Blank Wind Rose

\[ \sin(60^\circ) = \frac{x}{18} \]
\[ \sin(90^\circ) = \frac{x}{14} \]
\[ \sin(60^\circ) = \frac{x}{22} \]

2.43 knots = x
15.6 knots = x
19.1 knots = x

OK to land light plane. Prefers 32 over 14 due to head wind.

NOT ok to land a light plane.
Blank Wind Rose

\[
\sin 40^\circ = \frac{x}{14} \quad \sin 20^\circ = \frac{x}{22} \quad \sin 80^\circ = \frac{x}{18}
\]

\[
x = 9.00 \text{ knots} \quad x = 7.52 \text{ knots} \quad x = 19.7 \text{ knots}
\]

OK to land light plane

For the 14 knot wind choose 28.
For the 22 knot wind choose 10.
Figure 2.6: Blank Wind Rose

- OK to land on 2-20
  - with 18 knot wind from 200°
- No cross wind. Prefer 20 over 2 due to perfect head wind.

\[
\sin 70° = \frac{x}{14}
\]
\[
13.2 \text{ knots} = x
\]

- OK to land. Prefer 2 over 20, more headwind

\[
\sin 60° = \frac{x}{22}
\]
\[
19.1 \text{ knots} = x
\]

Never OK to land
molise 2a
The maximal coverage (in 10° increments) for a single runway is 96.05% and occurs when the runway is centered on 300° (or 120°) degrees. This is only off by 6° from the 306.2° runway at Moline. It is also only 10° off from the maximal wind bin of 290°. This difference is most likely due to the interaction with the additional two runways at Moline. That is, 13/31 must provide better coverage when paired with 6/27 and 5/23 than does our best single runway 12/30.

Bin 290° (all winds from (285, 295]) has largest number of recorded observations, 10,395, out of the 216,066 possible observations. (10,395 / 216,066 ≈ 4.8%) 10,395 is found in the far right column of the table and the grand total is in the lower right corner.

On the wind rose there are 1.2% of the winds in the 230° sector between 11-16 knots. In the FAA table there are a total of 77,013 wind observations in the 11-16 knot range and 2570 in the 230° bin for 11-16 knots. To arrive at the % of winds in the 230° bin compute 2570 / 77,013 = .03389 or ≈ 1.2%.
3pts

# 8

280° is best (runway 28/10). I checked all 5° increments starting with 130° and 280° performed the best (80.11% coverage). 275 was second with 80.10%.

* (ok if 80.10 is chosen, 275°)