

CLASSIC LITTLE HAULERS

Make just one, or build an entire fleet using the author's drill press and band saw jigs

By Dave Kraatz

I always look forward to the monthly meetings of the Kansas City Woodworkers Guild. My favorite segment is "show and tell," where members share ideas and information on tools, materials, projects and techniques. "Show and tell" sounds like it should be part of a grade-school class, but in a sense,

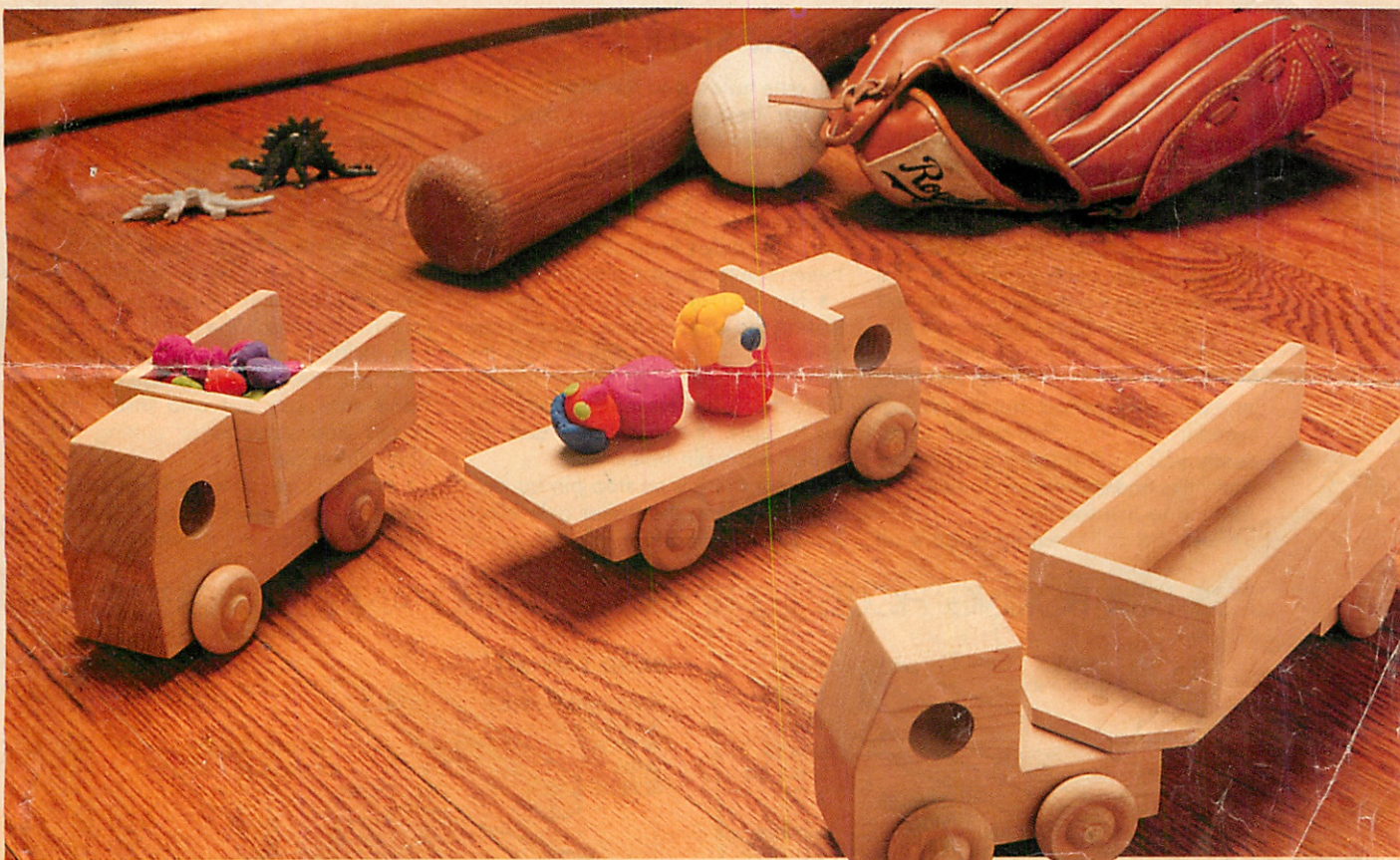
all woodworkers have a lifetime of learning ahead of them, no matter how much they already know.

One particular meeting I showed off my toy truck project, emphasizing the jigs used to mass-produce the trucks. By the end of the meeting the guild had decided to build the trucks for needy children.

The guild members who volunteered — a few professional woodworkers, but mostly hobbyists — collectively built 1,300 trucks. The secret was in the jigs.

If you're ambitious and would like to mass produce toy trucks for charities, gifts, or for sale at crafts fairs, you can cut your production time dramatically

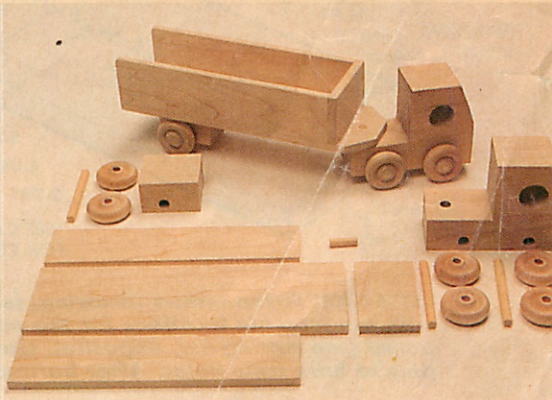
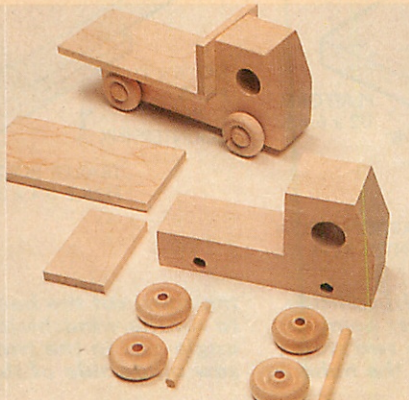
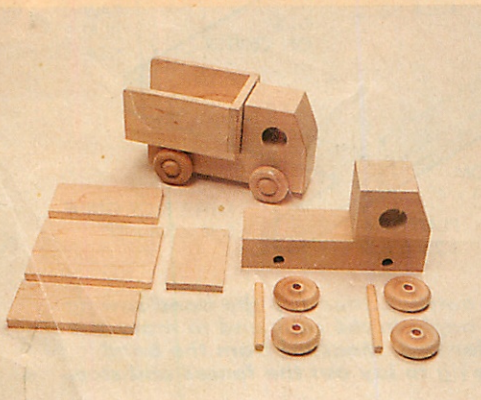
Continued on page 61



▲ BOX BED TRUCK

▲ FLATBED TRUCK

▲ TRAILER TRUCK



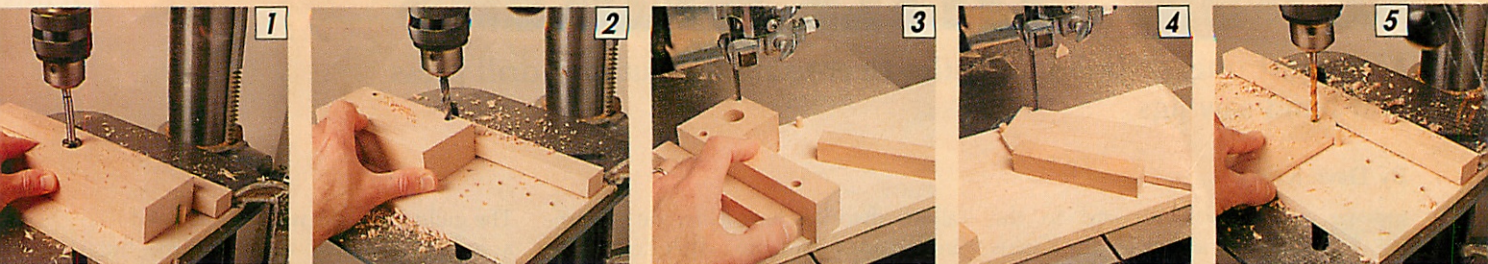


PHOTO 1: Start with the window hole. Put the dowel pin stop in the correct hole (see Drill Press Jig drawing) for the cab stock you're boring (flatbed truck shown). Hold the stock firmly against the fence and stop, then bore through. **PHOTO 2:** Repeat the procedures for the first step and bore the axle holes. Use two stop pins and slide the stock from one pin to the other to bore

the axle holes. **PHOTO 3:** Cut the bed notch in the cab stock, then use the band saw jig to cut the windshield angle. The jig slides in the table's miter slot; hold the stock against the fence and stop. **PHOTO 4:** Use the 45-degree angle block to cut the trailer bottom angles. (Blade guard raised for photo clarity.) **PHOTO 5:** Bore the hitch-pin holes in the trailer bottom and cab.

MAKING TRUCKS PRODUCTION STYLE

The key to cranking out truck after truck is to use jigs — one for a drill press, the other for a band saw. A jig is simply an accessory for a hand or power tool that lets you use that tool over and over, to perform the same operation, without having to measure and mark each workpiece. The jigs shown here are custom designed to bore all the holes and make the angle cuts for this set of trucks.

I made the jigs from 1/2-in. plywood and scrap hardwood. But the type of wood isn't as important as how accurately you lay out the jig. Here are a few tips and instructions to help you make and use the jigs.

- Use the drill press jig to bore all

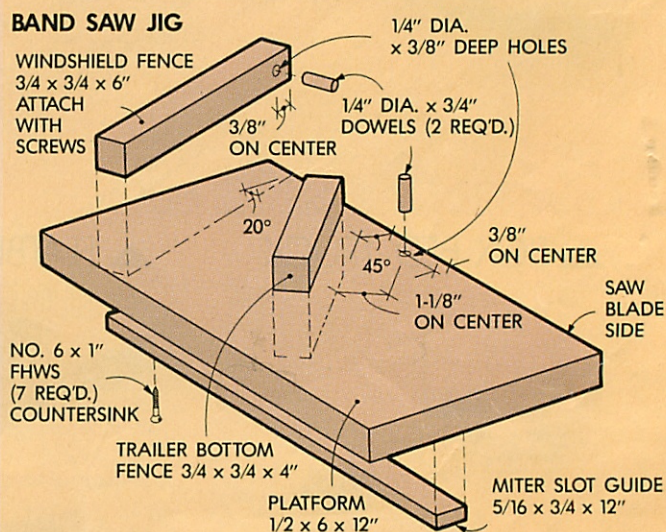
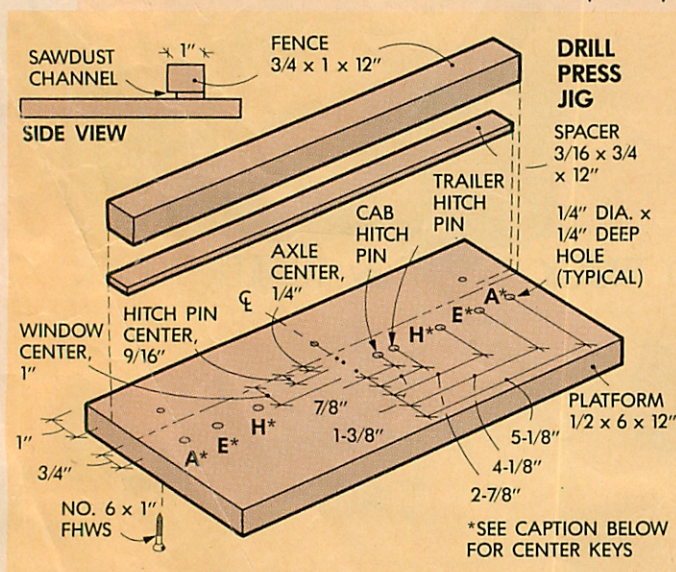
the axle holes, and the window hole.

- For best results use Forstner or brad point bits for all drilling.
- The spacer beneath the fence on the drill press jig is cut narrower than the fence to create a sawdust channel. This helps keep the corner between the fence and platform clean.
- The first drill press operation is boring the window holes in each cab (photo 1). Align the drill bit with the window hole in the jig, then clamp the jig to the drill press table. Realign the jig to bore the axle holes and the trailer hitch-pin holes.
- Note there is no stop pin for boring the hole in the trailer axle block K. Butt the bottom of the block

against the bed and bore 1 in. on center from the block's front edge.

- Use the band saw jig to cut the windshield angle on the cabs and the angles on the front end of the trailer bed bottom J.
- The band saw jig shown was devised for a Delta 14-in. model. The easy way to ensure accuracy with this jig is to first attach the guide (the bottom strip) to an oversize platform, then cut the platform edge on the band saw. Lay out and install the fences and stops after cutting the platform edge.
- Both jigs use dowel pins as stops. Band saw stops are glued in place. Drill press stops are movable.—D.K.

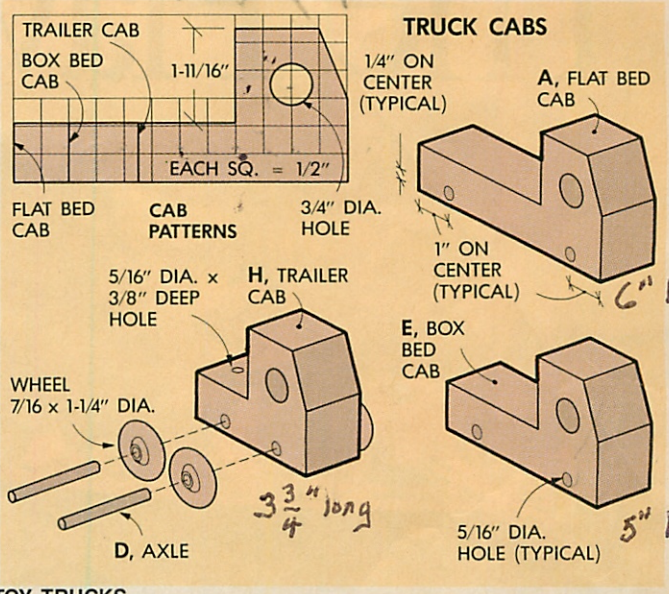
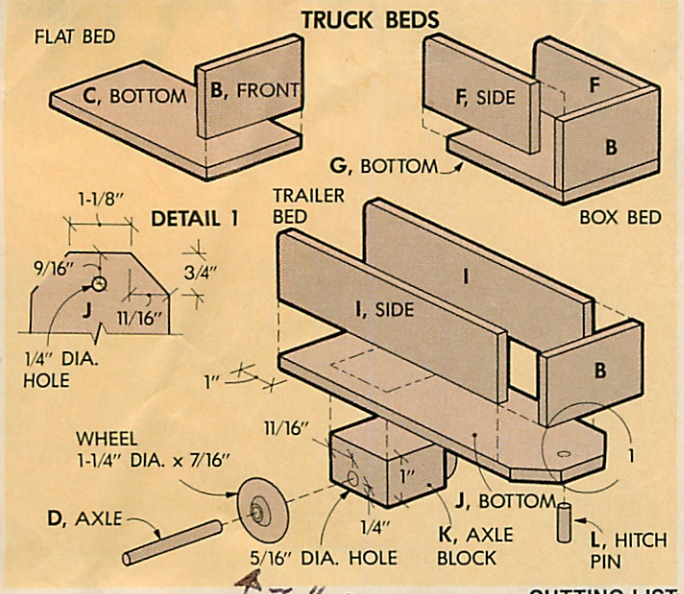
JIGS FOR BORING HOLES (LEFT) AND CUTTING ANGLES (RIGHT)



LETTER KEYS: The letters (drawing, left) coincide with the stop pin locations for the part being bored (see cutting list, opposite). Use two stop pins to bore axle holes. After boring the holes in

the cabs, cut the bed notches, then use the band saw jig to cut the windshield angle in the cabs and to make the angle cuts in the trailer bed. Measure from the band saw blade side of the jig to lay out the fences and stop.

1 - 2" x 4" x 18"
 1 - 1/4" x 3" x 3"
 Axle holes in body 15/64" dia - 20°



CUTTING LIST: TOY TRUCKS
 (all parts maple)

Key No.	Part	Size	Key No.	Part	Size	Key No.	Part	Size
Flatbed Truck								
A	1 Cab	1-1/2 x 2-3/4 x 6"	F	2 Sides	1/4 x 1-1/2 x 3-1/4"	I	2 Sides	1/4 x 1-1/2 x 6-3/4"
B	1 Front	1/4 x 1-1/2 x 2-1/2"	G	1 Bottom	1/4 x 2-1/2 x 3-1/2"	J	1 Bottom	1/4 x 2-1/2 x 8"
C	1 Bottom	1/4 x 2-1/2 x 5"	B	1 Front	1/4 x 1-1/2 x 2-1/2"	K	1 Axle block	1 x 1-1/2 x 1-3/4"
D	2 Axles (dowels)	1/4" dia. x 2-3/8"	D	2 Axles (dowels)	1/4" dia. x 2-3/8"	L	1 Hitch pin (dowel)	1/4" dia. x 3/4"
Box Bed Truck								
E	1 Cab	1-1/2 x 2-3/4 x 5"	H	1 Cab	1-1/2 x 2-3/4 x 3-3/4"	B	1 Front	1/4 x 1-1/2 x 2-1/2"
			D	3 Axles (dowels)	1/4" dia. x 2-7/16"	D	3 Axles (dowels)	1/4" dia. x 2-7/16"

Misc: 7/16" x 1-1/4" dia. wheels (see Where to Find It for a mail-order source)

Continued from page 59
 with the same drill press and band saw jigs the Guild used (see "Making Trucks Production Style," opposite page).

The materials needed are 1/4-in.-thick and 1-1/2-in.-thick maple, 1-1/4-in.-dia. wheels (see Where to Find It for a mail-order source) and 1/4-in.-dia. dowels. If you don't have a thickness planer to plane maple stock to 1/4 in., you can substitute Baltic birch plywood or any other void-free, 1/4-in. plywood.

Although woods such as birch, poplar or pine also work for making the trucks, maple is the best choice because it's durable and doesn't splinter easily.

MAKING THE TRUCK BEDS

To start, cut all the 1/4-in.-thick truck bed parts from 1-1/2- and 2-1/2-in.-wide stock. First, rip long pieces to width, then cut them to length. (The front B is common to all the truck beds.) To speed cross-cutting with a hand saw, cut one piece of each size, then use as templates to mark the remaining pieces. If you use a table saw, clamp a small stop block to the saw fence (on the infeed side of the blade) as a guide. Adjust the fence so the distance between the stop block and blade is the same as the length of the piece you're cutting. Use a miter gauge to push the stock through the blade.

Before assembling the trailer parts, cut the angles on the front of the bottom J and bore the 1/4-in.-dia. hitch-pin hole.

Glue the truck beds or trailer together with white or yellow wood glue. Use masking tape or rubber bands to hold the parts together while the glue sets. After the glue has dried (about three hours), sand all edges and corners smooth.

MAKING THE TRUCK CABS

Begin by cutting the truck cab(s) A, E, H to length. If you're using the drill press jig, bore all the holes before cutting the notch that houses the cabs or trailer. Mark the window hole and axle hole locations (you skip the marking if you're using the jigs). Bore the 3/4-in.-dia. window hole first. If you're using a hand drill, mark both sides of the cab and bore about halfway through the stock from one side, then complete the hole from the other side. Bore the 5/16-in.-dia. axle holes the same way.

Now you can lay out the notch, then cut it with a back saw. Be sure to clamp the stock securely in a bench vise. If you're cutting with a band saw, use a fence, or clamp a straightedge to the saw table to guide the work.

Use the waste from the trailer cab notch to make the trailer axle block K, then

bore the axle hole in it.

Mark the windshield angle on the cab front and carefully make a smooth cut. Now is a good time to bore the 5/16-in.-dia. hitch-pin hole in the trailer cab. Sand the cab smooth, taking care to relieve all sharp edges and corners with sandpaper.

ASSEMBLY AND OPTIONS

First, assemble the axles and wheels to the cab and to the trailer axle block. The best way to do this is to dip one axle end into glue and put on a wheel. Then, slide the axle through the axle hole and glue on the other wheel.

To complete the box bed and flatbed trucks, glue the beds to the cabs. Finish the trailer by gluing on the axle block assembly and hitch pin.

You can paint the trucks with acrylic-latex enamel or detail them with a wood-burning pen. **W**

Dave Kraatz is a consulting systems engineer for IBM and a dedicated woodworker who specializes in making toys and musical instruments.

WHERE TO FIND IT

Wooden wheels, catalog no. TW-1250, 7/16" x 1-1/4" dia., 1/4" dia. axle hole; 30 wheels for \$3.50.
 WOODWORKS, 4500 Anderson Blvd., Fort Worth, TX 76117; (817) 281-4447. Add \$3.00 shipping for orders under \$30.

All axle holes in
parts already made
must be reamed out

to $\frac{15}{64}$ "

Semi	8	2 $\frac{3}{4}$ " wide
Flat Bed	5"	"
Box Truck	3.5"	"

		8"	5"	3.5"
29"	1st pc.	3 semi +	1 Flat bed	
29"	2nd pc	3 semi +	1 Flat Bed	
29 $\frac{1}{2}$	3rd pc.	2 semi	2 Flat bed +	1 Box Bed
27	4th pc.		4 Flat bed +	2 Box Bed.
28	5th 5th pc			2 Box Bed

$$\begin{array}{r}
 7 \\
 3.5 \\
 \hline
 21 \\
 3.5 \\
 \hline
 24.5
 \end{array}$$

$$\begin{array}{r}
 16 \quad 20 \\
 10 \\
 \hline
 26 \\
 3.5 \\
 \hline
 29.5
 \end{array}$$

$$\begin{array}{r}
 2 \\
 14 \\
 5 \\
 \hline
 70
 \end{array}$$