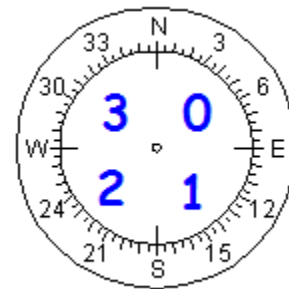


Reciprocal, Reciprocal, Oh What Art Thou?

Do you know the reciprocal for 090? How about 092? Or 045? Most of the General Aviation pilots I have worked with over the years know the answer to the first question without even taking a moment to think about it. A few even know the answer to the second question. After all, no matter what short cut pilots use for the calculation, in reality they are adding or subtracting 180 degrees. And even a 5th grader knows if you add or subtract a 0 to a number, the number stays the same (are you smarter than a 5th grader? After watching the TV show I wonder if I should do 5th grade over again.) So whatever the original number ends with, the recip ends with the same value.

The third question causes most of my clients to pull out their abacus. And while there is often not much to do during the straight and level portion of a long cross country, the terminal area, either departing or arriving, does not provide enough idle time to be doing arithmetic. So give some thought to developing the same familiarity with other areas of the compass as you already have with north, south, east and west. The following is a trick passed on to me by my old friend Chris (Columbus that is) a while back.

For starters, visualize a compass rose and take note of the fact that all of the numbers in the northeast quadrant begin with a zero. Most (not all) in the southeast quadrant begin with a one and the majority of the numbers in the southwest start with a two. The northwest quad mostly begins with a three. It therefore follows that the recip of 045 must begin with a 2 and end with a 5. The only number to calculate is the middle digit!



Now here is where things get strange. For reasons unknown to me, the sum of the first two numbers of any direction is equal to the sum of the first two numbers of its reciprocal (no... I'm not sniffing glue. I gave that up last week!) Add 0 to 4 (for 045) and you get a sum of 4. The sum of the first two numbers of its recip must also equal 4! 2 + 2 equals 4. Therefore 225 must be the recip of 045. Strange but true.

Give this method a try and let me know what you think. You can reach me by email at: fred@abramsaviation.com or by phone at either (209) 928-3447 (home/office) or (925) 858-5134 (cell). And if your flight destination includes Columbia Airport (O22) in the Sierra foothills, give us a call. We will pick you up and give you a tour of Abrams Aviation Seminars World Headquarters.

Keep the dirty side down... and may you always have tailwinds (except during takeoffs and landings).

Best regards to all,
Fred Abrams
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