The Family Handyman®

PROJECT PLAN

Tilting Mirror Stand

This article originally appeared in The Family Handyman magazine.
For subscription information, visit www.familyhandyman.com

BY BRUCE KIEFFER

TILTING MIRROR STAND

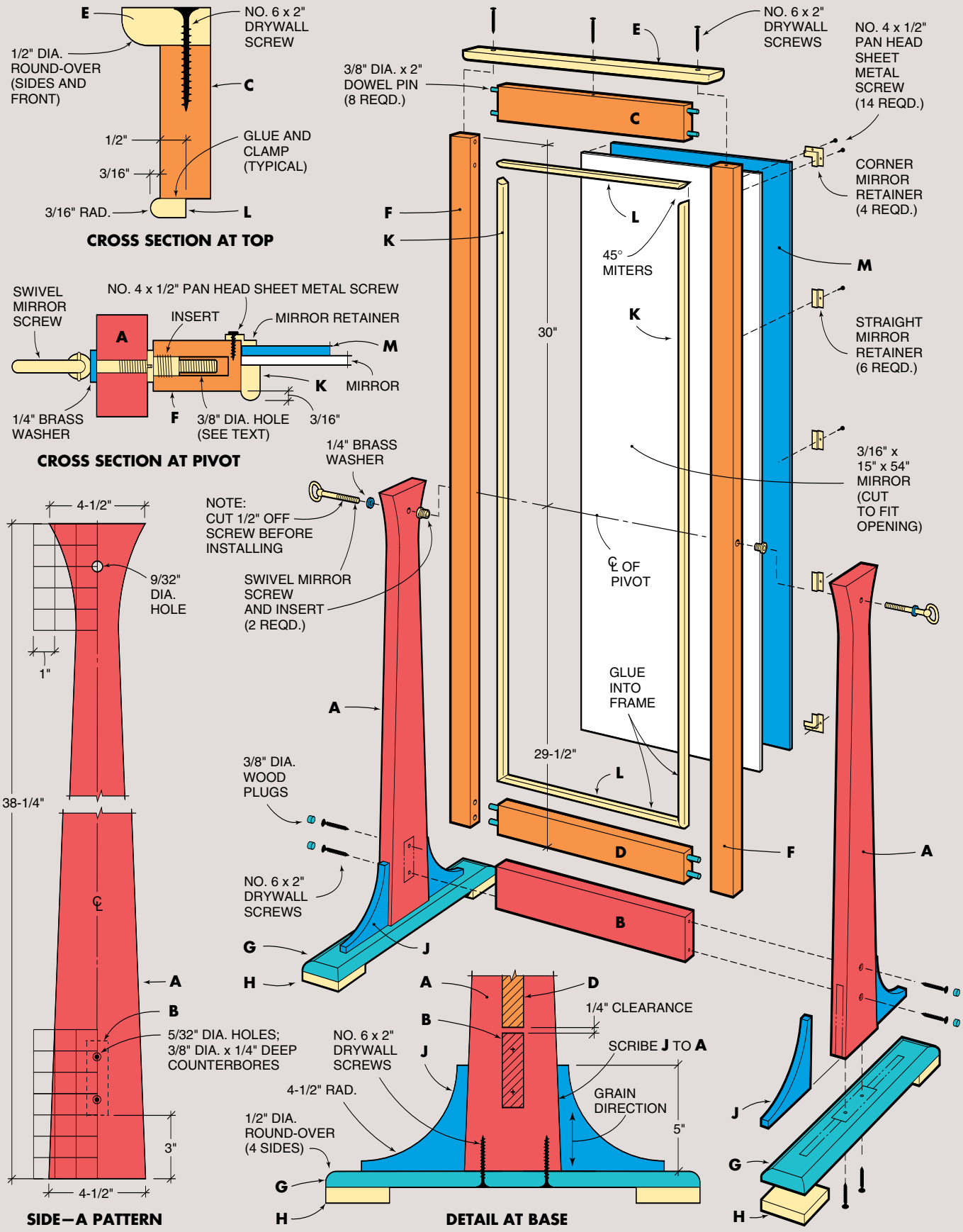
Traditional styling with the elegance to stand on its own.

Here's a project that'll reflect well on your workmanship as well as your self-image. The mirror tilts and can be tightened into position so you can see your entire body, from head to toe.

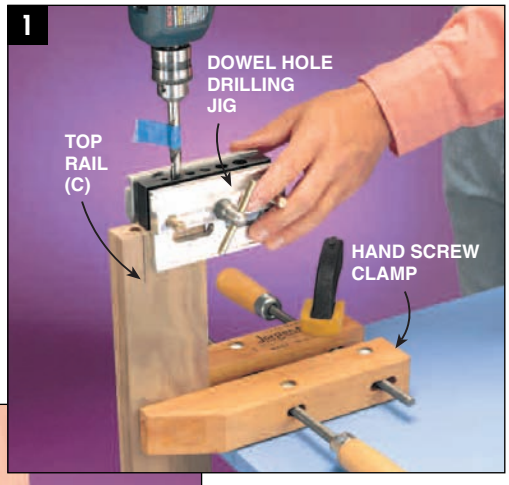
The stand is made of solid walnut with a walnut stain. The stain evens out some minor color variations in the wood and darkens the piece, so if you prefer a lighter color, eliminate the stain or choose a wood like cherry or oak.

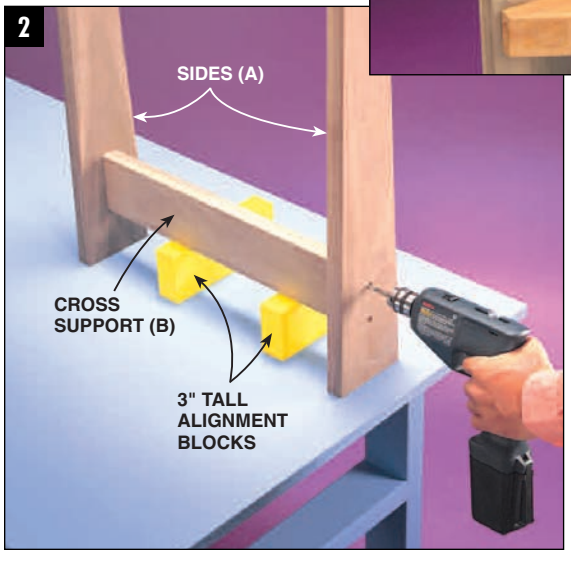
We'll show you some tricks for making the cap molding and the bullnosed inside frame moldings that'll also be useful when you build other projects. This mirror stand will take about 10 hours to build, and cost about $160.

FIG. A TILTING MIRROR STAND DETAILS



USE a dowel hole drilling jig to drill the dowel holes so they're straight and centered. Place a piece of masking tape on the drill bit to act as a depth stop flag.





PLACE the cross support on two 3-in. tall blocks to align its height. Measure and align the cross support so it's centered on the sides (A), then insert the screws.

BEFORE YOU START

Gather all the tools listed in the Tool List on p. 82 as well as your basic carpentry and layout tools.

Be selective if you buy walnut lumber. It's expensive, and the quality varies greatly from board to board. The quantities in the Shopping List allow for about 30 percent waste. You'll need this extra wood for cutting around knots and other defects. If you don't own a thickness planer, have your lumberyard plane three of the walnut boards so they're 1 in. thick, and the other one so it's 3/4 in. thick. Then cut a 24-in long piece from the 3/4-in. thick board, and plane it to 1/2-in. thickness. You can cut the rest on your table saw.

Buy the other materials listed in the Shopping List on p. 82, except for the mirror. Once you've assembled the mirror frame, take it to a local glass supplier and have them cut the mirror to fit your frame.

STEP-BY-STEP INSTRUCTIONS

1. Cut the pieces A through M to the dimensions given in the Cutting List on p. 82.

2. Lay out and drill the dowel holes in the top rail (C), bottom rail (D), and the stiles (F) **(Photo 1)**.

3. Glue, dowel and clamp the mirror frames pieces (C, D and F) together making sure the frame is square.

4. Lay out and drill the holes in the sides of the stiles for the threaded inserts that come with the swivel mirror screws. Use your dowel hole drilling jig and a 3/8-in. dia. drill bit. The holes for the inserts will still be a little small, so wiggle the bit a little to enlarge the holes. Don't screw the inserts in yet.

5. Make a template of half of the shape of the side piece (A). Start by cutting a scrap piece of thin plywood or hardboard to 2-1/4 in. x 38-1/4 in. long. Transfer and enlarge the grid shapes (see Fig. A on p. 79) to your template piece and mark the hole locations too. Cut out the shapes and smooth the sawn edges with a bastard file and sandpaper.

6. Draw center lines from end to end on one face of each side (A). Align your template to the center line and trace the shape. Flip the template over and trace the shape to the other side and mark the hole locations as well. Cut out the shapes with a band saw or jigsaw, then smooth the sawn edges with a bastard file and sandpaper. Drill the counterbored holes for the walnut plugs to cover the drywall screws that hold the cross support (B). Next, drill the clearance holes for the drywall screws, then the 9/32-in. dia. holes for the swivel mirror screws.

7. Finish-sand the mirror frame, cross support (B) and sides (A). Use an orbital sander, starting with 150-grit sandpaper, then 180-grit, and finish with 220-grit. Ease any sharp edges with 180-grit sandpaper.

8. Screw the sides to the cross support **(Photo 2)**.

9. Using a 3/8-in. dia. plug cutter, cut four 3/8-in. long screw cover plugs from a piece of scrap walnut. Glue and hammer the plugs into their holes. After the glue is dry, make the plugs flush using a bastard file, and then sandpaper.

10. Lay out, countersink and drill the screw holes in the bases (G). Glue and clamp the feet (H) to the bases. Clean off any oozed-out glue with a paint scraper and chisel; sand the edges after the glue is dry.

11. To make it easier to attach the bases, draw the outlines of the bottoms of the sides onto the tops of the bases. Rout the 1/2-in. radius edges on the bases. Now you're ready to align and screw the bases in place **(Photo 3)**.

SCREW the bases to the bottoms of the sides. An easy way to align the pieces is to draw an outline of the side's bottom on the top of the bases.

Unscrew the bases, finish-sand them, then reattach them.

12. Make the cap molding (E) and the bullnose moldings (K and L). See "Making the Moldings" at right.

13. Lay out, countersink and drill the screw holes in the cap molding. Next, miter the ends of the bullnose moldings so they fit inside the mirror frame. Finish-sand the molded pieces, then screw the cap molding to the top of the mirror frame. Apply glue lightly to the outside edges of the bullnose moldings, then clamp them to the inside edges of the frame.

14. Lay out the four braces (see Fig. A) on piece J. Draw the 4-1/2 in. radius curves using a large compass or a trammel point set. Start by cutting the curve, then smooth its sawn edge with a half-round bastard file and sandpaper. Then cut the brace to length. Do all four braces this way.

15. Scribe and trim the inside edges of the braces so they fit against the tapered sides **(Photo 7)**. Trim off the scribe waste with a band saw or bastard file. Finish-sand the braces and ease the exposed sharp edges. Apply glue lightly to the edges of the braces. Then press and align them against the sides and bases. Hold the braces in place for about a minute to allow the glue to stick, or use masking tape to hold them in place.

16. Apply the stain and let it dry for 24 hours. Following the directions on the can, apply three coats of Danish oil fin-

TIP

Instead of sanding excess glue in hard-to-reach corners, use a sharp chisel to clean off any oozed glue after the glue has partially dried.

MAKING THE MOLDINGS

It's usually best to rout the profiles on a larger piece of wood first, and then cut the moldings to their finished dimensions afterwards. This is easier than trying to rout the edges of narrow or thin pieces of wood.

I also prefer to hand-hold my router, rather than use my router table. It's easier to control and there's less wood tear-out. I use my router table to shape smaller, less detailed moldings. The mirror stand moldings are made using both methods. Here's how they're done.

MAKING THE CAP MOLDING

The cap molding (E) is made by routing the edge of a piece of wood that's 1/4 in. thicker and 1/4 in. wider than the molding's finished dimensions. The added thickness raises the router so the bottom of the router bit won't dig into your work table. The added width allows you to rout past the end without having to worry about tear-out because you'll saw the back edge off later.

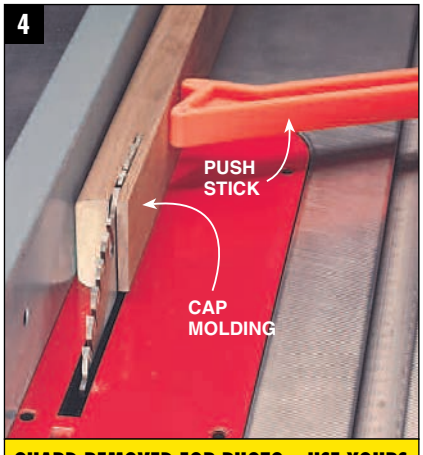
Rout the 1/2-in. dia. rounded-over front edge and the ends of the cap molding piece. Then, using your table saw, cut the width to 1-3/4 in., and then cut the thickness to 3/4 in. (Photo 4).

MAKING THE BULLNOSE MOLDINGS

The bullnose moldings (K and L) are made by routing both edges of pieces that are more than twice as wide as the finished moldings. This way two moldings can be made from each of the pieces K and L. Doing it this way is easier than routing the edges of narrow pieces.

Set up your router table with a 3/16-in. dia. round-over bit. Rout both edges and both sides of pieces K and L (Photo 5). Using a table saw, cut the bullnose moldings to their finished widths of 11/16 in. Now go back to step 13 of the step-by-step instructions.

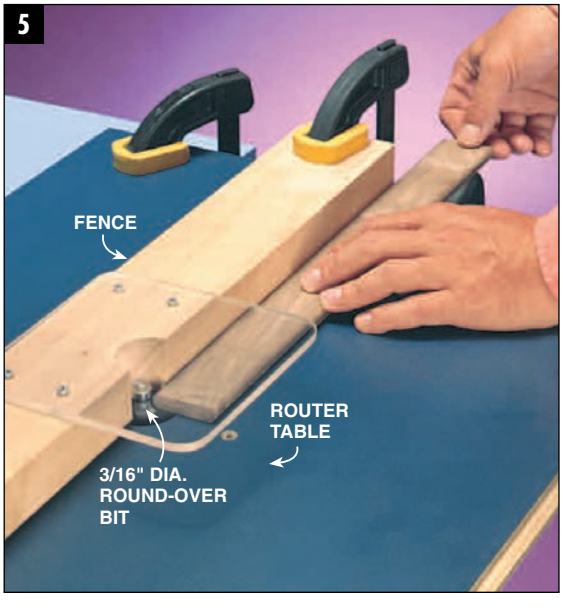
4



GUARD REMOVED FOR PHOTO—USE YOURS

CUT the cap molding so it's 3/4 in. thick. Do this after you've routed the rounded-over edges and cut the width to 1-3/4 in.

5



ROUT the edges of the bullnose molding pieces K and L using a router table and a 3/16-in. dia. round-over bit. Push the wood piece across the router table from right to left. Pushing at a slow, continuous rate will reduce tear-out and burning.

ish to all the pieces except the back (M). Allow the last coat of Danish oil to dry for two days.

17. After the oil finish has dried, buy your mirror and set it in the frame. Set the back in the opening, and screw the mirror retainer clips in place.

18. Screw the mirror swivel screw threaded inserts into the holes in the sides of the mirror frame. I found that applying a little wax to the insert threads made it easier to screw them in.

TOOL LIST

Table saw with miter gauge
Router with:
- router table and fence
- router pad
- 1/2" and 3/16" rad. round-over bits

Band saw or jigsaw
Hacksaw
Cordless or electric drill
No. 1 Phillips screwdriver or hex-shanked bit
No. 2 Phillips screwdriver or hex-shanked bit
Dowel hole drilling jig
Orbital sander
Drill bits:
- 1/16", 7/64", 5/32" and 9/32" twist bits
- 3/8" brad point bit
- countersink bit
- 3/8" dia. screw cover plug cutter

Half-round bastard file
Wood chisel
Large compass or trammel points
Clamps:
- two 24" long bar or pipe clamps
- eight 6" long bar clamps
- one 10" handscrew clamp

SHOPPING LIST

ITEM	QUANTITY
1" x 6" x 8' walnut*	3 pieces
3/4" x 6" x 8' walnut*	1 piece
1/4" x 15" x 54" scrap plywood	1 piece
3/16" x 14-15/16" x 53-15/16" mirror	1
No. 6 x 2" drywall screws	11
No. 4 x 1/2" pan head sheet metal screws	14
3/8" x 2" hardwood spiral dowel pins**	8
Polished brass swivel mirror screws**	1 pair
Mirror retainer clips (1/8" offset)**	1 set
1/4" brass flat washers	2
Minwax No. 224 Special Walnut stain	1/2 pint
Danish oil finish	1/2 pint

*Finished thicknesses.

**Available from The Woodworkers' Store, Dept. TFH, 4365 Willow Drive, Medina, MN 55340; (800) 279-4441. Cat. No. 16255, TFH Mirror Stand Hardware Kit, $8.95; kit includes fifty 3/8" x 2" hardwood spiral dowel pins, one pair polished brass swivel mirror screws, and a set of 10 mirror retainer clips (1/8" offset). Kit price includes shipping cost.

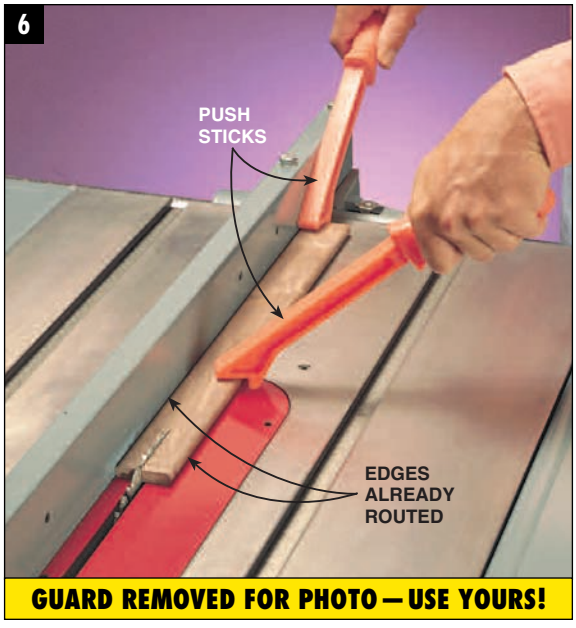
CUTTING LIST

KEY	PCS.	SIZE & DESCRIPTION
A	2	1" x 4-1/2" x 38-1/4" walnut (sides)
B	1	1" x 3-1/2" x 18-1/2" walnut (cross support)
C	1	1" x 3" x 15" walnut (top rail)
D	1	1" x 2-1/2" x 15" walnut (bottom rail)
E	1	1" x 2" x 19-3/4" walnut (cap molding)*
F	2	1" x 1-5/8" x 59-1/2" walnut (stiles)
G	2	3/4" x 3" x 17-1/2" walnut (bases)
H	4	3/4" x 3" x 3" walnut (feet)
J	1	1/2" x 5" x 24" walnut (braces)*
K	1	3/8" x 1-5/8" x 55" walnut (bullnose molding)*
L	1	3/8" x 1-5/8" x 16" walnut (bullnose molding)*
M	1	1/4" x 15" x 54" scrap plywood (back)

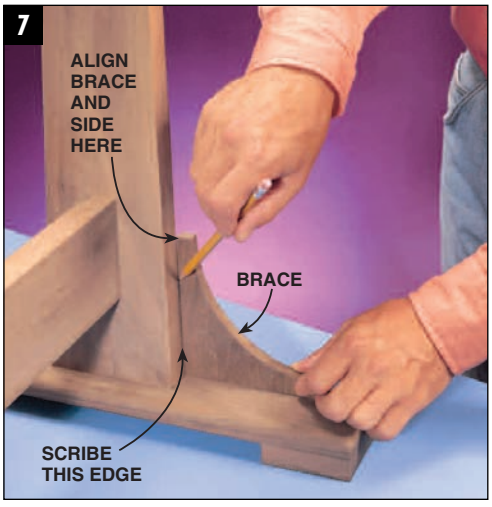
*Cut to finished dimensions during assembly; see the step-by-step instructions.

Use the side of the blade of a straight screwdriver placed in the slot of the inserts to twist them into their holes. A silver dollar works too!

19. Use a hacksaw to cut 1/2 in. from each swivel screw. Next, place the 1/4-in. brass flat washers over the mirror swivel screws. Now with the help of another person, hold the mirror frame between the sides and have your helper insert the swivel screws. Tighten the screws, and you're all set. **TFH**



***CUT** the finished widths of the bullnose moldings. Set your table saw to cut 11/16 in. wide. Cut off one molding piece, flip the waste piece over, and cut off the other molding piece. Do both pieces K and L.*



***SCRIBE** the edges of the braces where they meet the sides. Hold the brace behind the side so the top of the brace is aligned with the side, then draw the scribe line.*

Editor and Project Co-Designer • DAVID RADTKE
Art Direction • MARCIA WILLISTON
Technical Art • EUGENE THOMPSON
Lead Photo • MIKE KRIVIT
How-to Photography • BILL ZUEHLKE