Traveling at about 50 mph and revolving 10 times a second, the boomerang starts in a nearly vertical stance, like a speeding car tire. As it rotates, the lifting arm cuts through the air first and the trailing arm follows in the turbulence, with the result that each arm of the boomerang looses lift and airspeed. This phenomenon helps the boomerang keep its balance.

In the air, the boomerang exhibits fascinating behavior. At first vertical, it curves an arc through the sky to the thrower’s left (or right, if thrown left-handed). Reaching the completed circumference of its path, the boomerang begins to lay down in a speeding horizontal position. Its circular journey completed, the boomerang hovers like a helicopter, ready to be caught.

THE BEAUTY OF BOOMERANGS
On those summer afternoons when the sun starts its sultry decline, Chet’s neighbors haul their lawn mowers out for a cool clip. But Chet hauls out his boomerangs and heads for the open fields.

“Once, my only concern was how little time the boomerang spent dilly-dallying along its path,” notes Chet. “The less it hovered around, the faster it returned and the better it was for me in competition. What fascinates me now is the dipping, soaring, and hovering.”

Whenever weather permits, Chet fits his boomeranging into the day. Competition still happens to be exciting to him, but other things count even more—such as a boomerang brightened by the sun.

“A boomerang doesn’t look like much sitting still, but when it’s rotating, the thing has a unique beauty,” Chet remarks, spinning his hand in the air. “Then, that piece of wood becomes a boomerang.”

Interested in boomerangs? Write: U.S. Boomerang Association, P.O. Box 2146, Lower Burrell, PA 15068; Free Throwers Boomerang Society, 51 Troy Rd., Delaware, OH 43015.

Produced by Peter J. Stephano
Photographs: Jim Elder

BUILD YOUR OWN
BOOMERANG
The Seabreeze II Boomerang, a championship model designed by Chet Snouffer, guarantees you hours of fun for a minimal investment of time and material. Make several!

Note: You’ll need a $\times 13 \times \frac{3}{4}$ (6 mm) piece of five- or seven-ply Baltic birch aircraft plywood (or good marine-grade plywood) to make your boomerang. Check the Buying Guide at the end of this article for sources.

1. CUTTING OUT THE BLANK
Using tracing paper, copy the full-sized boomerang pattern outlined here, including the bevel lines, and transfer it to the plywood. You can do this easily, and have clear lines to follow, if you place carbon paper under the pattern on the stock.

Situate your tracing-paper pattern on the stock so that the grain runs across the arms (as indicated by the wavy lines on the pattern); then trace the outline on the wood. Your wood will still work even if it has a warp to it, but you must trace the pattern and form the edges of the boomerang on the side of the stock that dishes upward.

Use a band saw, jigsaw, or scroll saw to cut out the boomerang blank from the plywood.

2. MARKING THE BEVELS
The top of the boomerang has two tapered edges, called airoffs. The leading edge is 45° bevel, and the trailing edge has a 30° bevel (see pattern). Note that these edges blend into each other and gradually switch positions on the boomerang (i.e., the trailing edge of the right arm eventually becomes the leading edge on the left arm).

Where you position these edges on the boomerang determines if it will be left-handed or right-handed. Our pat-

tern indicates edge positions for a right-handed boomerang. To make it left-handed, reverse the edge bevel positions: The trailing arm becomes the leading arm and its leading edge and trailing edge trade locations.

This isn’t as confusing as it first may seem, if you remember that a leading edge must cut the air first when you throw the boomerang. That’s important, because otherwise it won’t fly.
3. SHAPING THE BOOMERANG
With a drum sander in a drill press, a disk sander in a portable drill, or by hand with a rasp, put a 45° bevel completely around the top side of the blank. Exactness isn’t critical, so you can simply eyeball the bevel.

Next, sand back the bevel on the trailing edges as marked on the pattern until you have a 30° taper. Be sure to gradually blend trailing edges into leading edges. Refer to the boomerang-arm cross sections for the proper edge taper at both ends and in the center of the boomerang.

Finish sanding the edge contours by rounding off the 45° bevel of the leading edges to a bullnose. Now, turn the boomerang over and sand a slight tapering bevel along the leading edges for about 2 1/2" from the tip of each arm, as indicated by the dashed line on the pattern. This bevel tends to add an even lift. Note the shape of the arm tips as indicated in the cross section views.

Chet Snouffer checks the smoothness of the tapering bevel on his boomerang’s trailing edge. Note the plies exposed in the aircraft plywood blank.

4. SANDING AND FINISHING
A smooth surface on your boomerang reduces wind resistance and makes catching much easier; so sand with 80-, then 120-grit paper.

Make your boomerang waterproof by applying sanding sealer. When dry, sand it again with 120-grit to smooth lifted grain fibers.

Let your imagination run when painting your boomerang. Bands of color or other decoration on the arms will create a pattern during the boomerang’s flight. Whatever hue (or combination of hues) you choose, spray the color on for an even finish.

For added protection of the paint as well as the boomerang, spray it with one or two coats of polyurethane or lacquer. Some throwers even rub a paste wax over the finished coat. But don’t get carried away—too much finish adversely affects the boomerang’s flight performance. Refer to the photo(s) on p.29 for the proper throwing technique.

BUYING GUIDE
Aircraft plywood
You can find aircraft plywood at large hobby stores, or by mail order. Here are some suppliers we know about:

- Flounder Bay Boat Lumber, Third and O Avenues, Anacortes, WA 98221.
- Sport Vehicle Supplies, 823 Strain Blvd., Lakeland, FL 33801.
- Trimcraft Aero, Inc., P.O. Box 27, Lyons, WI 53148.
- Violette Plywood, P.O. Box 141, Northfield Rd., Lunenburg, MA 01042.

Project Design: Chet Snouffer
Illustration: Kim Downing
Photography: Jim Elder