

# Tuning Boomerangs for Maximum Performance

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Once a boomerang is carved, sanded, and sealed by its maker, it's far from finished as far as maximizing its performance is concerned. Good boomerangs should fly fine when they arrive, but depending on your throwing style and the wind conditions, you may need to tune it to optimize its performance. Here are some of the most common corrections you can field tune. Always read the directions thoroughly and experiment with various angles of release and directions into the wind before tuning a boomerang. Also, NEVER TUNE A COLD BOOMERANG, as this may snap it. Finally, ANY tuning may break a boomerang if done improperly. TUNE AT YOUR OWN RISK. "Gently" is the key.

**Tuning may be done "in the field" with manual twisting or bending, or it may be done at home, using a hot air popper (preferred) or microwave. IF you microwave, only go 15 seconds maximum on high power. Again, heating a boomerang MAY damage the finish. Boomerangs may be HOT!! Use caution when first handling the boomerang.**

**If the boomerang flies too low, gently bend the wingtips up slightly.** The change in flight path can be dramatic, so go easy and adjust one, two, (or all three) wings as necessary to bring it up. Conversely, if the boomerang skies over your head, bend the tips down gently and test fly until it flies level all the way around.

The range of your boomerang can be dramatically altered as well. **If it flies shorter than you desire, twist the wingtips with a negative angle of attack.** That is, twist the wings so that the leading edge is slightly lower than the trailing edge. A second method I learned from Doug DuFresne is to place a small flap, 1/2" wide and only about 1/16" tall at the wingtip of one wing only. This spoiler really kicks the range out there and increases the wind resistance of the 'rang.

**If the boomerang is flying too far** ( a waste of time in Fast Catch, for example), then twist a positive angle of attack into one or more wingtips until the range is shortened up appropriately.

**In wind,** you may want to increase the range through either a spoiler, a small weight taped to the bottom of one or more wingtips, or negative angle of attack. You also want to slow it down! A drag flap almost 1/8" tall and taped to the underside of ONE wing, will slow it down while allowing it to stay up. A similar flap on the top side of the wing will slow it down and also lower the flight. Buy some velcro sticky-back dots at a local fabric store. Apply these as you would a flap. They are GREAT! Experiment to see which works best for you in the conditions you're facing. A final strategy of all competitors is to drill holes in the wings for high wind. 1/8 to 1/4" holes pop up in some of the best competition 'rangs around. Think about buying customized 'rangs for wind before chopping up one of your good sticks.

Another specialized situation might be a **boomerang that doesn't get all the way "home" to you in low winds.** You can lay it over more and throw lower, OR twist positive angle of attack into the wings. This makes a dramatic difference with most 'rangs. Another trick is a little dihedral (bend the wingtip up) in the trailing arm.

Good luck! If you have tuning questions:

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