



BUILD-IT-YOURSELF

Boomerang

“Throw the boomerang with the wings oriented vertically. It’ll flatten out into a horizontal position as it flies, arcing around in a curve”

PROPER FORM in the shop and at play will make this project fly across the horizon. All it takes is a little scrap plywood and some special curves on the boomerang’s wings

GRAB A CHUNK of randomly shaped, ¼"-thick plywood and throw it as hard as you can. It won't travel more than 10 or 20 yards. But take that same plywood and give it a very specific shape and it'll sail ten times farther with the same throw. The difference is in design; by turning a piece of plywood into a classic boomerang.

- The best material for a boomerang is ¼"-thick Baltic birch plywood. The kind I use has five laminations. You'll need that many plies to provide enough strength, and to function as a visual aid while shaping the all-important curved leading and trailing edges.

START BY SAWING as many boomerang blanks to shape as you want. You could make just one, but take it from me, these boomerangs are popular and they fly out of your shop like crazy. You'll also lose them sooner than you expect, so it pays to build at least three or four at a time.

Trace the outline onto your wood from the grid diagram in the plans, or download a full-size template from www.canadianhomeworkshop.com/templates.

The fastest way to make boomerang blanks is to tape together half a dozen plywood squares, glue the paper template on top, then gang cut them all on a bandsaw. You could do the same thing with four layers and a jigsaw.

● Boomerang Basics

ORIGINALLY CREATED BY the aboriginal people of Australia, the boomerang is nothing more than an L-shaped flying wing. And making a high performance version in your own workshop takes less than 20 minutes. Just be careful who you hand the completed boomerang to when you're done. The version you read about here is much more than a toy. The kids in your life will love to help make it, and throwing a good boomerang is even more fun. Just be sure an adult is always present to keep things safe.



TRACE THE shape of the boomerang onto a scrap piece of plywood



CUT OUT the shape on a bandsaw or jigsaw, staying just outside the waste line



WITH A light hand, use a random-orbit sander to create the necessary curves around the leading and trailing edges



A GENTLE curve on one edge of each side of the boomerang creates wind resistance for a great flight. The plans show where to add the curves

What you have now are pieces of plywood that look like boomerangs, but they're not. They still lack the essential genius that makes them soar: an airfoil profile.

Somehow, long before the Wright brothers pioneered powered flight, the native peoples of Australia discovered that a very specific curved wing profile is essential for optimum boomerang flight. And it all has to do with how the leading and trailing edges of the boomerang arms are shaped.

Leading edges need to be curved down bluntly, while the trailing edges must taper gently. The bottom edge of each wing is flat. The plans show the shape you need to make, and a random orbit sander is the tool of choice for making the airfoil happen.

Start by taking note of how the leading and trailing edges aren't the same on both wings of the boomerang. On one wing, the leading edge faces inward, while on the other, it faces outward.

Begin shaping work on one of the leading edges using a 100-grit disc. Work the machine back and forth until you create a smooth, blunt curve on the upper faces of the boomerang wings only. While it's true that the top face of both leading and trailing edges are curved, bottom faces of the wings must remain flat—just like the wings on some airplanes.

As you sand, pay attention to the plywood layers that become exposed while the curve forms under the sander. These function as a visual guide that helps you create consistent results. If any part of the curve is uneven, you'll see it in the form of wavy lamination lines. Smooth lines mean a smooth, consistent curve.

After you've tackled one leading edge, do the other one, then the two gently tapering trailing edges. You'll find the plywood laminations particularly helpful for creating a smooth taper here. As a final step with the power sander, angle the bottom faces of the wing tips up over their last 1½". This reduces wind resistance, leading to longer flights.

If you want flashy boomerangs, three or four coats of spray paint, sanded lightly between coats with 240-grit paper, create a new-car finish, though you can certainly leave your boomerangs bare, too. They won't look as nice, but they might just be more fun to play with if you don't have to worry about preserving a finish. Either way, pick a big field to throw them in (at least as large as a football field), have everyone stand a few feet behind the thrower, then keep your eyes open. Boomerangs really do circle back as they arc through the sky. 🌀

STEVE MAXWELL enjoys tossing a boomerang with his family (wife Mary and kids Robert, Katherine, Joseph and Jacob).

● Throw-How

YOU'LL GET OPTIMAL flights by grabbing one wing tip between your thumb and the side of your index finger, with the curved wing surface facing your face. The boomerang should look like an upside down L. Throw the boomerang with the wings oriented vertically. It'll flatten out into a horizontal position as it flies, arcing around in a curve. The radius of the arc is determined by the angle at which you throw the boomerang above the horizon.

PLANS FOR THE BOOMERANG

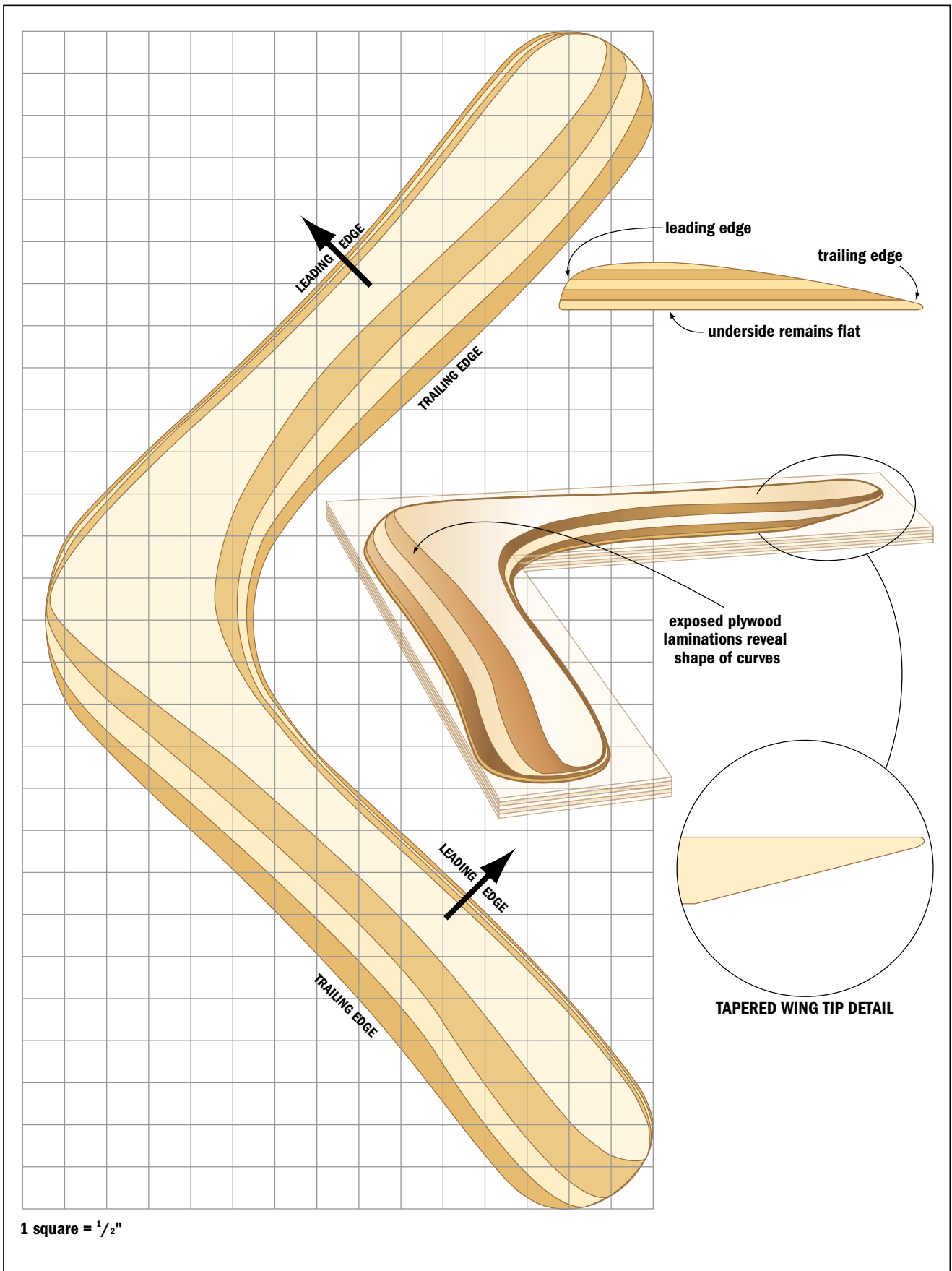


ILLUSTRATION: LEN CHURCHILL