



## Differences in Towfish Layback Calculations

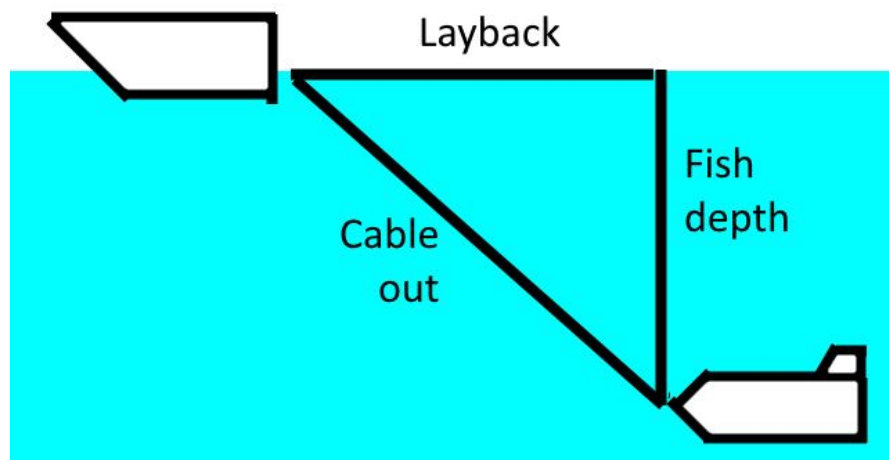
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The Towfish driver supports 4 different methods of calculating layback:

- HYPACK Mode and SHOM Classic are identical.
- T. Baker Smith Mode,
- SHOM Basic,
- SHOM Zero.

Consider the following beautiful diagram when reading the calculation explanations below:

**FIGURE 1.** Layback Diagram



For each mode, the following values are used:

$$\text{Adjusted Length} = \text{Cable Out} \times \text{Catenary Factor}$$

$$\text{Adjusted Depth} = \text{Fish Depth} - \text{Z Offset}$$

where z-offset is positive downward.

**HYPACK Mode/SHOM Classic** is a very simple calculation using the Pythagorean theorem. We take two known values: the cable out and the fish depth. Given that, we perform the following equation:

$$\text{Layback} = \sqrt{(\text{AdjustedLength}^2) - (\text{AdjustedDepth}^2)}$$

**T. Baker Smith Mode** is very similar to HYPACK mode, except the depth is calculated differently:

$$\text{Baker Depth} = \text{Fish Depth} + \text{Sheave Height}$$

$$\text{Layback} = \sqrt{(\text{AdjustedLength}^2 - \text{BakerDepth}^2)}$$

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**SHOM Basic** is the simplest of all. It assumes a depth of zero:

$$Layback = AdjustedLength$$

**SHOM Zero** is calculated as follows:

$$Layback = \sqrt{[(CatenaryFactor^2 \times (CableOut - ZOffset)^2) - ((FishDepth - ZOffset)^2)]}$$

If you are using the Towfish\_Simple driver or HYPACK® Marine Search, your layback is calculated using the SHOM Zero method.