

## PRO'S POINTERS

# THE RIGHT ANGLE

by Tom "Doc" Johnson\*

## Use The Angle Of The Dangle to Estimate Lure Running Depth

Some depth questions are easy to answer. "When fish are on the bottom or close to it and you're using jigs or bottom bouncers with livebait, how deep do you fish? Or when fish are near the bottom or suspended and conditions are right for slip bobbers, how deep do you fish?"

Other questions may appear to be easily answered, but the responses often are mere guesses. "If fish are suspended and you're trolling crankbaits or spinner rigs and livebait, how deep are your baits running?" The most frequent answer is, "The package indicates how deep the lure runs." Maybe, but probably not.

The listed operating depth as indicated on a lure package is based on three factors: line diameter (usually 10-pound line), length of line from the boat, and boat speed. Most of the time, a manufacturer doesn't indicate how much line to deploy to achieve a specific or maximum depth. Books such as *Crankbaits In-Depth* and *Precision Trolling* address these problems, but these books don't fit into your pocket and not all lures are listed.

### HIGH SCHOOL GEOMETRY APPLIED

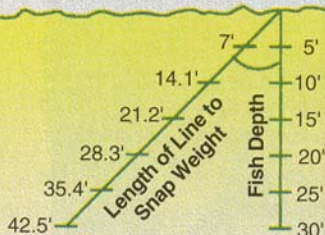
To apply this system, it's necessary to understand two key right triangles: the 45-45-90 and the 30-60-90. On the illustration, the vertical line applies to the depth of the fish, while the slanted line refers to the length of line needed to achieve the desired depth.

The 45 and 60 degree angles refer to the angle at which your line enters the water, while the boat is in motion at your desired trolling speed. Using the 45-45-90 triangle, multiply the depth of the fish by the square root of 2 (1.41). This indicates the amount of line needed to achieve the desired depth. When using the 60-degree angle, multiply the depth of the fish

### 45-Degree Angle Snap-Weight Depth-Control Conversion Chart

Use this chart to achieve a 45-degree angle and to determine the length of line from the surface to the snap weight.

LEFT SIDE



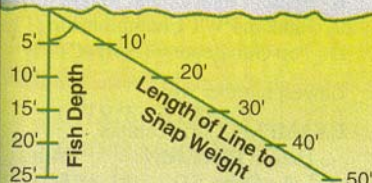
The weight to use is related to boat speed. Use the appropriate size weight to maintain a 45-degree angle—the faster the boat speed, the greater the weight.

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### 60-Degree Angle Snap-Weight Depth-Control Conversion Chart

Use this chart to achieve a 60-degree angle and to determine the length of line from the surface to the snap weight.

RIGHT SIDE



The weight to use is related to boat speed. Use the appropriate size weight to maintain a 60-degree angle—the faster the boat speed the greater the weight.

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by 2 to determine the amount of line to let out.

To use these programs effectively:

- Have the boat moving at the desired trolling speed before placing the lure or livebait rig in the water.
- When fishing cranks, use floating or shallow-running models.
- Attach an OffShore Snap weight from 5 to 50 feet up the line from the lure. The correct amount of weight is the amount necessary to achieve the desired 45- or 60-degree angle. I prefer to use the 60-degree angle because calculating the amount of line to deploy to achieve the desired depth is easier.
- After determining the depth you want the lure or bait to run, multiply the depth by 1.41 for the 45-degree angle of entry into the water, by 2 for the 60-degree angle.

Using the OffShore Snap Weight system makes changing weights easy and time effective. It also makes adding heavier weights easier when you need to troll faster, lighter to move slower.

Since a floating, shallow-running, or suspending lure runs close to the same level as the snap weight (especially the closer the weight is to the lure or shallower the maximum running depth of the lure), determining how much line to let out is easy. The 45- or 60-degree angle is determined by how far the Snap Weight moves from vertical. A livebait rig tends to run at the same level as the Snap Weight regardless of the length of the leader. (Use a floating rig with an exceptionally long distance between the Snap Weight and the rig.)

To determine how deep to fish, use the fish-track feature of your depthfinder. This feature on my Lowrance 350A places a numerical

value above each fish I pass over, indicating that fishes' depth. Then I calculate how much line to deploy, using the 45- or 60-degree formula, to get my baits in the strike zone.

You could carry a pocket calculator to quickly calculate. But a calculator doesn't indicate the angle a line is entering the water. So I've developed a set of pocket-size charts to help with these problems.

To use the charts, hold your rod parallel to the water, relate the tip of the triangle to the tip of your rod, and compare angles. If the angle is greater than that shown on the chart, increase the weight on your Snap Weight clip. If the angle is less, reduce the amount of weight until you reach the desired angle. Remember, if the weight remains constant, increasing trolling speed increases the angle, and decreasing speed decreases the angle. Changing speeds or trolling in an "S" curve, which has the same effect as increasing and decreasing speed, often triggers fish.

The vertical line on the chart shows the depth your bait will run. The sloped line (hypotenuse of the triangle) indicates the length of line to let out before attaching weight.

These charts soon will be included in Off-Shore Tackles' Snap Weight kits. Meanwhile, duplicate these charts, laminate them, and carry them in your shirt pocket. I've been using this system for several years and find that it takes much of the guesswork out of depth control. Although not perfect, it's close enough for most situations. High school geometry wasn't a waste of time after all. ■

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