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Dave Campbell
Editorial Content Chief, *WOOD* magazine



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Flag Case



A Hero's Memorial

Designed for a 5X9½' American flag, this case preserves the carefully folded symbol of our nation and honors the memory of a loved one. You can set this case on a tabletop or shelf, or hang it on a wall courtesy of a clever pair of bevel-edge cleats.

Making a flag case usually requires cutting long, narrow 22½° miters where the sides meet the base. By fitting the base between the sides, our design eliminates these difficult cuts, leaving you with easy 45° miters all around.

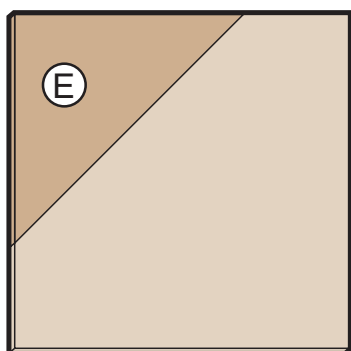
materials list

Part	FINISHED SIZE			Matl.	Qty.
	T	W	L		
A* sides	1/2"	3 3/8"	18 1/4"	C	2
B* base	1/2"	3 3/8"	24 13/32"	C	1
C* side trim	3/8"	3/4"	18 1/4"	C	4
D* base trim	3/8"	3/4"	23 11/16"	C	2
E back	1/4"	16 7/16"	16 7/16"	H	1
F* side liners	1/4"	3 1/16"	16 1/2"	C	2
G* base liner	1/4"	3 1/16"	22 11/16"	C	1
H* back cleat	3/8"	2"	4"	C	1
I* wall cleat	3/8"	2"	7 1/4"	C	1

*Parts initially cut oversize. See the instructions.

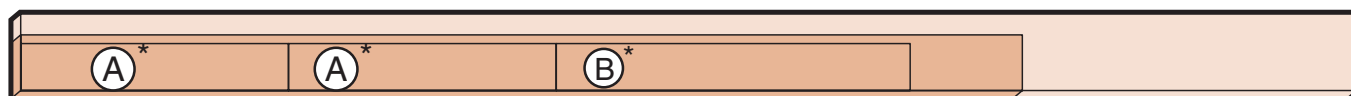
Materials Key: C—cherry, H—hardboard.

Supplies: 1/8" hardboard, #4×1" brass flathead wood screws (12), #8×1/2" flathead wood screw, #8×1 1/2" flat-head wood screw, wall anchor, single-strength glass.

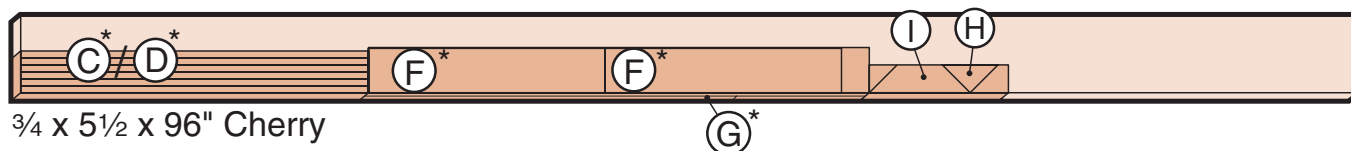


1/4 x 24 x 24" Hardboard

cutting diagram

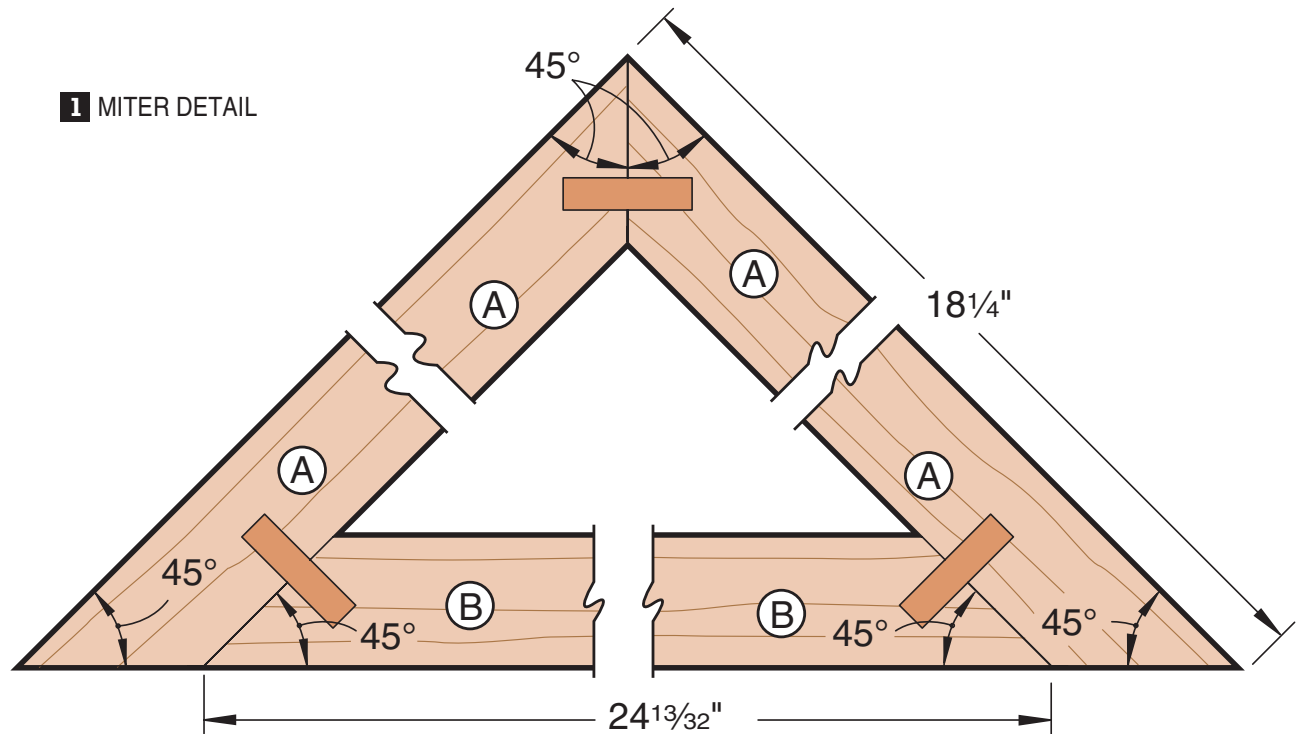


3/4 x 5 1/2 x 96" Cherry *Plane or resaw to the thickness listed in the Materials List.



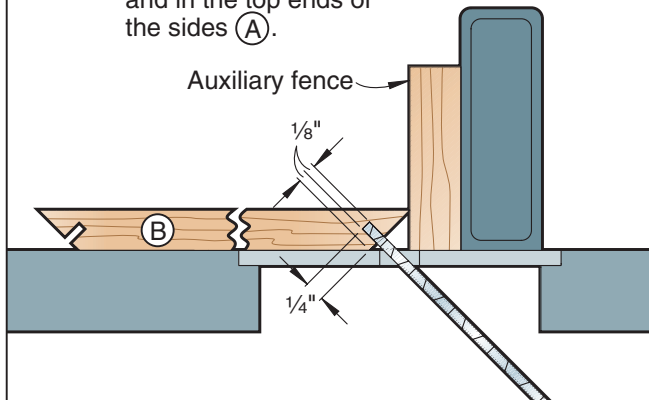
3/4 x 5 1/2 x 96" Cherry

1 MITER DETAIL

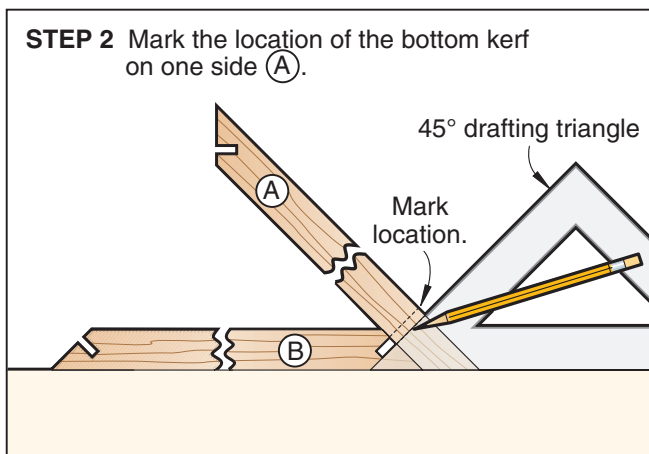


CUTTING THE SPLINE KERFS

STEP 1 Cut kerfs in both ends of the base (B) and in the top ends of the sides (A).



STEP 2 Mark the location of the bottom kerf on one side (A).

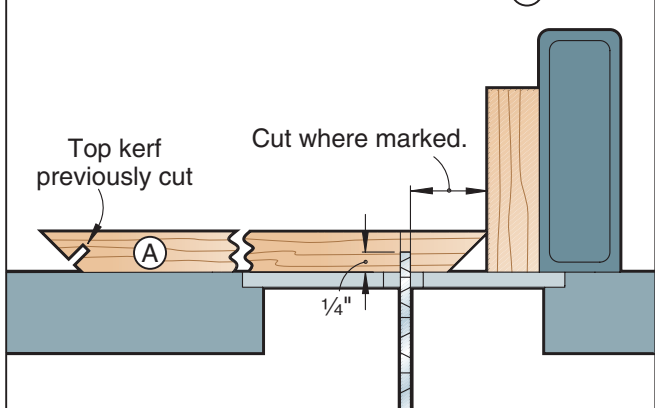


First, make the triangular frame

1 Plane a $\frac{3}{4} \times 4 \times 72$ " board to $\frac{1}{2}$ " thick for the sides (A) and the base (B). Cut these parts to the width and about 1" longer than the lengths listed in the Materials List. Save the extra stock for testing the spline-kerf cuts later. Take care to plane your material accurately. It must be exactly $\frac{1}{2}$ " thick for all the frame dimensions to work.

2 Miter-cut parts A and B to length, to the dimensions shown on **Drawing 1**. Note that all the miters cuts are 45° and that the base fits between the sides. Miter the ends of your test piece for use later when setting up your tablesaw to cut the spline kerfs in the sides (A).

STEP 3 Cut the bottom kerfs in the sides (A).



3 Referring to the three steps shown on *page 3* cut the spline kerfs in the mitered ends of parts A and B. Use your test piece to verify the accuracy of your saw setups before cutting the kerfs in the parts.

4 Rip a $\frac{7}{16} \times 12$ " strip of $\frac{1}{8}$ " hardboard, then crosscut three $3\frac{3}{8}$ "-long splines. Test the fit of the splines in the kerfs. We had to lightly sand our splines for a good fit. Dry-assemble the sides and base with the splines to check the fit, then apply glue to the miters and splines, and clamp the frame together, as shown in **Photo A**.

Add the trim, back, glass, and liners

1 From the edge of a $\frac{3}{4}$ "-thick, 25"-long board, rip six $\frac{1}{2}$ "-wide strips for the side trim (C) and base trim (D). Laying the strips on their $\frac{3}{4}$ " faces, plane them to $\frac{3}{8}$ " thick. Miter-cut two sets of trim to length, one set each for the frame's front and back. The trim miters match those of the frame. The outside edges of the trim and frame are flush, as shown on **Drawing 2**.

2 Glue and clamp one set of trim (C, D) to the frame's front edge. With the glue dry, clamp (do not glue) the other set to the frame's back edge, and drill pilot and countersunk shank holes, where shown on **Drawing 3**. Set the back trim aside.

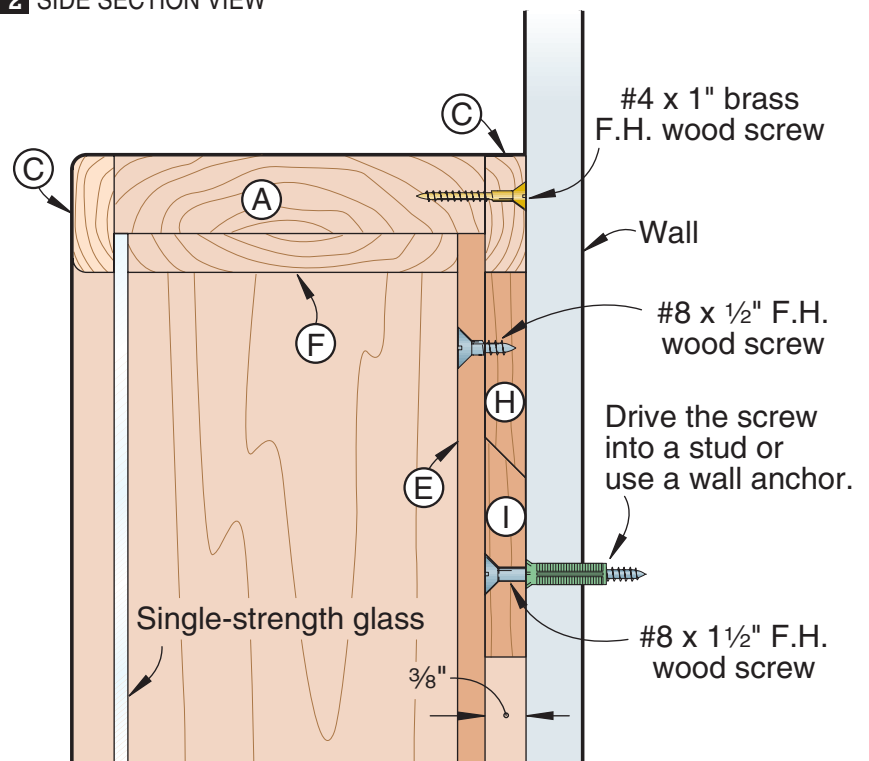
3 To lay out the back (E), place the frame's back top 90° corner on the 90° corner of a piece of $\frac{1}{4}$ " hardboard. Trace a line onto the hardboard along the inside edge of the base (B). Bandsaw and joint to the line. Have a piece of single-strength glass cut to fit inside the frame, leaving a $\frac{1}{16}$ " space all around. (You also can use clear acrylic sheet, and cut it with an 80-tooth carbide-tipped blade.)

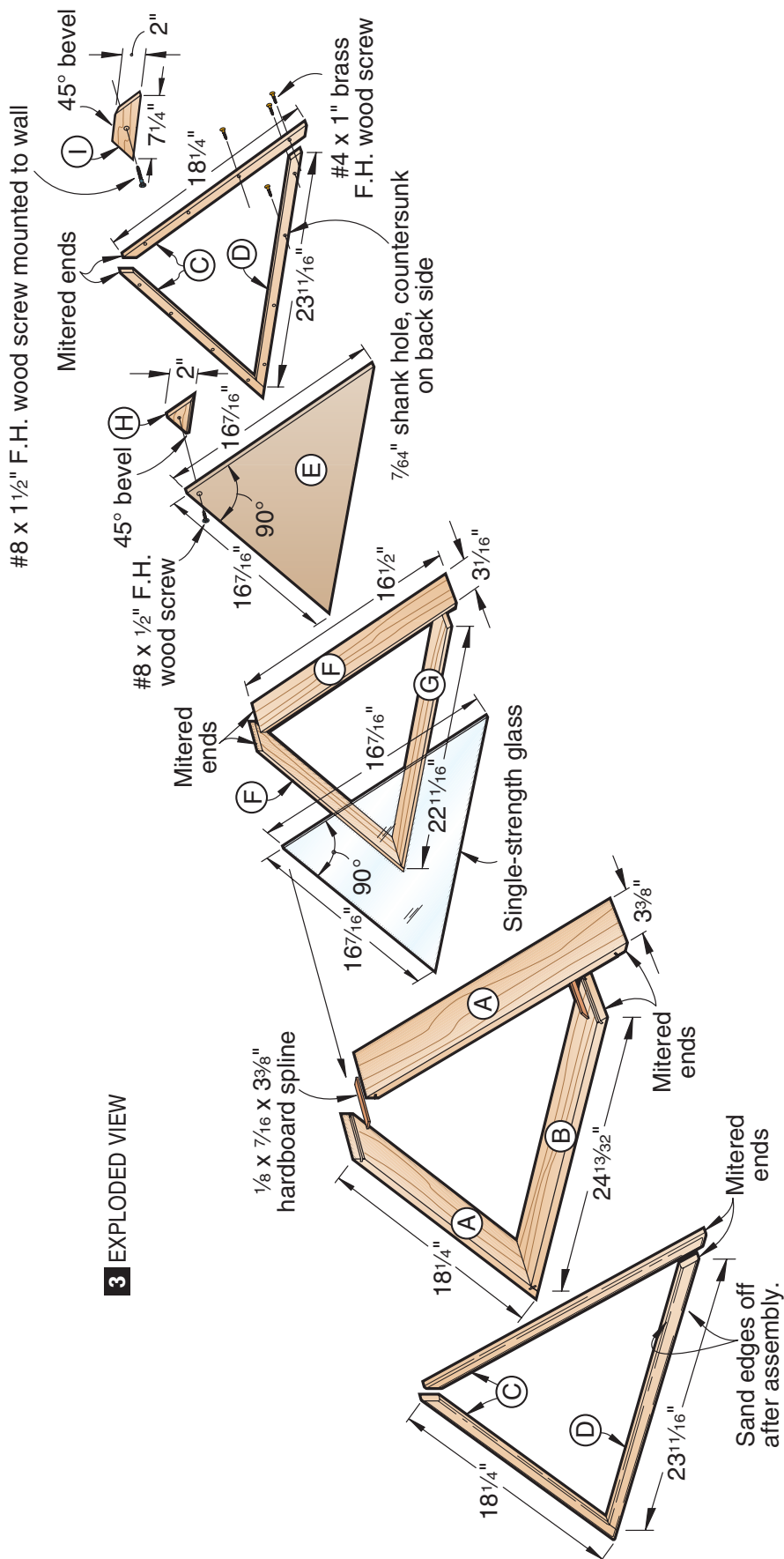
4 Resaw a $\frac{3}{4} \times 3\frac{1}{4} \times 36$ " board in half, and plane it to $\frac{1}{4}$ " thick for the side liners (F) and base liner (G). Cut these parts about $\frac{1}{8}$ " wider and $\frac{1}{2}$ " longer than the



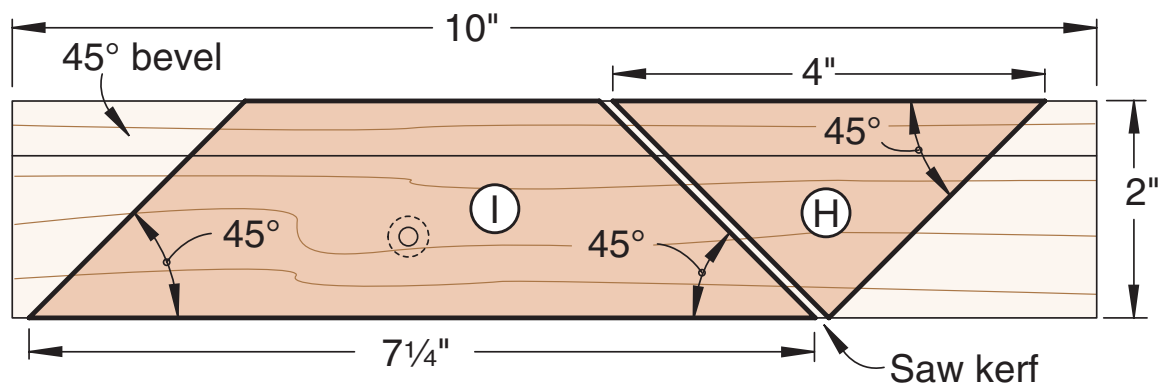
Set the assembled frame on a flat surface, and draw its mitered corners together with a pair of bandclamps.

2 SIDE SECTION VIEW





4 CLEATS



dimensions listed. Miter-cut the parts to fit inside the frame. The fit should be snug, but not tight. To determine the exact width for the liners, place the frame facedown on your bench, and lay in the glass and back. Slide the liners into the frame, and mark their finished width by striking a line even with the back edges of the frame. Remove the liners, and trim them to width.

5 Plane a $\frac{3}{4} \times 2 \times 10$ " board to $\frac{3}{8}$ " thick to make a blank for the back cleat (H) and wall cleat (I). Make a 45° bevel rip along one edge, where shown on **Drawing 4**. Cut parts H and I from the blank where dimensioned. Drill a countersunk hole in the wall cleat (I) for attachment to the wall later.

6 Assemble the glass, liners (F, G), and back (E) in the frame. Screw the back side trim (C) in place. Glue and clamp the back cleat (H) to the back with its 90° corner nested in the corner formed by the trim, and the bevel oriented as shown on **Drawing 2**. With the glue dry, remove the back, drill a pilot and countersunk shank hole in the back and cleat, and drive in the screw.

Apply finish and assemble the case

1 Remove the liners and glass. Sand all the parts, except the back, to 220 grit. Ease any sharp edges with a sanding block. Apply two



The mating cleat bevels provide concealed attachment. Level the wall cleat during installation to ensure a level-hanging case.

coats of satin polyurethane, sanding lightly with 220-grit sandpaper between coats.

2 With the finish dry, lay the frame facedown on your workbench. Place the glass in the frame, insert the liners, then the folded flag. Add the back, and screw the rear side and base trim (C, D) in place. If you need to fold your flag to fit the case, see the sidebar, "The correct way to fold the American flag" on *page 7*.

3 Fasten the wall cleat (I) to the wall, either screwing into a wall stud, or using a wall anchor. Check

the cleat for level. Hang the case. Note how the back cleat (H) and the wall cleat (I) interlock in **Photo B** and on **Drawing 2**. ♠

Produced by **Marlen Kemmet**
Project design: **Chuck Hedlund**
Graphic Design: **Jamie Downing**
Illustrations: **Roxanne LeMoine, Lorna Johnson**
Photographs: **Marty Baldwin**
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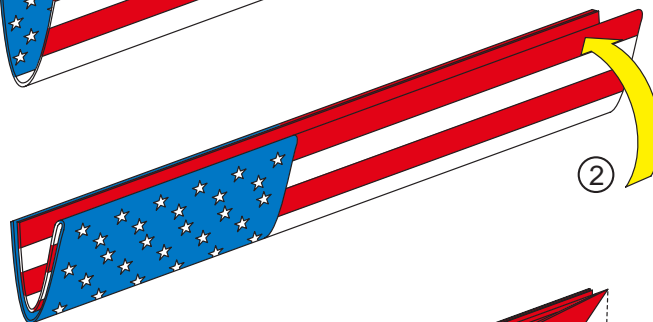
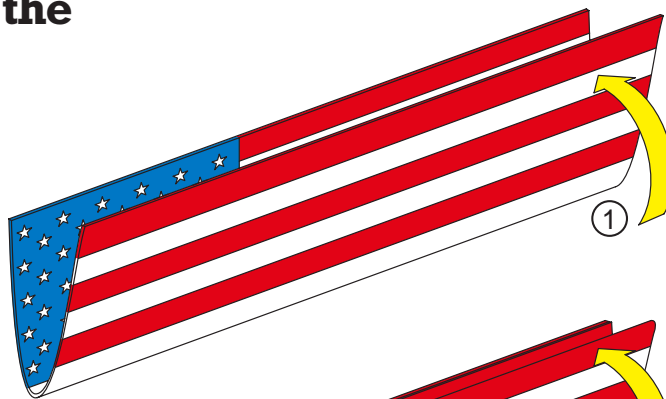
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The correct way to fold the American flag

Our flag case is shaped to hold a properly-folded 5×9½" American flag. Here's how it's done.

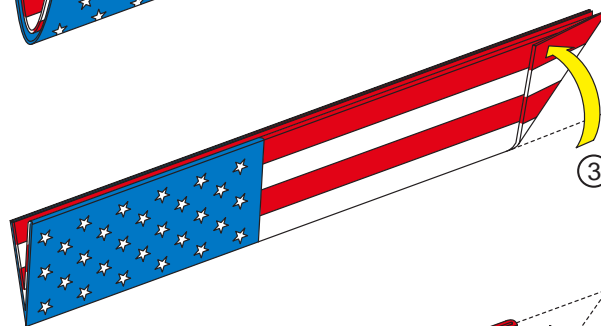
Step 1

Fold the flag in half. You now have open and closed edges.



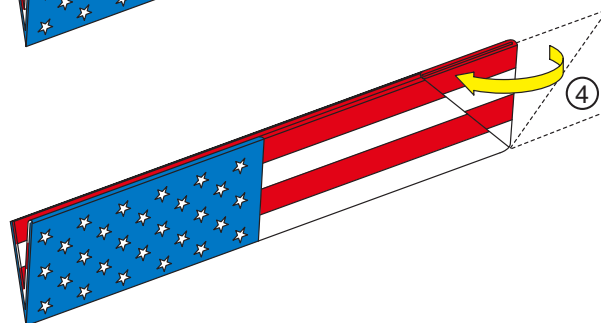
Step 2

Fold in half again toward the open edge.



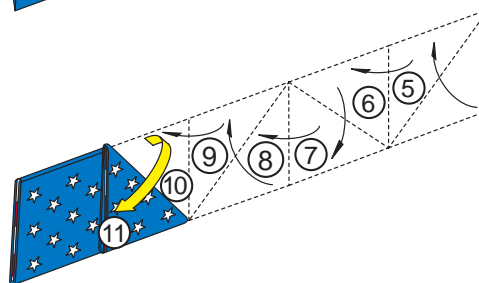
Step 3

Fold the closed corner toward the open edge, forming a triangle.



Step 4

Fold the point of the triangle toward the blue field.



Steps 5–11

Continue folding until you have one square of the field left.

Steps 12–13

Fold the open corner of the square toward the closed edge. Tuck the resulting triangle into the rest of the flag.

