

# The Rule Of Sixths

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Flight instructors love imparting mnemonic devices, gouges and other memory aids to help their students remember various aeronautical maneuvers and rules. The crosswind gouge known as the Rule of Sixths remains a handy one and works as well as any chart or app, and requires only a functioning brain to work. First, let's calculate the crosswind's angle.

Example: Reported winds of 210 degrees at 20 knots, and we'll be using Runway 18.  $210 \text{ minus } 180 = 30$ . The crosswind angle thus is 30 degrees.

Second, use the table at right to estimate the crosswind component. So, our 20-knot wind blowing 30 degrees off runway heading produces a crosswind component of  $\frac{3}{6} \times 20$  or, 10 knots. (Yes, we know that fractions class taught us to reduce to the simplest denominator and portray  $\frac{2}{6}$  as  $\frac{1}{3}$  and  $\frac{4}{6}$  as  $\frac{2}{3}$ . But this isn't fractions class—and the one-two-three-four-five-six approach simplifies remembering the calculation.)

Calculations using this approach closely align with charts such as those reproduced on the opposite page, which also have the benefit of showing you headwind component. While the crosswind component in our example was 10 knots, the headwind component was a helpful 17 knots.

- **For a 10-deg. crosswind, the component equals 1/6th of the wind speed.**
- **A 20-deg. crosswind? The component is 2/6ths of the wind.**
- **At 30 deg., the crosswind component equals 3/6th wind speed.**
- **With a 40-deg. crosswind, use 4/6th of the wind strength to estimate its component.**
- **A 50-deg. crosswind produces a component equaling 5/6 of the wind's speed.**
- **At 60 deg. or more, the crosswind component equals 6/6th of wind speed.**

From here, we can employ a second rule of thumb to help us determine a reasonable approach speed calculation. For a crosswind up to 40 deg. off the runway, add 50 percent of the crosswind component to your normal approach/departure speed. For 50 degrees and more, use 100 percent.

So that 10-knot component would call for adding five knots to our normal approach speed; but if 60 degrees off the runway, that 20-knot cross would impose a 20-knot crosswind component—and require a 20-knot boost to approach or departure speeds. Simple, right?