# Artemis Sight Advice

A recent study by Park and Larven[1] shows that top-archers at international tournaments lose score due to incorrectly adjusting their sights. This suggests that beginning and intermediate archers lose score as well, and perhaps even more.

To computing the *absolute* sight settings based on nothing else but the parameters of the bow/arrow combination is complicated for a compound bow, but in fact *impossible* for a recurve bow. However, what *is* possible, is to determine *relative* sight adjustments based on known positions of the arrows on the target face.

Based on the position of the centre of the group, the distance and size of the target face, the geometry of the archers eye the string or peep-sight and the sight pin or scope, all at full draw, the sight correction can be computed. If we also know the particulars of the sight (like movement of the pin per click), a sight adjustment expressed in turn and clicks can be calculated very accurate.
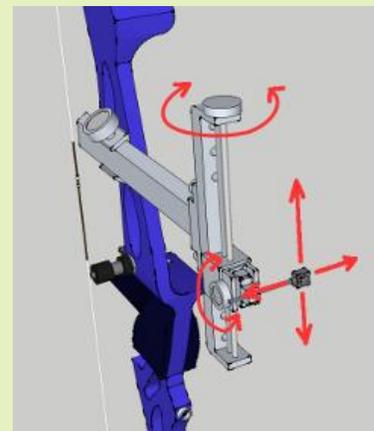
Surprising are the results of these sight correction calculations.

Most archers highly <u>under</u>-estimate sight corrections.

Example; a recurve setup using a Shibuya Ultima II series sight shoots a group left in the 9 ring at 70m on an 122cm target face. How many clicks are required to move the group to the centre?

Left is the website of Shibuya: one full revolution on the windage knob equals 1/32" inch (or 0.794mm) movement of the sight pin. One click moves the sight pin only 0.04mm!

With an arrow group in the middle of the 9 ring, a typical recurve archer needs about 1.2mm of sight pin movement, which is around 1.5 full turns or **30 clicks!**

$= 1/24 * 25.4 = 1.058$ mm/rev

$/32 * 25.4 = 0.794$ mm/rev

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[1] Analysis of scores and arrow grouping at major international archery competitions, J.L. Park and J.E. Larven, 2014

How to use Artemis' Sight Advice?

Setup Artemis with the correct data needed to calculate a sight advice!

 In the sight-menu where you have created your sight. Make sure the specifications of the sight pin movements are correct. In this case, the data is found on internet (the Shibuya website). If you cannot find the data, simply measure the distance that the sight pin moves when turning the knob 20 full revolutions, then divide the distance by 20.
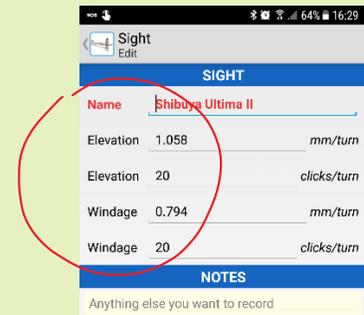
 In the bow-setup, make sure both eye-pin distance and eye-string distance are set. You need to measure these when at full draw, so it's best to have someone measure it for you. For best results, these need to be accurate to within 10mm. If you're setting up a compound, there is only one value to set, named peep-scope distance.
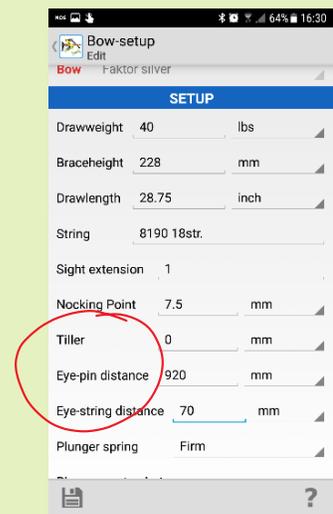
For recurve archery, different string alignment requires slightly different sight correction calculations. Set your personal style in string alignment in the ⚙ Options → 🎨 Analysis section. Also make sure the sight advice is not turned off because the app is set in World-Archery compliance mode.
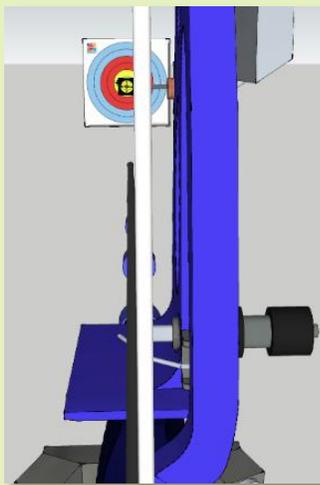
The two most common techniques for recurve string alignment are, on the left the string shadow aligned on the handle and on the right on the sight aperture.

All preparation work is done. Now you can create a match. Note that the sight advice also does not work for *competition* type of matches where *World Archery rules* apply[2].

Create a *training* match for plotting arrows and start that match. When you have plotted at least a minimum number of arrows (usually 3 or 4), the sight advisor function starts its calculations. Once the sight advice function determines a new sight adjustment is needed, the *sight advice button* appears on the right bottom of the screen. The function takes your current shooting level into account (based on the groups you shoot) so it will not warn you for very small adjustments if your skill level would not justify these small adjustments. Bottom line; the *sight advice button* will appear when the situation asks for it.
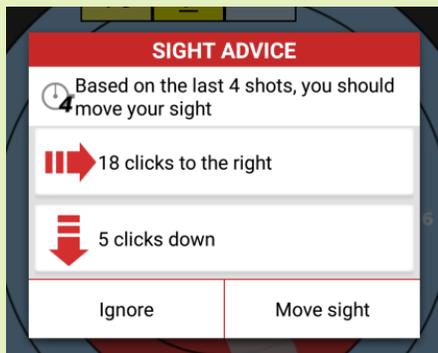

Click on the button to display the advice as shown on the left.

Here you have two options; ignore the advice or apply the adjustment (move the sight).

If you click on "Move sight", Artemis knows you have adjusted the sight and does not display the advice button anymore for the next few arrows. It will start its caclulations fresh from the next first plot. It will also display a small sight-pin picture in the score box to let you know when the most most recent sight adjustment of the match was. If you ignore the advice, the advisor function will probably nag you as long as your arrow group remains uncentered.

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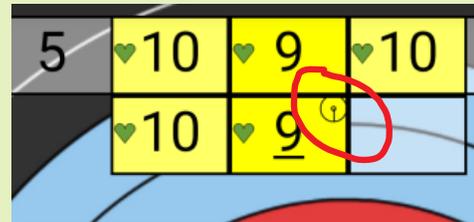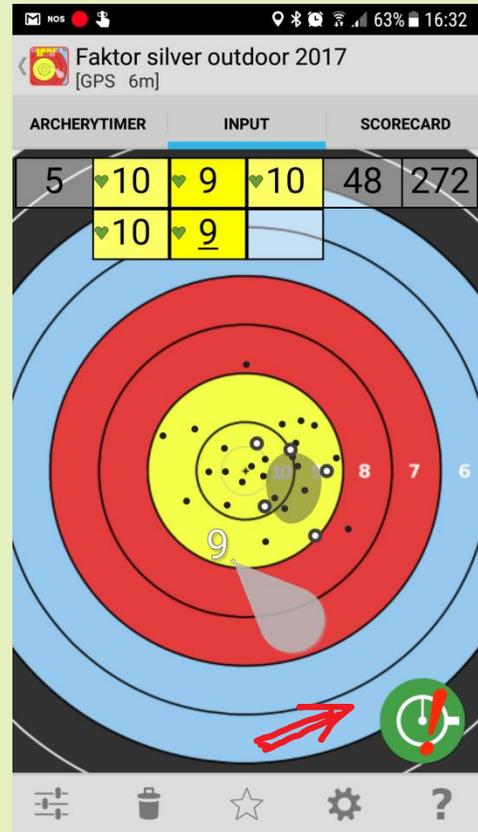
[2] World Archery has banned the use of software that can actually compute sight corrections based on grouping patterns. This is why Artemis will **not/never** provide sight advice when a match according to WorldArchery rules is plot, nor will it provide sight advice (no matter what match/training/rules/etc.) when it runs in World Archery rules compliant mode.

How to store your Sight Settings?

You can save your sight-settings in the Sight Settings section of Artemis. Your sight-settings depend on the bow-setup (tune) and the arrow-set you shoot, so be sure to select the combination you are actually shooting. The default combination is already selected.

You just add + any sight-setting you want to save. If you have 3 or more different distances (of over 15m), Artemis applies a sight calculation model and can predict all sight-settings from 15m to 90m[i].

Click 🔍 to enter the sight-settings calculator view. This view displays a graph with distance on the x-axis and your sight-settings on the y-axis.
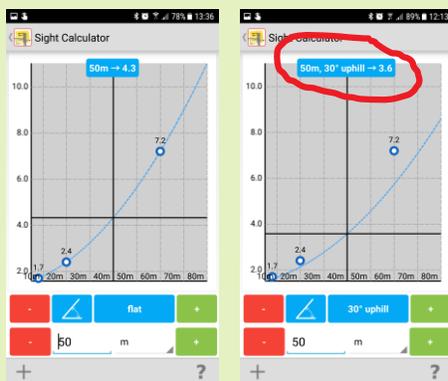
You can scroll through the distances with the red and green + and - buttons, and find the sight-setting for any given distance in the blue box at the top. You can even apply correction for an uphill/downhill angled shot.

Increasing or decreasing the uphill/downhill angle can be done with + and - buttons. If you're not sure about the angle, you can even measure it using the 📐 button. This will launch a camera-preview that will allow you to measure the uphill/downhill angle by pointing the camera to the target and aligning the target in the reticle and press 'Measure angle'. This uphill/downhill angle will then be used in the sight setting calculator.

This is experimental software, and I would like your opinion on this.

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[i] Because of the complicated parallax effect, very close distances are **not** calculated