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Dave Campbell
Editorial Content Chief, *WOOD* magazine



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Mil-Spec M1A1 Abrams Tank

Rumbling like thunder across the battlefield comes a rolling fortress, ready to strike fun into the hearts of its recipient. This bulletproof bruiser fits the cargo bay of the AC-130 shown in plan DP-01094, so you can airdrop your armor anywhere it's needed.

D I M E N S I O N S
13 1/4" L x 5 3/4" W x 4 1/4" H

60
tons: weight
of an M1 tank

16
wooden
wheels on
this toy

Construct the chassis

1 Begin by cutting the chassis (A) blank to size [Materials List]. Make a copy of the **Chassis Pattern** (page 6) and use it to locate the $\frac{7}{32}$ " holes on one edge of the blank. Then, adhere the pattern to the opposite edge and drill the holes. Bandsaw the chassis to shape,

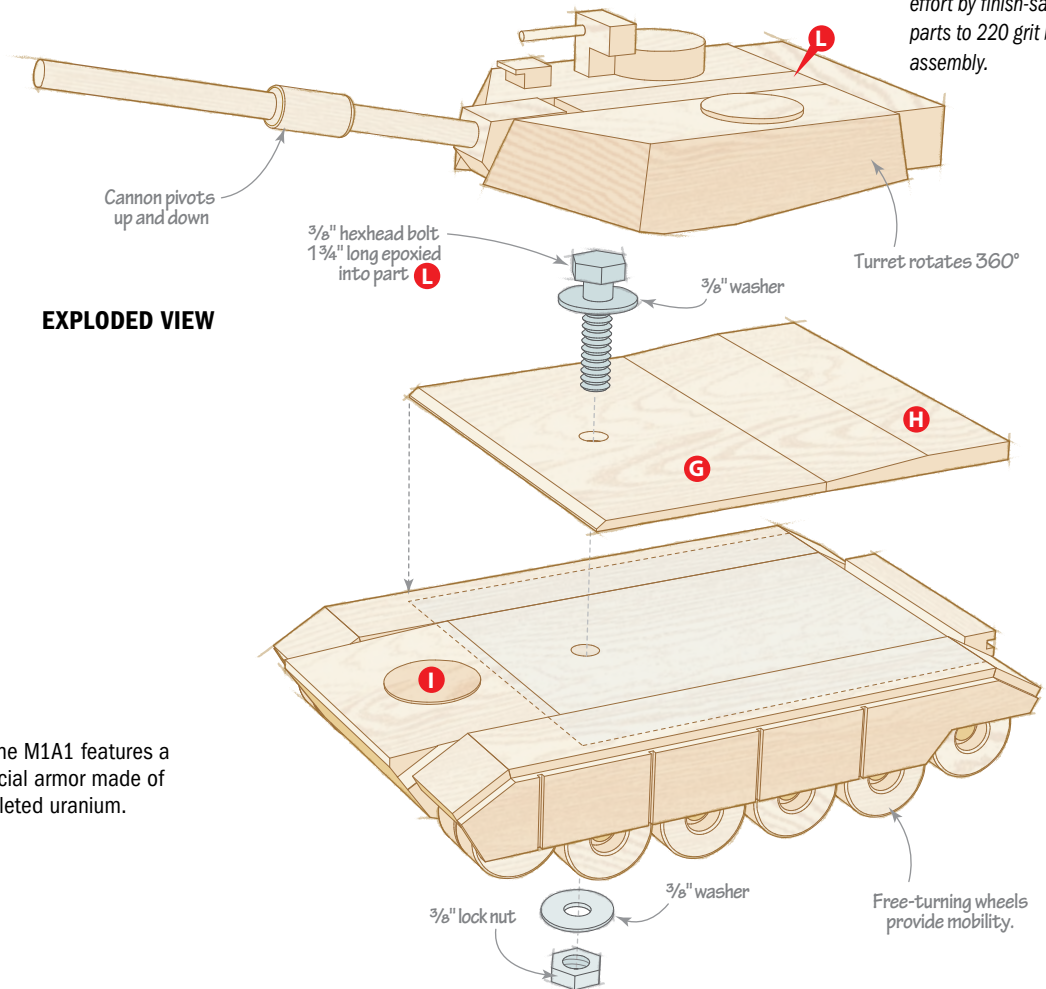
cutting just outside the lines and sanding the cut faces smooth. Bore the centered 1" counterbore and drill the $\frac{3}{8}$ " hole where shown on the pattern.

2 Cut the wheel spacers (B) to size [Drawing 1a], then drill the holes and sand the radii on the ends. Glue the spacers to the sides of

Tip! Learn to apply patterns and remove them.

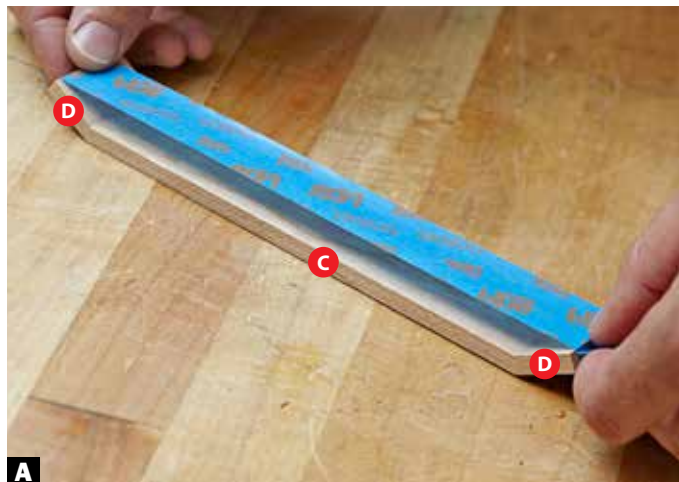
woodmagazine.com/stickysolutions

Tip! Save time and effort by finish-sanding parts to 220 grit before assembly.



EXPLODED VIEW

► The M1A1 features a special armor made of depleted uranium.



Use tape to clamp up small parts. Place the fenders (C, D) top-face-up on your workbench with mitered ends touching. Apply painter's tape across the miters, flip the assembly over, and apply glue to the miters. Pull the joints tight with another piece of tape and let dry.

the chassis (A), flush with the bottom and $1\frac{1}{16}$ " from the chassis' back edge [Drawing 1].

3 To make the fenders (C, D), first cut two $\frac{1}{4} \times 1\frac{1}{8} \times 12$ " blanks. Then, tilt your table-saw blade to 15° and miter-cut them to length [Drawing 1b]. Glue up the fenders [Photo A]. After the glue dries, finish-sand the fenders. Attach them to the chassis (A) [Photo B].

4 Cut two track armor blanks (E) to size and adhere them together with double-faced tape, keeping the edges and ends flush. Adhere a copy of the **Track Armor Pattern** (page 6) and cut the dadoes in both pieces. Then, cut the armor to shape. Remove the pattern, separate the two pieces, and set them aside.

5 To safely cut the grooves in the engine grille (F) [Drawing 1], start with a $\frac{1}{2} \times \frac{7}{8} \times 12$ " blank. After cutting the grooves, trim the grille to match the width of the chassis (A). Glue the grille to the chassis, flush with the bottom edge of the top chamfer.

6 Cut the turret base (G) and engine cover (H) to size. Chamfer the front edge of the

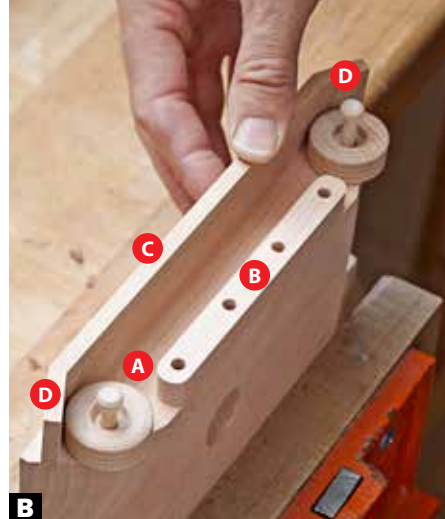
turret base [Drawing 1]. Use a saddle jig on your table-saw to bevel the engine cover's front edge. Drill the holes in the back edge of the engine cover [Drawing 1c]. Sand the two parts smooth.

7 Glue the turret base (G) and engine cover (H) to the chassis assembly, centered side to side, with the back edge of the engine cover aligned with the rear fender joint (C/D). After the glue dries, invert the chassis and, using the $\frac{3}{8}$ " hole as a guide, drill a $\frac{3}{8}$ " hole through the turret base.

8 From $1\frac{1}{4}$ " dowel, cut two hatch covers (I) and the commander's hatch (J). Glue one hatch cover centered on the front of the chassis [Drawing 1]. Set the other two pieces aside for now.

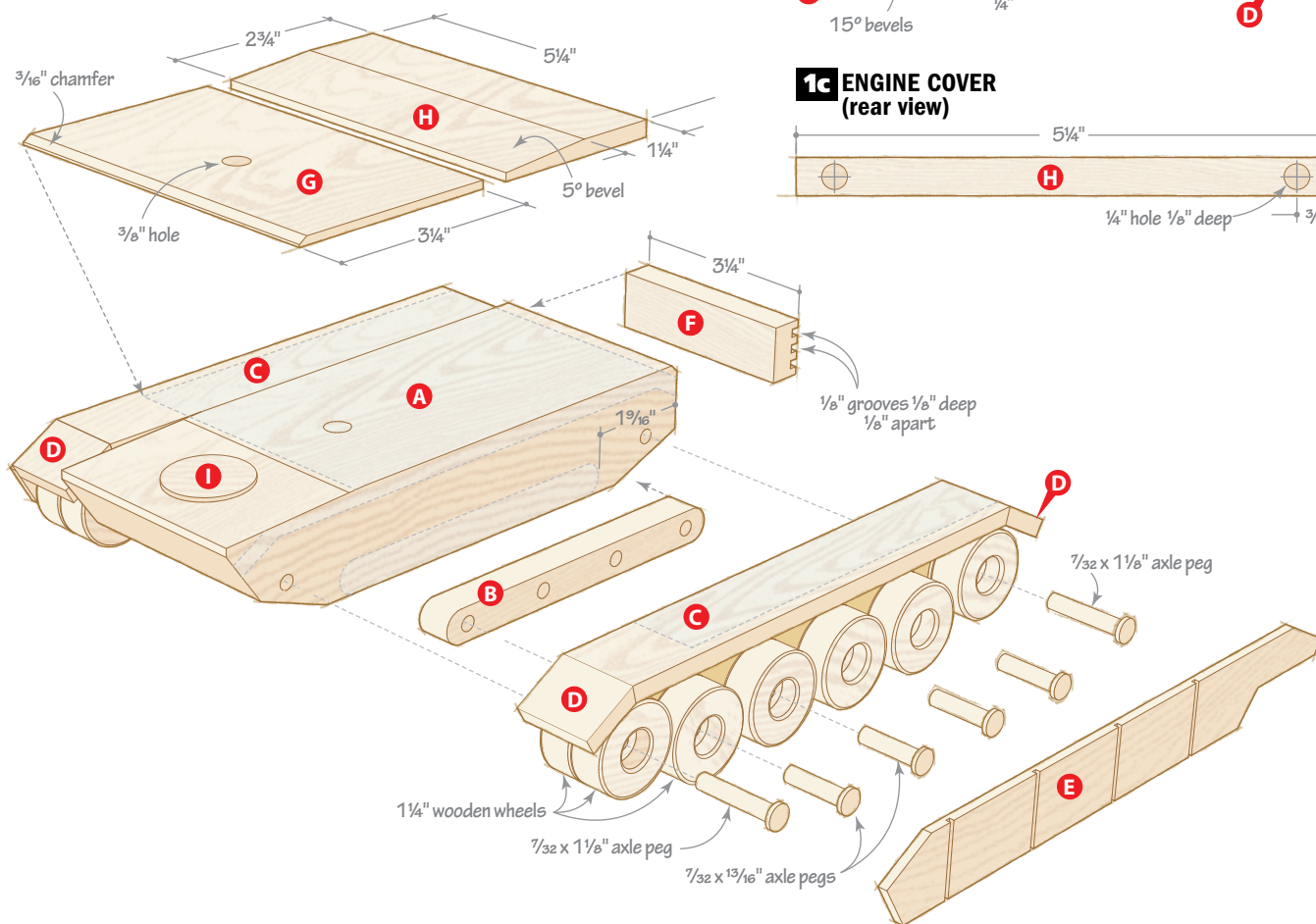
Tip! Learn how to build and use a table-saw saddle jig to safely cut bevels.

woodmagazine.com/saddlejigbevels

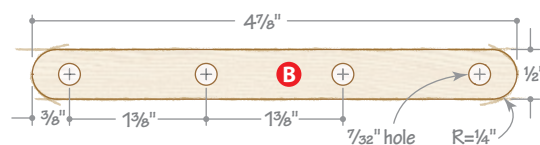


Don't let the wheels rub. Temporarily place wheels in the front and back holes in the chassis (A) before locating the fender assembly (C/D). Center the fenders, keeping them flush with the top of the chassis and away from the wheels.

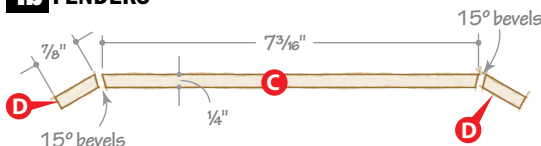
1 CHASSIS ASSEMBLY



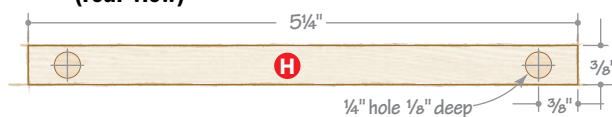
1a WHEEL SPACER



1b FENDERS



1c ENGINE COVER (rear view)





Finish the cuts. Without adjusting the bandsaw's table, crosscut the ends of the turret sides, keeping the bottom front of the workpiece flat against the table.



F Drill holes in small parts safely. Use a wooden handscrew to hold the cannon base (M) securely when drilling its holes.



G Clamp down on the turret. Use the bar of a one-handed bar clamp to keep the ends of the turret assembly aligned during glue-up.

►The Abrams's 120mm smoothbore gun has a range of up to two miles.

3 Crosscut the cannon base (M) from the turret core (L). Adhere the **Cannon Base Pattern** to the blank and cut it to shape. Drill the holes where shown [Photo F].

4 From $\frac{1}{4}$ " dowel, cut the cannon pivot (N) to size and insert it into the cannon base (M) [Drawing 2]. Glue up the turret assembly (K-N) [Photo G]. Cut the rear storage (O) to size and glue it to the back of the turret assembly.

5 Invert the turret assembly (K-O) and epoxy the head of a $\frac{3}{8} \times 1\frac{3}{4}$ " hexhead bolt into the turret core's (L) hole. (Trim away any excess epoxy after it cures.) Make sure the protruding bolt shaft is perpendicular to the turret assembly before setting it aside until the epoxy cures.

6 Glue the remaining hatch cover (I) and the commander's hatch (J) to the turret sides (K) [Drawing 2]. Then, cut the periscope (P) and machine-gun mount (Q) to size and shape [Drawing 2b]. Drill the hole in the machine-gun mount, then glue the two pieces in place.

7 From $\frac{1}{2}$ " dowel, cut the fume extractor (R) to length. Holding it in a handscrew, drill a centered $\frac{5}{16}$ " hole through the piece, and chamfer the ends [Drawing 2]. Cut the machine-gun barrel (S) and cannon (T) to length. Glue the machine-gun barrel into the machine-gun mount (Q). Slide the fume extractor over the cannon and carefully glue in place. Glue the cannon assembly (R/T) into the cannon base (M).

8 Attach the wheels by gluing into place the axle pegs [Drawing 1]. Then, glue on the track armor (E). Apply three coats of satin spray lacquer, sanding between coats with 800-grit sandpaper. Bolt the turret assembly to the chassis assembly [Exploded View]. Finally, get this tank off the assembly line and onto the battlefield! 🌳

Tip! If the fit between the fume extractor (R) and main cannon (T) is too tight, sand the cannon to achieve a good fit.

Produced by **Nate Granzow** with **Kevin Boyle**
Project design: **Kevin Boyle**
Illustrations: **Roxanne LeMoine**, **Lorna Johnson**

Materials List

Part		FINISHED SIZE			Matl.	Qty.
		T	W	L		
A	chassis	1½"	3¼"	8¾"	C	1
B	wheel spacers	½"	½"	4⅞"	C	2
C	side fenders	¼"	1⅞"	7⅜"	C	2
D	front/back fenders	¼"	1⅞"	7⅞"	C	4
E	track armor	⅛"	1"	8½"	M	2
F*	engine grille	½"	7⁄8"	3¼"	M	1
G	turret base	¼"	5¼"	3¼"	M	1
H	engine cover	⅜"	5¼"	2¾"	M	1
I	hatch covers	1¼" diam.	⅝"		C	2
J	commander's hatch	1¼" diam.	⅜"		C	1
K	turret sides	1"	2"	4⅞"	C	2
L*	turret core	1"	¾"	3½"	C	1
M	cannon base	1"	¾"	1"	C	1
N	cannon pivot	¼" diam.	1⅞"		M	1
O	rear storage	¾"	¾"	3¾"	M	1
P	periscope	⅜"	½"	½"	M	1
Q	machine-gun mount	⅜"	¾"	7⁄8"	M	1
R	fume extractor	½" diam.	1"		M	1
S	machine-gun barrel	⅛" diam.	1¼"		M	1
T	cannon	5⁄16" diam.	6"		M	1

*Parts initially cut oversize. See the instructions.

Materials key: C=cherry, M=maple.

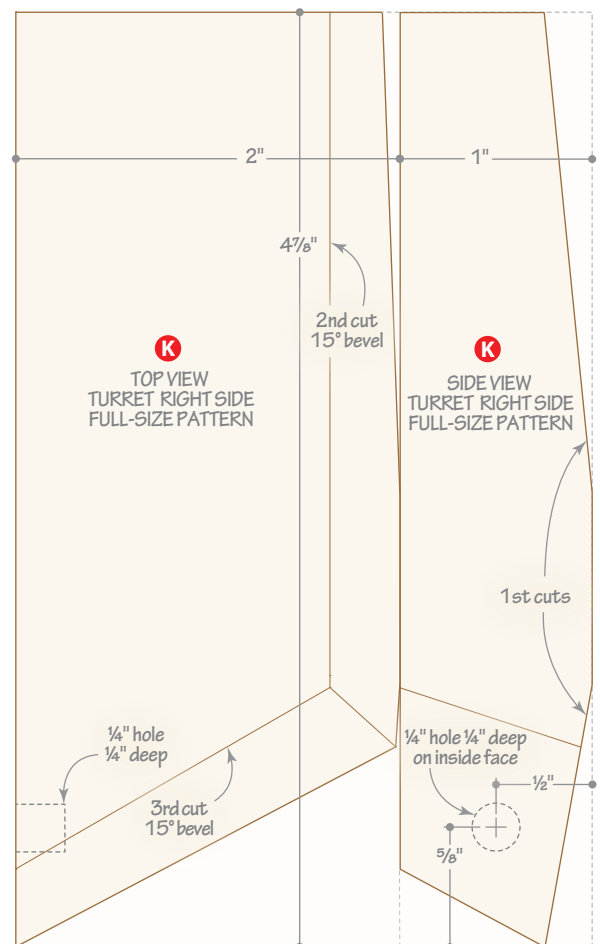
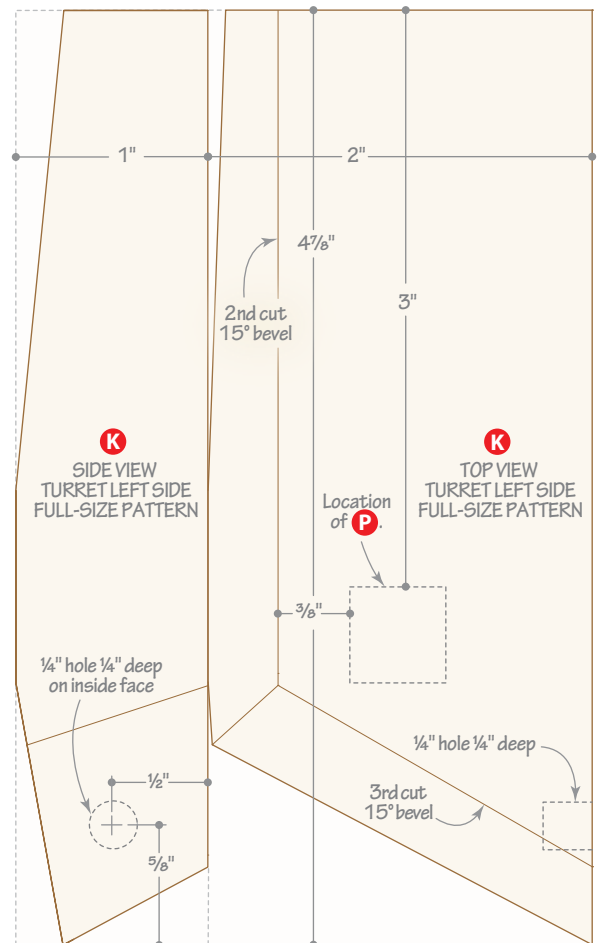
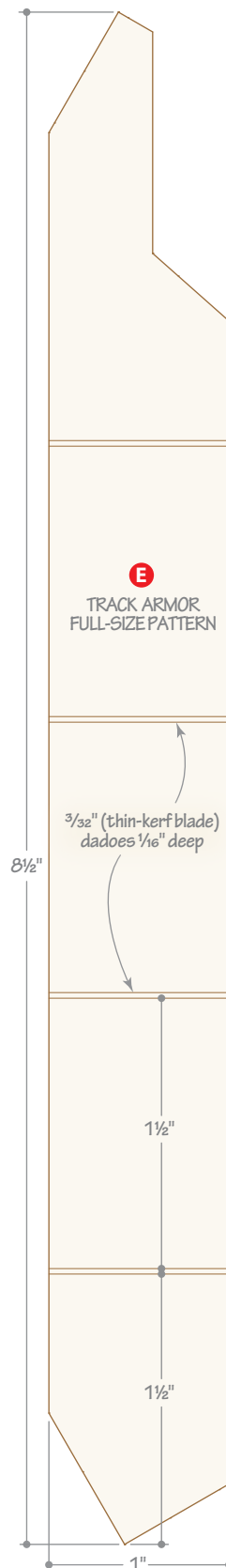
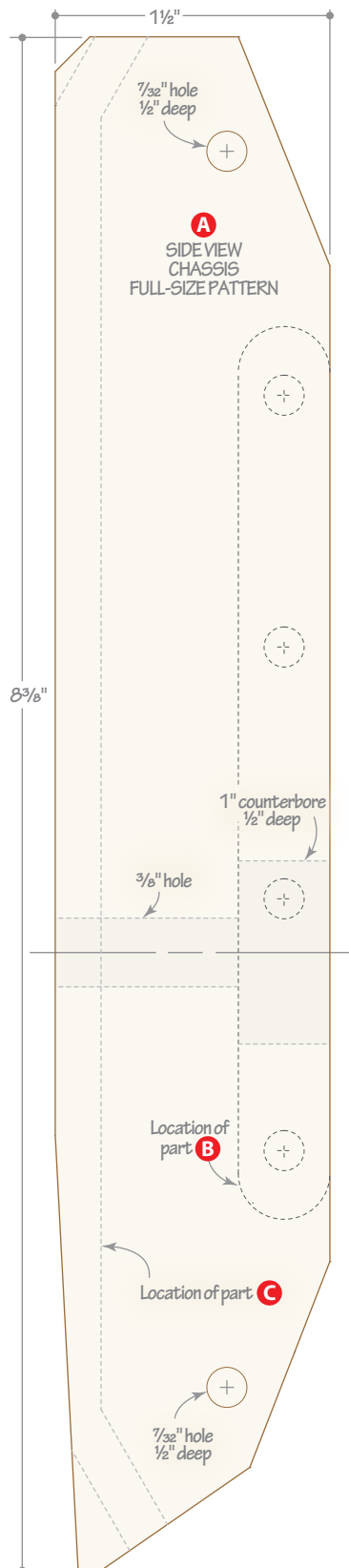
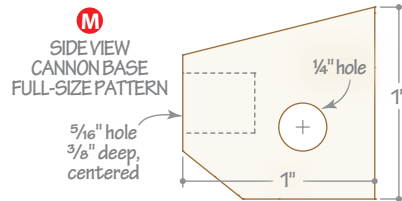
Supplies: ⅛", ¼", 5⁄16", ½" maple dowels; 1¼" cherry dowel; ⅜×1¼" hexhead bolt; ⅜" washers (2); ⅜" lock nut.

Bits: ⅛", ¼", 7⁄32", 5⁄16", ⅜" brad-point bits; 1½", 1" Forstner drill bits.

Source: This kit includes the following specialty parts and hardware to construct one tank: 1¼" wheels (16), 7⁄32×1½" axle pegs (4), and 7⁄32×1½" axle pegs (8), kit no. RS-01110, 888-636-4478, woodmagazine.com/m1tankkit.



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