ENVIRONMENTAL INFORMATION SUMMARIES C-12

# WIND DIRECTION VERSUS WIND SPEED TABULATIONS

## SAMPLE FORMS OF RECORDS AVAILABLE

## AT NATIONAL CLIMATIC CENTER FEDERAL BUILDING ASHEVILLE, NORTH CAROLINA 28801

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL DATA SERVICE / NATIONAL CLIMATIC CENTER ASHEVILLE, N.C. REPRINTED JUNE 1979

# WIND DIRECTION VS. WIND SPEED

Station: 12834 Daytona Beach, Florida  Hours: 24 observations per day  Period: 1956-1963

Station Name/Number, Type of Run - Monthly, Seasonal or Annual and Period of Record. Month or Season: Data for individual months, or seasons, combined for the period of record. Annual: Total of all months combined. Tabulations prepared for stations reporting less than twenty-four observations per day will carry a special notation indicating the actual hours of observations.

SPEED GROUPS: Knots (knots)
MPH (miles per hour) ✓
MPS (meters per second)

A choice of units (as shown) is offered in the wind speeds. In general, no increase in cost will be incurred by altering class intervals, provided the number of classes shown is not exceeded.

MO: Month 01 = Jan., 02 = Feb., etc. where 12 = Dec.
AN = Annual
S1 = Season 1 (Dec., Jan., Feb.) S2 = Season 2 (Mar., Apr., May), etc.

Months selected for specific seasons may vary, but each season will be clearly defined in a separate document furnished with the tabulation.

CODE: No entry indicates that ALL weather conditions are included in the tabulation. When tabulations are prepared for selected weather conditions a series of special identification codes will be used and defined.

DIR: Wind Direction to 16 Compass Points and Calm.

The distribution represents mean conditions for the period specified. The direction is that from which the wind is blowing. Reporting practices vary somewhat among services and over different periods; however, it is common practice to prepare wind tabulations to 16 compass points and calm. The practice of reporting wind directions to 36 points began in January 1964. Tabulations can be prepared for stations and periods reporting to 36 points by using the conversion table shown below.

| | | | |
|---|---|---|---|
| 35,36,01 = N | 08,09,10 = E | 17,18,19 = S | 26,27,28 = W |
| 02,03 = NNE | 11,12 = ESE | 20,21 = SSW | 29,30 = WNW |
| 04,05 = NE | 13,14 = SE | 22,23 = SW | 31,32 = NW |
| 06,07 = ENE | 15,16 = SSE | 24,25 = WSW | 33,34 = NNW |

TOTAL: Total frequency by direction and by speed groups.

PERCENT: Total frequency by direction or speed group divided by the total number of observations for indicated period, rounded to tenths of percent. A percent shown as (.0) indicates an occurrence, but less than 0.05%.

AVG SPEED: Sum of speeds by direction divided by total number of observations in that direction category for tabulations prepared by computer. For those prepared by hand, an estimated value will be used based on the sums of the frequency times the cell mid-point for each class and divided by the total number of observations for that direction.

The usual input for this tabulation is the simultaneous observation of wind speed and direction recorded hourly, twenty-four times a day. Most wind tabulations on file contain a minimum of five years of record with 24 observations per day. Lesser observations are used pending the availability of data.

# WIND DIRECTION VERSUS WIND SPEED

STATION NAME/NUMBER 12834 Daytona Beach, Florida HOURS 24 Observations per day PERIOD OF RECORD 1956-1963

SPEED GROUPS IN M.P.H.

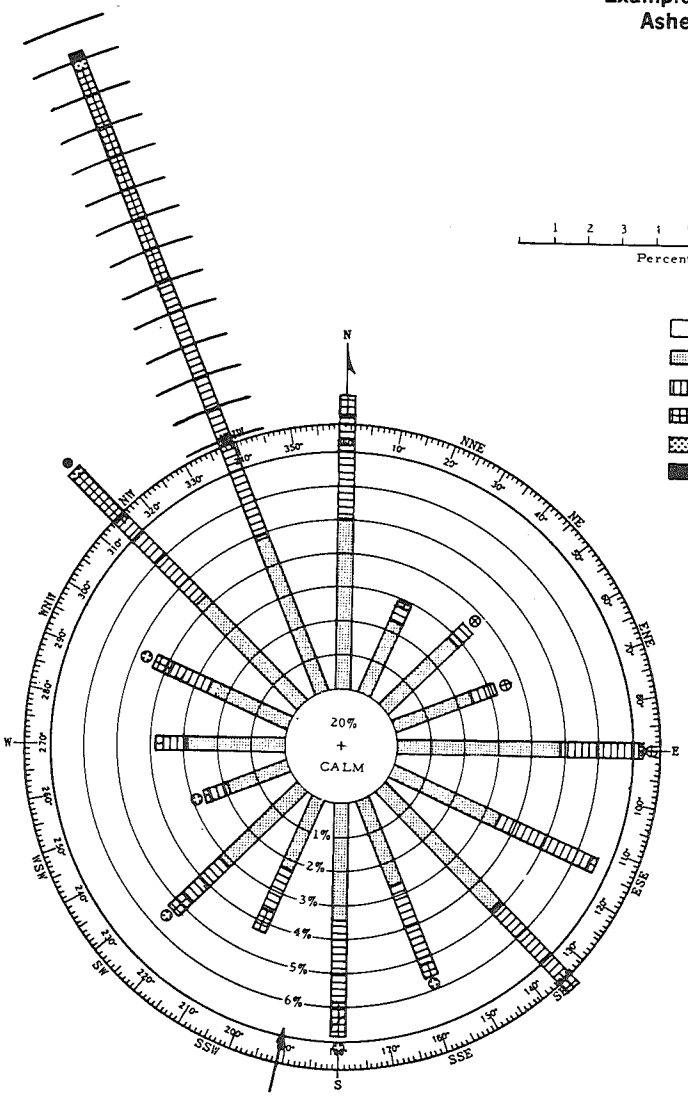
| Mo | Code | Speed / Dir | 0 — 3 | 4 — 7 | 8 — 12 | 13 — 18 | 19 — 24 | 25 — 31 | 32 — 38 | 39 — 46 | 47 & Gr. | Total | Percent | Avg Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | | N | 28 | 84 | 151 | 165 | 53 | 19 | 2 | | | 502 | 8.4 | 12.6 |
| | | NNE | 9 | 54 | 144 | 115 | 30 | 5 | | | | 357 | 6.0 | 12.0 |
| | | NE | 11 | 44 | 93 | 58 | 8 | | | | | 214 | 3.6 | 10.6 |
| | | ENE | 11 | 29 | 78 | 41 | 8 | | | | | 167 | 2.8 | 10.5 |
| | | E | 10 | 37 | 58 | 38 | 2 | | | | | 145 | 2.4 | 9.9 |
| | | ESE | 7 | 30 | 56 | 51 | 8 | | | | | 154 | 2.6 | 11.3 |
| | | SE | 16 | 53 | 51 | 41 | 13 | | | | | 174 | 2.9 | 10.2 |
| | | SSE | 12 | 40 | 81 | 42 | 6 | | | | | 181 | 3.0 | 10.1 |
| | | S | 23 | 61 | 84 | 50 | 14 | 5 | 1 | | | 238 | 4.0 | 10.4 |
| | | SSW | 14 | 72 | 106 | 86 | 15 | | | | | 299 | 5.0 | 11.0 |
| | | SW | 27 | 148 | 144 | 89 | 24 | 3 | | | | 435 | 7.3 | 9.9 |
| | | WSW | 23 | 121 | 193 | 89 | 27 | 1 | 1 | | | 455 | 7.6 | 10.3 |
| | | W | 40 | 162 | 192 | 109 | 22 | 5 | 1 | 1 | | 532 | 8.9 | 9.9 |
| | | WNW | 28 | 145 | 205 | 120 | 16 | 3 | | | | 517 | 8.7 | 9.9 |
| | | NW | 43 | 285 | 248 | 128 | 17 | | | | | 721 | 12.1 | 9.0 |
| | | NNW | 26 | 149 | 171 | 112 | 23 | 1 | | | | 482 | 8.1 | 9.9 |
| | | Calm | 378 | | | | | | | | | 378 | 6.4 | |
| Total | | | 706 | 1514 | 2055 | 1334 | 286 | 50 | 5 | 1 | | 5951 | 100.0 | 9.7 |
| Percent | | | 11.9 | 25.4 | 34.5 | 22.4 | 4.8 | .8 | .1 | .0 | | | 100.0 | |

# WIND ROSE

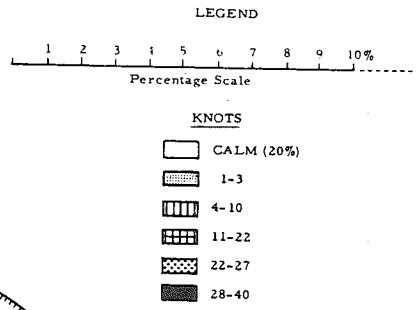
## Percentage Frequency

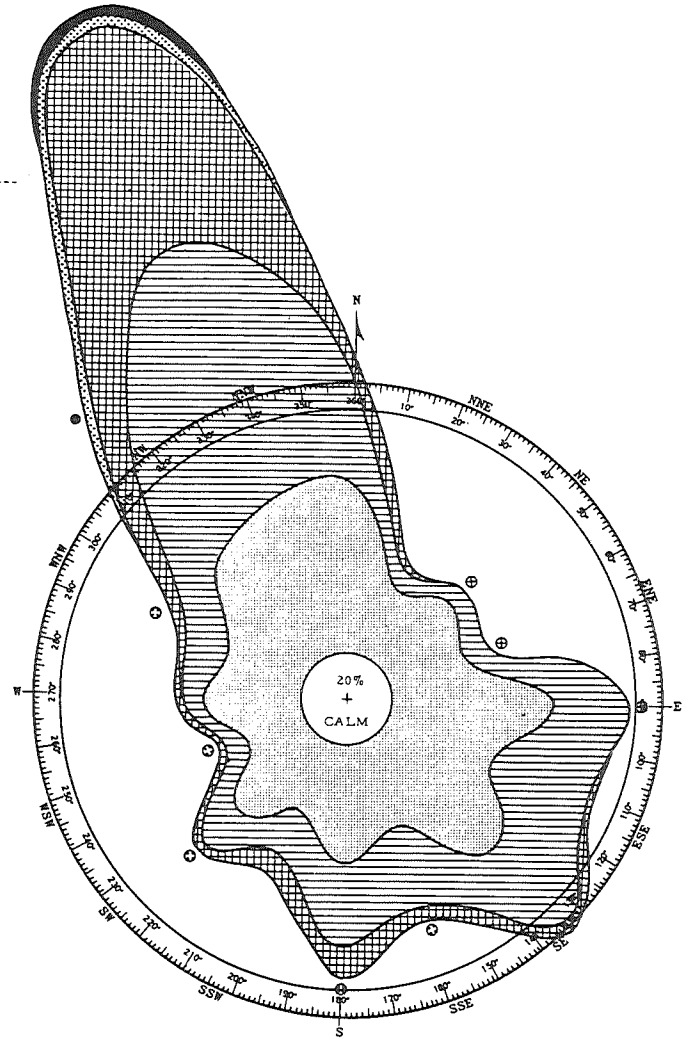
## Annual

### Examples of Wind Rose Presentations
### Asheville-Hendersonville Airport
### POR 8/43 - 1/46




This Wind Rose is marked off in 1% increments, using the Percentage Scale.




Percentage frequencies of occurrences can be derived at any of the 16 compass points by using the scale and measuring from the perimeter of the Calm Circle.

The Calm Circle is derived by distributing the percentage value of calms to 16 points.

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