Trail Scout

From Science & Mechanics, October 1947
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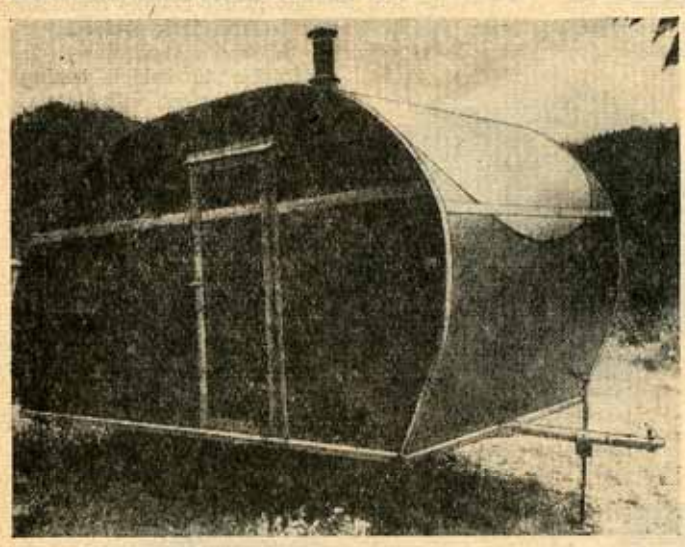
Check on Teardrop and Tiny Travel Trailers for up to date building information;
http://www.mikenchell.com/forums

HOW TO MAKE IT

Building the TRAIL SCOUT



Part 1. You can stow your grub and gear in this land cruiser and start traveling in comfort

By DALE VINCENT

Craft Print Project No. 50

HERE is a hunting and fishing trailer that embodies features that have proved themselves over 10,000 miles of travel on every kind of road, and in all climatic conditions—spring fishing, fall hunting, or even a full winter spent in the South.

Wheels are spaced the same width apart as your car, enabling you to travel and explore far from the regular beaten track.

Weighing only 1,100 pounds, it is light enough to be taken into the mountains with ease. Its stream-lined shape utilizes waste space and lets you roll at your customary driving speed over the highways.

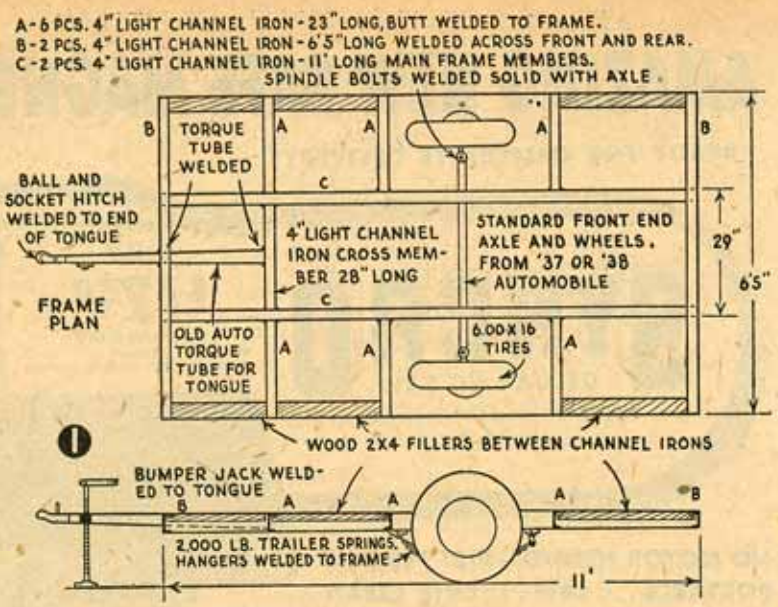
Built of waterproof, marine plywood, she is as water tight and sound as a boat. Trailer itself is 12½ feet long (overall), 6 feet 5 inches wide, and six feet in height. The cost of material will run approximately $300.00, including running gear, and a full-size, inner spring mattress. Trailer wheels and axle purchased at a trailer parts house are best, but if expense has to be watched, purchase the front end of a late model car at some wrecking yard.

After checking the wheels for alignment, the spindle bolts should be welded solid, making wheels and axle one unit. When 2000 pound springs are U-bolted to the axle, they may have to be underslung—this you will have to check, as axles differ. Angle iron or old automobile frames are cut and assembled, Fig. 1.

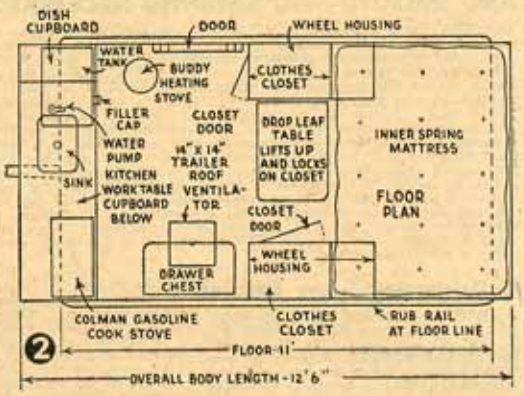
Acquire a good torque tube drive shaft housing at a wrecking yard. A hole is now cut with a cutting torch in the center of the front cross channel iron large enough for the torque tube to

slip through. Slide this torque tube through the hole until it butts against the next cross bar, and weld it solid (Fig. 1). Then weld the torque tube in the front channel iron cross bar. Weld the trailer hitch socket on the end of the torque tube. This hitch should be of malleable steel and not made of casting.

A screw type bumper jack is needed to raise and lower your trailer tongue. This jack can be any one of a number of bumper jacks that are sold at the parts houses. The body of jack is welded on the side of the torque tube tongue 29 inches out from the trailer frame.



The ¾ inch marine plywood floor is laid on top this frame. Do not bolt it down until it has been cut to fit. A space will have to be cut out of the floor at each wheel for the wheel housings (Fig. 2). Now the floor is laid, and two-by-fours are cut to fit between the ends of the channel iron under the floor along



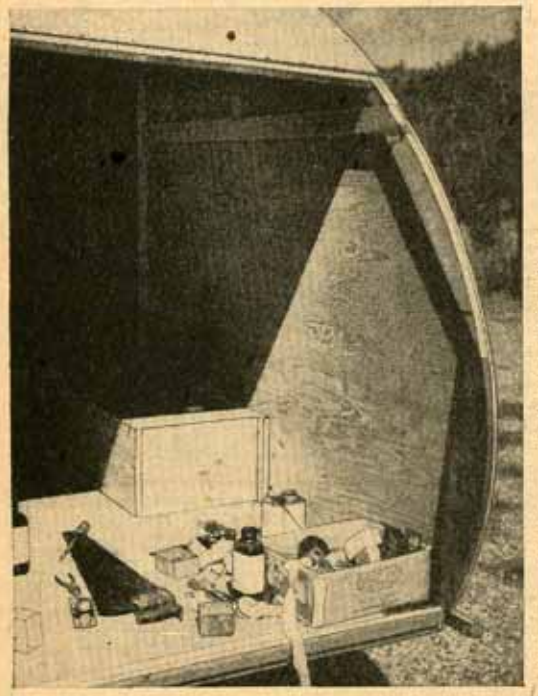


Photo 1. Showing rear end segments glued and screwed to sidewall. Also note splice batten and wheel house box.

both sides, except the space where the wheels are. Now insert these fillers between frame ends and clamp with C-clamps. Drill a ¼ inch hole down through each end of filler strip. Be sure to catch the frame wherever possible. These are then bolted with ¼ x 3 inch carriage bolts all around both sides. Take light batten strips and screw underneath floor, crossways over the floor panel cracks, to keep out dust.

Wheel-housing boxes are made of 1 x 12 pine or spruce according to Figs. 2 and 3, and are covered by gluing and screwing a ⅜ inch veneer panel on top. Be sure you have at least four inches for tires to work up and down.

The outside edges of wheel-housing, floor, and filler strips are all flush, as your sidewall goes flat against all these. Linoleum is now glued and laid over the floor, flush to the edges. The ⅜ inch marine plywood sides are laid out in 6 inch squares according to Fig. 4. The curve is then marked with a pencil and sawed out with a keyhole or band saw. Next, 5/16 inch holes are drilled

LIST OF MATERIALS

FRAME AND RUNNING GEAR

PURCHASED AT:

1—Set trailer wheels and axle—standard tread.....Trailer parts house
(Front end of '36 or '37 auto could be used).....Wrecking yard
1—Drive shaft torque tube, for tongue .....Wrecking yard
1—Set 2000 lb. trailer springs..
1—Trailer ball and socket hitch .....Trailer parts house
1—Screw type bumper jack

2—pcs. 4" x 11' light-weight channel iron
2—pcs. 4" x 6'5" light-weight channel iron
1—pc. 4" x 29" light-weight channel iron
6—pcs. 4" x 23" light-weight channel iron

This frame can also be assembled from old automobile frames, from wrecking yard, by cutting and welding.

FLOOR

2—¾" panels, 4' x 6'5", marine waterproof plywood
1—¾" panel, 3' x 6'5", marine waterproof plywood
1—pc. 6'5" x 11', linoleum
2—pcs. 2" x 4" x 8', fir filler strips (between ends of channel iron)
1—pc. 1" x 12" x 14' fir or spruce for wheel housings

SIDE WALLS

2—⅜" panels, 4' x 12'6", marine waterproof plywood
2—⅜" panels, 2'8" x 9', marine waterproof plywood

TOP

6—¼" panels, 4' x 6'5¾", marine waterproof plywood
200 sq. ft. ¼" plywood for inside cupboards, closets, and shelves
250 lin. ft. ¾" x 2½" pine or spruce to be used around edges of sides, joining panels together, studding, partitions, and fillers
1—pc. 2" x 4" x 14', fir ripped on angle for side scuff rails
1—pc. 2" x 4" x 7', fir ripped on angle for end scuff rails
2—pcs. 2" x 4" x 7', fir ripped in center for door and door frames

EQUIPMENT AND PARTS (can be purchased from trailer parts house)

1—Trailer outside locking door handle, with keys
1—5' piano hinge (for main door)
1—"Buddy" heating stove (coal and wood)
3—4" stovepipe joints
1—4" stovepipe metal roof jack
1—4" stovepipe cap
1—4" damper
1—Coleman 2-burner gasoline cook stove
1—Coleman gasoline lantern
1—Aluminum trailer kitchen sink
1—Trailer water pump—with 5' of copper tubing and fittings
2—Screened, ventilating trailer windows 18" x 24"
1—Screened, trailer roof ventilator, 14" x 14"
2—Amber clearance lights
2—Red clearance lights
2—Red reflectors for rear
1—Red tail light, and license bracket
100 lin. ft. of 6 volt wiring
2—Screw type trailer jacks
2—Stabilizing jacks

FASTENERS REQUIRED

4—Gross ⅜" No. 8 sheet metal screws (round or oval head)
5—Gross 1" No. 12 flat head screws
1—Gross 1½" No. 12 flat head screws
1—Gross 1" No. 10 flat head screws
1—Box ¼" x 2" flat head stove bolts
1—Box ¾" x 3" round head carriage bolts
1—Pound galvanized shingle nails
1—Gal. liquid marine glue
7—Pair 2" butt hinges
7—Turn buttons

FINISHING MATERIAL

1—Gal. boiled linseed oil
1—Gal best marine spar varnish
1—Qt. aluminum paint for top
2—Qt. ivory or white enamel for interior

MISCELLANEOUS

1—Pr. of standard size steel bed springs
1—Standard inner spring mattress
1—Water tank (made to order out of heavy galvanized or stainless steel, size as shown in Chart Nos. 2 and 3)
2—Sheets of corrugated aluminum (strips cut from this for outside trim)

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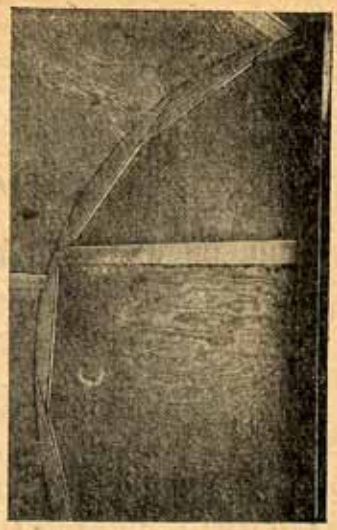


Photo 2. Showing front end curved segments and batten splices on the roof and sides.

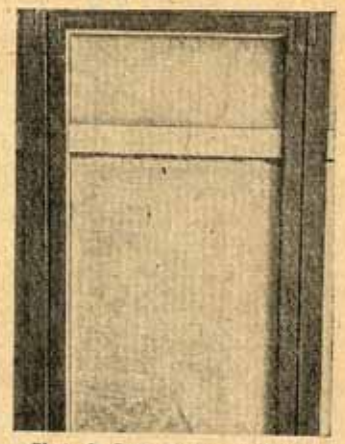
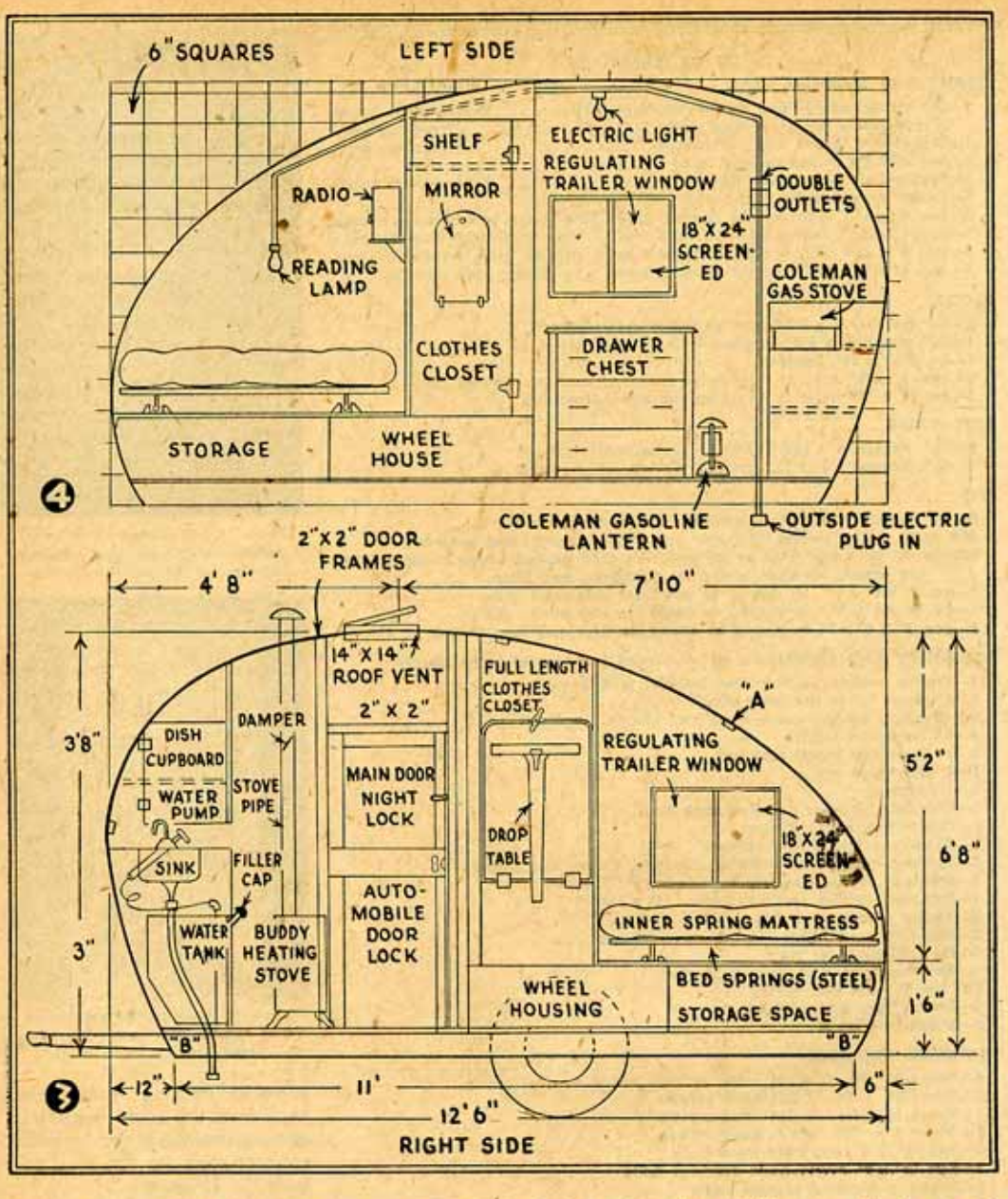


Photo 3. Door jambs and frame are glued and screwed into place first on solid wall.

three inches apart and ¾ inch back from the edge completely around these side panels; holes counter-sunk for flat head one inch No. 12 screws.

A soft pine board 1 x 3 inches and 12 feet long is now laid on the workshop floor or out in the yard. On this board is painted with a brush a medium coat of waterproof liquid marine glue. If your wife has a *used* cotton blanket, trade her out of it and rip up 3 inch wide strips to go the full length of this batten. Push this stripping down onto the glue and put another medium coat of glue on top of the



blanket strip. This pine batten makes a solid side, after gluing and screwing the top and bottom halves to it.

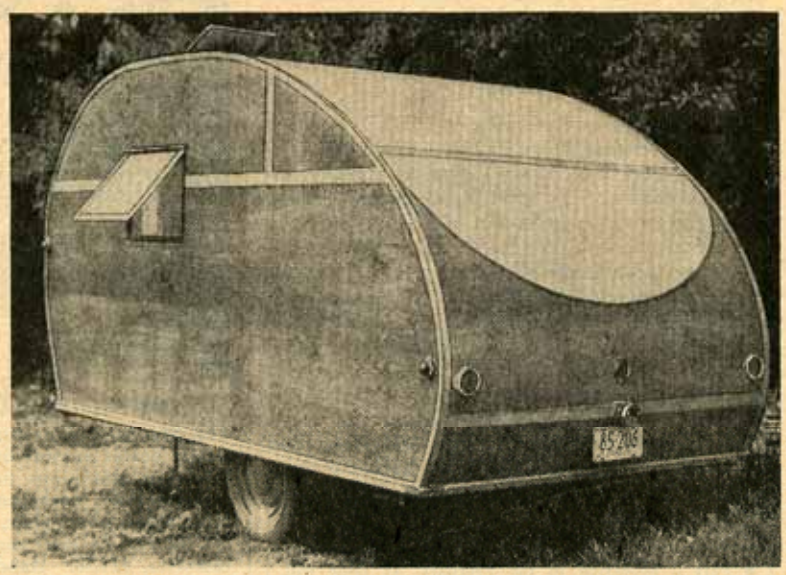
These blanket strips are laid between all splices and joints throughout the trailer. Saturated with liquid marine glue and screwed up tight, they make a permanent, flexible, waterproof joint. Filler strip segments are sawed out of pine or spruce and screwed to curved edge of side as per photos No. 1 and 2 (do not forget the marine glue-soaked blanket strips).

Marine glued blanket strips are now run full length of both outside edges of floor and around wheel-housing box. Sides are lifted up and clamped in position with C-clamps. Sides are now screwed to the filler strips at floor line and around wheel-housing the full length of the trailer. So much for the first steps in constructing the Trail Scout. We'll complete the job in the next issue of SCIENCE AND MECHANICS.

● Part 2, appearing in the December issue, will complete this project with an explanation of how roof panels, door, leveling jacks, scuff rails, and wiring system are installed in the trailer, how to complete the interior decorating, and how the finishing work is done. To be sure you get the complete story, reserve a copy of the December issue at your favorite newsstand.

Building the TRAIL SCOUT

Craft Print
Project No. 50

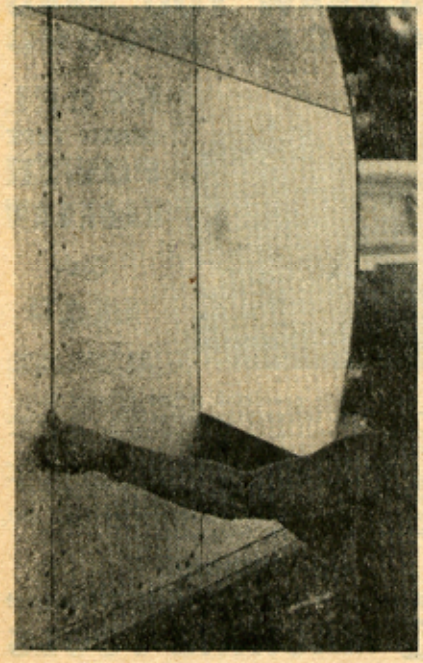


Part 2. We can't let our work trail behind, so let's put the finishing touches on the Scout

By DALE VINCENT

IN PART 1 the building of the shell of the Trail Scout was described. In this issue we will tell you how to complete the interior and finish the exterior.

The ¼-inch marine plywood roof panels are now drilled and counter-sunk for 1-inch No. 12 flathead screws around all four edges, 3 inches apart and ¾ inch back from edge. Starting at the bottom front, these roof panels are screwed tight. With the grain running crosswise, the roof panels automatically take the curve of the sides. A splice is made between each roof panel as per "A" Fig 3. (Detail of this roof-splice joint can be studied at "C" on Fig. 6.) Be sure to put glue and blanket stripping at all joints. All roof panels are put on except the last one. This panel is left off until the main door is cut out.



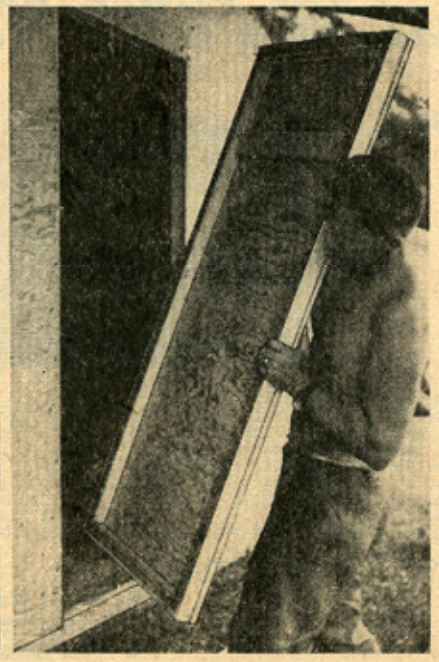
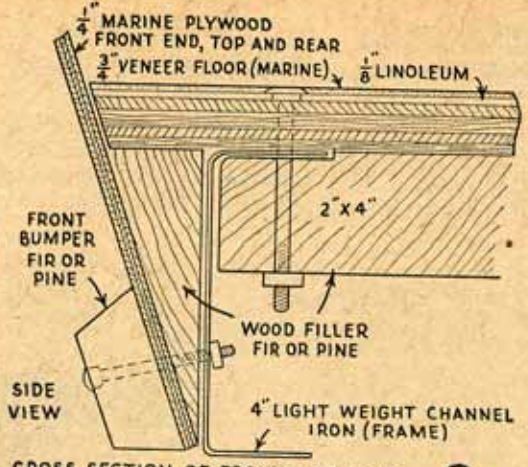


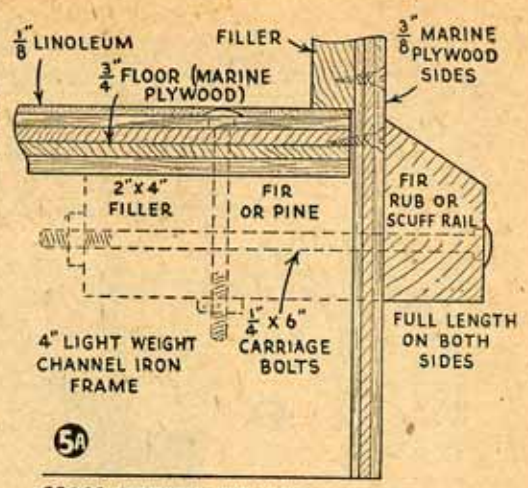
Photo 4 shows the door being sawed out of the sidewall. The door is then lifted out and the edges trimmed. Be sure to leave plenty of play for the metal edge strip, hinges and locks as shown on Photo 5.

The main door, posts, jambs, and header are glued and screwed into position as per "D" in Fig. 3, Fig. 7, and photo No. 3. This door is then sawed out as in photos No. 4 and 5. Now the last roof panel at the rear is put on, leaving your job looking as in photo No. 7.

Two permanent, screw-type, leveling jacks are fas-



CROSS SECTION OF FRONT AND REAR CONSTRUCTION SEE "B" ON CHART 3 (5)



CROSS SECTION SHOWING HOW SIDES ARE FASTENED AT FLOOR LINE.

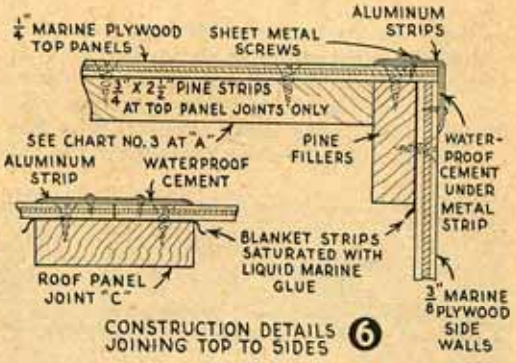
tened underneath to the two rear corners. Two adjustable stabilizing jacks are carried for the two front corners.

Rub or scuff rails are now bolted full length on each side as per Fig. 5A. End rub and scuff rails are now clamped and bolted to front and rear as per Fig. 5. The 3-inch aluminum strips are now cut from corrugated sheets, and bent, clamped, and screwed into place with sheet metal screws over all outside joints and splices, as shown in Fig. 6. For the next step in construction waterproof cement or dum-dum is putty-knifed over all edges before the 3-inch aluminum strips are screwed into place.

Fig. 7 shows detail construction of hinges and metal weather stripping around door and door casings. Openings for windows, roof ventilator and stovepipe jack are reinforced on the inside by gluing and screwing ¾ x 2½-inch pine strips around the openings. Dum-dum or waterproof cement is then placed under edges of windows, ventilator, and stovepipe jack and then screwed into place.

If your wife helps you on this job, be careful that the marine glue, and the waterproof cement do not drip into her hair. If they do, build yourself a doghouse instead of a trailer.

Next the wiring system is put in. All states do not have the same regulations, so inquiry should be made from the state police, and clearance lights, tail lights, and reflectors installed according to your local laws. A simple electric light wiring diagram is installed as shown in Fig. 4.



CONSTRUCTION DETAILS JOINING TOP TO SIDES (6)

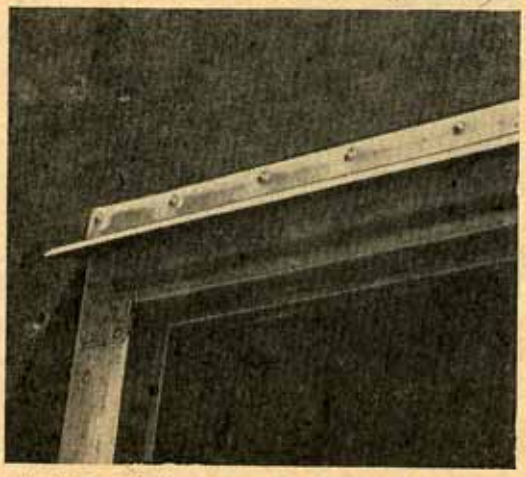
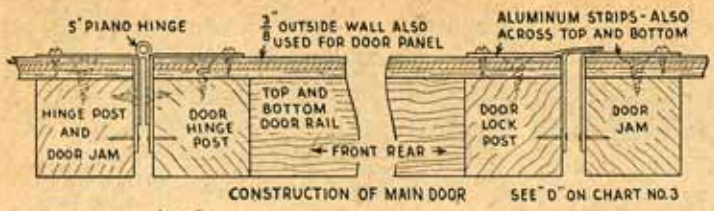


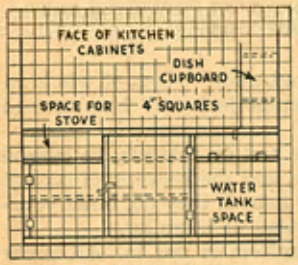
Photo 6. Aluminum strips are screwed around all raw edges of door, frame and body. Drip molding is bent and fastened above as shown.

You are now ready for your interior furnishings. Bedsprings are installed first as per Figs. 2 and 3. Notice that you can lift front of bed to get at storage space underneath. Figs. 2 and 3 also show detailed construction of full-length clothes closets. Both these closets have a hat shelf at the top and a broom-stick rod underneath the shelf for coathangers. These closets are made from ¼-inch veneer, or the scraps left from top and sides.

A butane cookstove and heater may be used



CONSTRUCTION OF MAIN DOOR — SEE "D" ON CHART NO. 3



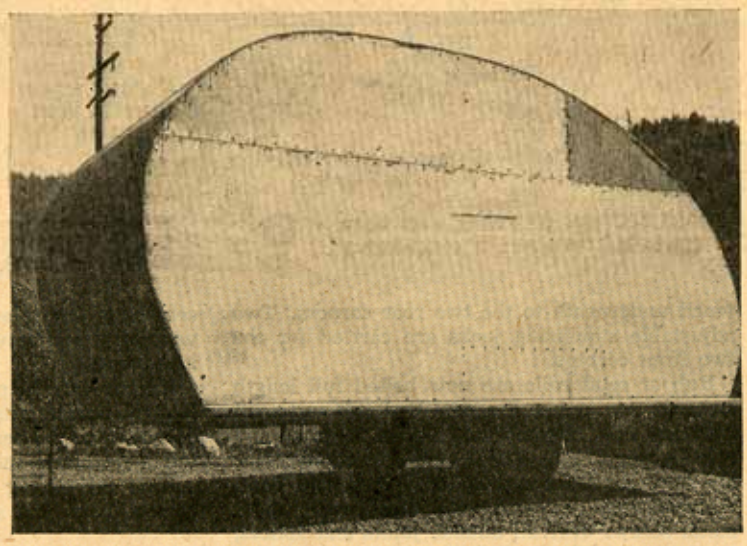
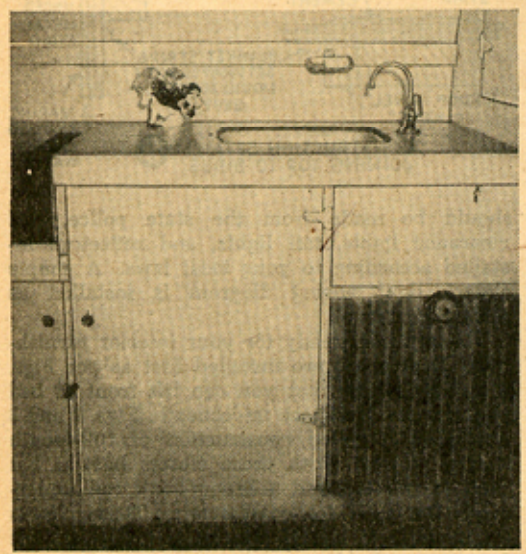


Photo 7. At right, body before trim is put on.

we use in our lamp and the outboard motor. One five gallon can of white gas supplies fuel for all.

A large-size water tank, as shown in Fig. 3, is absolutely essential for off-the-highway travel. It guarantees pure drinking water for at least a week. If an icebox is wanted it can be placed in the space marked "dish cupboard" on Figs. 2 and 3. But experience has proved an icebox useless in hunting and fishing camps because of the lack of ice. The

by those who prefer them. We have found that a Buddy heating stove, as shown in Fig. 3, is preferable because it will burn coal, pine cones, cow chips, or sage brush—things you are most likely to find around camp. The cookstove is a two-burner Coleman, using the same white gas



View of front end, showing part of kitchen table, sink, water pump and water tank.

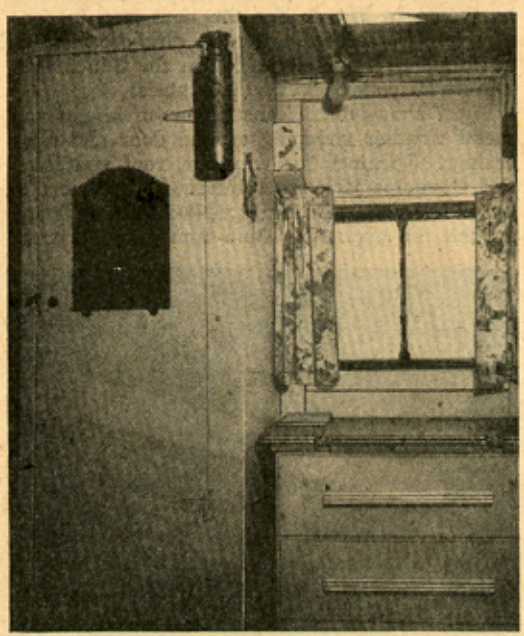


Photo 9. View of left side of interior.

Photo 10 above shows the ball type hitch mounted on the rear of the car.

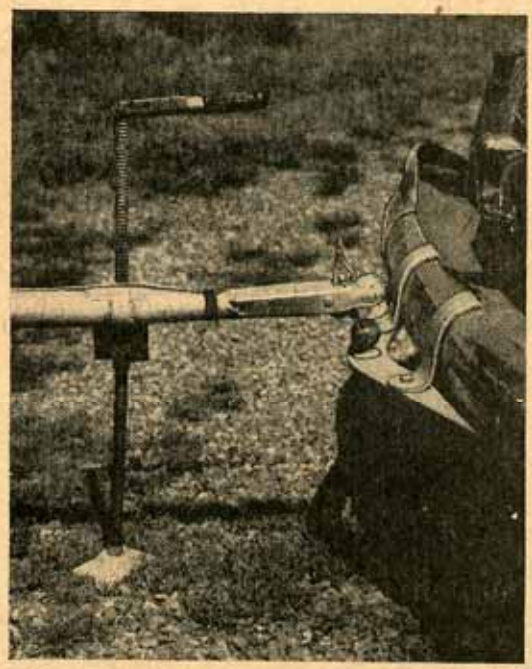


Photo 11 above shows the car being unhitched from the trailer.

chest of three drawers was purchased unpainted at a local furniture house.

Cupboards may be made as suggested in sketches—or according to your wife's specifications. The interior is painted with two coats

of white or ivory fast-drying enamel. Curtains are hung and mirror installed. Fire extinguisher is optional. (Photo No. 9.)

With mattress installed, and the bed made, she is now starting to look like home. The outside should be painted with two coats of boiled oil. A little stain may be added to this, if wanted. The roof is now painted silver to reflect the heat, and the outside is given at least three coats of the best marine spar varnish. The trailer may also be painted with enamel to match the paint job on your car.

You will need a ball type hitch mounted on the rear of your car. You hook your trailer to this ball. Next have a garage mechanic hook a plug on to the tail light wiring that matches outlet plug to your trailer cord. This lets your clearance lights on the trailer work on and off from your own light switch on the dash.

You are now ready to roll to your favorite hunting or camping spot, or this little trailer will leave you independent of hotels on business trips—or will serve as a guest bedroom at home—and if you happen to have a flat tire, remember you have chosen your wheels to match the ones on your private car, and the spare in your trunk is also a spare for the trailer.

If a flat does happen on the trailer, don't worry because it looks like the wheel is boarded up solid, just take your bumper jack, hook it under the scuff rail, and lift the body of the trailer. The springs force the wheel down as the body goes up, and as the tire clears the ground you will find it easy to remove.

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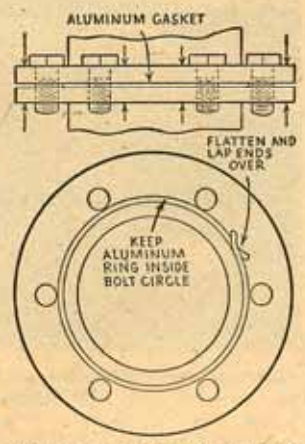
Emergency Gasket



EMERGENCY gaskets can be made from soft or half hard aluminum wire and can be used safely, in a majority of cases, to hold vacuum and pressure.

The wire must of course be placed to the inside of the bolt area and the ends should be flattened slightly and lapped over as shown in sketch. This will insure against any possible leakage when gasket is in use.

This type gasket should stand considerable wear and may outlast regular type gaskets if you follow these instructions.—E.L.J.