | 17.7 | 8.8  | 8.8  | 6.7 | 7.3  | 3.1 | 7.3  | 12.1 | 9.1  |
|        | 1500 | 2.5  | 1.2  | 0.5 | 0.6 | 1.3 | 4.7  | 11.5 | 22.3 | 9.4  | 8.4  | 5.6 | 4.9  | 3.1 | 7.0  | 9.9  | 7.2  |
|        | 1800 | 4.4  | 2.2  | 0.7 | 1.1 | 2.3 | 8.7  | 13.6 | 18.7 | 7.5  | 8.4  | 6.6 | 4.2  | 3.1 | 5.0  | 7.1  | 6.4  |
|        | 2100 | 6.5  | 4.3  | 1.7 | 3.5 | 5.0 | 11.6 | 9.8  | 9.8  | 6.3  | 7.1  | 6.4 | 7.2  | 2.9 | 5.1  | 6.1  | 6.7  |
|        | 2400 | 8.0  | 5.2  | 0.7 | 2.6 | 2.4 | 7.9  | 5.4  | 6.5  | 3.1  | 7.1  | 8.8 | 10.0 | 5.7 | 8.6  | 7.9  | 10.1 |

TABLE 27m(1)  
 ONSLOW MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 15.9 | 16.5 | 15.7 | 15.2 | 14.8 | 12.1 | 12.3 | 16.4 | 17.2 | 15.9 | 12.8 | 11.7 | 10.6 | 12.9 | 14.9 | 13.5 |
|        | 0600 | 12.0 | 14.3 | 14.0 | 12.4 | 12.8 | 10.4 | 11.3 | 15.0 | 15.6 | 13.9 | 11.3 | 10.9 | 11.1 | 11.4 | 15.5 | 11.6 |
|        | 0900 | 16.1 | 17.8 | 19.2 | 18.5 | 16.8 | 17.8 | 17.9 | 19.6 | 18.2 | 15.7 | 13.9 | 13.9 | 11.9 | 12.5 | 15.9 | 11.8 |
|        | 1200 | 22.2 | 24.1 | 28.2 | 26.0 | 23.1 | 19.0 | 18.8 | 18.1 | 18.9 | 17.9 | 17.2 | 23.9 | 20.7 | 16.8 | 17.4 | 18.9 |
|        | 1500 | 30.0 | 37.9 | 32.1 | 44.2 | 24.1 | 25.1 | 24.9 | 23.3 | 21.3 | 22.8 | 30.4 | 30.7 | 26.3 | 23.6 | 23.3 | 25.4 |
|        | 1800 | 31.0 | 38.9 | 27.8 | 25.3 | 31.7 | 29.1 | 24.9 | 25.3 | 26.8 | 32.3 | 28.7 | 25.8 | 23.3 | 19.7 | 21.6 | 21.9 |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 15.3 | 18.0 | 18.5 | 18.1 | 17.1 | 15.3 | 13.9 | 18.3 | 20.2 | 18.7 | 14.8 | 12.1 | 12.3 | 12.1 | 18.7 | 19.3 |
| AUTUMN | 0300 | 12.0 | 14.1 | 12.7 | 12.8 | 10.8 | 10.2 | 11.3 | 12.8 | 13.9 | 12.0 | 11.2 | 11.3 | 8.1  | 8.3  | 15.7 | 14.3 |
|        | 0600 | 12.0 | 14.3 | 13.4 | 10.8 | 8.3  | 9.1  | 11.6 | 12.0 | 13.6 | 12.5 | 10.2 | 9.4  | 11.3 | 10.6 | 16.8 | 13.3 |
|        | 0900 | 16.1 | 16.9 | 17.2 | 14.6 | 13.8 | 15.8 | 17.6 | 17.6 | 15.6 | 13.4 | 13.9 | 10.3 | 10.3 | 12.7 | 19.8 | 16.0 |
|        | 1200 | 17.6 | 18.9 | 20.2 | 17.1 | 16.0 | 15.6 | 18.9 | 17.3 | 15.0 | 13.9 | 13.7 | 15.5 | 15.3 | 12.8 | 14.2 | 15.2 |
|        | 1500 | 21.6 | 22.0 | 34.5 | 23.7 | 21.8 | 20.2 | 18.2 | 19.2 | 17.7 | 17.4 | 18.5 | 23.2 | 19.9 | 17.5 | 18.3 | 19.7 |
|        | 1800 | 16.1 | 23.0 | 33.4 | 18.3 | 22.6 | 24.7 | 19.1 | 17.3 | 14.4 | 18.1 | 17.3 | 15.5 | 15.0 | 12.1 | 11.7 | 12.6 |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 13.1 | 15.5 | 14.1 | 15.9 | 12.5 | 12.0 | 12.3 | 13.9 | 14.2 | 13.2 | 11.8 | 12.0 | 10.7 | 10.8 | 13.4 | 15.1 |
| WINTER | 0300 | 12.5 | 12.7 | 10.7 | 9.3  | 7.3  | 8.9  | 10.7 | 12.3 | 12.7 | 12.2 | 10.9 | 8.3  | 10.7 | 11.5 | 13.4 | 10.6 |
|        | 0600 | 11.3 | 12.6 | 11.4 | 9.6  | 8.3  | 8.9  | 11.2 | 12.2 | 12.9 | 10.1 | 11.0 | 8.2  | 10.7 | 22.5 | 16.7 | 12.1 |
|        | 0900 | 13.2 | 17.9 | 16.4 | 13.7 | 13.2 | 15.6 | 17.8 | 17.7 | 12.5 | 12.2 | 13.2 | 13.0 | 13.2 | 13.7 | 18.4 | 11.4 |
|        | 1200 | 18.0 | 20.5 | 18.1 | 15.4 | 14.4 | 19.9 | 19.4 | 18.0 | 17.3 | 16.3 | 13.3 | 15.0 | 13.6 | 11.0 | 11.5 | 14.8 |
|        | 1500 | 19.1 | 20.9 | 15.2 | 13.7 | 16.9 | 19.6 | 19.9 | 19.0 | 18.4 | 19.1 | 19.4 | 19.5 | 16.4 | 13.7 | 14.9 | 17.4 |
|        | 1800 | 13.1 | 14.0 | 13.5 | 10.9 | 13.4 | 16.7 | 17.2 | 15.5 | 14.9 | 13.0 | 14.0 | 11.6 | 9.2  | 8.1  | 8.1  | 10.7 |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 11.4 | 9.8  | 12.5 | 8.4  | 9.0  | 10.6 | 11.1 | 12.2 | 12.5 | 12.5 | 11.3 | 9.1  | 6.8  | 8.9  | 9.0  | 8.5  |
| SPRING | 0300 | 11.1 | 4.4  | 9.4  | 9.3  | 9.2  | 12.1 | 11.2 | 17.6 | 17.8 | 15.8 | 12.9 | 10.8 | 11.6 | 8.4  | 6.4  | 8.7  |
|        | 0600 | 13.7 | 10.4 | 9.4  | 9.1  | 7.9  | 9.9  | 11.8 | 16.2 | 16.3 | 14.4 | 11.6 | 10.5 | 8.6  | 8.7  | 9.7  | 6.9  |
|        | 0900 | 14.6 | 18.2 | 20.1 | 18.2 | 19.2 | 21.6 | 23.7 | 21.8 | 20.3 | 16.0 | 12.5 | 13.9 | 11.8 | 11.6 | 12.9 | 13.8 |
|        | 1200 | 19.2 | 18.1 | 15.2 | 13.1 | 15.8 | 17.8 | 20.6 | 20.0 | 18.5 | 18.4 | 18.8 | 23.0 | 20.9 | 16.6 | 16.8 | 19.4 |
|        | 1500 | 24.6 | 20.8 | 27.8 | 12.8 | 17.5 | 20.3 | 22.1 | 21.3 | 21.8 | 22.8 | 27.5 | 29.6 | 25.9 | 21.7 | 23.1 | 25.5 |
|        | 1800 | 17.6 | 25.9 | 12.9 | 13.6 | 14.8 | 25.0 | 24.6 | 22.4 | 21.4 | 28.4 | 23.9 | 22.9 | 19.4 | 16.3 | 17.0 | 17.4 |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 29.6 | 10.5 | 7.4  | 19.1 | 7.1  | 12.0 | 17.5 | 18.0 | 18.6 | 18.2 | 14.6 | 11.7 | 10.8 | 10.8 | 9.1  | 11.8 |

TABLE 27m(11)  
 ONSLOW PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 1.2  | 1.5  | 1.1  | 1.8  | 1.0  | 2.5  | 2.1  | 11.2 | 19.3 | 27.6 | 12.6 | 9.1  | 2.8  | 2.1  | 2.1  | 2.0  |
|        | 0600 | 1.0  | 1.9  | 2.4  | 3.5  | 1.9  | 3.7  | 3.0  | 16.3 | 23.2 | 24.8 | 7.8  | 4.4  | 1.3  | 1.5  | 1.6  | 1.9  |
|        | 0900 | 3.3  | 4.9  | 4.2  | 5.7  | 3.3  | 7.2  | 9.5  | 23.5 | 12.5 | 8.8  | 2.9  | 4.1  | 2.8  | 2.8  | 1.8  | 2.9  |
|        | 1200 | 5.1  | 2.4  | 1.1  | 1.8  | 1.3  | 3.4  | 4.8  | 8.8  | 5.2  | 3.9  | 1.3  | 14.0 | 16.1 | 13.5 | 6.3  | 10.9 |
|        | 1500 | 1.4  | 0.9  | 0.4  | 0.5  | 0.2  | 1.0  | 1.1  | 2.8  | 2.5  | 1.8  | 1.8  | 33.1 | 25.7 | 15.0 | 6.7  | 5.2  |
|        | 1800 | 1.4  | 1.0  | 0.7  | 0.4  | 0.5  | 0.4  | 0.6  | 2.5  | 1.9  | 5.3  | 9.4  | 39.6 | 19.8 | 10.3 | 3.8  | 2.5  |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 1.9  | 1.5  | 1.1  | 1.1  | 0.6  | 1.5  | 1.0  | 5.9  | 14.0 | 33.0 | 15.5 | 11.4 | 3.9  | 3.5  | 1.7  | 2.4  |
| AUTUMN | 0300 | 0.9  | 1.8  | 2.9  | 3.9  | 3.0  | 7.5  | 7.1  | 21.6 | 19.2 | 18.3 | 6.2  | 3.6  | 0.6  | 1.1  | 1.0  | 1.4  |
|        | 0600 | 0.4  | 2.4  | 4.4  | 8.9  | 5.8  | 11.1 | 8.5  | 22.6 | 17.1 | 11.6 | 2.7  | 1.6  | 0.7  | 0.6  | 0.5  | 1.2  |
|        | 0900 | 1.2  | 5.0  | 9.7  | 14.2 | 8.1  | 15.5 | 12.7 | 20.4 | 5.5  | 3.2  | 0.9  | 0.7  | 0.6  | 0.7  | 0.8  | 1.1  |
|        | 1200 | 12.7 | 10.4 | 4.7  | 4.6  | 3.4  | 7.0  | 6.8  | 9.9  | 3.4  | 3.0  | 1.3  | 4.3  | 5.4  | 5.7  | 3.4  | 14.0 |
|        | 1500 | 4.8  | 1.8  | 0.8  | 1.0  | 1.0  | 2.5  | 2.5  | 5.2  | 3.5  | 2.7  | 1.5  | 17.4 | 14.0 | 18.0 | 10.6 | 12.7 |
|        | 1800 | 2.9  | 1.6  | 0.8  | 0.8  | 0.5  | 2.1  | 2.2  | 5.3  | 2.9  | 4.2  | 9.4  | 29.8 | 12.4 | 11.8 | 6.5  | 6.8  |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 0.9  | 2.4  | 2.1  | 1.9  | 1.2  | 5.3  | 5.6  | 14.5 | 18.3 | 25.3 | 9.3  | 6.7  | 1.1  | 2.1  | 1.5  | 1.7  |
| WINTER | 0300 | 1.4  | 2.0  | 3.5  | 6.8  | 5.2  | 13.0 | 13.3 | 27.9 | 14.4 | 8.6  | 1.0  | 0.9  | 0.3  | 0.7  | 0.5  | 0.6  |
|        | 0600 | 0.6  | 3.6  | 6.1  | 11.0 | 8.2  | 15.8 | 14.6 | 25.8 | 8.3  | 3.6  | 0.5  | 0.3  | 0.3  | 0.3  | 0.4  | 0.6  |
|        | 0900 | 1.5  | 5.6  | 12.9 | 15.4 | 10.3 | 23.7 | 13.2 | 12.1 | 2.2  | 0.9  | 0.4  | 0.3  | 0.2  | 0.2  | 0.4  | 0.6  |
|        | 1200 | 16.7 | 14.8 | 6.3  | 6.7  | 5.0  | 11.1 | 8.5  | 9.8  | 3.1  | 1.8  | 1.2  | 1.8  | 1.5  | 2.3  | 1.4  | 8.1  |
|        | 1500 | 9.3  | 3.2  | 0.7  | 1.1  | 1.3  | 4.9  | 5.6  | 8.1  | 3.2  | 2.6  | 1.0  | 8.4  | 8.9  | 12.1 | 12.0 | 17.8 |
|        | 1800 | 5.0  | 1.5  | 0.4  | 0.4  | 0.2  | 3.0  | 5.9  | 10.3 | 3.5  | 3.6  | 8.0  | 18.4 | 9.5  | 10.3 | 8.0  | 12.0 |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 1.8  | 3.2  | 1.3  | 3.3  | 2.2  | 8.2  | 10.0 | 26.6 | 17.3 | 15.0 | 4.0  | 2.5  | 0.5  | 0.8  | 1.2  | 2.3  |
| SPRING | 0300 | 0.1  | 0.4  | 0.8  | 0.9  | 0.6  | 3.0  | 3.9  | 19.9 | 29.3 | 28.7 | 7.0  | 2.7  | 0.8  | 0.8  | 0.6  | 0.5  |
|        | 0600 | 0.2  | 0.5  | 1.1  | 3.1  | 2.1  | 4.5  | 5.5  | 27.7 | 29.6 | 19.0 | 3.7  | 1.2  | 0.4  | 0.7  | 0.3  | 0.3  |
|        | 0900 | 1.5  | 3.1  | 4.2  | 5.4  | 5.0  | 14.0 | 17.4 | 26.1 | 10.2 | 6.6  | 1.5  | 1.3  | 1.1  | 1.1  | 0.6  | 1.0  |
|        | 1200 | 5.4  | 1.7  | 0.7  | 0.8  | 2.0  | 5.8  | 8.2  | 12.9 | 7.6  | 6.6  | 1.7  | 11.5 | 11.5 | 9.5  | 4.1  | 9.9  |
|        | 1500 | 0.9  | 0.2  | 0.0  | 0.3  | 0.3  | 1.5  | 2.3  | 5.7  | 4.0  | 4.2  | 3.4  | 14.3 | 20.5 | 11.5 | 5.8  | 5.2  |
|        | 1800 | 0.3  | 0.1  | 0.1  | 0.0  | 0.1  | 0.8  | 2.3  | 6.3  | 4.2  | 7.5  | 14.3 | 36.0 | 15.2 | 8.8  | 2.6  | 1.7  |
|        | 2100 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|        | 2400 | 0.1  | 0.4  | 0.1  | 0.2  | 0.3  | 1.1  | 1.8  | 12.3 | 23.4 | 39.4 | 10.8 | 5.6  | 1.9  | 1.4  | 0.5  | 0.7  |

TABLE 27n(1)  
PERTH MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 11.0 | 10.4 | 15.4 | 16.2 | 18.0 | 13.4 | 12.6 | 13.2 | 13.6 | 14.4 | 10.4 | 11.0 | 12.2 | 9.6  | 12.0 | 6.7  |
|        | 0600 | 7.4  | 12.1 | 15.3 | 16.4 | 15.9 | 10.5 | 12.1 | 12.0 | 15.0 | 12.5 | 12.6 | 11.3 | 11.4 | 10.7 | 9.4  | 7.3  |
|        | 0900 | 16.8 | 18.3 | 19.4 | 19.1 | 16.4 | 12.4 | 12.9 | 13.4 | 13.4 | 14.9 | 12.9 | 15.1 | 14.7 | 14.4 | 11.7 | 12.3 |
|        | 1200 | 14.8 | 15.1 | 17.5 | 16.9 | 15.6 | 12.9 | 11.1 | 12.8 | 18.2 | 19.3 | 17.6 | 17.8 | 19.5 | 19.9 | 17.0 | 12.3 |
|        | 1500 | 14.8 | 15.5 | 15.0 | 17.8 | 17.3 | 16.2 | 15.3 | 19.9 | 23.1 | 23.5 | 20.9 | 20.1 | 21.3 | 25.1 | 0.0  | 13.5 |
|        | 1800 | 16.9 | 11.5 | 21.2 | 18.4 | 20.2 | 19.9 | 17.5 | 21.3 | 21.8 | 20.8 | 15.7 | 16.5 | 16.2 | 14.8 | 17.6 | 14.6 |
|        | 2100 | 6.3  | 7.1  | 10.5 | 14.7 | 15.6 | 15.9 | 12.4 | 14.4 | 14.9 | 13.7 | 10.2 | 9.2  | 10.1 | 11.3 | 5.6  | 5.7  |
|        | 2400 | 6.5  | 9.6  | 14.5 | 18.2 | 20.6 | 14.9 | 13.6 | 14.2 | 13.7 | 12.1 | 9.8  | 10.3 | 12.1 | 11.6 | 9.6  | 7.3  |
| AUTUMN | 0300 | 9.9  | 10.4 | 14.3 | 14.9 | 15.4 | 11.2 | 9.9  | 11.7 | 11.2 | 14.8 | 17.4 | 16.6 | 18.9 | 13.0 | 11.1 | 9.7  |
|        | 0600 | 10.3 | 10.1 | 14.4 | 15.0 | 14.3 | 10.1 | 9.8  | 11.0 | 13.0 | 16.9 | 15.0 | 17.5 | 20.0 | 15.3 | 11.4 | 9.8  |
|        | 0900 | 9.8  | 13.4 | 15.6 | 17.0 | 14.0 | 10.0 | 11.3 | 11.9 | 14.0 | 14.1 | 20.3 | 18.6 | 24.2 | 15.3 | 14.3 | 10.3 |
|        | 1200 | 14.7 | 15.4 | 16.4 | 16.0 | 15.4 | 10.5 | 9.8  | 12.4 | 13.1 | 15.2 | 17.1 | 18.4 | 18.8 | 17.9 | 15.3 | 12.8 |
|        | 1500 | 15.4 | 13.7 | 16.4 | 15.8 | 14.8 | 13.1 | 9.6  | 12.9 | 17.4 | 18.5 | 17.1 | 17.6 | 19.1 | 20.4 | 20.8 | 15.6 |
|        | 1800 | 8.7  | 12.3 | 13.5 | 13.4 | 14.6 | 14.0 | 12.1 | 13.2 | 15.7 | 14.9 | 13.0 | 13.7 | 14.4 | 15.7 | 19.1 | 9.7  |
|        | 2100 | 10.0 | 8.4  | 10.7 | 10.2 | 11.7 | 11.0 | 10.6 | 10.8 | 11.6 | 9.7  | 13.0 | 13.0 | 14.2 | 13.5 | 14.2 | 12.9 |
|        | 2400 | 10.7 | 9.5  | 12.6 | 15.5 | 15.8 | 11.3 | 10.2 | 11.3 | 10.9 | 15.2 | 16.6 | 15.0 | 16.9 | 14.6 | 12.3 | 8.4  |
| WINTER | 0300 | 11.2 | 9.8  | 11.0 | 10.7 | 8.8  | 7.6  | 10.8 | 10.7 | 14.3 | 18.2 | 19.9 | 20.8 | 23.8 | 18.6 | 13.1 | 11.5 |
|        | 0600 | 10.9 | 10.3 | 11.7 | 10.7 | 9.2  | 7.1  | 9.5  | 10.0 | 13.8 | 19.9 | 18.7 | 20.6 | 24.0 | 17.4 | 13.7 | 10.8 |
|        | 0900 | 11.2 | 10.7 | 11.8 | 11.7 | 7.9  | 7.6  | 10.7 | 13.0 | 16.7 | 19.7 | 21.7 | 21.8 | 23.7 | 19.6 | 14.5 | 11.5 |
|        | 1200 | 15.9 | 14.3 | 14.6 | 13.0 | 10.7 | 8.6  | 12.9 | 12.6 | 15.8 | 18.7 | 22.0 | 22.7 | 24.6 | 21.0 | 17.2 | 16.9 |
|        | 1500 | 14.7 | 13.7 | 14.0 | 14.3 | 12.5 | 8.7  | 9.4  | 12.7 | 14.1 | 15.8 | 18.6 | 19.4 | 22.5 | 20.6 | 20.3 | 17.0 |
|        | 1800 | 12.6 | 9.8  | 10.6 | 11.4 | 11.2 | 9.4  | 8.7  | 10.9 | 11.9 | 11.5 | 15.6 | 16.7 | 18.8 | 16.8 | 15.8 | 11.2 |
|        | 2100 | 11.1 | 9.0  | 8.2  | 9.6  | 6.8  | 7.0  | 9.1  | 10.2 | 12.2 | 16.0 | 15.7 | 15.1 | 19.2 | 14.4 | 13.7 | 11.6 |
|        | 2400 | 10.2 | 9.0  | 10.4 | 9.5  | 8.5  | 8.3  | 8.8  | 10.2 | 13.2 | 17.6 | 20.2 | 17.5 | 21.4 | 18.8 | 12.7 | 11.0 |
| SPRING | 0300 | 8.3  | 8.7  | 13.7 | 14.2 | 15.6 | 9.3  | 9.8  | 11.4 | 13.3 | 14.6 | 16.2 | 16.0 | 16.9 | 12.5 | 10.2 | 9.0  |
|        | 0600 | 8.9  | 9.3  | 14.3 | 14.4 | 14.1 | 8.8  | 10.0 | 11.4 | 13.8 | 15.9 | 17.6 | 15.3 | 16.1 | 13.7 | 11.2 | 7.7  |
|        | 0900 | 12.2 | 15.5 | 15.6 | 16.2 | 13.4 | 9.6  | 12.3 | 13.7 | 13.9 | 19.8 | 19.0 | 19.4 | 20.5 | 17.1 | 13.4 | 12.7 |
|        | 1200 | 14.3 | 14.6 | 16.2 | 16.5 | 13.9 | 11.8 | 10.2 | 13.8 | 16.5 | 18.6 | 18.6 | 19.2 | 21.7 | 21.6 | 18.3 | 15.9 |
|        | 1500 | 13.0 | 13.6 | 18.7 | 16.8 | 18.7 | 14.2 | 15.5 | 18.9 | 22.0 | 21.2 | 19.5 | 19.8 | 22.5 | 24.7 | 22.4 | 17.8 |
|        | 1800 | 7.2  | 11.2 | 11.4 | 15.6 | 18.0 | 16.3 | 14.6 | 18.0 | 18.3 | 17.4 | 15.9 | 15.1 | 18.7 | 19.3 | 13.7 | 8.7  |
|        | 2100 | 5.6  | 7.1  | 9.8  | 13.3 | 13.9 | 13.3 | 11.9 | 12.1 | 14.3 | 12.8 | 12.6 | 13.3 | 13.6 | 17.1 | 9.4  | 7.3  |
|        | 2400 | 9.9  | 8.1  | 15.1 | 14.7 | 16.2 | 10.2 | 10.8 | 12.1 | 12.3 | 14.3 | 15.2 | 15.2 | 17.9 | 13.4 | 11.7 | 7.5  |

TABLE 27n(11)  
PERTH PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW | NW   | NNW | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|-----|------|
| SUMMER | 0300 | 0.8  | 1.9  | 6.1  | 18.8 | 14.2 | 10.2 | 12.7 | 17.6 | 6.8  | 4.0  | 2.0  | 1.8  | 1.2 | 1.1  | 0.6 | 0.5  |
|        | 0600 | 1.4  | 4.5  | 11.2 | 19.0 | 12.9 | 10.1 | 12.3 | 14.2 | 3.8  | 3.8  | 1.4  | 1.8  | 1.4 | 1.1  | 0.6 | 0.7  |
|        | 0900 | 1.9  | 7.0  | 12.4 | 19.3 | 8.6  | 12.1 | 8.5  | 10.1 | 4.5  | 5.9  | 2.3  | 2.4  | 1.6 | 1.6  | 0.7 | 1.2  |
|        | 1200 | 1.4  | 4.3  | 5.9  | 11.1 | 7.7  | 8.9  | 3.9  | 6.4  | 7.7  | 23.1 | 8.4  | 5.0  | 2.7 | 2.0  | 0.5 | 1.0  |
|        | 1500 | 0.2  | 1.0  | 1.5  | 4.7  | 4.6  | 6.0  | 2.4  | 4.3  | 13.9 | 40.6 | 11.6 | 5.6  | 2.5 | 0.8  | 0.0 | 0.2  |
|        | 1800 | 0.3  | 0.3  | 0.6  | 3.3  | 4.5  | 3.5  | 1.0  | 9.1  | 25.9 | 39.7 | 5.4  | 3.4  | 1.3 | 1.2  | 0.1 | 0.3  |
|        | 2100 | 0.6  | 0.6  | 0.5  | 3.7  | 4.9  | 6.0  | 6.5  | 25.2 | 27.4 | 16.6 | 1.5  | 2.4  | 1.3 | 1.5  | 0.1 | 1.2  |
|        | 2400 | 0.7  | 1.3  | 2.3  | 10.2 | 12.8 | 9.6  | 10.9 | 26.6 | 11.1 | 6.3  | 1.8  | 2.6  | 1.5 | 0.9  | 0.5 | 0.8  |
| AUTUMN | 0300 | 5.1  | 8.1  | 11.7 | 13.8 | 9.6  | 9.2  | 8.7  | 9.6  | 3.5  | 2.4  | 2.5  | 3.8  | 2.9 | 2.1  | 2.3 | 4.7  |
|        | 0600 | 6.2  | 11.3 | 14.1 | 14.4 | 8.8  | 8.4  | 7.6  | 7.8  | 2.4  | 2.7  | 2.1  | 3.8  | 2.2 | 1.9  | 1.9 | 4.4  |
|        | 0900 | 5.8  | 13.9 | 14.3 | 16.9 | 7.0  | 10.1 | 5.1  | 5.4  | 1.5  | 3.0  | 2.0  | 3.5  | 1.8 | 2.6  | 2.0 | 5.2  |
|        | 1200 | 4.0  | 8.8  | 8.1  | 11.5 | 6.2  | 8.0  | 4.6  | 6.8  | 4.4  | 9.1  | 4.8  | 6.4  | 4.5 | 5.9  | 3.1 | 3.9  |
|        | 1500 | 1.9  | 3.1  | 3.8  | 6.9  | 6.0  | 6.5  | 2.9  | 5.4  | 8.7  | 22.5 | 10.0 | 8.9  | 5.4 | 5.1  | 1.9 | 1.1  |
|        | 1800 | 0.9  | 1.3  | 2.2  | 6.9  | 7.1  | 5.4  | 2.6  | 7.7  | 19.0 | 24.6 | 6.0  | 6.6  | 3.1 | 4.0  | 1.6 | 0.7  |
|        | 2100 | 1.9  | 2.9  | 3.4  | 7.4  | 5.2  | 10.6 | 8.8  | 24.8 | 10.1 | 6.6  | 2.9  | 6.3  | 2.4 | 2.2  | 1.9 | 2.8  |
|        | 2400 | 3.7  | 5.4  | 6.7  | 11.5 | 8.1  | 10.7 | 11.1 | 16.6 | 5.3  | 2.9  | 2.6  | 4.5  | 3.0 | 2.1  | 2.2 | 3.4  |
| WINTER | 0300 | 10.5 | 14.7 | 8.7  | 7.6  | 3.1  | 5.8  | 3.1  | 3.7  | 1.8  | 3.3  | 5.3  | 8.8  | 5.2 | 3.6  | 4.7 | 10.3 |
|        | 0600 | 12.0 | 17.3 | 8.8  | 7.8  | 3.1  | 4.7  | 2.8  | 3.3  | 1.5  | 2.9  | 4.6  | 8.8  | 4.8 | 3.7  | 4.1 | 9.7  |
|        | 0900 | 12.0 | 18.7 | 10.2 | 7.5  | 2.6  | 4.3  | 2.1  | 2.7  | 1.1  | 3.4  | 4.3  | 8.2  | 4.2 | 3.2  | 4.5 | 10.9 |
|        | 1200 | 7.9  | 10.8 | 6.9  | 6.5  | 2.2  | 5.1  | 2.6  | 5.0  | 2.4  | 5.5  | 5.1  | 9.9  | 6.0 | 8.3  | 6.3 | 9.6  |
|        | 1500 | 3.9  | 5.8  | 5.1  | 5.3  | 1.8  | 3.5  | 2.1  | 5.8  | 5.4  | 10.7 | 7.5  | 13.4 | 8.7 | 11.5 | 4.7 | 4.8  |
|        | 1800 | 3.0  | 4.5  | 4.1  | 8.6  | 2.9  | 2.1  | 2.2  | 8.4  | 7.6  | 12.4 | 6.7  | 12.3 | 7.4 | 8.4  | 4.6 | 4.7  |
|        | 2100 | 3.6  | 6.7  | 7.5  | 6.2  | 3.2  | 5.4  | 4.4  | 8.8  | 2.6  | 4.3  | 5.3  | 16.3 | 7.7 | 5.3  | 4.0 | 8.4  |
|        | 2400 | 8.6  | 11.6 | 7.4  | 7.2  | 3.0  | 6.5  | 5.1  | 5.4  | 1.4  | 3.0  | 4.3  | 11.2 | 5.4 | 3.4  | 4.9 | 11.5 |
| SPRING | 0300 | 3.6  | 6.1  | 5.3  | 11.2 | 8.0  | 10.0 | 10.9 | 14.9 | 4.2  | 4.7  | 4.3  | 6.8  | 3.2 | 2.6  | 1.9 | 2.4  |
|        | 0600 | 5.4  | 9.6  | 10.0 | 12.7 | 7.1  | 9.1  | 9.0  | 11.0 | 2.7  | 4.5  | 3.2  | 6.5  | 2.6 | 1.9  | 1.4 | 3.4  |
|        | 0900 | 3.6  | 8.5  | 9.8  | 12.6 | 6.0  | 9.9  | 7.1  | 8.6  | 3.9  | 6.5  | 4.3  | 6.0  | 3.6 | 4.1  | 2.2 | 3.5  |
|        | 1200 | 1.8  | 4.1  | 3.6  | 6.7  | 4.2  | 5.8  | 4.2  | 7.8  | 7.7  | 19.0 | 8.9  | 10.6 | 5.9 | 6.6  | 1.7 | 1.4  |
|        | 1500 | 0.5  | 1.5  | 1.5  | 3.4  | 2.4  | 3.0  | 1.4  | 3.6  | 11.2 | 33.9 | 13.5 | 11.7 | 6.6 | 5.1  | 0.5 | 0.4  |
|        | 1800 | 0.3  | 0.9  | 0.7  | 2.8  | 2.8  | 2.2  | 1.3  | 7.9  | 24.8 | 29.5 | 7.2  | 9.1  | 5.4 | 3.7  | 0.6 | 0.9  |
|        | 2100 | 2.0  | 1.7  | 1.2  | 3.5  | 3.5  | 5.2  | 5.2  | 29.0 | 17.1 | 9.7  | 2.7  | 9.7  | 4.5 | 2.1  | 1.5 | 1.5  |
|        | 2400 | 1.6  | 2.5  | 2.4  | 7.1  | 5.5  | 9.3  | 10.9 | 26.0 | 7.3  | 5.5  | 3.8  | 7.6  | 4.2 | 3.1  | 1.3 | 2.0  |

TABLE 27o(i)  
RICHMOND MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 5.1  | 6.7  | 7.4  | 3.7  | 3.7  | 9.6  | 9.9  | 8.2  | 8.9  | 8.2  | 8.4  | 6.8  | 5.6  | 7.9  | 5.6  | 8.4  |
|        | 0600 | 10.7 | 6.6  | 10.0 | 10.2 | 6.4  | 9.7  | 11.7 | 10.5 | 10.1 | 8.6  | 6.4  | 10.5 | 6.6  | 11.1 | 9.3  | 10.8 |
|        | 0900 | 8.7  | 7.4  | 7.5  | 6.2  | 8.2  | 10.3 | 12.9 | 14.0 | 12.4 | 10.0 | 15.1 | 15.6 | 16.2 | 14.4 | 12.2 | 10.4 |
|        | 1200 | 10.7 | 9.5  | 9.2  | 8.9  | 12.5 | 13.6 | 14.7 | 14.4 | 14.6 | 13.5 | 19.2 | 22.2 | 19.2 | 20.2 | 15.3 | 10.7 |
|        | 1500 | 11.3 | 11.4 | 13.2 | 13.7 | 15.1 | 17.5 | 17.1 | 15.9 | 12.3 | 14.9 | 22.9 | 24.5 | 24.7 | 20.2 | 19.4 | 12.9 |
|        | 1800 | 13.3 | 12.9 | 16.6 | 15.3 | 14.9 | 16.4 | 17.6 | 13.8 | 14.3 | 15.8 | 20.3 | 22.5 | 17.8 | 14.4 | 16.8 | 13.6 |
|        | 2100 | 8.1  | 7.8  | 7.4  | 7.8  | 8.6  | 9.8  | 9.5  | 11.3 | 11.2 | 8.4  | 14.1 | 12.6 | 12.4 | 13.3 | 7.9  | 11.5 |
|        | 2400 | 4.3  | 5.8  | 5.2  | 9.0  | 5.9  | 8.1  | 7.3  | 9.8  | 8.5  | 6.6  | 6.8  | 8.9  | 13.0 | 6.8  | 6.3  | 7.4  |
| AUTUMN | 0300 | 6.0  | 6.5  | 5.0  | 0.0  | 3.7  | 8.3  | 7.8  | 9.4  | 8.2  | 6.9  | 8.2  | 7.3  | 12.1 | 8.5  | 6.5  | 6.3  |
|        | 0600 | 11.6 | 7.7  | 8.2  | 7.0  | 6.8  | 10.4 | 10.2 | 11.2 | 12.7 | 9.4  | 11.5 | 11.3 | 12.9 | 12.5 | 11.4 | 10.8 |
|        | 0900 | 10.9 | 7.4  | 5.9  | 4.9  | 10.7 | 8.3  | 11.8 | 12.0 | 14.7 | 12.0 | 14.2 | 15.3 | 15.4 | 14.6 | 15.3 | 10.8 |
|        | 1200 | 9.2  | 8.7  | 7.8  | 7.6  | 10.3 | 12.6 | 13.1 | 14.2 | 15.8 | 16.4 | 19.1 | 22.3 | 24.3 | 19.3 | 16.8 | 12.1 |
|        | 1500 | 9.2  | 9.3  | 9.5  | 9.1  | 12.9 | 15.5 | 15.6 | 14.9 | 15.0 | 17.6 | 22.4 | 21.6 | 23.2 | 20.3 | 15.2 | 10.2 |
|        | 1800 | 8.3  | 9.2  | 11.2 | 9.3  | 10.5 | 11.8 | 12.6 | 12.5 | 11.7 | 12.1 | 12.1 | 14.2 | 15.1 | 10.2 | 15.3 | 9.1  |
|        | 2100 | 9.7  | 6.9  | 6.0  | 5.6  | 8.2  | 10.6 | 10.5 | 9.9  | 9.7  | 8.3  | 8.8  | 11.7 | 10.5 | 8.7  | 9.8  | 7.5  |
|        | 2400 | 10.2 | 6.5  | 6.2  | 9.3  | 1.9  | 2.8  | 6.5  | 8.0  | 9.5  | 5.8  | 6.8  | 12.4 | 12.1 | 6.9  | 7.4  | 7.6  |
| WINTER | 0300 | 8.2  | 10.3 | 7.4  | 5.1  | 3.7  | 17.6 | 11.1 | 10.8 | 11.1 | 10.2 | 13.7 | 12.6 | 14.0 | 13.3 | 9.5  | 9.1  |
|        | 0600 | 10.1 | 11.4 | 7.3  | 5.8  | 11.8 | 8.8  | 17.3 | 14.6 | 15.0 | 12.3 | 12.4 | 16.7 | 15.1 | 12.3 | 11.1 | 10.3 |
|        | 0900 | 12.1 | 7.8  | 7.2  | 5.4  | 3.9  | 6.7  | 14.2 | 18.6 | 17.2 | 15.9 | 17.7 | 20.4 | 19.3 | 15.0 | 14.2 | 12.7 |
|        | 1200 | 12.5 | 8.7  | 7.0  | 6.8  | 8.5  | 9.9  | 13.8 | 16.5 | 17.9 | 17.2 | 23.2 | 24.8 | 27.1 | 22.4 | 18.4 | 14.8 |
|        | 1500 | 9.7  | 9.7  | 8.7  | 7.7  | 8.5  | 12.3 | 12.4 | 14.4 | 16.3 | 16.5 | 23.6 | 25.0 | 25.8 | 22.9 | 19.6 | 13.0 |
|        | 1800 | 14.1 | 7.9  | 6.9  | 7.1  | 8.2  | 8.1  | 10.2 | 11.4 | 12.5 | 10.9 | 13.8 | 14.7 | 14.8 | 14.6 | 10.5 | 9.5  |
|        | 2100 | 8.9  | 7.8  | 7.1  | 8.1  | 12.1 | 10.2 | 18.3 | 10.4 | 12.1 | 9.9  | 10.5 | 10.4 | 10.4 | 10.7 | 9.8  | 9.5  |
|        | 2400 | 8.4  | 8.6  | 7.1  | 14.8 | 0.0  | 4.3  | 13.9 | 7.8  | 10.6 | 10.0 | 8.0  | 12.8 | 10.8 | 12.9 | 12.4 | 10.2 |
| SPRING | 0300 | 12.4 | 10.2 | 7.8  | 6.5  | 5.6  | 6.5  | 9.3  | 8.3  | 9.6  | 9.6  | 12.6 | 11.2 | 11.9 | 8.7  | 15.0 | 11.0 |
|        | 0600 | 10.7 | 8.8  | 7.4  | 6.1  | 6.2  | 11.1 | 10.7 | 9.4  | 11.6 | 9.8  | 10.4 | 12.6 | 13.5 | 11.2 | 12.3 | 13.4 |
|        | 0900 | 11.1 | 7.5  | 6.2  | 6.3  | 6.2  | 9.7  | 13.5 | 14.1 | 15.8 | 14.1 | 20.7 | 22.3 | 21.9 | 17.6 | 16.1 | 14.1 |
|        | 1200 | 12.9 | 9.8  | 9.1  | 8.7  | 10.6 | 12.9 | 14.4 | 15.0 | 15.9 | 17.7 | 22.7 | 29.3 | 27.6 | 28.2 | 22.5 | 13.7 |
|        | 1500 | 12.5 | 11.7 | 12.3 | 13.9 | 15.0 | 16.5 | 17.5 | 16.9 | 17.4 | 19.7 | 27.2 | 27.7 | 28.6 | 25.0 | 21.0 | 17.3 |
|        | 1800 | 11.6 | 10.9 | 12.4 | 13.5 | 13.3 | 14.9 | 15.5 | 15.1 | 14.3 | 15.3 | 20.2 | 19.2 | 18.8 | 16.2 | 14.0 | 13.7 |
|        | 2100 | 9.9  | 9.6  | 6.9  | 6.0  | 10.9 | 9.4  | 10.4 | 9.7  | 10.0 | 10.3 | 11.4 | 13.3 | 11.5 | 10.9 | 9.4  | 10.5 |
|        | 2400 | 11.3 | 8.2  | 6.6  | 3.7  | 10.5 | 6.0  | 8.0  | 6.3  | 9.5  | 7.6  | 6.5  | 15.6 | 11.4 | 8.5  | 11.1 | 11.1 |

TABLE 27o(ii)  
RICHMOND PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW | W    | WNW  | NW   | NNW | N    |
|--------|------|-----|------|------|------|------|------|------|------|------|------|-----|------|------|------|-----|------|
| SUMMER | 0300 | 1.7 | 4.8  | 1.7  | 1.7  | 0.4  | 2.6  | 4.8  | 21.7 | 23.5 | 18.7 | 4.8 | 3.9  | 0.4  | 3.0  | 2.6 | 3.5  |
|        | 0600 | 2.8 | 5.5  | 1.6  | 1.6  | 2.0  | 6.3  | 7.1  | 19.7 | 18.3 | 18.3 | 5.3 | 5.0  | 1.4  | 1.3  | 1.1 | 2.7  |
|        | 0900 | 6.0 | 12.5 | 7.0  | 4.2  | 3.4  | 7.9  | 7.7  | 16.3 | 10.6 | 8.3  | 2.0 | 3.0  | 1.0  | 3.0  | 1.8 | 5.4  |
|        | 1200 | 6.4 | 14.8 | 9.1  | 10.1 | 5.1  | 14.5 | 7.8  | 6.7  | 4.1  | 3.1  | 2.0 | 2.7  | 2.0  | 3.6  | 2.0 | 5.9  |
|        | 1500 | 4.0 | 11.0 | 9.9  | 13.9 | 9.0  | 17.1 | 8.1  | 5.2  | 2.2  | 3.5  | 3.1 | 4.3  | 1.7  | 2.8  | 1.1 | 3.1  |
|        | 1800 | 1.5 | 7.9  | 14.1 | 21.9 | 12.1 | 14.1 | 6.5  | 5.3  | 1.5  | 2.7  | 2.3 | 3.6  | 1.7  | 1.5  | 1.1 | 2.2  |
|        | 2100 | 3.1 | 7.3  | 12.6 | 14.2 | 7.0  | 12.7 | 10.1 | 11.4 | 6.3  | 5.4  | 2.0 | 3.2  | 1.3  | 1.2  | 0.4 | 1.7  |
|        | 2400 | 1.3 | 3.5  | 6.6  | 2.6  | 2.6  | 4.8  | 7.5  | 16.3 | 17.2 | 21.6 | 4.0 | 4.0  | 1.8  | 1.3  | 2.2 | 2.6  |
| AUTUMN | 0300 | 4.4 | 3.9  | 1.5  | 0.0  | 0.5  | 2.9  | 2.4  | 12.7 | 23.4 | 21.0 | 4.4 | 6.3  | 2.0  | 6.8  | 1.0 | 6.8  |
|        | 0600 | 3.9 | 5.8  | 0.9  | 1.7  | 0.6  | 1.5  | 2.8  | 9.7  | 24.0 | 18.2 | 7.5 | 6.0  | 3.0  | 5.6  | 4.3 | 4.5  |
|        | 0900 | 3.8 | 5.5  | 3.6  | 4.2  | 1.2  | 4.4  | 5.0  | 14.0 | 20.2 | 12.9 | 3.9 | 4.6  | 2.7  | 3.6  | 3.7 | 6.8  |
|        | 1200 | 6.1 | 10.6 | 6.6  | 6.3  | 4.3  | 7.8  | 7.4  | 12.7 | 8.4  | 5.7  | 3.9 | 5.3  | 2.8  | 2.8  | 3.4 | 6.0  |
|        | 1500 | 4.3 | 12.8 | 7.9  | 9.0  | 6.5  | 14.5 | 7.4  | 7.2  | 4.1  | 3.4  | 3.8 | 6.0  | 3.4  | 3.4  | 2.3 | 4.1  |
|        | 1800 | 1.3 | 5.2  | 12.6 | 13.8 | 8.4  | 13.3 | 7.5  | 7.9  | 3.6  | 4.4  | 4.4 | 7.0  | 3.4  | 2.9  | 1.8 | 2.4  |
|        | 2100 | 1.7 | 4.7  | 6.0  | 2.1  | 1.3  | 4.5  | 4.0  | 14.5 | 14.0 | 14.3 | 7.9 | 9.4  | 3.2  | 5.7  | 3.0 | 3.6  |
|        | 2400 | 1.3 | 5.2  | 1.9  | 0.6  | 0.6  | 2.6  | 1.3  | 11.0 | 19.4 | 22.6 | 3.9 | 10.3 | 1.3  | 6.5  | 3.9 | 7.7  |
| WINTER | 0300 | 5.1 | 7.4  | 2.9  | 1.5  | 0.4  | 0.7  | 0.4  | 5.5  | 12.5 | 13.2 | 4.4 | 10.3 | 5.9  | 11.8 | 7.0 | 11.0 |
|        | 0600 | 5.4 | 4.7  | 3.3  | 2.3  | 0.4  | 1.6  | 0.8  | 7.1  | 10.7 | 15.1 | 6.5 | 10.9 | 7.2  | 8.5  | 6.6 | 8.9  |
|        | 0900 | 5.4 | 7.1  | 3.3  | 2.0  | 1.0  | 1.9  | 0.9  | 6.7  | 14.4 | 12.3 | 5.3 | 10.4 | 5.5  | 8.5  | 5.7 | 9.6  |
|        | 1200 | 4.0 | 7.4  | 4.0  | 3.7  | 2.3  | 3.6  | 5.5  | 11.3 | 11.0 | 9.8  | 6.5 | 11.7 | 5.1  | 4.4  | 4.1 | 5.8  |
|        | 1500 | 3.4 | 8.1  | 4.2  | 5.3  | 3.1  | 6.3  | 5.6  | 10.3 | 7.3  | 7.0  | 7.3 | 12.6 | 6.3  | 5.0  | 3.3 | 4.9  |
|        | 1800 | 2.1 | 4.6  | 2.3  | 3.3  | 3.5  | 6.8  | 5.7  | 7.7  | 6.2  | 7.7  | 9.2 | 16.6 | 10.2 | 7.0  | 3.7 | 3.4  |
|        | 2100 | 3.3 | 4.0  | 1.5  | 0.4  | 0.3  | 0.8  | 1.1  | 6.9  | 12.4 | 12.8 | 9.5 | 18.2 | 7.3  | 9.8  | 6.7 | 5.0  |
|        | 2400 | 4.1 | 5.9  | 2.7  | 0.5  | 0.0  | 1.4  | 0.9  | 6.4  | 11.0 | 11.9 | 7.3 | 11.9 | 11.0 | 6.8  | 5.9 | 12.3 |
| SPRING | 0300 | 2.8 | 5.0  | 4.1  | 1.3  | 0.6  | 3.8  | 2.8  | 9.8  | 12.9 | 18.6 | 8.5 | 8.8  | 6.6  | 5.0  | 3.2 | 6.0  |
|        | 0600 | 4.8 | 4.1  | 3.4  | 1.0  | 0.4  | 2.0  | 3.1  | 8.3  | 15.7 | 15.8 | 7.0 | 11.3 | 4.6  | 6.4  | 4.5 | 7.4  |
|        | 0900 | 7.1 | 9.3  | 3.5  | 4.4  | 2.1  | 4.2  | 5.8  | 11.5 | 11.2 | 9.6  | 4.5 | 6.6  | 3.6  | 5.0  | 4.6 | 7.1  |
|        | 1200 | 5.5 | 11.2 | 7.9  | 7.1  | 4.8  | 8.1  | 7.0  | 7.4  | 4.4  | 5.0  | 4.2 | 8.5  | 4.0  | 4.5  | 4.3 | 6.3  |
|        | 1500 | 2.9 | 8.3  | 7.0  | 10.1 | 7.1  | 14.5 | 7.2  | 4.7  | 2.2  | 3.4  | 5.9 | 10.3 | 4.1  | 5.4  | 3.1 | 3.8  |
|        | 1800 | 1.7 | 4.9  | 11.9 | 12.9 | 9.8  | 14.0 | 5.8  | 4.1  | 2.5  | 3.5  | 5.8 | 11.3 | 3.9  | 2.5  | 2.3 | 3.0  |
|        | 2100 | 3.1 | 4.3  | 5.8  | 6.1  | 3.2  | 7.2  | 7.6  | 11.8 | 7.1  | 8.6  | 7.9 | 11.1 | 4.8  | 5.0  | 2.3 | 4.1  |
|        | 2400 | 3.6 | 8.4  | 2.8  | 1.2  | 1.2  | 1.6  | 4.8  | 8.0  | 14.4 | 16.8 | 4.8 | 11.2 | 5.6  | 7.6  | 2.0 | 6.0  |

TABLE 27p(i)  
TOWNSVILLE MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 8.6  | 10.6 | 12.3 | 11.6 | 9.9  | 9.5  | 7.4  | 8.9  | 9.1  | 9.2  | 8.5  | 9.6  | 13.7 | 9.7  | 10.3 | 9.2  |
|        | 0600 | 9.8  | 9.1  | 11.9 | 11.0 | 8.8  | 8.2  | 8.0  | 8.0  | 9.4  | 6.7  | 8.8  | 5.6  | 7.1  | 10.7 | 8.6  | 8.9  |
|        | 0900 | 11.0 | 12.2 | 12.6 | 13.9 | 14.4 | 11.8 | 11.1 | 10.7 | 12.4 | 9.8  | 9.3  | 7.3  | 11.3 | 11.1 | 12.1 | 12.7 |
|        | 1200 | 15.6 | 16.9 | 18.6 | 19.1 | 18.1 | 15.7 | 12.6 | 13.6 | 14.8 | 13.7 | 12.2 | 9.0  | 10.6 | 11.9 | 13.2 | 14.6 |
|        | 1500 | 18.1 | 20.4 | 21.1 | 21.8 | 20.7 | 15.5 | 15.9 | 15.4 | 19.1 | 16.4 | 14.3 | 15.5 | 13.4 | 12.1 | 15.4 | 15.7 |
|        | 1800 | 14.9 | 16.6 | 17.9 | 20.4 | 19.4 | 13.1 | 14.4 | 16.9 | 11.9 | 15.6 | 23.6 | 8.0  | 12.2 | 11.9 | 13.8 | 14.0 |
|        | 2100 | 10.6 | 11.1 | 12.3 | 14.6 | 15.1 | 12.6 | 11.2 | 12.0 | 9.4  | 10.4 | 17.1 | 10.1 | 8.7  | 8.5  | 9.8  | 9.8  |
|        | 2400 | 8.6  | 10.0 | 11.3 | 11.4 | 11.3 | 9.4  | 9.6  | 11.4 | 9.9  | 10.3 | 11.1 | 6.5  | 10.3 | 9.4  | 9.7  | 8.9  |
| AUTUMN | 0300 | 11.1 | 12.6 | 10.9 | 9.8  | 9.4  | 9.5  | 9.1  | 8.2  | 9.8  | 10.9 | 11.1 | 6.9  | 12.4 | 6.6  | 10.1 | 10.8 |
|        | 0600 | 11.7 | 13.9 | 8.5  | 9.9  | 9.2  | 8.4  | 8.1  | 7.5  | 10.0 | 10.6 | 7.4  | 8.6  | 13.0 | 7.2  | 12.6 | 8.4  |
|        | 0900 | 10.1 | 9.9  | 10.9 | 11.3 | 12.1 | 11.9 | 12.0 | 10.9 | 12.3 | 11.7 | 10.8 | 6.5  | 10.7 | 10.4 | 10.5 | 11.0 |
|        | 1200 | 13.1 | 14.9 | 17.6 | 19.0 | 19.4 | 16.4 | 14.3 | 15.3 | 17.3 | 15.1 | 7.7  | 7.8  | 10.1 | 11.8 | 13.2 | 11.3 |
|        | 1500 | 15.8 | 18.9 | 20.4 | 23.4 | 20.7 | 16.1 | 14.2 | 14.4 | 13.2 | 13.1 | 13.9 | 13.5 | 0.0  | 12.6 | 12.6 | 14.0 |
|        | 1800 | 10.8 | 12.4 | 14.7 | 17.8 | 16.4 | 12.0 | 9.1  | 10.4 | 11.5 | 11.8 | 8.4  | 11.6 | 9.7  | 9.2  | 9.1  | 9.9  |
|        | 2100 | 8.3  | 10.2 | 10.6 | 12.4 | 11.8 | 10.3 | 7.6  | 9.9  | 10.1 | 11.8 | 22.2 | 7.4  | 8.5  | 4.6  | 9.0  | 8.4  |
|        | 2400 | 12.1 | 12.2 | 10.3 | 10.4 | 9.7  | 9.4  | 8.6  | 7.4  | 8.0  | 13.9 | 16.4 | 6.6  | 13.9 | 8.3  | 12.8 | 7.0  |
| WINTER | 0300 | 6.5  | 8.0  | 12.2 | 10.6 | 9.7  | 8.3  | 7.3  | 8.7  | 10.8 | 10.3 | 7.0  | 5.4  | 4.3  | 5.6  | 9.8  | 6.3  |
|        | 0600 | 6.3  | 7.2  | 9.1  | 11.0 | 9.3  | 8.2  | 7.0  | 7.9  | 11.7 | 10.5 | 8.2  | 5.4  | 5.5  | 5.8  | 7.4  | 5.6  |
|        | 0900 | 9.6  | 9.6  | 9.9  | 13.1 | 13.5 | 10.1 | 9.4  | 12.0 | 14.8 | 12.3 | 13.1 | 5.8  | 7.2  | 8.4  | 6.3  | 7.6  |
|        | 1200 | 13.4 | 14.3 | 17.0 | 19.9 | 19.6 | 14.2 | 14.3 | 16.2 | 17.7 | 16.7 | 12.6 | 6.2  | 4.8  | 14.4 | 15.0 | 12.4 |
|        | 1500 | 17.0 | 18.8 | 21.4 | 23.9 | 21.5 | 14.5 | 13.3 | 15.6 | 15.8 | 15.7 | 16.5 | 12.1 | 11.8 | 13.0 | 14.3 | 14.8 |
|        | 1800 | 9.8  | 11.8 | 13.6 | 16.6 | 18.2 | 11.9 | 8.1  | 10.9 | 10.3 | 11.0 | 8.6  | 7.9  | 7.2  | 7.2  | 8.0  | 8.4  |
|        | 2100 | 11.7 | 8.2  | 10.3 | 12.1 | 11.4 | 8.4  | 7.0  | 8.9  | 9.8  | 7.1  | 7.0  | 5.0  | 5.6  | 7.6  | 4.3  | 8.0  |
|        | 2400 | 8.3  | 7.4  | 11.0 | 10.5 | 9.8  | 7.9  | 7.3  | 9.7  | 9.5  | 10.2 | 5.6  | 5.6  | 8.1  | 5.5  | 0.0  | 5.4  |
| SPRING | 0300 | 9.8  | 11.5 | 11.1 | 11.5 | 10.2 | 8.0  | 6.5  | 8.7  | 11.1 | 8.8  | 10.6 | 5.0  | 6.5  | 7.4  | 9.2  | 8.5  |
|        | 0600 | 9.6  | 11.1 | 11.5 | 10.6 | 9.8  | 7.1  | 5.8  | 7.3  | 10.7 | 10.5 | 6.0  | 4.5  | 6.3  | 8.2  | 9.5  | 8.6  |
|        | 0900 | 13.7 | 13.8 | 15.4 | 17.2 | 17.5 | 14.1 | 12.4 | 16.7 | 18.3 | 13.5 | 6.0  | 6.2  | 10.3 | 12.4 | 13.3 | 13.6 |
|        | 1200 | 18.2 | 20.6 | 22.3 | 25.5 | 22.9 | 17.1 | 16.4 | 16.1 | 18.0 | 16.5 | 15.1 | 12.3 | 14.6 | 14.5 | 16.1 | 17.7 |
|        | 1500 | 19.7 | 23.6 | 25.8 | 28.2 | 23.1 | 16.8 | 16.9 | 17.7 | 18.6 | 17.8 | 21.3 | 13.0 | 7.4  | 18.1 | 17.1 | 18.2 |
|        | 1800 | 15.5 | 16.9 | 19.2 | 23.7 | 21.3 | 17.4 | 12.4 | 16.1 | 17.8 | 14.3 | 27.8 | 12.3 | 14.4 | 11.5 | 13.6 | 14.0 |
|        | 2100 | 10.0 | 11.4 | 13.7 | 16.6 | 16.2 | 11.6 | 8.3  | 9.9  | 12.4 | 10.4 | 3.7  | 6.7  | 10.2 | 9.8  | 8.6  | 9.5  |
|        | 2400 | 8.5  | 11.8 | 12.1 | 12.8 | 11.9 | 9.0  | 6.6  | 10.1 | 11.1 | 7.4  | 5.0  | 7.0  | 5.6  | 6.2  | 9.6  | 8.6  |

TABLE 27p(ii)  
TOWNSVILLE PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW  | WSW | W   | WNW | NW  | NNW | N    |
|--------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|------|
| SUMMER | 0300 | 5.2  | 7.8  | 5.7  | 7.9  | 15.2 | 21.9 | 5.6  | 4.8  | 1.9  | 1.4 | 1.0 | 1.2 | 0.6 | 2.0 | 3.7 | 13.1 |
|        | 0600 | 5.6  | 7.3  | 3.7  | 7.2  | 13.5 | 22.4 | 8.1  | 9.5  | 3.9  | 1.6 | 1.2 | 1.2 | 0.5 | 1.9 | 2.5 | 9.9  |
|        | 0900 | 5.2  | 10.7 | 8.5  | 12.8 | 14.1 | 16.3 | 5.2  | 4.3  | 2.6  | 1.8 | 0.9 | 1.5 | 0.7 | 5.0 | 3.8 | 6.6  |
|        | 1200 | 10.5 | 31.5 | 13.4 | 11.9 | 6.5  | 4.8  | 1.8  | 1.9  | 0.8  | 0.6 | 0.5 | 0.5 | 0.5 | 3.0 | 3.9 | 8.0  |
|        | 1500 | 9.3  | 35.3 | 19.6 | 9.7  | 4.4  | 2.5  | 0.9  | 1.1  | 0.4  | 0.5 | 0.2 | 0.4 | 0.1 | 1.5 | 3.9 | 10.2 |
|        | 1800 | 6.4  | 30.6 | 20.2 | 12.7 | 6.3  | 2.9  | 0.6  | 0.7  | 0.3  | 0.5 | 0.1 | 0.3 | 0.5 | 1.9 | 5.2 | 11.0 |
|        | 2100 | 7.6  | 17.6 | 16.1 | 19.6 | 10.8 | 6.0  | 1.1  | 1.0  | 0.5  | 0.5 | 0.3 | 0.8 | 0.4 | 1.5 | 2.8 | 13.5 |
|        | 2400 | 7.2  | 11.3 | 10.1 | 15.1 | 13.8 | 14.7 | 2.9  | 2.6  | 1.1  | 1.4 | 0.5 | 0.7 | 0.7 | 1.7 | 4.0 | 12.2 |
| AUTUMN | 0300 | 0.8  | 1.8  | 0.7  | 4.4  | 14.8 | 32.7 | 13.6 | 18.6 | 6.6  | 2.1 | 0.2 | 0.5 | 0.5 | 0.5 | 0.8 | 1.4  |
|        | 0600 | 0.7  | 0.8  | 0.6  | 2.9  | 10.2 | 25.0 | 15.9 | 25.4 | 10.4 | 4.1 | 0.9 | 0.9 | 0.3 | 0.7 | 0.4 | 0.9  |
|        | 0900 | 0.9  | 1.5  | 1.4  | 5.9  | 13.6 | 32.6 | 15.0 | 13.7 | 8.2  | 3.5 | 0.4 | 0.9 | 0.6 | 0.7 | 0.4 | 0.6  |
|        | 1200 | 6.3  | 18.9 | 11.6 | 19.3 | 15.0 | 11.3 | 3.4  | 4.0  | 2.5  | 1.3 | 0.2 | 0.4 | 0.3 | 1.7 | 1.8 | 2.1  |
|        | 1500 | 8.6  | 31.6 | 19.3 | 16.3 | 6.1  | 4.5  | 1.6  | 2.7  | 1.6  | 0.8 | 0.1 | 0.1 | 0.0 | 1.4 | 1.8 | 3.6  |
|        | 1800 | 3.9  | 22.8 | 21.5 | 25.9 | 8.2  | 3.7  | 1.3  | 1.9  | 0.9  | 0.5 | 0.1 | 0.3 | 0.1 | 2.1 | 3.2 | 3.7  |
|        | 2100 | 1.9  | 5.1  | 7.2  | 25.3 | 27.0 | 19.5 | 3.6  | 3.9  | 1.4  | 0.7 | 0.1 | 0.3 | 0.3 | 0.3 | 1.2 | 2.4  |
|        | 2400 | 0.8  | 2.8  | 2.9  | 14.0 | 26.0 | 31.5 | 8.3  | 6.4  | 1.8  | 1.4 | 0.5 | 0.6 | 0.3 | 0.7 | 0.9 | 1.2  |
| WINTER | 0300 | 0.5  | 0.8  | 1.2  | 6.4  | 14.6 | 25.5 | 10.7 | 21.9 | 9.6  | 5.5 | 0.9 | 1.1 | 0.2 | 0.3 | 0.5 | 0.4  |
|        | 0600 | 0.4  | 0.6  | 0.7  | 3.7  | 8.0  | 20.1 | 14.0 | 25.5 | 14.1 | 8.8 | 1.1 | 1.0 | 0.4 | 0.7 | 0.5 | 0.3  |
|        | 0900 | 0.3  | 0.6  | 1.4  | 5.8  | 10.8 | 22.2 | 12.6 | 20.3 | 14.8 | 6.9 | 1.0 | 0.6 | 0.3 | 1.0 | 0.7 | 0.7  |
|        | 1200 | 5.4  | 19.2 | 14.0 | 18.7 | 10.0 | 7.9  | 3.6  | 7.9  | 4.6  | 2.8 | 0.4 | 0.1 | 0.2 | 1.6 | 1.0 | 2.6  |
|        | 1500 | 8.9  | 33.8 | 20.7 | 11.9 | 3.8  | 2.7  | 1.7  | 4.3  | 3.0  | 1.6 | 0.3 | 0.2 | 0.2 | 1.0 | 1.7 | 4.1  |
|        | 1800 | 3.4  | 23.1 | 23.4 | 23.6 | 5.0  | 2.7  | 1.4  | 3.8  | 2.0  | 0.8 | 0.1 | 0.7 | 0.9 | 2.8 | 2.6 | 3.8  |
|        | 2100 | 0.3  | 2.8  | 6.1  | 21.5 | 25.8 | 21.4 | 6.0  | 7.4  | 3.9  | 1.5 | 0.5 | 0.4 | 0.2 | 0.5 | 0.3 | 1.3  |
|        | 2400 | 0.2  | 0.8  | 2.9  | 13.1 | 23.5 | 27.9 | 9.9  | 12.8 | 4.2  | 2.1 | 0.6 | 0.2 | 0.3 | 0.6 | 0.0 | 1.0  |
| SPRING | 0300 | 6.9  | 9.1  | 7.7  | 11.1 | 17.1 | 19.1 | 4.9  | 4.1  | 1.8  | 1.0 | 0.4 | 0.3 | 0.1 | 1.1 | 3.4 | 11.9 |
|        | 0600 | 6.5  | 8.1  | 4.3  | 8.3  | 13.3 | 20.8 | 6.4  | 9.8  | 4.6  | 1.6 | 0.5 | 0.4 | 0.6 | 1.3 | 3.2 | 10.4 |
|        | 0900 | 6.2  | 13.9 | 11.1 | 17.6 | 12.8 | 9.6  | 2.5  | 3.5  | 2.6  | 1.1 | 0.3 | 0.5 | 1.1 | 4.9 | 5.1 | 7.3  |
|        | 1200 | 12.2 | 36.0 | 18.8 | 9.9  | 2.0  | 1.1  | 0.7  | 1.5  | 0.8  | 0.7 | 0.2 | 0.2 | 0.3 | 2.5 | 4.5 | 8.7  |
|        | 1500 | 10.7 | 40.6 | 22.5 | 6.0  | 0.9  | 0.3  | 0.2  | 0.4  | 0.5  | 0.3 | 0.1 | 0.1 | 0.0 | 1.0 | 4.7 | 11.7 |
|        | 1800 | 7.3  | 32.5 | 24.1 | 10.0 | 1.4  | 0.8  | 0.1  | 0.4  | 0.2  | 0.2 | 0.0 | 0.2 | 0.3 | 2.2 | 6.2 | 13.9 |
|        | 2100 | 7.5  | 18.3 | 19.2 | 21.9 | 8.8  | 3.2  | 0.4  | 0.9  | 0.4  | 0.3 | 0.1 | 0.4 | 0.2 | 1.4 | 4.0 | 13.1 |
|        | 2400 | 6.8  | 12.0 | 11.2 | 18.4 | 16.8 | 11.9 | 1.8  | 2.2  | 0.6  | 0.5 | 0.2 | 0.3 | 0.1 | 0.8 | 3.9 | 12.7 |

TABLE 27q(i)  
WAGGA MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS

| TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0300 | 11.8 | 11.7 | 14.1 | 11.7 | 8.9  | 8.7  | 9.7  | 11.1 | 14.1 | 15.1 | 14.7 | 10.2 | 12.2 | 9.2  | 13.6 | 13.4 |
| 0600 | 12.8 | 10.4 | 12.9 | 10.8 | 7.6  | 8.2  | 11.3 | 10.7 | 11.0 | 16.6 | 15.8 | 12.2 | 10.3 | 7.1  | 8.3  | 12.2 |
| 0900 | 13.2 | 13.6 | 15.7 | 13.4 | 12.0 | 11.8 | 12.9 | 13.4 | 16.1 | 19.3 | 20.1 | 14.4 | 11.8 | 12.2 | 14.0 | 13.9 |
| 1200 | 13.5 | 13.4 | 15.8 | 14.3 | 12.0 | 10.6 | 13.4 | 13.0 | 18.1 | 19.6 | 19.9 | 18.5 | 15.7 | 14.3 | 14.7 | 13.3 |
| 1500 | 14.1 | 13.7 | 16.6 | 14.3 | 11.0 | 11.8 | 13.3 | 14.3 | 18.5 | 19.9 | 23.5 | 20.5 | 18.3 | 16.1 | 14.8 | 14.6 |
| 1800 | 12.9 | 12.9 | 17.0 | 14.6 | 12.6 | 12.4 | 15.4 | 14.1 | 17.8 | 20.6 | 20.9 | 18.0 | 17.1 | 11.9 | 16.7 | 13.1 |
| 2100 | 14.5 | 15.0 | 17.2 | 13.4 | 9.4  | 12.3 | 12.3 | 11.0 | 12.3 | 13.5 | 14.4 | 11.7 | 12.5 | 12.5 | 15.3 | 12.8 |
| 2400 | 13.8 | 11.7 | 14.7 | 13.0 | 9.7  | 8.7  | 15.5 | 12.0 | 13.5 | 13.7 | 14.8 | 9.7  | 6.8  | 8.4  | 9.7  | 17.8 |
| 0300 | 16.1 | 10.9 | 11.9 | 10.0 | 7.6  | 7.9  | 11.1 | 8.9  | 10.8 | 13.5 | 14.1 | 14.8 | 14.4 | 8.8  | 11.4 | 13.9 |
| 0600 | 11.9 | 9.3  | 11.2 | 8.9  | 7.5  | 7.7  | 10.4 | 10.9 | 10.5 | 12.8 | 14.3 | 13.2 | 12.0 | 9.1  | 9.8  | 12.5 |
| 0900 | 12.2 | 12.7 | 13.2 | 10.4 | 8.4  | 9.6  | 12.5 | 12.6 | 13.1 | 17.7 | 16.3 | 14.2 | 12.7 | 10.4 | 15.2 | 13.9 |
| 1200 | 12.9 | 12.5 | 13.6 | 11.5 | 9.5  | 9.2  | 14.2 | 14.3 | 18.0 | 16.7 | 17.1 | 16.1 | 14.6 | 12.9 | 14.4 | 11.4 |
| 1500 | 12.0 | 12.1 | 13.7 | 11.8 | 10.8 | 10.1 | 11.2 | 12.1 | 16.1 | 17.8 | 17.8 | 16.1 | 16.2 | 12.2 | 16.2 | 11.8 |
| 1800 | 11.3 | 11.8 | 12.2 | 10.1 | 7.9  | 9.5  | 12.0 | 10.0 | 12.7 | 14.0 | 14.6 | 12.9 | 14.6 | 11.4 | 11.1 | 10.6 |
| 2100 | 11.3 | 12.3 | 14.4 | 10.5 | 8.2  | 9.2  | 11.7 | 10.9 | 9.5  | 13.7 | 16.1 | 13.4 | 14.9 | 11.3 | 11.4 | 14.7 |
| 2400 | 10.8 | 15.2 | 12.5 | 9.6  | 8.0  | 6.9  | 12.5 | 7.5  | 13.3 | 14.3 | 16.7 | 16.3 | 9.3  | 10.6 | 13.0 | 11.1 |
| 0300 | 11.5 | 8.4  | 11.4 | 8.2  | 7.9  | 8.0  | 10.2 | 9.1  | 10.8 | 12.4 | 17.9 | 15.6 | 13.7 | 10.5 | 12.6 | 11.7 |
| 0600 | 14.6 | 8.3  | 9.5  | 7.9  | 7.8  | 7.7  | 12.1 | 9.4  | 13.5 | 14.3 | 19.2 | 14.8 | 13.0 | 11.3 | 9.9  | 9.7  |
| 0900 | 12.2 | 9.2  | 9.7  | 8.2  | 7.9  | 7.9  | 12.0 | 10.2 | 10.5 | 16.9 | 16.7 | 16.3 | 14.0 | 11.1 | 10.7 | 13.2 |
| 1200 | 13.4 | 10.8 | 11.6 | 9.7  | 9.1  | 10.0 | 11.1 | 12.2 | 15.1 | 19.4 | 20.7 | 17.1 | 15.3 | 13.8 | 12.9 | 12.3 |
| 1500 | 12.5 | 12.2 | 13.2 | 10.4 | 9.0  | 8.8  | 10.2 | 11.4 | 16.2 | 17.7 | 19.8 | 16.9 | 16.1 | 14.0 | 11.7 | 12.6 |
| 1800 | 12.9 | 9.1  | 9.7  | 9.1  | 6.8  | 8.2  | 8.6  | 8.9  | 8.4  | 10.9 | 13.0 | 12.9 | 12.4 | 10.8 | 12.5 | 12.2 |
| 2100 | 15.9 | 10.7 | 10.8 | 8.2  | 7.8  | 8.2  | 11.1 | 10.7 | 9.7  | 14.9 | 15.4 | 15.2 | 14.5 | 13.7 | 11.3 | 14.2 |
| 2400 | 16.5 | 8.5  | 11.4 | 7.7  | 7.5  | 7.4  | 7.1  | 5.1  | 9.0  | 17.8 | 14.5 | 15.3 | 14.6 | 13.5 | 12.7 | 10.9 |
| 0300 | 12.4 | 10.8 | 12.9 | 10.4 | 8.3  | 7.9  | 12.3 | 9.4  | 11.3 | 15.7 | 16.3 | 14.1 | 12.0 | 8.9  | 9.2  | 13.6 |
| 0600 | 13.6 | 9.7  | 12.1 | 9.9  | 7.6  | 7.8  | 9.8  | 11.6 | 12.0 | 14.4 | 15.7 | 13.6 | 12.5 | 8.6  | 11.1 | 11.1 |
| 0900 | 12.3 | 12.3 | 13.7 | 10.9 | 10.3 | 9.5  | 12.0 | 12.1 | 17.4 | 19.2 | 19.7 | 18.3 | 14.2 | 12.7 | 12.4 | 14.4 |
| 1200 | 14.8 | 12.7 | 15.4 | 12.7 | 13.6 | 11.0 | 10.5 | 12.7 | 17.1 | 18.8 | 20.9 | 18.6 | 18.6 | 14.5 | 15.0 | 11.5 |
| 1500 | 14.3 | 14.3 | 15.2 | 14.0 | 11.5 | 11.9 | 11.1 | 12.6 | 18.1 | 19.4 | 21.2 | 20.5 | 18.7 | 15.5 | 14.9 | 14.8 |
| 1800 | 12.8 | 10.6 | 12.1 | 10.4 | 10.4 | 8.5  | 11.4 | 12.1 | 13.8 | 16.0 | 17.1 | 16.4 | 14.7 | 12.3 | 12.5 | 14.4 |
| 2100 | 15.7 | 11.9 | 13.0 | 10.0 | 9.2  | 8.8  | 11.2 | 9.6  | 10.1 | 13.0 | 14.8 | 12.2 | 13.1 | 12.1 | 13.5 | 14.6 |
| 2400 | 15.3 | 12.0 | 9.7  | 8.5  | 7.6  | 10.7 | 4.7  | 6.3  | 12.6 | 15.8 | 13.8 | 12.3 | 12.3 | 10.8 | 9.3  | 11.9 |

TABLE 27q(ii)  
WAGGA PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS

| TIME | NNE | NE   | ENE  | E    | ESE  | SE  | SSE | S   | SSW | SW   | WSW  | W    | WNW | NW  | NNW | N   |
|------|-----|------|------|------|------|-----|-----|-----|-----|------|------|------|-----|-----|-----|-----|
| 0300 | 1.7 | 3.6  | 23.0 | 29.6 | 8.0  | 5.1 | 1.6 | 1.9 | 1.4 | 4.7  | 4.9  | 3.9  | 1.2 | 1.5 | 0.8 | 2.1 |
| 0600 | 1.8 | 7.1  | 19.9 | 31.8 | 10.4 | 5.4 | 1.5 | 1.2 | 1.4 | 4.1  | 4.6  | 5.1  | 1.6 | 1.4 | 1.1 | 1.6 |
| 0900 | 3.8 | 13.5 | 23.5 | 18.2 | 3.6  | 2.1 | 1.3 | 1.6 | 1.4 | 5.5  | 6.6  | 6.0  | 2.4 | 2.9 | 2.4 | 5.1 |
| 1200 | 5.1 | 10.1 | 9.8  | 7.5  | 2.0  | 2.3 | 0.9 | 1.8 | 2.5 | 8.5  | 10.4 | 11.7 | 7.3 | 8.5 | 4.7 | 7.1 |
| 1500 | 3.2 | 6.9  | 6.8  | 6.4  | 2.7  | 2.4 | 1.5 | 3.8 | 4.6 | 11.8 | 13.1 | 14.4 | 7.1 | 6.2 | 2.9 | 3.1 |
| 1800 | 2.3 | 9.1  | 8.9  | 6.4  | 2.2  | 2.4 | 2.0 | 4.4 | 5.5 | 17.7 | 15.6 | 11.1 | 3.9 | 3.4 | 1.7 | 3.5 |
| 2100 | 2.4 | 10.4 | 15.0 | 11.5 | 3.0  | 4.4 | 3.8 | 6.2 | 7.3 | 17.2 | 9.6  | 3.6  | 1.3 | 1.2 | 1.1 | 2.1 |
| 2400 | 5.3 | 16.5 | 27.7 | 12.9 | 4.0  | 3.3 | 3.0 | 1.3 | 5.3 | 7.6  | 5.0  | 2.6  | 1.0 | 0.7 | 1.7 | 2.3 |
| 0300 | 1.1 | 4.7  | 12.4 | 29.2 | 13.4 | 7.9 | 2.4 | 1.4 | 1.1 | 3.7  | 4.9  | 7.0  | 3.4 | 4.1 | 1.4 | 2.0 |
| 0600 | 1.6 | 2.9  | 10.6 | 29.0 | 16.7 | 8.3 | 2.3 | 1.2 | 0.7 | 4.3  | 3.2  | 8.3  | 3.5 | 3.0 | 1.9 | 1.5 |
| 0900 | 1.6 | 5.3  | 15.9 | 33.6 | 10.4 | 4.5 | 1.2 | 1.0 | 1.0 | 4.2  | 4.6  | 6.5  | 3.2 | 3.5 | 1.4 | 2.2 |
| 1200 | 5.1 | 9.3  | 12.9 | 12.7 | 2.8  | 2.3 | 1.7 | 1.6 | 1.8 | 8.7  | 9.6  | 11.5 | 5.0 | 7.0 | 3.5 | 5.6 |
| 1500 | 3.2 | 7.3  | 6.9  | 6.9  | 1.9  | 2.6 | 2.2 | 3.0 | 3.7 | 13.8 | 11.5 | 15.4 | 7.1 | 7.2 | 2.6 | 4.5 |
| 1800 | 2.3 | 6.7  | 7.9  | 8.8  | 3.2  | 2.9 | 1.5 | 4.3 | 5.3 | 16.9 | 14.5 | 13.1 | 4.2 | 4.3 | 1.4 | 2.6 |
| 2100 | 2.5 | 5.4  | 13.4 | 16.9 | 7.1  | 4.1 | 3.5 | 4.5 | 4.1 | 11.1 | 7.8  | 8.1  | 3.6 | 3.9 | 1.6 | 2.5 |
| 2400 | 4.4 | 14.0 | 21.0 | 16.2 | 8.1  | 4.1 | 1.5 | 0.7 | 2.2 | 5.5  | 3.3  | 5.5  | 3.7 | 4.8 | 2.6 | 2.2 |
| 0300 | 1.5 | 3.3  | 5.5  | 24.3 | 12.6 | 7.5 | 1.9 | 1.3 | 0.8 | 3.3  | 4.9  | 14.6 | 5.6 | 6.5 | 3.3 | 3.0 |
| 0600 | 1.4 | 3.5  | 5.8  | 25.4 | 15.2 | 6.5 | 1.0 | 1.5 | 0.9 | 4.2  | 4.8  | 11.7 | 6.0 | 6.4 | 3.0 | 2.7 |
| 0900 | 1.4 | 4.0  | 8.5  | 26.0 | 12.3 | 5.0 | 1.0 | 0.7 | 0.8 | 3.3  | 5.6  | 11.6 | 5.7 | 7.4 | 3.2 | 3.3 |
| 1200 | 2.8 | 7.6  | 11.5 | 15.2 | 3.5  | 2.5 | 1.5 | 1.8 | 0.8 | 6.3  | 8.9  | 14.0 | 7.5 | 8.3 | 3.2 | 4.6 |
| 1500 | 3.4 | 5.7  | 6.8  | 7.2  | 1.8  | 1.7 | 1.6 | 2.5 | 2.0 | 11.6 | 13.1 | 17.8 | 8.8 | 8.4 | 3.7 | 3.8 |
| 1800 | 3.2 | 4.5  | 5.9  | 9.8  | 3.7  | 3.5 | 1.8 | 3.3 | 4.0 | 10.9 | 13.5 | 17.2 | 7.7 | 6.2 | 2.0 | 2.8 |
| 2100 | 3.3 | 3.7  | 7.1  | 18.1 | 6.2  | 5.2 | 3.0 | 2.9 | 2.2 | 6.1  | 8.9  | 12.5 | 6.9 | 6.5 | 3.0 | 4.4 |
| 2400 | 3.0 | 4.7  | 6.7  | 16.4 | 11.0 | 7.4 | 2.0 | 1.3 | 2.3 | 3.3  | 5.0  | 13.7 | 9.4 | 7.4 | 2.3 | 4.0 |
| 0300 | 3.8 | 4.6  | 11.3 | 24.2 | 9.4  | 6.2 | 1.7 | 1.5 | 1.7 | 4.6  | 6.9  | 9.1  | 4.8 | 5.4 | 2.2 | 3.6 |
| 0600 | 2.2 | 4.0  | 11.0 | 23.9 | 12.6 | 6.3 | 1.1 | 0.9 | 1.1 | 4.2  | 6.2  | 9.0  | 4.8 | 6.6 | 2.7 | 3.4 |
| 0900 | 3.5 | 8.4  | 16.4 | 19.0 | 4.0  | 2.0 | 1.3 | 1.5 | 2.0 | 7.2  | 8.2  | 10.1 | 4.7 | 5.0 | 3.1 | 3.8 |
| 1200 | 4.7 | 7.8  | 7.1  | 6.1  | 1.2  | 1.8 | 0.8 | 2.2 | 2.3 | 9.7  | 12.7 | 16.3 | 7.9 | 9.1 | 4.7 | 5.6 |
| 1500 | 3.8 | 5.7  | 4.8  | 4.9  | 1.5  | 1.6 | 1.4 | 2.2 | 4.2 | 13.5 | 17.3 | 17.2 | 7.8 | 6.6 | 2.6 | 5.0 |
| 1800 | 3.0 | 5.9  | 6.4  | 7.3  | 2.2  | 2.9 | 1.3 | 4.0 | 5.7 | 18.9 | 15.9 | 13.1 | 4.5 | 3.8 | 2.1 | 2.7 |
| 2100 | 3.9 | 5.7  | 9.7  | 14.5 | 4.6  | 4.0 | 3.6 | 5.9 | 6.4 | 12.9 | 9.8  | 8.1  | 2.9 | 3.2 | 1.7 | 3.2 |
| 2400 | 4.4 | 7.3  | 13.9 | 15.0 | 4.4  | 3.3 | 1.5 | 1.8 | 1.8 | 8.8  | 9.5  | 9.1  | 4.7 | 6.2 | 3.3 | 5.1 |

TABLE 27r(i)

WILLIAMTOWN MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 6.6  | 9.6  | 9.8  | 8.1  | 11.1 | 15.1 | 17.7 | 21.7 | 18.2 | 14.1 | 9.9  | 8.9  | 12.9 | 8.1  | 4.8  | 8.5  |
|        | 0600 | 6.3  | 9.4  | 7.8  | 8.2  | 14.3 | 15.3 | 18.1 | 18.6 | 16.2 | 12.2 | 7.8  | 8.7  | 8.3  | 8.0  | 8.2  | 6.0  |
|        | 0900 | 10.3 | 12.2 | 13.0 | 12.7 | 14.4 | 15.2 | 17.6 | 19.9 | 17.9 | 12.6 | 11.7 | 12.6 | 14.8 | 10.2 | 5.2  | 7.5  |
|        | 1200 | 11.7 | 14.6 | 15.8 | 17.9 | 16.8 | 16.0 | 19.7 | 22.3 | 25.1 | 17.7 | 16.1 | 18.9 | 21.7 | 15.0 | 9.7  | 9.4  |
|        | 1500 | 14.1 | 19.4 | 22.8 | 20.0 | 18.4 | 18.1 | 22.3 | 25.3 | 26.7 | 23.2 | 21.4 | 22.1 | 29.1 | 19.7 | 14.8 | 13.2 |
|        | 1800 | 15.0 | 18.0 | 19.8 | 16.3 | 15.0 | 15.6 | 18.7 | 22.4 | 24.0 | 20.3 | 17.2 | 29.9 | 25.8 | 14.9 | 12.0 | 10.7 |
|        | 2100 | 11.5 | 12.5 | 12.0 | 9.7  | 11.6 | 13.7 | 16.9 | 19.6 | 21.7 | 17.6 | 9.3  | 12.1 | 15.8 | 11.2 | 12.4 | 11.8 |
|        | 2400 | -    | -    | -    | -    | -    | -    | 7.4  | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| AUTUMN | 0300 | 9.4  | 7.9  | 8.7  | 9.9  | 15.1 | 14.9 | 22.0 | 20.8 | 20.5 | 14.8 | 12.0 | 15.6 | 15.2 | 10.4 | 7.0  | 8.8  |
|        | 0600 | 6.0  | 8.9  | 9.0  | 8.5  | 13.7 | 16.8 | 18.2 | 20.3 | 19.5 | 14.2 | 11.2 | 14.3 | 14.1 | 9.4  | 8.4  | 9.4  |
|        | 0900 | 10.6 | 10.2 | 11.2 | 13.0 | 12.1 | 18.6 | 19.4 | 17.3 | 18.8 | 14.1 | 13.4 | 17.5 | 16.5 | 10.2 | 8.4  | 7.3  |
|        | 1200 | 10.9 | 11.5 | 13.7 | 13.4 | 14.0 | 15.3 | 17.5 | 19.5 | 19.7 | 18.1 | 14.4 | 21.4 | 23.1 | 14.4 | 10.4 | 8.2  |
|        | 1500 | 10.9 | 14.0 | 15.7 | 15.1 | 14.9 | 14.8 | 17.6 | 20.3 | 21.8 | 18.8 | 15.0 | 23.8 | 25.4 | 19.8 | 8.9  | 9.2  |
|        | 1800 | 10.3 | 10.4 | 11.0 | 9.7  | 9.9  | 13.2 | 16.4 | 17.5 | 17.0 | 15.0 | 14.5 | 18.6 | 19.2 | 14.5 | 9.6  | 7.1  |
|        | 2100 | 8.6  | 8.9  | 8.8  | 9.9  | 9.4  | 15.8 | 18.8 | 19.4 | 17.3 | 14.2 | 11.8 | 17.9 | 18.2 | 12.8 | 7.5  | 6.5  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| WINTER | 0300 | 6.9  | 10.6 | 9.6  | 16.1 | 18.6 | 22.8 | 26.3 | 23.7 | 18.9 | 17.7 | 13.6 | 18.4 | 17.4 | 11.7 | 14.3 | 8.5  |
|        | 0600 | 10.1 | 8.8  | 10.1 | 16.2 | 18.0 | 27.5 | 28.6 | 20.8 | 11.1 | 16.4 | 13.2 | 17.1 | 16.8 | 11.8 | 10.4 | 7.7  |
|        | 0900 | 9.9  | 8.8  | 9.5  | 21.9 | 21.9 | 23.0 | 28.0 | 23.1 | 21.5 | 19.2 | 14.1 | 19.8 | 19.6 | 12.1 | 14.1 | 8.1  |
|        | 1200 | 10.7 | 11.2 | 11.4 | 17.9 | 21.0 | 17.7 | 19.9 | 18.8 | 19.0 | 18.4 | 15.5 | 22.7 | 24.5 | 17.0 | 10.8 | 8.4  |
|        | 1500 | 8.8  | 10.7 | 12.9 | 11.9 | 15.5 | 12.9 | 15.6 | 18.1 | 21.2 | 18.3 | 19.5 | 24.3 | 27.9 | 18.9 | 11.2 | 8.9  |
|        | 1800 | 6.6  | 7.4  | 8.5  | 9.8  | 13.9 | 14.4 | 17.0 | 16.9 | 18.7 | 15.7 | 13.0 | 19.8 | 20.2 | 13.7 | 9.4  | 6.2  |
|        | 2100 | 6.2  | 9.1  | 7.7  | 14.4 | 20.3 | 20.3 | 19.8 | 17.4 | 18.0 | 15.7 | 13.0 | 18.7 | 19.4 | 14.8 | 7.2  | 6.7  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| SPRING | 0300 | 8.8  | 10.9 | 7.9  | 10.5 | 12.1 | 15.7 | 16.0 | 20.3 | 16.5 | 13.2 | 11.5 | 12.6 | 14.8 | 9.7  | 7.3  | 8.7  |
|        | 0600 | 7.9  | 9.5  | 9.7  | 10.9 | 11.2 | 14.0 | 18.3 | 20.3 | 16.5 | 14.0 | 12.3 | 13.2 | 13.9 | 9.9  | 6.7  | 7.0  |
|        | 0900 | 12.1 | 13.0 | 14.1 | 12.8 | 16.3 | 14.2 | 17.6 | 18.8 | 18.2 | 18.0 | 16.1 | 19.3 | 20.4 | 12.1 | 8.4  | 7.6  |
|        | 1200 | 12.1 | 14.4 | 17.5 | 15.7 | 15.4 | 15.9 | 20.1 | 21.6 | 26.8 | 20.7 | 21.7 | 25.7 | 29.1 | 19.4 | 12.1 | 9.8  |
|        | 1500 | 14.4 | 18.5 | 21.8 | 18.8 | 17.6 | 17.1 | 21.2 | 25.2 | 33.0 | 24.0 | 22.3 | 29.8 | 31.4 | 23.5 | 17.4 | 9.6  |
|        | 1800 | 9.7  | 14.9 | 15.4 | 12.5 | 12.8 | 13.9 | 16.9 | 20.0 | 22.1 | 17.9 | 20.2 | 23.4 | 24.7 | 15.4 | 8.5  | 9.2  |
|        | 2100 | 10.9 | 11.2 | 10.3 | 9.6  | 11.0 | 14.0 | 17.5 | 17.6 | 20.1 | 16.4 | 15.6 | 17.0 | 17.5 | 13.0 | 7.8  | 8.9  |
|        | 2400 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |

TABLE 27r(ii)

WILLIAMTOWN PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW | SW  | WSW | W    | WNW  | NW   | NNW | N   |
|--------|------|-----|------|------|------|------|------|------|------|-----|-----|-----|------|------|------|-----|-----|
| SUMMER | 0300 | 2.2 | 11.0 | 7.3  | 7.5  | 5.1  | 10.9 | 6.7  | 16.7 | 8.2 | 4.9 | 2.8 | 5.2  | 4.1  | 1.9  | 1.0 | 2.7 |
|        | 0600 | 2.1 | 7.2  | 3.7  | 6.3  | 4.5  | 9.3  | 7.1  | 18.3 | 8.5 | 5.9 | 2.6 | 9.8  | 6.5  | 6.0  | 0.6 | 1.7 |
|        | 0900 | 3.9 | 9.6  | 5.5  | 6.3  | 5.0  | 11.7 | 7.0  | 13.9 | 5.8 | 4.6 | 1.9 | 5.7  | 5.3  | 6.9  | 2.6 | 4.4 |
|        | 1200 | 2.5 | 5.7  | 4.6  | 8.6  | 9.7  | 21.8 | 11.5 | 14.1 | 2.9 | 1.5 | 0.7 | 2.8  | 4.7  | 5.3  | 2.1 | 1.5 |
|        | 1500 | 0.7 | 6.5  | 10.6 | 15.7 | 14.1 | 20.1 | 9.8  | 11.1 | 2.3 | 0.8 | 0.3 | 1.2  | 2.6  | 3.0  | 0.6 | 0.7 |
|        | 1800 | 1.5 | 13.3 | 17.9 | 17.9 | 9.5  | 13.4 | 6.9  | 11.2 | 2.3 | 1.1 | 0.3 | 0.9  | 0.9  | 1.7  | 0.4 | 0.8 |
|        | 2100 | 3.9 | 23.9 | 14.2 | 11.6 | 5.5  | 10.7 | 6.5  | 12.2 | 3.6 | 1.8 | 0.5 | 1.3  | 0.9  | 1.2  | 0.6 | 1.7 |
|        | 2400 | -   | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -    | -    | -    | -   | -   |
| AUTUMN | 0300 | 2.1 | 4.3  | 1.7  | 3.7  | 1.8  | 5.5  | 3.8  | 8.2  | 3.3 | 4.8 | 4.7 | 20.0 | 21.5 | 11.5 | 1.0 | 1.9 |
|        | 0600 | 0.9 | 2.8  | 1.4  | 3.1  | 2.0  | 5.3  | 3.8  | 5.4  | 2.4 | 5.4 | 4.1 | 21.0 | 26.0 | 13.7 | 1.8 | 1.1 |
|        | 0900 | 1.8 | 2.9  | 1.9  | 2.6  | 1.9  | 5.0  | 2.7  | 5.6  | 2.9 | 5.8 | 3.6 | 18.5 | 24.1 | 15.4 | 2.8 | 2.4 |
|        | 1200 | 1.8 | 3.9  | 3.0  | 5.3  | 3.7  | 10.7 | 6.7  | 11.8 | 4.5 | 5.1 | 2.5 | 12.4 | 13.9 | 9.9  | 2.9 | 2.0 |
|        | 1500 | 1.2 | 3.9  | 5.0  | 8.9  | 8.1  | 15.9 | 10.5 | 12.0 | 3.9 | 3.2 | 1.7 | 8.8  | 9.2  | 5.5  | 1.3 | 0.8 |
|        | 1800 | 1.0 | 10.6 | 14.0 | 13.6 | 5.4  | 10.2 | 7.0  | 10.8 | 3.7 | 3.7 | 1.9 | 6.3  | 5.5  | 3.9  | 0.9 | 1.6 |
|        | 2100 | 4.2 | 16.7 | 7.1  | 5.5  | 2.6  | 8.1  | 6.3  | 8.2  | 3.2 | 4.6 | 4.1 | 10.9 | 9.9  | 5.0  | 1.4 | 2.2 |
|        | 2400 | -   | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -    | -    | -    | -   | -   |
| WINTER | 0300 | 0.6 | 1.5  | 0.3  | 0.8  | 1.2  | 2.4  | 1.5  | 1.6  | 0.9 | 5.5 | 5.2 | 31.1 | 33.1 | 12.4 | 1.1 | 0.8 |
|        | 0600 | 0.5 | 1.2  | 0.4  | 1.0  | 0.8  | 1.6  | 1.3  | 1.9  | 0.3 | 4.6 | 3.4 | 31.8 | 35.6 | 13.4 | 1.3 | 1.0 |
|        | 0900 | 0.7 | 0.8  | 0.3  | 0.5  | 0.8  | 1.8  | 0.8  | 1.3  | 0.7 | 3.4 | 4.1 | 28.0 | 40.6 | 14.5 | 1.1 | 0.7 |
|        | 1200 | 0.9 | 1.8  | 0.6  | 1.1  | 1.2  | 2.8  | 2.2  | 5.6  | 4.0 | 8.7 | 5.2 | 23.8 | 28.2 | 11.3 | 1.9 | 0.8 |
|        | 1500 | 0.5 | 1.8  | 1.2  | 2.4  | 3.2  | 7.7  | 6.4  | 11.5 | 5.4 | 6.7 | 3.5 | 16.8 | 21.3 | 9.1  | 1.3 | 1.1 |
|        | 1800 | 0.8 | 4.9  | 3.4  | 3.9  | 1.8  | 3.8  | 3.6  | 9.0  | 4.9 | 9.1 | 4.1 | 18.0 | 18.8 | 10.4 | 2.1 | 1.5 |
|        | 2100 | 2.1 | 5.0  | 1.4  | 1.4  | 1.3  | 3.4  | 2.2  | 4.5  | 2.3 | 7.5 | 6.1 | 23.8 | 23.7 | 10.5 | 2.0 | 2.7 |
|        | 2400 | -   | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -    | -    | -    | -   | -   |
| SPRING | 0300 | 2.9 | 8.0  | 2.0  | 3.5  | 1.4  | 4.1  | 3.2  | 9.3  | 4.9 | 6.0 | 4.1 | 19.8 | 17.8 | 9.5  | 1.3 | 2.2 |
|        | 0600 | 2.2 | 4.5  | 1.6  | 2.3  | 1.8  | 3.0  | 2.7  | 6.8  | 4.1 | 4.9 | 4.1 | 24.3 | 22.8 | 11.5 | 1.4 | 1.9 |
|        | 0900 | 2.8 | 5.6  | 2.4  | 2.6  | 1.6  | 4.7  | 3.8  | 9.0  | 4.7 | 6.8 | 3.5 | 15.6 | 18.5 | 12.0 | 2.8 | 3.5 |
|        | 1200 | 2.1 | 4.6  | 2.8  | 4.1  | 5.0  | 13.9 | 9.4  | 12.5 | 2.9 | 3.0 | 2.1 | 10.4 | 13.4 | 8.4  | 2.9 | 2.5 |
|        | 1500 | 1.1 | 5.4  | 6.8  | 10.7 | 9.0  | 16.2 | 9.4  | 11.1 | 2.2 | 1.5 | 1.4 | 6.7  | 9.4  | 6.5  | 1.3 | 1.3 |
|        | 1800 | 1.9 | 15.8 | 14.9 | 12.4 | 6.0  | 8.4  | 6.1  | 10.5 | 2.2 | 1.8 | 1.9 | 4.8  | 6.2  | 4.2  | 1.4 | 1.5 |
|        | 2100 | 6.3 | 23.2 | 7.3  | 6.5  | 2.2  | 5.9  | 5.0  | 11.4 | 3.5 | 3.5 | 2.6 | 8.2  | 7.1  | 3.1  | 0.8 | 3.3 |
|        | 2400 | -   | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -    | -    | -    | -   | -   |

TABLE 27s(1)  
WOOMERA MEAN DIURNAL WIND SPEEDS (km/h) AND DIRECTIONS FOR ALL SEASONS.

|        | TIME | NNE  | NE   | ENE  | E    | ESE  | SE   | SSE  | S    | SSW  | SW   | WSW  | W    | WNW  | NW   | NNW  | N    |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | 0300 | 14.7 | 12.9 | 10.3 | 12.1 | 11.6 | 18.2 | 23.5 | 24.2 | 24.9 | 23.7 | 20.2 | 17.2 | 13.9 | 12.3 | 14.7 | 12.3 |
|        | 0600 | 15.4 | 11.0 | 9.0  | 10.4 | 10.9 | 16.2 | 20.3 | 20.7 | 21.3 | 18.8 | 14.2 | 13.0 | 11.6 | 6.5  | 13.4 | 10.9 |
|        | 0900 | 23.2 | 19.0 | 16.6 | 15.2 | 16.9 | 20.7 | 23.4 | 25.6 | 25.4 | 23.7 | 16.9 | 15.6 | 16.2 | 18.4 | 21.1 | 21.0 |
|        | 1200 | 19.7 | 14.7 | 15.4 | 12.8 | 16.2 | 17.8 | 21.2 | 21.2 | 21.3 | 19.3 | 18.8 | 16.4 | 17.4 | 18.5 | 21.8 | 20.5 |
|        | 1500 | 16.5 | 14.7 | 15.4 | 16.0 | 14.8 | 17.9 | 21.5 | 21.7 | 20.5 | 20.4 | 19.7 | 17.9 | 17.7 | 21.7 | 21.6 | 17.8 |
|        | 1800 | 16.5 | 15.3 | 15.4 | 14.3 | 15.6 | 19.2 | 21.8 | 20.8 | 21.9 | 21.8 | 21.6 | 19.3 | 14.8 | 16.6 | 17.5 | 14.9 |
|        | 2100 | 12.2 | 12.6 | 11.1 | 12.5 | 16.6 | 21.9 | 24.9 | 19.8 | 23.8 | 21.8 | 18.9 | 10.9 | 35.3 | 11.9 | 10.0 | 15.2 |
|        | 2400 | 14.9 | 9.4  | 13.2 | 14.8 | 15.5 | 20.3 | 22.5 | 24.6 | 29.4 | 26.6 | 22.2 | 46.3 | 0.0  | 14.8 | 13.7 | 12.2 |
| AUTUMN | 0300 | 11.0 | 11.0 | 8.5  | 9.4  | 11.2 | 14.0 | 19.0 | 17.5 | 16.8 | 14.5 | 12.3 | 13.1 | 12.0 | 12.2 | 10.7 | 12.0 |
|        | 0600 | 12.0 | 10.6 | 8.1  | 8.6  | 9.1  | 12.4 | 16.8 | 15.5 | 14.8 | 12.6 | 11.0 | 11.3 | 10.2 | 10.0 | 10.5 | 11.3 |
|        | 0900 | 15.3 | 13.6 | 11.3 | 12.7 | 13.8 | 17.4 | 20.2 | 19.6 | 18.5 | 14.6 | 16.0 | 17.0 | 15.5 | 11.8 | 13.6 | 15.1 |
|        | 1200 | 18.7 | 14.8 | 12.9 | 11.6 | 13.9 | 16.0 | 18.6 | 18.8 | 20.3 | 20.1 | 20.6 | 19.5 | 13.8 | 16.5 | 20.3 | 18.8 |
|        | 1500 | 16.0 | 12.6 | 13.0 | 11.6 | 11.6 | 15.0 | 18.1 | 17.9 | 20.5 | 18.6 | 20.1 | 20.8 | 19.4 | 16.9 | 19.3 | 18.8 |
|        | 1800 | 12.4 | 9.7  | 12.8 | 10.6 | 12.1 | 13.8 | 17.7 | 14.8 | 17.4 | 18.0 | 18.1 | 19.4 | 17.6 | 12.9 | 12.2 | 13.3 |
|        | 2100 | 11.6 | 9.8  | 7.7  | 10.1 | 9.9  | 15.4 | 17.3 | 16.1 | 17.1 | 15.6 | 12.6 | 12.8 | 17.7 | 8.1  | 9.2  | 12.2 |
|        | 2400 | 12.8 | 7.4  | 8.5  | 7.6  | 9.8  | 12.2 | 15.8 | 14.4 | 12.8 | 10.1 | 11.1 | 13.0 | 9.3  | 13.9 | 9.5  | 11.7 |
| WINTER | 0300 | 14.0 | 11.9 | 7.9  | 8.4  | 11.5 | 11.0 | 17.1 | 13.3 | 13.9 | 10.9 | 12.3 | 14.8 | 17.6 | 13.7 | 13.7 | 13.9 |
|        | 0600 | 13.4 | 11.5 | 8.9  | 7.2  | 8.1  | 9.4  | 17.6 | 12.7 | 12.9 | 11.8 | 11.3 | 12.3 | 14.7 | 11.4 | 13.5 | 13.8 |
|        | 0900 | 14.6 | 11.7 | 8.6  | 9.0  | 9.0  | 10.7 | 13.0 | 14.4 | 12.0 | 14.0 | 14.3 | 15.5 | 14.1 | 11.5 | 14.5 | 15.6 |
|        | 1200 | 20.1 | 15.7 | 11.6 | 12.0 | 13.8 | 15.1 | 16.5 | 18.6 | 18.8 | 21.1 | 22.8 | 22.0 | 20.7 | 18.3 | 22.7 | 22.0 |
|        | 1500 | 17.1 | 15.0 | 10.1 | 11.5 | 12.2 | 14.3 | 17.7 | 17.0 | 19.2 | 21.4 | 23.2 | 22.4 | 21.8 | 20.2 | 23.3 | 21.6 |
|        | 1800 | 13.0 | 11.3 | 8.8  | 8.9  | 8.6  | 11.3 | 13.9 | 12.5 | 15.3 | 17.4 | 19.2 | 18.6 | 17.9 | 13.0 | 16.3 | 14.4 |
|        | 2100 | 13.0 | 11.2 | 8.5  | 8.6  | 6.4  | 9.6  | 13.4 | 12.7 | 13.3 | 14.3 | 12.4 | 13.8 | 14.3 | 11.5 | 14.7 | 14.1 |
|        | 2400 | 12.2 | 6.9  | 7.9  | 8.4  | 8.4  | 9.8  | 11.5 | 10.7 | 11.7 | 9.8  | 8.8  | 10.3 | 9.9  | 10.2 | 12.0 | 12.4 |
| SPRING | 0300 | 15.4 | 13.3 | 10.8 | 10.7 | 11.5 | 15.0 | 19.2 | 19.5 | 20.4 | 21.0 | 18.6 | 16.8 | 15.0 | 15.4 | 12.6 | 16.2 |
|        | 0600 | 15.4 | 12.9 | 11.1 | 10.4 | 10.4 | 13.7 | 16.7 | 17.7 | 17.8 | 16.6 | 16.1 | 14.8 | 9.8  | 12.4 | 13.6 | 14.9 |
|        | 0900 | 24.1 | 19.5 | 15.9 | 14.5 | 17.0 | 17.7 | 21.7 | 22.8 | 24.2 | 23.8 | 25.3 | 25.0 | 21.1 | 21.1 | 23.6 | 23.1 |
|        | 1200 | 21.7 | 18.3 | 15.7 | 13.4 | 11.4 | 15.4 | 19.5 | 20.1 | 22.7 | 24.3 | 23.1 | 23.3 | 19.5 | 22.6 | 27.3 | 25.7 |
|        | 1500 | 19.8 | 14.4 | 11.1 | 11.7 | 11.8 | 15.7 | 18.3 | 19.1 | 22.2 | 23.8 | 26.1 | 25.6 | 19.9 | 22.6 | 24.7 | 24.9 |
|        | 1800 | 18.4 | 11.7 | 15.2 | 12.2 | 12.3 | 14.0 | 18.5 | 18.3 | 22.1 | 24.1 | 26.9 | 24.4 | 19.5 | 21.1 | 19.5 | 19.8 |
|        | 2100 | 14.7 | 11.9 | 8.8  | 11.4 | 10.7 | 17.5 | 19.0 | 18.3 | 21.1 | 24.6 | 23.5 | 17.5 | 15.6 | 19.6 | 10.9 | 16.0 |
|        | 2400 | 12.0 | 11.3 | 11.9 | 9.9  | 12.6 | 16.1 | 19.7 | 18.9 | 18.5 | 17.6 | 13.4 | 16.2 | 15.7 | 5.6  | 19.5 | 16.0 |

TABLE 27s(11)  
WOOMERA PERCENTAGE TIME WIND WAS FROM GIVEN DIRECTION FOR ALL SEASONS.

|        | TIME | NNE | NE  | ENE | E   | ESE | SE   | SSE  | S    | SSW  | SW   | WSW | W    | WNW | NW  | NNW | N    |
|--------|------|-----|-----|-----|-----|-----|------|------|------|------|------|-----|------|-----|-----|-----|------|
| SUMMER | 0300 | 2.5 | 4.9 | 1.6 | 5.5 | 6.6 | 27.7 | 22.8 | 15.7 | 3.0  | 4.0  | 0.8 | 0.6  | 0.1 | 0.6 | 0.6 | 3.0  |
|        | 0600 | 2.3 | 4.2 | 3.0 | 6.9 | 7.2 | 25.8 | 20.0 | 17.6 | 4.2  | 3.9  | 1.1 | 0.5  | 0.2 | 0.3 | 0.7 | 2.3  |
|        | 0900 | 4.8 | 8.7 | 4.6 | 9.2 | 8.1 | 19.9 | 14.9 | 12.2 | 3.8  | 3.0  | 0.8 | 0.9  | 0.6 | 1.2 | 1.8 | 5.5  |
|        | 1200 | 4.8 | 7.2 | 3.1 | 6.1 | 5.3 | 13.1 | 11.0 | 15.3 | 6.1  | 6.3  | 1.8 | 2.5  | 2.3 | 4.1 | 3.4 | 7.8  |
|        | 1500 | 1.9 | 4.0 | 1.8 | 4.8 | 3.5 | 12.4 | 9.9  | 19.0 | 9.5  | 11.4 | 3.9 | 5.3  | 1.7 | 3.5 | 2.5 | 5.0  |
|        | 1800 | 1.5 | 3.8 | 1.7 | 5.1 | 3.9 | 12.9 | 13.4 | 21.1 | 11.6 | 11.4 | 3.3 | 2.5  | 0.8 | 2.3 | 1.4 | 3.1  |
|        | 2100 | 1.8 | 3.8 | 3.5 | 6.0 | 4.6 | 23.5 | 18.7 | 14.6 | 9.7  | 8.9  | 1.1 | 0.7  | 0.2 | 0.4 | 0.4 | 2.1  |
|        | 2400 | 1.4 | 3.9 | 3.2 | 8.6 | 8.2 | 36.9 | 17.6 | 7.2  | 2.5  | 2.2  | 0.4 | 0.4  | 0.0 | 0.4 | 1.8 | 5.4  |
| AUTUMN | 0300 | 4.0 | 7.4 | 2.3 | 5.4 | 6.5 | 20.9 | 14.2 | 11.3 | 3.6  | 8.0  | 3.1 | 3.5  | 1.2 | 1.3 | 1.9 | 5.3  |
|        | 0600 | 4.3 | 6.7 | 1.7 | 5.7 | 7.0 | 18.9 | 14.5 | 13.0 | 4.6  | 6.6  | 3.1 | 4.6  | 1.2 | 1.1 | 1.4 | 5.5  |
|        | 0900 | 5.6 | 7.3 | 3.9 | 8.1 | 9.1 | 17.4 | 9.9  | 8.9  | 3.8  | 5.7  | 2.8 | 3.6  | 1.2 | 1.5 | 2.8 | 8.5  |
|        | 1200 | 5.8 | 7.3 | 3.9 | 6.5 | 4.7 | 10.7 | 7.2  | 9.3  | 4.8  | 6.7  | 4.0 | 4.8  | 2.7 | 4.3 | 5.8 | 11.4 |
|        | 1500 | 4.2 | 5.0 | 1.8 | 3.9 | 3.3 | 10.4 | 7.1  | 13.7 | 7.3  | 11.3 | 5.0 | 6.4  | 3.4 | 4.8 | 4.8 | 7.6  |
|        | 1800 | 3.8 | 3.9 | 1.8 | 4.4 | 3.8 | 10.7 | 10.9 | 16.8 | 9.1  | 12.6 | 3.8 | 4.5  | 1.7 | 2.6 | 2.9 | 6.8  |
|        | 2100 | 5.4 | 5.4 | 2.8 | 5.5 | 3.0 | 17.7 | 13.5 | 13.6 | 6.6  | 10.2 | 3.4 | 3.2  | 1.1 | 1.1 | 1.1 | 6.3  |
|        | 2400 | 4.0 | 4.0 | 2.8 | 4.8 | 7.2 | 26.9 | 11.2 | 11.6 | 5.6  | 5.2  | 4.4 | 0.4  | 1.2 | 0.8 | 2.8 | 6.8  |
| WINTER | 0300 | 7.4 | 7.4 | 2.1 | 3.8 | 3.3 | 8.6  | 5.7  | 7.3  | 3.9  | 10.7 | 6.7 | 10.3 | 2.9 | 3.1 | 3.7 | 13.2 |
|        | 0600 | 5.4 | 8.6 | 1.8 | 4.0 | 4.3 | 10.1 | 3.8  | 6.5  | 3.4  | 10.6 | 6.4 | 11.7 | 3.6 | 3.5 | 3.5 | 12.7 |
|        | 0900 | 7.0 | 9.0 | 2.4 | 5.0 | 5.3 | 8.2  | 4.2  | 6.1  | 4.0  | 8.7  | 6.6 | 8.5  | 3.9 | 4.3 | 4.2 | 12.6 |
|        | 1200 | 6.4 | 6.0 | 2.5 | 4.4 | 2.9 | 5.6  | 4.1  | 6.2  | 4.2  | 9.2  | 5.2 | 9.9  | 3.5 | 7.0 | 8.7 | 14.3 |
|        | 1500 | 4.4 | 4.5 | 1.5 | 2.8 | 1.8 | 5.2  | 3.5  | 7.1  | 6.6  | 10.2 | 7.0 | 11.3 | 5.0 | 8.1 | 8.1 | 12.8 |
|        | 1800 | 5.5 | 4.7 | 1.4 | 2.6 | 1.8 | 6.0  | 5.5  | 9.4  | 5.2  | 13.0 | 6.8 | 10.6 | 3.7 | 5.3 | 6.1 | 12.4 |
|        | 2100 | 8.4 | 6.1 | 2.2 | 4.3 | 1.8 | 8.7  | 6.1  | 7.7  | 5.9  | 11.5 | 6.4 | 8.0  | 3.7 | 4.1 | 2.6 | 12.5 |
|        | 2400 | 7.5 | 4.4 | 3.5 | 4.1 | 6.0 | 9.4  | 6.3  | 9.4  | 5.3  | 8.8  | 6.9 | 7.2  | 1.9 | 1.9 | 4.7 | 12.6 |
| SPRING | 0300 | 5.4 | 6.8 | 2.3 | 5.5 | 5.2 | 17.7 | 11.4 | 13.7 | 6.1  | 10.8 | 3.6 | 3.3  | 0.4 | 0.8 | 1.5 | 5.6  |
|        | 0600 | 4.5 | 7.8 | 3.2 | 6.7 | 5.5 | 16.2 | 10.8 | 13.2 | 6.0  | 9.5  | 3.8 | 4.1  | 1.4 | 1.5 | 0.8 | 5.2  |
|        | 0900 | 7.8 | 8.9 | 4.6 | 8.0 | 5.2 | 10.9 | 8.3  | 9.8  | 6.2  | 8.4  | 3.2 | 3.2  | 1.0 | 1.8 | 2.4 | 10.2 |
|        | 1200 | 6.1 | 5.9 | 2.5 | 3.4 | 2.6 | 6.6  | 6.1  | 10.8 | 7.7  | 10.5 | 4.7 | 6.1  | 2.9 | 5.0 | 5.7 | 13.3 |
|        | 1500 | 5.0 | 3.4 | 1.9 | 2.3 | 1.1 | 5.4  | 6.0  | 11.1 | 9.9  | 14.6 | 6.0 | 8.3  | 2.9 | 6.8 | 5.7 | 9.7  |
|        | 1800 | 4.5 | 4.1 | 0.9 | 2.9 | 1.6 | 6.0  | 7.4  | 14.7 | 10.6 | 18.0 | 5.4 | 6.2  | 1.6 | 3.6 | 3.4 | 9.2  |
|        | 2100 | 7.1 | 4.7 | 2.2 | 4.4 | 2.5 | 12.3 | 8.6  | 12.8 | 11.3 | 17.2 | 3.7 | 2.6  | 0.7 | 0.7 | 1.4 | 7.7  |
|        | 2400 | 5.5 | 3.7 | 2.9 | 6.1 | 7.5 | 19.9 | 8.6  | 13.3 | 7.2  | 8.6  | 2.6 | 2.6  | 1.2 | 0.6 | 0.6 | 9.2  |

TABLE 28

SOLAR RADIATION DATA FOR EACH SEASON FOR  
SEVEN STATIONS

## SOLAR RADIATION

Tables 28(a)-(d) give the mean daily total, the mean maximum intensity, the highest recorded intensity and the mean intensity of solar radiation for those stations where records are available.

The data were obtained from the Bureau of Meteorology as half hourly integrals of instantaneous solar radiation intensity and the total amount of radiation recorded each day.

From these figures the figures in Table 28 were obtained as follows:-

### Mean Daily Total ( $\text{kWh m}^{-2}$ )

The sum of the daily totals was divided by the number of days of record.

### Mean Maximum Intensity ( $\text{kW m}^{-2}$ )

The maximum reading each day was summed and divided by the number of days of record. The result was multiplied by 2 to allow for half-hourly readings and the result is an average intensity over a 30 minute period. Under certain meteorological conditions the instantaneous intensity can exceed this value by up to 50% for periods of a few minutes.

### Highest Recorded Intensity ( $\text{kW m}^{-2}$ )

The highest recorded half hourly reading was multiplied by 2.

### Mean Intensity ( $\text{kW m}^{-2}$ )

The sum of the daily totals was multiplied by 2 and divided by the total number of half hourly readings. This in effect approximates the mean intensity during daylight hours. The mean intensity over 24 hours would be approximately half this figure. Dividing the mean daily total by the mean intensity will give the mean number of hours of radiation per day.

T A B L E 28a

SOLAR RADIATION (SUMMER)

Mean Daily Total, Mean Daily Maximum Intensity, Highest Recorded Intensity and  
Mean Daily Intensity of Solar Radiation for Each Station

| STATION             | MEAN DAILY<br>TOTAL<br>kWh/m <sup>2</sup> | MEAN MAX<br>INTENSITY<br>kW/m <sup>2</sup> | HIGHEST RECORDED<br>INTENSITY<br>kW/m <sup>2</sup> | MEAN<br>INTENSITY<br>kW/m <sup>2</sup> |
|---------------------|-------------------------------------------|--------------------------------------------|----------------------------------------------------|----------------------------------------|
| ALICE SPRINGS AERO. | 7.20                                      | 1.04                                       | 1.27                                               | 0.53                                   |
| DARWIN AERO.        | 5.62                                      | 0.95                                       | 1.22                                               | 0.43                                   |
| MELBOURNE R.O.      | 6.29                                      | 0.91                                       | 1.16                                               | 0.44                                   |
| PERTH (GUILDFORD)   | 7.48                                      | 1.02                                       | 1.19                                               | 0.54                                   |
| WAGGA AERO.         | 7.25                                      | 1.00                                       | 1.21                                               | 0.51                                   |
| WILLIAMTOWN AERO.   | 6.42                                      | 0.95                                       | 1.24                                               | 0.46                                   |
| WOOMERA (A) M.O.    | 7.72                                      | 1.04                                       | 1.22                                               | 0.55                                   |

T A B L E 28b

SOLAR RADIATION (AUTUMN)

Mean Daily Total, Mean Daily Maximum Intensity, Highest Recorded Intensity and  
Mean Daily Intensity of Solar Radiation for Each Station

| STATION             | MEAN DAILY<br>TOTAL<br>kWh/m <sup>2</sup> | MEAN MAX<br>INTENSITY<br>kW/m <sup>2</sup> | HIGHEST RECORDED<br>INTENSITY<br>kW/m <sup>2</sup> | MEAN<br>INTENSITY<br>kW/m <sup>2</sup> |
|---------------------|-------------------------------------------|--------------------------------------------|----------------------------------------------------|----------------------------------------|
| ALICE SPRINGS AERO. | 5.70                                      | 0.86                                       | 1.21                                               | 0.48                                   |
| DARWIN AERO.        | 5.53                                      | 0.89                                       | 1.23                                               | 0.45                                   |
| MELBOURNE R.O.      | 3.12                                      | 0.56                                       | 0.98                                               | 0.27                                   |
| PERTH (GUILDFORD)   | 4.50                                      | 0.72                                       | 0.99                                               | 0.38                                   |
| WAGGA AERO.         | 4.08                                      | 0.68                                       | 1.07                                               | 0.35                                   |
| WILLIAMTOWN AERO.   | 4.16                                      | 0.71                                       | 1.08                                               | 0.35                                   |
| WOOMERA (A) M.O.    | 4.81                                      | 0.75                                       | 1.14                                               | 0.40                                   |

T A B L E 28c

SOLAR RADIATION (WINTER)

Mean Daily Total, Mean Daily Maximum Intensity, Highest Recorded Intensity and  
Mean Daily Intensity of Solar Radiation for Each Station

| STATION             | MEAN DAILY<br>TOTAL<br>kWh/m <sup>2</sup> | MEAN MAX<br>INTENSITY<br>kW/m <sup>2</sup> | HIGHEST RECORDED<br>INTENSITY<br>kW/m <sup>2</sup> | MEAN<br>INTENSITY<br>kW/m <sup>2</sup> |
|---------------------|-------------------------------------------|--------------------------------------------|----------------------------------------------------|----------------------------------------|
| ALICE SPRINGS AERO. | 4.61                                      | 0.74                                       | 0.95                                               | 0.41                                   |
| DARWIN AERO.        | 5.51                                      | 0.83                                       | 0.97                                               | 0.46                                   |
| MELBOURNE R.O.      | 1.95                                      | 0.41                                       | 0.70                                               | 0.19                                   |
| PERTH (GUILDFORD)   | 2.75                                      | 0.53                                       | 0.79                                               | 0.26                                   |
| WAGGA AERO.         | 2.54                                      | 0.49                                       | 0.84                                               | 0.24                                   |
| WILLIAMTOWN AERO.   | 3.02                                      | 0.55                                       | 0.90                                               | 0.28                                   |
| WOOMERA (A) M.O.    | 3.39                                      | 0.59                                       | 0.94                                               | 0.31                                   |

T A B L E 28d

SOLAR RADIATION (SPRING)

Mean Daily Total, Mean Daily Maximum Intensity, Highest Recorded Intensity and  
Mean Daily Intensity of Solar Radiation for Each Station

| STATION             | MEAN DAILY<br>TOTAL <sub>2</sub><br>kWh/m <sup>2</sup> | MEAN MAX<br>INTENSITY<br>kW/m <sup>2</sup> | HIGHEST RECORDED<br>INTENSITY<br>kW/m <sup>2</sup> | MEAN<br>INTENSITY<br>kW/m <sup>2</sup> |
|---------------------|--------------------------------------------------------|--------------------------------------------|----------------------------------------------------|----------------------------------------|
| ALICE SPRINGS AERO. | 6.77                                                   | 0.99                                       | 1.24                                               | 0.52                                   |
| DARWIN AERO.        | 6.49                                                   | 0.99                                       | 1.25                                               | 0.50                                   |
| MELBOURNE R.O.      | 4.65                                                   | 0.76                                       | 1.14                                               | 0.35                                   |
| PERTH               | 5.79                                                   | 0.89                                       | 1.13                                               | 0.44                                   |
| WAGGA AERO.         | 5.66                                                   | 0.86                                       | 1.31                                               | 0.43                                   |
| WILLIAMTOWN AERO.   | 5.37                                                   | 0.84                                       | 1.20                                               | 0.41                                   |
| WOOMERA (A) M.O.    | 6.37                                                   | 0.91                                       | 1.18                                               | 0.49                                   |

TABLE 29

MEAN NUMBER OF DAYS WHEN VARIOUS METEOROLOGICAL CONDITIONS  
HAVE BEEN EXPERIENCED AT EACH STATION

### METEOROLOGICAL CONDITIONS

Tables 29(a)-(d) give the mean number of days per season on which the given meteorological condition has been recorded. Except for the number of raindays which were obtained from "Climatic Averages Australia - Metric Edition 1975", Bureau of Meteorology, the figures in Tables 29 were extracted from daily meteorological summaries.

The definitions of the meteorological conditions are:-

Haze            Visibility greater than 1 km and less than 10 km

Fog            Visibility less than 1 km

Dust            Visibility less than 1 km

Rainday        registered if more than 0.1 mm of rain fell

Strong Wind    10 minute average wind speed greater than 41 km/h

Gale            10 minute average wind speed greater than 63 km/h

Frost           Screen temperature below 2.2°C

Thunder, hail and snow are self evident

T A B L E 29a

## METEOROLOGICAL CONDITIONS (SUMMER)

Mean number of days per season when the given condition has been recorded for each station.

| Station             | C o n d i t i o n |      |         |       |      |      |      |             |      |      |
|---------------------|-------------------|------|---------|-------|------|------|------|-------------|------|------|
|                     | HAIL              | SNOW | THUNDER | FROST | DUST | HAZE | FOG  | STRONG WIND | GALE | RAIN |
| ADELAIDE R.O.       | 0.14              | 0.0  | 3.6     | 0.0   | 0.23 | 43.3 | 0.05 | 4.7         | 0.50 | 14   |
| ALICE SPRINGS AERO. | 0.08              | 0.0  | 5.8     | 0.0   | 7.5  | 33.3 | 0.11 | 5.1         | 0.31 | 13   |
| AMBERLEY AERO.      | 0.34              | 0.0  | 11.2    | 0.0   | 0.0  | 41.0 | 3.8  | 3.3         | 0.46 | 36   |
| BROOME AERO.        | 0.08              | 0.0  | 17.4    | 0.0   | 0.22 | 26.8 | 0.17 | 3.4         | 0.72 | 26   |
| CAIRNS AERO.        | 0.0               | 0.0  | 7.7     | 0.0   | -    | 28.7 | 0.11 | 0.69        | 0.09 | 53   |
| CANBERRA (A) M.O.   | 0.91              | 0.0  | 9.1     | 0.6   | 0.88 | 31.4 | 2.9  | 5.0         | 0.37 | 23   |
| COCOS ISLAND        | 0.0               | 0.0  | 1.8     | 0.0   | 0.04 | 16.0 | 0.04 | 5.8         | 0.40 | -    |
| DARWIN AERO.        | 0.03              | 0.0  | 27.7    | 0.0   | 0.14 | 11.5 | 0.14 | 2.6         | 0.14 | 49   |
| EAST SALE AERO.     | 0.15              | 0.0  | 5.4     | 0.2   | 0.21 | 62.8 | 10.8 | 13.0        | 1.1  | 28   |
| KATHERINE P.O.      | 0.0               | 0.0  | -       | 0.0   | -    | -    | 0.0  | -           | 0.0  | 39   |
| KIMBERLEY RESEARCH  | 0.17              | 0.0  | 29.8    | 0.0   | -    | 20.3 | 0.25 | 2.6         | 0.17 | 37   |
| MELBOURNE R.O.      | 0.64              | 0.0  | 4.1     | 0.0   | 0.0  | 55.0 | 0.59 | 2.3         | 0.09 | 27   |
| ONSLow AERO.        | 0.03              | 0.0  | 7.5     | 0.0   | 2.7  | 43.1 | 0.14 | 21.5        | 2.0  | 8    |
| PERTH R.O.          | 0.06              | 0.0  | 2.1     | 0.0   | 0.09 | 57.2 | 0.86 | 7.3         | 0.17 | 10   |
| RICHMOND AERO.      | 0.36              | 0.0  | 7.4     | 0.0   | 0.39 | 45.3 | 6.0  | 2.5         | 0.62 | 41   |
| TOWNSVILLE AERO.    | 0.08              | 0.0  | 7.9     | 0.0   | 0.03 | 25.7 | 0.31 | 2.2         | 0.11 | 43   |
| WAGGA AERO.         | 0.27              | 0.0  | 6.1     | 0.0   | 1.7  | 19.4 | 0.15 | 5.6         | 0.12 | 20   |
| WILLIAMTOWN AERO.   | 0.34              | 0.0  | 8.9     | 2.5   | 0.38 | 58.6 | 5.4  | 4.4         | 0.38 | 36   |
| WOOMERA (A) M.O.    | 0.07              | 0.0  | 3.4     | 0.0   | 1.2  | 14.0 | 0.21 | 11.7        | 0.61 | 8    |

T A B L E 29b

## METEOROLOGICAL CONDITIONS (AUTUMN)

Mean number of days per season when the given condition has been recorded for each station.

| Station             | C o n d i t i o n |      |         |       |      |      |      |             |      |      |
|---------------------|-------------------|------|---------|-------|------|------|------|-------------|------|------|
|                     | HAIL              | SNOW | THUNDER | FROST | DUST | HAZE | FOG  | STRONG WIND | GALE | RAIN |
| ADELAIDE R.O.       | 0.77              | 0.0  | 2.3     | 0.23  | 0.14 | 52.9 | 0.55 | 3.8         | 0.50 | 27   |
| ALICE SPRINGS AERO. | 0.0               | 0.0  | 1.5     | 2.0   | 1.9  | 14.3 | 0.28 | 1.6         | 0.03 | 8    |
| AMBERLEY AERO.      | 0.06              | 0.0  | 2.7     | 0.92  | 0.11 | 32.5 | 11.5 | 1.3         | 0.06 | 25   |
| BROOME AERO.        | 0.0               | 0.0  | 5.8     | 0.0   | 0.06 | 17.4 | 2.0  | 1.8         | 0.17 | 13   |
| CAIRNS AERO.        | 0.0               | 0.0  | 1.8     | 0.0   | 0.03 | 24.4 | 0.26 | 1.6         | 0.14 | 55   |
| CANBERRA (A) M.O.   | 0.35              | 0.30 | 2.7     | 21.7  | 0.35 | 33.8 | 14.7 | 3.9         | 0.14 | 23   |
| COCOS ISLAND        | 0.0               | 0.0  | 3.1     | 0.0   | 0.0  | 22.0 | 0.0  | 8.8         | 0.52 | -    |
| DARWIN AERO.        | 0.0               | 0.0  | 10.1    | 0.0   | 0.06 | 13.2 | 0.14 | 1.5         | 0.03 | 30   |
| EAST SALE AERO.     | 0.21              | 0.0  | 1.8     | 4.7   | 0.03 | 60.2 | 22.5 | 11.2        | 0.88 | 36   |
| KATHERINE P.O.      | 0.0               | 0.0  | -       | 0.0   | 0.13 | -    | 0.0  | 1.1         | 0.0  | 13   |
| KIMBERLEY RESEARCH  | 0.0               | 0.0  | 8.3     | 0.0   | 0.08 | 18.2 | 0.17 | 1.8         | 0.0  | 12   |
| MELBOURNE R.O.      | 0.55              | 0.0  | 2.0     | 0.0   | 0.09 | 63.2 | 4.3  | 3.2         | 0.23 | 35   |
| ONSLow AERO.        | 0.0               | 0.0  | 4.0     | 0.0   | 1.6  | 19.6 | 0.74 | 6.3         | 1.0  | 9    |
| PERTH R.O.          | 0.26              | 0.0  | 3.8     | 0.38  | 0.14 | 60.8 | 3.5  | 6.4         | 0.66 | 26   |
| RICHMOND AERO.      | 0.13              | 0.0  | 2.6     | 1.7   | 0.0  | 39.7 | 21.0 | 2.3         | 0.13 | 27   |
| TOWNSVILLE AERO.    | 0.03              | 0.0  | 1.9     | 0.0   | 0.03 | 24.8 | 1.2  | 1.5         | 0.11 | 29   |
| WAGGA AERO.         | 0.06              | 0.0  | 2.3     | 5.9   | 0.82 | 26.6 | 4.9  | 2.6         | 0.18 | 22   |
| WILLIAMTOWN AERO.   | 0.07              | 0.0  | 3.5     | 1.5   | 0.24 | 54.4 | 10.4 | 6.4         | 0.48 | 33   |
| WOOMERA (A) M.O.    | 0.0               | 0.0  | 1.4     | 0.15  | 0.46 | 9.9  | 1.3  | 5.8         | 0.25 | 11   |

T A B L E 29c

## METEOROLOGICAL CONDITIONS (WINTER)

Mean number of days per season when the given condition has been recorded for each station.

| Station             | C o n d i t i o n |      |         |       |      |      |      |             |      |      |
|---------------------|-------------------|------|---------|-------|------|------|------|-------------|------|------|
|                     | HAIL              | SNOW | THUNDER | FROST | DUST | HAZE | FOG  | STRONG WIND | GALE | RAIN |
| ADELAIDE R.O.       | 1.5               | 0.0  | 1.5     | 2.6   | 0.14 | 63.0 | 2.9  | 5.8         | 0.82 | 47   |
| ALICE SPRINGS AERO. | 0.03              | 0.0  | 0.64    | 25.5  | 1.2  | 10.7 | 0.81 | 1.6         | 0.08 | 8    |
| AMBERLEY AERO.      | 0.06              | 0.0  | 1.1     | 13.2  | 0.11 | 32.4 | 13.7 | 1.2         | 0.06 | 18   |
| BROOME AERO.        | 0.0               | 0.0  | 0.10    | 0.0   | 0.22 | 18.9 | 9.5  | 1.7         | 0.0  | 5    |
| CAIRNS AERO.        | 0.0               | 0.0  | 0.03    | 0.0   | 0.11 | 33.1 | 0.31 | 1.1         | 0.0  | 28   |
| CANBERRA (A) M.O.   | 1.0               | 1.5  | 1.1     | 59.5  | 0.05 | 31.6 | 19.8 | 8.2         | 0.45 | 32   |
| COCOS ISLAND        | 0.0               | 0.0  | 0.56    | 0.0   | 0.04 | 24.6 | 0.04 | 21.3        | 0.04 | -    |
| DARWIN AERO.        | 0.0               | 0.0  | 0.06    | 0.0   | 0.11 | 43.5 | 1.5  | 0.70        | 0.0  | 2    |
| EAST SALE AERO.     | 0.53              | 0.09 | 0.32    | 29.1  | 0.0  | 52.9 | 22.2 | 13.8        | 1.6  | 45   |
| KATHERINE P.O.      | 0.0               | 0.0  | -       | -     | -    | -    | 0.13 | 1.3         | 0.0  | 0    |
| KIMBERLEY RESEARCH  | 0.0               | 0.0  | 0.17    | 0.0   | 0.0  | 44.9 | 0.17 | 2.0         | 0.0  | 0    |
| MELBOURNE R.O.      | 1.4               | 0.05 | 0.82    | 1.9   | 0.05 | 57.7 | 8.4  | 5.6         | 0.27 | 45   |
| ONSLow AERO.        | 0.0               | 0.0  | 0.15    | 0.0   | 1.5  | 13.5 | 0.99 | 7.5         | 0.09 | 10   |
| PERTH R.O.          | 1.5               | 0.0  | 4.8     | 0.08  | 0.03 | 51.9 | 3.8  | 9.5         | 2.0  | 52   |
| RICHMOND AERO.      | 0.07              | 0.0  | 0.93    | 23.3  | 0.20 | 32.3 | 20.5 | 5.0         | 0.60 | 23   |
| TOWNSVILLE AERO.    | 0.0               | 0.0  | 0.08    | 0.0   | 0.06 | 32.2 | 6.5  | 1.5         | 0.06 | 10   |
| WAGGA AERO.         | 0.85              | 0.24 | 1.1     | 35.6  | 0.06 | 24.1 | 16.7 | 4.3         | 0.21 | 32   |
| WILLIAMTOWN AERO.   | 0.17              | 0.0  | 2.0     | 4.3   | 0.07 | 44.2 | 8.9  | 13.7        | 2.3  | 32   |
| WOOMERA (A) M.O.    | 0.14              | 0.0  | 1.1     | 3.1   | 0.07 | 12.3 | 2.4  | 7.7         | 0.29 | 17   |

T A B L E 29d

## METEOROLOGICAL CONDITIONS (SPRING)

Mean number of days per season when the given condition has been recorded for each station.

| Station             | C o n d i t i o n |      |         |       |      |      |      |             |      |      |
|---------------------|-------------------|------|---------|-------|------|------|------|-------------|------|------|
|                     | HAIL              | SNOW | THUNDER | FROST | DUST | HAZE | FOG  | STRONG WIND | GALE | RAIN |
| ADELAIDE R.O.       | 1.7               | 0.0  | 3.7     | 1.5   | 0.14 | 48.5 | 0.50 | 8.7         | 1.4  | 32   |
| ALICE SPRINGS AERO. | 0.28              | 0.0  | 5.9     | 0.77  | 6.6  | 28.6 | 0.28 | 6.0         | 0.36 | 11   |
| AMBERLEY AERO.      | 0.36              | 0.0  | 7.9     | 0.62  | 0.25 | 55.6 | 12.3 | 2.1         | 0.06 | 26   |
| BROOME AERO.        | 0.03              | 0.0  | 1.9     | 0.0   | 0.36 | 37.0 | 5.4  | 1.1         | 0.03 | 3    |
| CAIRNS AERO.        | 0.14              | 0.0  | 1.9     | 0.0   | 0.09 | 46.8 | 0.23 | 1.1         | 0.0  | 25   |
| CANBERRA (A) M.O.   | 2.0               | 0.54 | 6.2     | 23.0  | 0.45 | 28.3 | 8.7  | 9.5         | 0.39 | 31   |
| COCOS ISLAND        | 0.0               | 0.0  | 0.08    | 0.0   | 0.0  | 24.0 | 0.0  | 15.5        | 0.16 | -    |
| DARWIN AERO.        | 0.03              | 0.0  | 12.0    | 0.0   | 0.17 | 37.0 | 0.28 | 0.75        | 0.03 | 20   |
| EAST SALE AERO.     | 0.68              | 0.03 | 2.9     | 6.9   | 0.18 | 58.2 | 15.8 | 17.5        | 1.9  | 44   |
| KATHERINE P.O.      | 0.0               | 0.0  | 2.1     | 0.0   | 0.25 | -    | 0.0  | 1.0         | 0.13 | 11   |
| KIMBERLEY RESEARCH  | 0.25              | 0.0  | 9.9     | 0.0   | 0.08 | 48.5 | 0.08 | 1.7         | 0.17 | 12   |
| MELBOURNE R.O.      | 1.6               | 0.0  | 3.2     | 0.0   | 0.09 | 50.5 | 1.7  | 6.2         | 0.32 | 41   |
| ONSLow AERO.        | 0.0               | 0.0  | 0.55    | 0.0   | 2.8  | 38.0 | 0.61 | 17.0        | 0.26 | 2    |
| PERTH R.O.          | 0.69              | 0.0  | 2.2     | 0.0   | 0.0  | 54.4 | 2.1  | 6.1         | 1.0  | 31   |
| RICHMOND AERO.      | 0.23              | 0.0  | 6.3     | 1.5   | 0.77 | 42.3 | 12.6 | 6.6         | 0.43 | 32   |
| TOWNSVILLE AERO.    | 0.06              | 0.0  | 2.7     | 0.0   | 0.14 | 42.1 | 1.8  | 1.7         | 0.0  | 13   |
| WAGGA AERO.         | 0.91              | 0.03 | 5.5     | 12.7  | 1.0  | 21.0 | 5.5  | 6.8         | 0.48 | 30   |
| WILLIAMTOWN AERO.   | 0.31              | 0.0  | 6.9     | 2.6   | 0.45 | 56.9 | 7.0  | 11.4        | 1.2  | 31   |
| WOOMERA (A) M.O.    | 0.11              | 0.0  | 3.5     | 0.0   | 9.4  | 15.7 | 0.18 | 15.9        | 1.5  | 13   |

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MATERIALS RESEARCH LABS ASCOT VALE (AUSTRALIA)  
CLIMATIC CONDITIONS AT AIR FORCE BASES IN AUSTRALIA, (U)  
OCT 80 B T MURRELL, J A MCRAE  
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ANNEX A

AIR FORCE RESEARCH REQUEST 10/76

ENVIRONMENTAL CONDITIONS FOR RAAF EQUIPMENT

## AIR FORCE RESEARCH REQUIREMENT 10/76

### ENVIRONMENTAL CONDITIONS FOR RAAF EQUIPMENT

#### Introduction

1. The RAAF has experienced many aircraft and equipment problems which were caused in toto or in part by the environmental conditions in the areas in which the RAAF has operated. These problems have manifested themselves in such forms as corrosion, physical deterioration, material reversions and conversions, contamination, and insidious property change, or by a reduction in performance to an unacceptable level. Factors such as temperature, humidity, solar radiation, precipitation, etc., either singularly or in combination play some causal part in these problems. But these problems usually occur when the equipment or material is operated or used in an environment outside its design limitations.

2. The solution, therefore in many cases lies with the ability to specify the ground level environmental conditions in which RAAF equipment is intended to operate so that the relevant factors will be taken into account in the design and the selection of materials or the development of protective measures. If the foreseen ground level environmental conditions are not specified the designer or manufacturer cannot guarantee acceptable performance, safety and service life. The converse is also true in that, unless the intended environmental conditions are known, the evaluation for suitability of "off the shelf" equipment cannot be effectively completed. The RAAF therefore has a requirement for a document, to form part of a revised DEF(AUST) 168, to be used as the basis for specifying ground level environmental conditions that will apply to Service equipment in its foreseen role, and its storage.

#### Object

3. Assistance is required in the gathering and processing of environmental information pertinent to the Australia continent and its environs and the reduction of this information into a form which will allow its selective use.

#### Requirements

4. Details of the task requirements are given in the following paragraphs.

5. Task Terms of Reference. The task terms of reference are:

- (a) To ascertain and define the standard Australian atmosphere and to detail divergencies from that standard at the following locations:
  - (1) Darwin area,
  - (2) Cocos Island area,
  - (3) Tindall area,
  - (4) Learmonth area,
  - (5) Kimberleys area,
  - (6) Townsville area,
  - (7) Cairns area,
  - (8) Amberley area,
  - (9) Richmond area (including Williamstown),
  - (10) Canberra area (including Wagga),
  - (11) Melbourne area (including East Sale),
  - (12) Adelaide area,
  - (13) Woomera area,
  - (14) Alice Springs area,
  - (15) Perth area,
  - (16) Snowy Mountains area of NSW/VIC; and
  - (17) Other locations within the Australian area of interest as determined by the strategic basis.
- (b) To ascertain and define the following climatic factors at those areas given in sub-para a.
  - (1) ground level air temperature extremes and average maximums and the minimums for the four seasons;
  - (2) ground level absolute humidity and dew point extremes and average maximums and minimums for the four seasons;

- (3) precipitation types, rate and quantity extremes;
  - (4) wind speed extremes and averages for the four seasons;
  - (5) average wind direction on a diurnal and seasonal basis;
  - (6) likelihood by type and the level of wind borne hazards such as sand and dust on a seasonal basis;
  - (7) mean quantity and mean and maximum daily intensity of solar radiation for the four seasons;
  - (8) the incidence of corrosive chemicals such as salt or industrial fallout.
- (c) To collate the gathered data into a form which will simplify its utilization and allow its ready reference from other documents.
- (d) To consider and report on the extent to which the following man made or induced conditions could be specified in DEF(AUST) 168.
- (1) Noise, vibration and shock;
  - (2) Electromagnetic radiation - thermal to ultra violet and perhaps above;
  - (3) Ambient conditions in elementary storage, containers, sheds etc; and
  - (4) Contaminants, principally fluids such as hydraulic oils and cleansers, but also gases and solids such as propellant residue, aerosols, industrial fogs etc.

6. Operational Relevance and Urgency. The results of this task need to be applied at the earliest opportunity and whenever RAAF equipment requirements need to be stated. The nonavailability of environmental details could cause the RAAF to over or under specify its requirements and thus unnecessarily increase costs or allow unsuitable equipment to be put into service.

7. Data Source and Availability. Much of the required basic data should be available either from the work done to date against RD71 67/3 or from the

Bureau of Meteorology. Reference should also be made to the work done by WRE against the Karinga project and by ARDU in deriving a RAAF Atmospheric Environment. The RD70 draft task description sent to ECADSS requesting proposal of a program for the development of a GUST model of the Australian atmosphere may also have relevance to this task.

8. Possible Subdivision of the Task. The more important environmental conditions of concern are those related to the hot/dry and hot/wet areas and work in these areas should be afforded the higher priority.

#### Documentation

9. The results of the task should be presented in a manner suitable for immediate inclusion in DEF(AUST) 168. However, interim or progress reports are required to enable the Air Force to utilize any available data and to ascertain task progress.

#### Security

10. All aspects of this task are unclassified.

#### Target Date

11. The desired target date for completion of the task is December 1976. However, as indicated in paragraph 8 usable interim environmental data on hot/wet and hot/dry areas are needed at the earliest possible time.

#### Task Management

12. This task is basically directed towards meeting an engineering requirement but the results will have wide application throughout the RAAF. Service requirements are being co-ordinated by CAFTS Branch with DTP acting as the Project Director.

ANNEX B

DETERMINATION OF EXTREME VALUES

The theory of extreme values has been widely used for the prediction of the intensities of meteorological events that occur infrequently [1,2].

The values estimated in this report were obtained using the equation of Jenkinson [3].

$$x = x_0 + \frac{\alpha}{k} (1 - e^{-ky}) \quad (1)$$

where  $x$  is the value of a variable expected to occur once in a return period  $T$  years and

$$y = -\ln \{ \ln [T/(T-1)] \}$$

The values of  $x_0$ ,  $\alpha$  and  $k$  that gave the best fit to the recorded data were determined by both a weighted least squares fit and by the method of Maximum Likelihood [2]. These results obtained by both methods were similar and the figures quoted on the various tables are those obtained from a least squares fit weighted by a factor  $1/w$  (1) where

$$w = \pi^2/6 + 1.14 (y-\gamma)\pi/\sqrt{6} + 1.1(y-\gamma)^2$$

$$\gamma = 0.5772$$

#### REFERENCES

1. Gumbel, E.J., "Statistics of Extremes", 1958 Columbia University Press, N.Y.
2. W.M.O. Tech. Note 98, "Estimation of Maximum Floods", 1969 Chap. 5.
3. Jenkinson, A.F. (1955). "The Frequency Distribution of the Annual Maximum (or Minimum) Values of Meteorological Elements", Quart. J. Roy. Meteor. Soc. 87, 158.

# INDEX

|                      |                                 | <u>TABLE</u> | <u>PAGE</u> |
|----------------------|---------------------------------|--------------|-------------|
| <b>Adelaide</b>      |                                 |              |             |
| Dust                 |                                 | 29           | 89-92       |
| Elevation            |                                 | 1            | 2           |
| Fog                  |                                 | 2,29         | 4,89-92     |
| Gales                |                                 | 2,29         | 4,89-92     |
| Hail                 |                                 | 2,29         | 4,89-92     |
| Haze                 |                                 | 29           | 89-92       |
| Humidity, Absolute   | Extreme                         | 2,23         | 4,37-40     |
|                      | Mean                            | 2            | 4           |
| Latitude             |                                 | 1            | 2           |
| Longitude            |                                 | 1            | 2           |
| Rainfall             | Extreme Annual                  | 24(a)        | 43          |
|                      | Extreme Daily                   | 24(c)        | 45          |
|                      | Extreme Hourly                  | 24(d)        | 46          |
|                      | Extreme Monthly                 | 24(b)        | 44          |
|                      | Extreme Six Minute              | 24(e)        | 47          |
|                      | Seasonal                        | 2            | 4           |
| Temperature          | Extreme Maximum                 | 21           | 25-29       |
|                      | Extreme Minimum                 | 22           | 30-34       |
|                      | Seasonal                        | 2            | 4           |
| Thunder              |                                 | 2,29         | 4,89-92     |
| Wind                 | Direction                       | 2,27         | 4,62-80     |
|                      | Diurnal & Seasonal<br>Variation | 27           | 62-80       |
|                      | Extreme Gusts                   | 25           | 50-53       |
|                      | Extreme Averages                | 26           | 56-59       |
|                      | Seasonal Means & Extremes       | 2            | 4           |
| <b>Alice Springs</b> |                                 |              |             |
| Dust                 |                                 | 29           | 89-92       |
| Elevation            |                                 | 1            | 2           |

# Alice Springs (Cont.)

|                    |                              |       |         |
|--------------------|------------------------------|-------|---------|
| Fog                |                              | 29    | 89-92   |
| Gales              |                              | 3,29  | 5,89-92 |
| Hail               |                              | 3,29  | 5,89-92 |
| Haze               |                              | 29    | 89-92   |
| Humidity, Absolute | Extreme                      | 3,23  | 5,37-40 |
|                    | Mean                         | 3     | 5       |
| Latitude           |                              | 1     | 2       |
| Longitude          |                              | 1     | 2       |
| Radiation          |                              | 28    | 83-86   |
| Rainfall           | Extreme Annual               | 24(a) | 43      |
|                    | Extreme Daily                | 24(c) | 45      |
|                    | Extreme Hourly               | 24(d) | 46      |
|                    | Extreme Monthly              | 24(b) | 44      |
|                    | Extreme Six Minute           | 24(e) | 47      |
|                    | Seasonal                     | 3     | 5       |
| Temperature        | Extreme Maximum              | 21    | 25-29   |
|                    | Extreme Minimum              | 22    | 30-34   |
|                    | Seasonal                     | 3     | 5       |
| Thunder            |                              | 3,29  | 5,89-92 |
| Wind               | Direction                    | 3,27  | 5,62-80 |
|                    | Diurnal & Seasonal Variation | 27    | 62-80   |
|                    | Extreme Gusts                | 25    | 50-53   |
|                    | Extreme Averages             | 26    | 56-59   |
|                    | Seasonal Means & Extremes    | 3     | 5       |

## Amberley

|                    |         |      |         |
|--------------------|---------|------|---------|
| Dust               |         | 29   | 89-92   |
| Elevation          |         | 1    | 2       |
| Fog                |         | 4,29 | 6,89-92 |
| Gales              |         | 4,29 | 6,89-92 |
| Hail               |         | 4,29 | 6,89-92 |
| Haze               |         | 29   | 89-92   |
| Humidity, Absolute | Extreme | 4,23 | 6,37-40 |

# Amberley (Cont.)

|                    |                              |       |         |
|--------------------|------------------------------|-------|---------|
| Humidity, Absolute | Mean                         | 4     | 6       |
| Latitude           |                              | 1     | 2       |
| Longitude          |                              | 1     | 2       |
| Rainfall           | Extreme Annual               | 24(a) | 43      |
|                    | Extreme Daily                | 24(c) | 45      |
|                    | Extreme Hourly               | 24(d) | 46      |
|                    | Extreme Monthly              | 24(b) | 44      |
|                    | Extreme Six Minute           | 24(e) | 47      |
|                    | Seasonal                     | 4     | 6       |
| Temperature        | Extreme Maximum              | 21    | 25-29   |
|                    | Extreme Minimum              | 22    | 30-34   |
|                    | Seasonal                     | 4     | 6       |
| Thunder            |                              | 4,29  | 6,89-92 |
| Wind               | Direction                    | 4,27  | 6,62-80 |
|                    | Diurnal & Seasonal Variation | 27    | 62-80   |
|                    | Extreme Gusts                | 25    | 50-53   |
|                    | Extreme Averages             | 26    | 56-59   |
|                    | Seasonal Means & Extremes    | 4     | 6       |
|                    |                              |       |         |

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### Broome

|                    |                |       |         |
|--------------------|----------------|-------|---------|
| Dust               |                | 29    | 89-92   |
| Elevation          |                | 1     | 2       |
| Fog                |                | 5,29  | 7,89-92 |
| Gales              |                | 5,29  | 7,89-92 |
| Hail               |                | 5,29  | 7,89-92 |
| Haze               |                | 29    | 89-92   |
| Humidity, Absolute | Extreme        | 5,23  | 7,37-40 |
|                    | Mean           | 5     | 7       |
| Latitude           |                | 1     | 2       |
| Longitude          |                | 1     | 2       |
| Rainfall           | Extreme Annual | 24(a) | 43      |

# Broome (Cont.)

|             |                              |       |         |
|-------------|------------------------------|-------|---------|
| Rainfall    | Extreme Daily                | 24(c) | 45      |
|             | Extreme Hourly               | 24(d) | 46      |
|             | Extreme Monthly              | 24(b) | 44      |
|             | Extreme Six Minute           | 24(e) | 47      |
|             | Seasonal                     | 5     | 7       |
| Temperature | Extreme Maximum              | 21    | 25-29   |
|             | Extreme Minimum              | 22    | 30-34   |
|             | Seasonal                     | 5     | 7       |
| Thunder     |                              | 5,29  | 7,89-92 |
| Wind        | Direction                    | 5,27  | 7,62-80 |
|             | Diurnal & Seasonal Variation | 27    | 62-80   |
|             | Extreme Gusts                | 25    | 50-53   |
|             | Extreme Averages             | 26    | 56-59   |
|             | Seasonal Means & Extremes    | 5     | 7       |
|             |                              |       |         |

# Cairns

|                    |                    |       |         |
|--------------------|--------------------|-------|---------|
| Dust               |                    | 29    | 89-92   |
| Elevation          |                    | 1     | 2       |
| Fog                |                    | 6,29  | 8,89-92 |
| Gales              |                    | 6,29  | 8,89-92 |
| Hail               |                    | 6,29  | 8,89-92 |
| Haze               |                    | 29    | 89-92   |
| Humidity, Absolute | Extreme            | 6,23  | 8,37-40 |
|                    | Mean               | 6     | 8       |
| Latitude           |                    | 1     | 2       |
| Longitude          |                    | 1     | 2       |
| Rainfall           | Extreme Annual     | 24(a) | 43      |
|                    | Extreme Daily      | 24(c) | 45      |
|                    | Extreme Hourly     | 24(d) | 46      |
|                    | Extreme Monthly    | 24(b) | 44      |
|                    | Extreme Six Minute | 24(e) | 47      |
|                    | Seasonal           | 6     | 8       |
| Temperature        | Extreme Maximum    | 21    | 25-29   |

# Cairns (Cont.)

|             |                              |      |         |
|-------------|------------------------------|------|---------|
| Temperature | Extreme Minimum              | 22   | 30-34   |
|             | Seasonal                     | 6    | 8       |
| Thunder     |                              | 6,29 | 8,89-92 |
| Wind        | Direction                    | 2,27 | 62-80   |
|             | Diurnal & Seasonal Variation | 27   | 62-80   |
|             | Extreme Gusts                | 25   | 50-53   |
|             | Extreme Averages             | 26   | 56-59   |
|             | Seasonal Means & Extremes    | 6    | 8       |

# Canberra

|                    |                              |       |         |
|--------------------|------------------------------|-------|---------|
| Dust               |                              | 29    | 89-92   |
| Elevation          |                              | 1     | 2       |
| Fog                |                              | 7,29  | 9,89-92 |
| Gales              |                              | 7,29  | 9,89-92 |
| Hail               |                              | 7,29  | 9,89-92 |
| Haze               |                              | 29    | 89-92   |
| Humidity, Absolute | Extreme                      | 7,23  | 37-40   |
|                    | Mean                         | 7     | 9       |
| Latitude           |                              | 1     | 2       |
| Longitude          |                              | 1     | 2       |
| Rainfall           | Extreme Annual               | 24(a) | 43      |
|                    | Extreme Daily                | 24(c) | 45      |
|                    | Extreme Hourly               | 24(d) | 46      |
|                    | Extreme Monthly              | 24(b) | 44      |
|                    | Extreme Six Minute           | 24(e) | 47      |
|                    | Seasonal                     | 7     | 9       |
| Temperature        | Extreme Maximum              | 21    | 25-29   |
|                    | Extreme Minimum              | 22    | 30-34   |
|                    | Seasonal                     | 7     | 9       |
| Thunder            |                              | 7,29  | 9,89-92 |
| Wind               | Direction                    | 7,27  | 9,62-80 |
|                    | Diurnal & Seasonal Variation | 27    | 62-80   |
|                    | Extreme Gusts                | 25    | 50-53   |

# Canberra (Cont.)

|      |                           |    |       |
|------|---------------------------|----|-------|
| Wind | Extreme Averages          | 26 | 56-59 |
|      | Seasonal Means & Extremes | 7  | 9     |

## Cocos Island

|                    |                              |       |          |
|--------------------|------------------------------|-------|----------|
| Dust               |                              | 29    | 89-92    |
| Elevation          |                              | 1     | 2        |
| Fog                |                              | 8,29  | 10,89-92 |
| Gales              |                              | 8,29  | 10,89-92 |
| Hail               |                              | 8,29  | 10,89-92 |
| Haze               |                              | 29    | 89-92    |
| Humidity, Absolute | Extreme                      | 8,23  | 10,37-40 |
|                    | Mean                         | 8     | 10       |
| Latitude           |                              | 1     | 2        |
| Longitude          |                              | 1     | 2        |
| Rainfall           | Extreme Annual               | 24(a) | 43       |
|                    | Extreme Daily                | 24(c) | 45       |
|                    | Extreme Hourly               | 24(d) | 46       |
|                    | Extreme Monthly              | 24(b) | 44       |
|                    | Extreme Six Minute           | 24(e) | 47       |
|                    | Seasonal                     | 8     | 10       |
| Temperature        | Extreme Maximum              | 21    | 25-29    |
|                    | Extreme Minimum              | 22    | 30-34    |
|                    | Seasonal                     | 8     | 10       |
| Thunder            |                              | 8,29  | 10,89-92 |
| Wind               | Direction                    | 8,27  | 10,62-80 |
|                    | Diurnal & Seasonal Variation | 27    | 62-80    |
|                    | Extreme Gusts                | 25    | 50-53    |
|                    | Extreme Averages             | 26    | 56-59    |
|                    | Seasonal Means & Extremes    | 8     | 10       |

|                    |                                 |        |            |
|--------------------|---------------------------------|--------|------------|
| Cyclones           |                                 |        | 41, 48, 54 |
| Darwin             |                                 |        |            |
| Dust               |                                 | 29     | 89-92      |
| Elevation          |                                 | 1      | 2          |
| Fog                |                                 | 9, 29  | 11, 89-92  |
| Gales              |                                 | 9, 29  | 11, 89-92  |
| Hail               |                                 | 9, 29  | 11, 89-92  |
| Haze               |                                 | 29     | 89-92      |
| Humidity, Absolute | Extreme                         | 9, 23  | 11, 37-40  |
|                    | Mean                            | 9      | 11         |
| Latitude           |                                 | 1      | 2          |
| Longitude          |                                 | 1      | 2          |
| Radiation          |                                 | 28     | 83-86      |
| Rainfall           | Extreme Annual                  | 24(a)  | 43         |
|                    | Extreme Daily                   | 24(c)  | 45         |
|                    | Extreme Hourly                  | 24(d)  | 46         |
|                    | Extreme Monthly                 | 24(b)  | 44         |
|                    | Extreme Six Minute              | 24(e)  | 47         |
|                    | Seasonal                        | 9      | 11         |
| Temperature        | Extreme Maximum                 | 21     | 25-29      |
|                    | Extreme Minimum                 | 22     | 30-34      |
|                    | Seasonal                        | 9      | 11         |
| Thunder            |                                 | 9, 29  | 11, 89-92  |
| Wind               | Direction                       | 9, 27  | 11, 62-80  |
|                    | Diurnal & Seasonal<br>Variation | 27     | 62-80      |
|                    | Extreme Gusts                   | 25     | 50-53      |
|                    | Extreme Averages                | 26     | 56-59      |
|                    | Seasonal Means & Extremes       | 9      | 11         |
| Dust               |                                 | 29     | 89-92      |
| East Sale          |                                 |        |            |
| Dust               |                                 | 29     | 89-92      |
| Elevation          |                                 | 1      | 2          |
| Fog                |                                 | 10, 29 | 12, 89-92  |

# East Sale (Cont.)

|                      |                              |           |                |
|----------------------|------------------------------|-----------|----------------|
| Gales                |                              | 10,29     | 12,89-92       |
| Hail                 |                              | 10,29     | 12,89-92       |
| Haze                 |                              | 29        | 89-92          |
| Humidity, Absolute   | Extreme                      | 10,23     | 12,37-40       |
|                      | Mean                         | 10        | 12             |
| Latitude             |                              | 1         | 2              |
| Longitude            |                              | 1         | 2              |
| Rainfall             | Extreme Annual               | 24(a)     | 43             |
|                      | Extreme Daily                | 24(c)     | 45             |
|                      | Extreme Hourly               | 24(d)     | 46             |
|                      | Extreme Monthly              | 24(b)     | 44             |
|                      | Extreme Six Minute           | 24(e)     | 47             |
|                      | Seasonal                     | 10        | 12             |
|                      |                              |           |                |
| Temperature          | Extreme Maximum              | 21        | 25-29          |
|                      | Extreme Minimum              | 22        | 30-34          |
|                      | Seasonal                     | 10        | 12             |
| Thunder              |                              | 10,29     | 12,89-92       |
| Wind                 | Direction                    | 10,27     | 12,62-80       |
|                      |                              |           |                |
|                      | Diurnal & Seasonal Variation | 27        | 62-80          |
|                      | Extreme Gusts                | 25        | 50-53          |
|                      | Extreme Averages             | 26        | 56-59          |
|                      | Seasonal Means & Extremes    | 10        | 12             |
| Elevation            |                              | 1         | 2              |
| Extreme Value Theory |                              |           | 99             |
| Fog                  |                              | 2-20,29   | 4-22,<br>89-92 |
| Gales                |                              | 2-20,29   | 4-22,<br>89-92 |
| Hail                 |                              | 2-20,29   | 4-22,<br>89-92 |
| Haze                 |                              | 29        | 89-92          |
| Humidity - Absolute  |                              | 2-20      | 4-22           |
|                      | - Extreme                    | 23(a)-(d) | 37-40          |
|                      | - Mean                       | 2-20      | 4-22           |

# **Katherine**

|                    |                              |       |          |
|--------------------|------------------------------|-------|----------|
| Dust               |                              | 29    | 89-92    |
| Elevation          |                              | 1     | 2        |
| Fog                |                              | 11,29 | 13,89-92 |
| Gales              |                              | 11,29 | 13,89-92 |
| Hail               |                              | 11,29 | 13,89-92 |
| Haze               |                              | 29    | 89-92    |
| Humidity, Absolute | Extreme                      | 11,23 | 13,37-40 |
|                    | Mean                         | 11    | 13       |
| Latitude           |                              | 1     | 2        |
| Longitude          |                              | 1     | 2        |
| Rainfall           | Extreme Annual               | 24(a) | 43       |
|                    | Extreme Daily                | 24(c) | 45       |
|                    | Extreme Hourly               | 24(d) | 46       |
|                    | Extreme Monthly              | 24(b) | 44       |
|                    | Extreme Six Minute           | 24(e) | 47       |
|                    | Seasonal                     | 11    | 13       |
| Temperature        | Extreme Maximum              | 21    | 25-29    |
|                    | Extreme Minimum              | 22    | 30-34    |
|                    | Seasonal                     | 11    | 13       |
| Thunder            |                              | 11,29 | 13,89-92 |
| Wind               | Direction                    | 11,27 | 13,62-80 |
|                    | Diurnal & Seasonal Variation | 27    | 62-80    |
|                    | Extreme Gusts                | 25    | 50-53    |
|                    | Extreme Averages             | 26    | 56-59    |
|                    | Seasonal Means & Extremes    | 11    | 13       |

# **Kimberley**

|           |  |       |          |
|-----------|--|-------|----------|
| Dust      |  | 29    | 89-92    |
| Elevation |  | 1     | 2        |
| Fog       |  | 12,29 | 14,89-92 |
| Gales     |  | 12,29 | 14,89-92 |
| Hail      |  | 12,29 | 14,89-92 |
| Haze      |  | 29    | 89-92    |

# Kimberley (Cont.)

|                    |                              |       |          |
|--------------------|------------------------------|-------|----------|
| Humidity, Absolute | Extreme                      | 12,23 | 14,37-40 |
|                    | Mean                         | 12    | 14       |
| Latitude           |                              | 1     | 2        |
| Longitude          |                              | 1     | 2        |
| Rainfall           | Extreme Annual               | 24(a) | 43       |
|                    | Extreme Daily                | 24(c) | 45       |
|                    | Extreme Hourly               | 24(d) | 46       |
|                    | Extreme Monthly              | 24(b) | 44       |
|                    | Extreme Six Minute           | 24(e) | 47       |
|                    | Seasonal                     | 12    | 14       |
|                    |                              |       |          |
| Temperature        | Extreme Maximum              | 21    | 25-29    |
|                    | Extreme Minimum              | 22    | 30-34    |
|                    | Seasonal                     | 12    | 14       |
|                    |                              |       |          |
| Thunder            |                              | 12,29 | 14,89-92 |
| Wind               | Direction                    | 12,27 | 14,62-80 |
|                    |                              |       |          |
|                    | Diurnal & Seasonal Variation | 27    | 62-80    |
|                    | Extreme Gusts                | 25    | 50-53    |
|                    | Extreme Averages             | 26    | 56-59    |
|                    | Seasonal Means & Extremes    | 12    | 14       |
|                    |                              |       |          |
| Latitude           |                              | 1     | 2        |
| Longitude          |                              | 1     | 2        |

## Melbourne

|                    |         |       |          |
|--------------------|---------|-------|----------|
| Dust               |         | 29    | 89-92    |
| Elevation          |         | 1     | 2        |
| Fog                |         | 13,29 | 15,89-92 |
| Gales              |         | 13,29 | 15,89-92 |
| Hail               |         | 13,29 | 15,89-92 |
| Haze               |         | 29    | 89-92    |
| Humidity, Absolute | Extreme | 13,23 | 15,37-40 |
|                    | Mean    | 13    | 15,      |
| Latitude           |         | 1     | 2        |
| Longitude          |         | 1     | 2        |

# Melbourne (Cont.)

|             |                                 |       |          |
|-------------|---------------------------------|-------|----------|
| Radiation   |                                 | 28    | 83-86    |
| Rainfall    | Extreme Annual                  | 24(a) | 43       |
|             | Extreme Daily                   | 24(c) | 45       |
|             | Extreme Hourly                  | 24(d) | 46       |
|             | Extreme Monthly                 | 24(b) | 44       |
|             | Extreme Six Minute              | 24(e) | 47       |
|             | Seasonal                        | 13    | 15       |
| Temperature | Extreme Maximum                 | 21    | 25-29    |
|             | Extreme Minimum                 | 22    | 30-34    |
|             | Seasonal                        | 13    | 15       |
| Thunder     |                                 | 13,29 | 15,89-92 |
| Wind        | Direction                       | 13,27 | 15,62-80 |
|             | Diurnal & Seasonal<br>Variation | 27    | 62-80    |
|             | Extreme Gusts                   | 25    | 50-53    |
|             | Extreme Averages                | 26    | 56-59    |
|             | Seasonal Means & Extremes       | 13    | 15       |

## Meteorological Conditions

88

### Onslow

|                    |                 |       |          |
|--------------------|-----------------|-------|----------|
| Dust               |                 | 29    | 89-92    |
| Elevation          |                 | 1     | 2        |
| Fog                |                 | 14,29 | 16,89-92 |
| Gales              |                 | 14,29 | 16,89-92 |
| Hail               |                 | 14,29 | 16,89-92 |
| Haze               |                 | 29    | 89-92    |
| Humidity, Absolute | Extreme         | 14,23 | 16,37-40 |
|                    | Mean            | 14    | 16,      |
| Latitude           |                 | 1     | 2        |
| Longitude          |                 | 1     | 2        |
| Rainfall           | Extreme Annual  | 24(a) | 43       |
|                    | Extreme Daily   | 24(c) | 45       |
|                    | Extreme Hourly  | 24(d) | 46       |
|                    | Extreme Monthly | 24(b) | 44       |

# Onslow (Cont.)

|             |                              |       |          |
|-------------|------------------------------|-------|----------|
| Rainfall    | Extreme Six Minute           | 24(e) | 47       |
|             | Seasonal                     | 14    | 16       |
| Temperature | Extreme Maximum              | 21    | 25-29    |
|             | Extreme Minimum              | 22    | 30-34    |
|             | Seasonal                     | 14    | 16       |
| Thunder     |                              | 14,29 | 16,89-92 |
| Wind        | Direction                    | 14,27 | 16,62-80 |
|             | Diurnal & Seasonal Variation | 27    | 62-80    |
|             | Extreme Gusts                | 25    | 50-53    |
|             | Extreme Averages             | 26    | 56-59    |
|             | Seasonal Means & Extremes    | 14    | 16       |
|             |                              |       |          |

# Perth

|                    |                    |       |          |
|--------------------|--------------------|-------|----------|
| Dust               |                    | 29    | 89-92    |
| Elevation          |                    | 1     | 2        |
| Fog                |                    | 15,29 | 17,89-92 |
| Gales              |                    | 15,29 | 17,89-92 |
| Hail               |                    | 15,29 | 17,89-92 |
| Haze               |                    | 29    | 89-92    |
| Humidity, Absolute | Extreme            | 15,23 | 17,37-40 |
|                    | Mean               | 15    | 17       |
| Latitude           |                    | 1     | 2        |
| Longitude          |                    | 1     | 2        |
| Radiation          |                    | 28    | 83-86    |
| Rainfall           | Extreme Annual     | 24(a) | 43       |
|                    | Extreme Daily      | 24(c) | 45       |
|                    | Extreme Hourly     | 24(d) | 46       |
|                    | Extreme Monthly    | 24(b) | 44       |
|                    | Extreme Six Minute | 24(e) | 47       |
|                    | Seasonal           | 15    | 17       |
| Temperature        | Extreme Maximum    | 21    | 25-29    |
|                    | Extreme Minimum    | 22    | 30-34    |
|                    | Seasonal           | 15    | 17       |

# Perth (Cont.)

|                   |                              |       |          |
|-------------------|------------------------------|-------|----------|
| Thunder           |                              | 15,29 | 17,89-92 |
| Wind              | Direction                    | 15,27 | 17,62-80 |
|                   | Diurnal & Seasonal Variation | 27    | 62-80    |
|                   | Extreme Gusts                | 25    | 50-53    |
|                   | Extreme Averages             | 26    | 56-59    |
|                   | Seasonal Means & Extremes    | 15    | 17       |
| Radiation         |                              | 28    | 83-86    |
| Rainfall - Annual |                              | 24(a) | 43       |
| - Daily           |                              | 24(c) | 45       |
| - Hourly          |                              | 24(d) | 46       |
| - Monthly         |                              | 24(b) | 44       |
| - Seasonal        |                              | 2-20  | 4-22     |
| - Six Minute      |                              | 24(e) | 47       |

# Richmond

|                    |                    |       |          |
|--------------------|--------------------|-------|----------|
| Dust               |                    | 29    | 89-92    |
| Elevation          |                    | 1     | 2        |
| Fog                |                    | 16,29 | 18,89-92 |
| Gales              |                    | 16,29 | 18,89-92 |
| Hail               |                    | 16,29 | 18,89-92 |
| Haze               |                    | 29    | 89-92    |
| Humidity, Absolute | Extreme            | 16,23 | 18,37-40 |
|                    | Mean               | 16    | 18       |
| Latitude           |                    | 1     | 2        |
| Longitude          |                    | 1     | 2        |
| Rainfall           | Extreme Annual     | 24(a) | 43       |
|                    | Extreme Daily      | 24(c) | 45       |
|                    | Extreme Hourly     | 24(d) | 46       |
|                    | Extreme Monthly    | 24(b) | 44       |
|                    | Extreme Six Minute | 24(e) | 47       |
|                    | Seasonal           | 16    | 18       |
| Temperature        | Extreme Maximum    | 21    | 25-29    |
|                    | Extreme Minimum    | 22    | 30-34    |

# Richmond (Cont.)

|                       |                              |         |             |
|-----------------------|------------------------------|---------|-------------|
| Temperature           | Seasonal                     | 16      | 18          |
| Thunder               |                              | 16,29   | 18,89-92    |
| Wind                  | Direction                    | 16,27   | 18,62-80    |
|                       | Diurnal & Seasonal Variation | 27      | 62-80       |
|                       | Extreme Gusts                | 25      | 50-53       |
|                       | Extreme Averages             | 26      | 56-59       |
|                       | Seasonal Means & Extremes    | 16      | 18          |
| Temperature - Maximum |                              | 21      | 25-29       |
| - Minimum             |                              | 22      | 30-34       |
| - Seasonal            |                              | 2-20    | 4-22        |
| Thunder               |                              | 2-20,29 | 4-22, 89-92 |

# Townsville

|                    |                    |       |          |
|--------------------|--------------------|-------|----------|
| Dust               |                    | 29    | 89-92    |
| Elevation          |                    | 1     | 2        |
| Fog                |                    | 17,29 | 19,89-92 |
| Gales              |                    | 17,29 | 19,89-92 |
| Hail               |                    | 17,29 | 19,89-92 |
| Haze               |                    | 29    | 89-92    |
| Humidity, Absolute | Extreme            | 17,23 | 19,37-40 |
|                    | Mean               | 17    | 19       |
| Latitude           |                    | 1     | 2        |
| Longitude          |                    | 1     | 2        |
| Rainfall           | Extreme Annual     | 24(a) | 43       |
|                    | Extreme Daily      | 24(c) | 45       |
|                    | Extreme Hourly     | 24(d) | 46       |
|                    | Extreme Monthly    | 24(b) | 44       |
|                    | Extreme Six Minute | 24(e) | 47       |
|                    | Seasonal           | 17    | 19       |
| Temperature        | Extreme Maximum    | 21    | 25-29    |
|                    | Extreme Minimum    | 22    | 30-34    |
|                    | Seasonal           | 17    | 19       |

Townsville (Cont.)

|         |                                 |       |          |
|---------|---------------------------------|-------|----------|
| Thunder |                                 | 17,29 | 19,89-92 |
| Wind    | Direction                       | 17,27 | 19,62-80 |
|         | Diurnal & Seasonal<br>Variation | 27    | 62-80    |
|         | Extreme Gusts                   | 25    | 50-53    |
|         | Extreme Averages                | 26    | 56-59    |
|         | Seasonal Means & Extremes       | 17    | 19       |

Tropical Cyclones

41,48,54

Wagga

|                    |                                 |       |          |
|--------------------|---------------------------------|-------|----------|
| Dust               |                                 | 29    | 89-92    |
| Elevation          |                                 | 1     | 2        |
| Fog                |                                 | 18,29 | 20,89-92 |
| Gales              |                                 | 18,29 | 20,89-92 |
| Hail               |                                 | 18,29 | 20,89-92 |
| Haze               |                                 | 29    | 89-92    |
| Humidity, Absolute | Extreme                         | 18,23 | 20,37-40 |
|                    | Mean                            | 18    | 20       |
| Latitude           |                                 | 1     | 2        |
| Longitude          |                                 | 1     | 2        |
| Radiation          |                                 | 28    | 83-86    |
| Rainfall           | Extreme Annual                  | 24(a) | 43       |
|                    | Extreme Daily                   | 24(c) | 45       |
|                    | Extreme Hourly                  | 24(d) | 46       |
|                    | Extreme Monthly                 | 24(b) | 44       |
|                    | Extreme Six Minute              | 24(e) | 47       |
|                    | Seasonal                        | 18    | 20       |
| Temperature        | Extreme Maximum                 | 21    | 25-29    |
|                    | Extreme Minimum                 | 22    | 30-34    |
|                    | Seasonal                        | 18    | 20       |
| Thunder            |                                 | 18,29 | 20,89-92 |
| Wind               | Direction                       | 18,27 | 20,62-80 |
|                    | Diurnal & Seasonal<br>Variation | 27    | 62-80    |
|                    | Extreme Gusts                   | 25    | 50-53    |

# Wagga (Cont.)

|      |                           |    |       |
|------|---------------------------|----|-------|
| Wind | Extreme Averages          | 26 | 56-59 |
|      | Seasonal Means & Extremes | 18 | 20    |

# Williamtown

|                    |                              |                   |          |
|--------------------|------------------------------|-------------------|----------|
| Dust               |                              | 29                | 89-92    |
| Elevation          |                              | 1                 | 2        |
| Fog                |                              | 19,29             | 21,89-92 |
| Gales              |                              | 19,29             | 21,89-92 |
| Hail               |                              | 19,29             | 21,89-92 |
| Haze               |                              | 29                | 89-92    |
| Humidity, Absolute | Extreme                      | 19,23             | 21,      |
|                    | Mean                         | 19                | 21       |
| Latitude           |                              | 1                 | 2        |
| Longitude          |                              | 1                 | 2        |
| Radiation          |                              | 28                | 83-86    |
| Rainfall           | Extreme Annual               | 24(a)             | 43       |
|                    | Extreme Daily                | 24(c)             | 45       |
|                    | Extreme Hourly               | 24(d)             | 46       |
|                    | Extreme Monthly              | 24(b)             | 44       |
|                    | Extreme Six Minute           | 24(e)             | 47       |
|                    | Seasonal                     | 19                | 21       |
|                    |                              |                   |          |
| Temperature        | Extreme Maximum              | 21                | 25-29    |
|                    | Extreme Minimum              | 22                | 30-34    |
|                    | Seasonal                     | 19                | 21       |
| Thunder            |                              | 19,29             | 21,89-92 |
| Wind               | Direction                    | 19,27             | 21,62-80 |
|                    | Diurnal & Seasonal Variation | 27                | 62-80    |
|                    | Extreme Gusts                | 25                | 50-53    |
|                    | Extreme Averages             | 26                | 56-59    |
|                    | Seasonal Means & Extremes    | 19                | 21       |
|                    |                              |                   |          |
|                    |                              |                   |          |
| Wind Averages      |                              | 26                | 56-59    |
| - Diurnal          |                              | 27a(1)-<br>27s(1) | 62-80    |

# Wind (Cont.)

|                        |                    |       |
|------------------------|--------------------|-------|
| - Forces on Buildings: |                    | 48    |
| - Gusts                | 25(a)-(d)          | 50-53 |
| - Seasonal             | 27a(11)<br>27s(11) | 62-80 |

## Woomera

|                    |                                 |       |          |
|--------------------|---------------------------------|-------|----------|
| Dust               |                                 | 29    | 89-92    |
| Elevation          |                                 | 1     | 2        |
| Fog                |                                 | 20,29 | 22,89-92 |
| Gales              |                                 | 20,29 | 22,89-92 |
| Hail               |                                 | 20,29 | 22,89-92 |
| Haze               |                                 | 29    | 89-92    |
| Humidity, Absolute | Extreme                         | 20,23 | 22,37-40 |
|                    | Mean                            | 20    | 22       |
| Latitude           |                                 | 1     | 2        |
| Longitude          |                                 | 1     | 2        |
| Rainfall           | Extreme Annual                  | 24(a) | 43       |
|                    | Extreme Daily                   | 24(c) | 45       |
|                    | Extreme Hourly                  | 24(d) | 46       |
|                    | Extreme Monthly                 | 24(b) | 44       |
|                    | Extreme Six Minute              | 24(e) | 47       |
|                    | Seasonal                        | 20    | 22       |
| Temperature        | Extreme Maximum                 | 21    | 25-29    |
|                    | Extreme Minimum                 | 22    | 30-34    |
|                    | Seasonal                        | 20    | 22       |
| Thunder            |                                 | 20,29 | 22,89-92 |
| Wind               | Direction                       | 20,27 | 22,62-80 |
|                    | Diurnal & Seasonal<br>Variation | 27    | 62-80    |
|                    | Extreme Gusts                   | 25    | 50-53    |
|                    | Extreme Averages                | 26    | 56-59    |
|                    | Seasonal Means & Extremes       | 20    | 22       |

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