

All Aboard!

Build this caboose-inspired toy chest for little engineers

by Dan Cary

Our toy chest features two storage compartments, a checkerboard on top and spring-loaded lid supports to keep little hands safe (see inset).



An imaginative addition to any child's room, our caboose toy chest looks great and holds a lot of toys, making it a piece that kids and parents will appreciate. And like any project made for kids, it's as much fun to give as it is to build.

Designed to maximize practicality, the caboose features storage for small items such as game pieces in the cupola (the elevated top section characteristic of many cabooses) and a painted checkerboard on top for use as a game board. Although the various trim pieces make the cutting list long, the project isn't difficult. You'll mill the trim pieces and then cut them to size

(see "Making the Moldings," p. 20).

The most time-consuming aspect of the project is the multicolor paint scheme — you'll need to paint different-color parts before assembly. To simplify painting, build the boxes, lids and trim pieces separately; then paint and assemble them.

Of course, you can adapt the color scheme to suit the room's décor — or even forgo the caboose theme and build a simpler toy box (see "Classic Toy Box," p. 18).

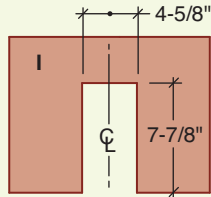
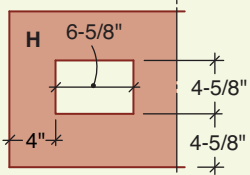
Build the boxes

The basis of this design is two boxes made of 1/2-in.-thick plywood. Because



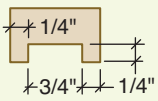
panels and trim pieces cover the boxes, I kept the construction simple, using butt joints and screws at each corner. The bottom of the main box rests in dadoes located in the front and back pieces. I cut each 1/4-in.-deep x 1/2-in.-wide dado on a router table equipped with a 1/2-in. straight bit and assembled the

TOY BOX



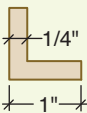
PANEL PATTERNS

3/4" rad. (typical)

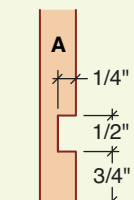


BOX CAP PROFILE

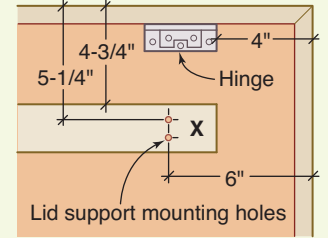
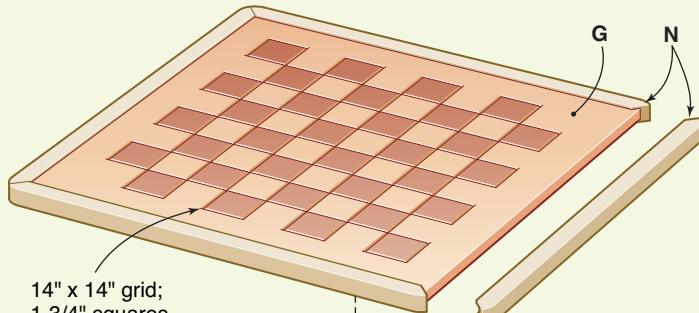
45° miter (typical)



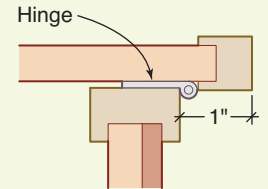
CORNER MOLDING PROFILE



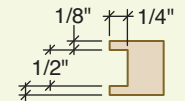
DETAIL 1



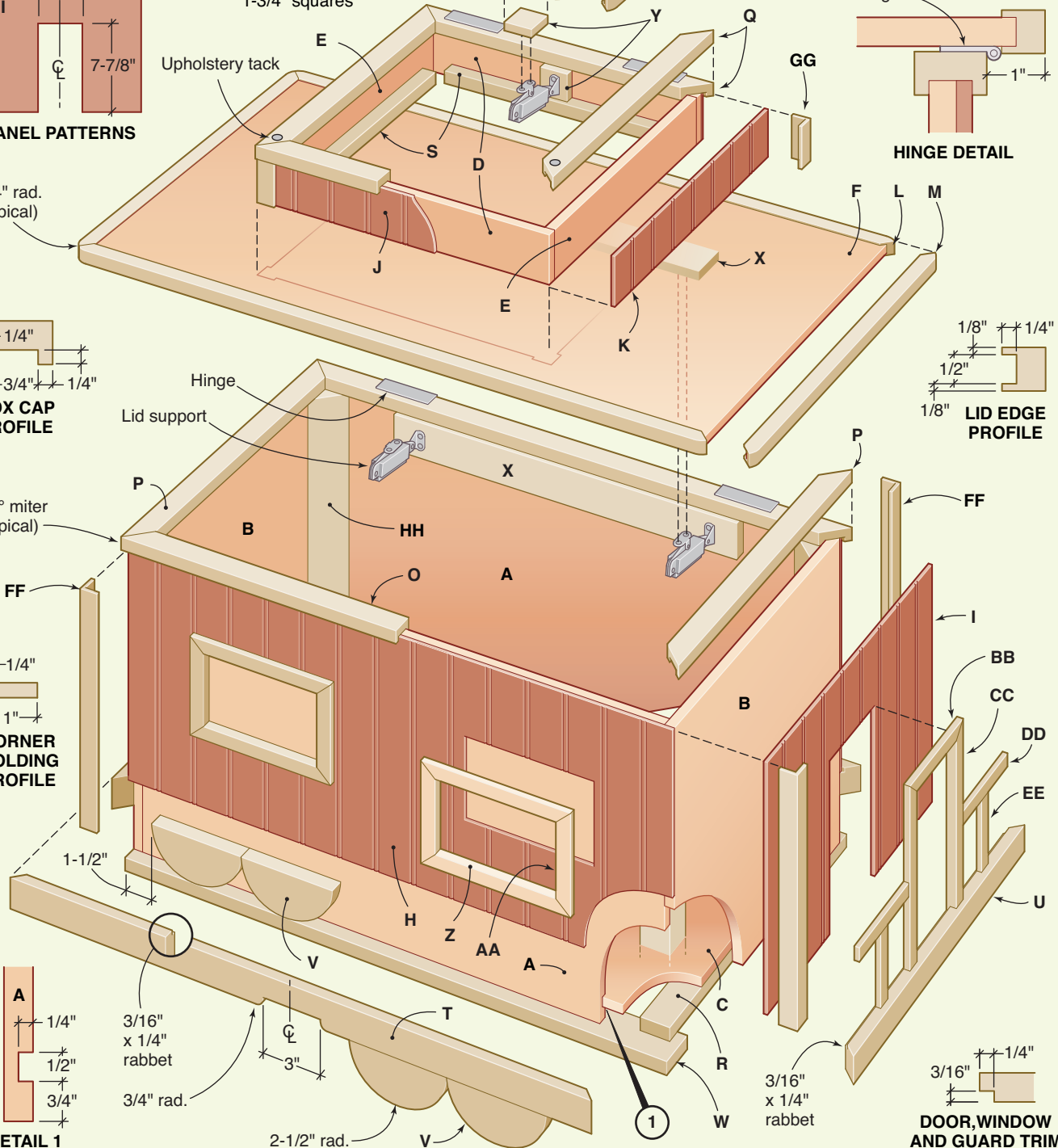
LID DETAIL



HINGE DETAIL

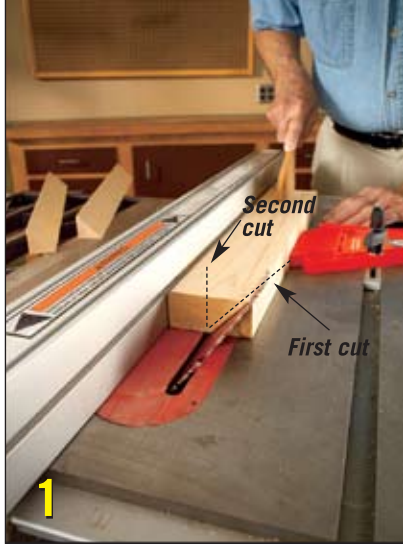


LID EDGE PROFILE



DOOR, WINDOW AND GUARD TRIM

ILLUSTRATION BY GABRIEL GRAPHICS



Tilt the blade to 45 degrees and position the fence opposite the blade tilt direction. Keep the small beveled corner block piece on the outside of the blade, away from the fence, to prevent kickback. Tilt the blade back to vertical to cut the next piece.

main and top box parts with glue and 1-1/4-in. screws.

Corner blocks give the main box



Assemble the boxes with glue and 1-1/4-in. screws. Attach the corner blocks to the main box with glue and 1-1/4-in. brad nails.

additional strength. I cut the corner blocks from an 18-in. section of a 2x4 that was straight and free of knots. I beveled the corner blocks on the table saw (photo 1, above) and then fastened them to the inside of the main box with glue and 1-1/4-in. brad nails (photo 2).

To mimic the look of vertical board siding, I used 3/16-in.-thick primed beadboard for the panels. I cut the door and window openings in each panel with a jigsaw and then fastened the panels to the main and top boxes with glue and 5/8-in. brads. You'll need to locate the brads near the edges of the panels so that the trim pieces will cover them.

Use a router table or table saw to cut the groove in the box-cap moldings. Miter the box caps to fit each side of the top and main boxes. Do your best to keep the miters tight, but don't worry if they're not perfect — you can easily fill gaps as wide as 1/8 in. with wood putty or spackle before painting. Once you've cut the miters, fasten the box caps with glue and 1-1/4-in. brads (photo 3).

Corner moldings, available at most home centers, protect the corners and cover the exposed beadboard panel

MATERIALS AND CUTTING LIST

Box, 1/2-in. birch plywood

Key	No.	Description	Size
A	2	Main-box front/back	1/2 x 17-1/2 x 28 in.
B	2	Main-box ends	1/2 x 17-1/2 x 17 in.
C	1	Main-box bottom	1/2 x 16-1/2 x 28 in.
D	2	Top-box front/back	1/2 x 2-3/4 x 15-1/8 in.
E	2	Top-box sides	1/2 x 2-3/4 x 14-1/8 in.
F	1	Large lid	1/2 x 19 x 33 in.
G	1	Small lid	1/2 x 17 x 17 in.

Panels, 3/16-in. beadboard

H	2	Main-box front/back panels	3/16 x 13-1/2 x 29 in.
I	2	Main-box side panels	3/16 x 13-1/2 x 17-3/8 in.
J	2	Top-box front/back panels	3/16 x 2-3/4 x 15-1/8 in.
K	2	Top-box side panels	3/16 x 2-3/4 x 15-1/2 in.

Trim, poplar

L	2	Large-lid front/back edges	3/4 x 3/4 x 34 in.
M	2	Large-lid side edges	3/4 x 3/4 x 20 in.
N	4	Small-lid edges	3/4 x 3/4 x 18 in.
O	2	Main-box front/back caps	3/4 x 1-1/4 x 29 in.
P	2	Main-box side caps	3/4 x 1-1/4 x 18 in.
Q	4	Top-box cap	3/4 x 1-1/4 x 16 in.
R	2	Bottom cleats	3/4 x 1-1/2 x 16 in.
S	4	Top-box cleats	3/4 x 3/4 x 12 in.
T	2	Front/back wheel guard	3/4 x 1-1/2 x 30-1/2 in.
U	2	Side wheel guard	3/4 x 1-1/2 x 18-1/2 in.
V	8	Wheels	3/4 x 2-1/2 x 5 in.
W	2	Tracks	3/4 x 2 x 29 in.
X	2	Large-lid support cleats	3/4 x 2 x 26 in.
Y	2	Small-lid support cleats	3/4 x 1-1/2 x 1-1/2 in.
Z	8	Window frame top/bottom	1/2 x 3/4 x 7 in.
AA	8	Window frame sides	1/2 x 3/4 x 5 in.
BB	2	Door frame tops	1/2 x 3/4 x 5 in.
CC	4	Door frame sides	1/2 x 3/4 x 10 in.
DD	4	Railings	1/4 x 3/4 x 5-1/4 in.
EE	4	Balusters	1/4 x 3/4 x 3 in.

Additional parts, pine

FF	4	Main-box corner molding	1 x 1 x 13-1/4 in.
GG	4	Top-box corner molding	1 x 1 x 2-1/2 in.
HH	4	Corner braces	1-1/2 x 1-1/2 x 16-3/4 in.

SHOPPING LIST

- 1/2-in. x 4x8-ft. birch plywood (1)
- 1/2-in. x 2x4-ft. birch plywood (1)
- 3/16-in. x 4x8-ft. primed beadboard (1)
- 1x4 x 8-ft. poplar (4)
- 1x6 x 2-ft. poplar (1)
- 2x4 x 2-ft. pine
- 1x1 x 60-in. stock corner molding (1)
- 13/16 x 2-7/16-in. no-mortise hinges (Woodcraft No. 27G13; 2)
- Left lid support (Woodcraft No.04X61; 1)
- Right lid support (Woodcraft No.04X12; 1)
- Right lid support (Woodcraft No.04X13; 1)
- No. 8 x 1-1/4-in. screws
- 1-1/4-in. brads
- 1-in. brads
- 5/8-in. brads
- Upholstery tacks
- Wood putty or spackle
- Wood glue



Attach the box caps and corner moldings. Miter the box caps to fit around the top edges of the main and small boxes. Attach the box caps and corner moldings with glue and 1-1/4-in. brad nails.

joint. Fasten the corner moldings with wood glue and 1-in. brads.

Build the lids

The edges of the 1/2-in. plywood lids are wrapped with poplar edge molding. Cut the groove in the lid edging using the same method that you used to cut the channel in the top cap molding. Miter the lid edging to fit around both lids. Fasten the edging with glue and 1-in. brads. Keep the brads centered on the lid edging and at least 1-1/2 in. away from the corners.

Sharp corners on children's furniture are a safety hazard, so be sure to round off the lid corners using a jigsaw or band saw. Then round over all edges using a



Use a router and 3/16-in. roundover bit to profile the lid edges. A scrap of 1/8-in.-thick hardboard keeps the router base level.



Gang cut the wheel halves with a jigsaw. Cut just outside the line and then sand back to the line.

router and 3/16-in.-dia. roundover bit (photo 4).

To keep little fingers safe, the lids are supported by spring-loaded hardware that provides resistance when the lid is opened or closed. These supports should be fastened to solid stock. Glue the large- and small-lid support cleats to the inside of the lids and to the inside faces of the back of both boxes. Then drill pilot holes in the top-box cleats and attach them to the top box with glue and 1-1/4-in. screws.

Make the trim details

Because the wheel pieces are not functional, they don't need to be perfectly round. Rather than draw eight half-circles on the edge of a piece of stock, I drew four 2-1/2-in.-dia. circles in the center of a 24-in.-long piece of 1x6 poplar. Then I ripped the 1x6 down the middle, cut out the eight half circles with a jigsaw (photo 5) and sanded them smooth.

The wheel guards and window and door trim conceal the beadboard panel edges. I milled these molding pieces on the router table.

To create the railings and balusters, rip 1/4-in.-wide strips of poplar from 3/4-in.-thick stock. Leave all of these moldings in long pieces until after painting. Sand all surfaces smooth, easing any sharp edges.

Paint the parts

For maximum glue adhesion you shouldn't paint surfaces that will be glued, so use 1/2-in.-wide masking tape to cover the future locations of trim pieces on the main box. Likewise, do not paint the corresponding back of the trim pieces. (This also leaves one dry face for the trim pieces to rest on while the painted faces are drying.)

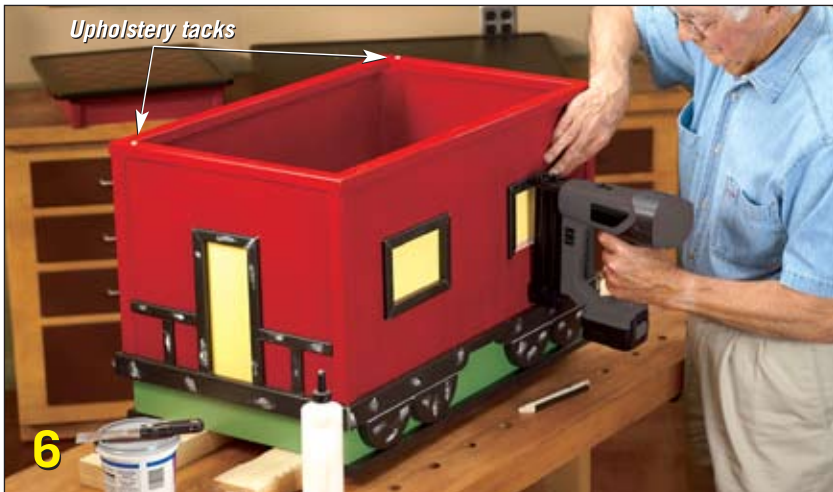
Apply one coat of wood primer to all surfaces that will be painted. After the primer dries, sand the surfaces lightly and apply at least two coats of satin or semigloss latex paint, sanding lightly between coats. I added Flood Floetrol paint conditioner (see SOURCES ONLINE) to help the paint flow on more evenly and dry to a smoother finish.

CLASSIC TOY BOX

If the caboose theme doesn't fit your décor, you can easily build the toy chest without the trim pieces. Just eliminate all of the parts related to the upper box and the caboose trim details, and extend the side panels and corner moldings to the bottom of the main box. The following three parts change dimensions as noted (changed dimension is bold):

Key No.	Description	Size
Panels, 3/16-in. headboard		
H . . . 2	Main-box front/back panels	3/16 x 16 x 29 in.
I . . . 2	Main-box side panels	3/16 x 16 x 17-3/8 in.
Additional parts, pine		
FF . . . 4	Main-box corner molding	1 x 1 x 15-3/4 in.





Attach trim pieces with glue and 1-in. brad nails. Fill the nail holes with spackle. Drive one upholstery tack in the box cap near each front corner to keep the lid from sticking to the box.



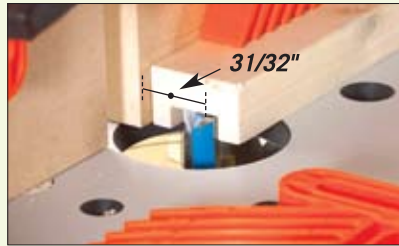
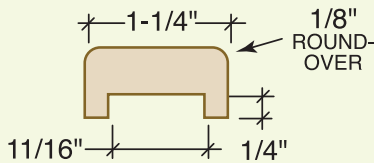
Install the spring-loaded lid supports (see SOURCES ONLINE). These supports provide resistance when you open and close the lid. Various spring strengths are available to accommodate different lid weights.

MAKING THE MOLDINGS

This project uses the following trim pieces. Cut the profiles using a table saw, a router table or a combination of the two.

BOX CAPS

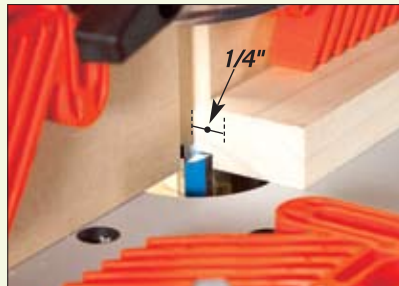
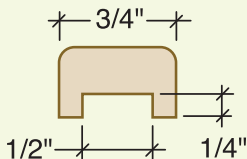
Box Caps — 72 in. (3)



Cut the top-cap grooves with a 1/2-in. straight bit. The outside edge of the bit is positioned 31/32 in. from the fence. Center the grooves by flipping the molding end-for-end and making a second pass.

LID EDGING

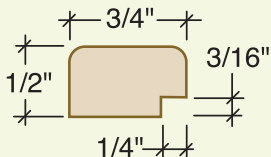
Lid edging — 60 in. (4)



Cut the rabbets with a 1/2-in. straight bit positioned between the fences. The bit is 3/16 in. high, and the outside edge of the bit is 1/4 in. from the fence.

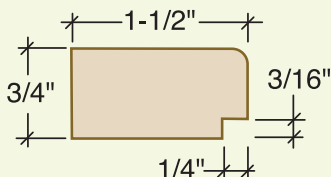
WINDOW/DOOR TRIM

Window/door trim — 72 in. (2)



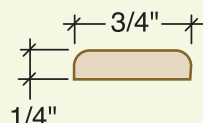
GUARDS

Guards — 50 in. (2)



RAILING/BALUSTERS

Railing and balusters — 40 in. (1)



You'll need only two or three coats of black, green and yellow paint, but the red paint will require at least four coats.

Assemble the caboose

When the paint is dry, you're ready to begin the final assembly. Cut each trim piece to fit. Miter the wheel guards and window and door trim pieces. Cut the railings and balusters, and secure the trim with glue and 1-in. brad nails (photo 6). Drill pilot holes through the rails and attach them to the bottom of the box with 1-1/4-in. screws.

To attach the large lid, first fasten a pair of hinges to it. With a helper holding the lid in position, fasten the hinges and the lid to the main box. Attach the lid supports to the large-lid support cleats (see drawing for exact support placement). Next, attach the top box to the large lid with 1-1/4-in. screws. Attach the hinges and a lid support to the small lid and top box just as you did with the large lid (photo 7).

The final step is to fill any exposed nail holes with paintable wood putty or spackle and then touch up the paint. To give the finish additional protection, apply two coats of clear polyurethane (spray cans work well) to the entire toy chest. ♦

ILLUSTRATION BY MIKE ANDERSON

SOURCES ONLINE
For online information, go to www.HandymanClub.com and click on SOURCES ONLINE.

The Flood Co. (Floetrol), 800-321-3444

Woodcraft (hinges and lid supports), 800-535-4482