Kaycraft Kampster
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YOU ASKED FOR An Ideal

By Hi Sibley

Though compact, the snug quarters provided by this lightweight trailer have every needed convenience. Below, aluminum molding being tacked over corners to give the finished job an attractive appearance.

This compact, streamlined trailer is especially adapted to the demands of the outdoorsman because of its unusually generous road clearance and lightweight, making it possible to follow wagon trails through brush and to climb steep, rutty roads. Although it weighs only 600 pounds, its construction is exceptionally sturdy, as the detailed drawings indicate. The unique idea is by Walter Hille and J. S. McBeth, of Los Angeles, who have named it the Kaycraft Kampa'r.

A snug, comfortable sleeping compartment is located amidships, an inner-spring mattress being laid directly on the floor. Forward is a compartment for clothes, and, over the sleepers' feet, a large shelf for bedding, duffel, and miscellaneous equipment. It has ample space for hunting and fishing gear.

In the rear, a lid lifts to give access to a complete kitchenette, including stove, refrigerator, water tank, shelves, a drawer for food, and racks for dishes. Even a swinging beverage rack can be built in, if desired. Electric bulbs and switches are provided in both the sleeping compartment and kitchenette. The wiring for which can be arranged to plug in on a six-volt car battery, or a 110-volt circuit in an automobile camp.

Materials to build the trailer cost about $100 east of the Rockies, and somewhat more on the Pacific Coast. A man who lacks the equipment to make the chassis himself, or would rather not go to the trouble, can buy the chassis complete with wheels, tires, and hitch. This will increase his cost about $50.

The chassis frame is a flat rectangle 48 x 115½ inches, made of steel angle irons as in Figure 1. Side and end members are 2½ x 2½ x ¼ inches, mitered and welded at the corners.
Outdoorsman's Trailer

TO BUILD YOURSELF... HERE IT IS

There are two cross members of 1 1/2 x 1 1/2 x 1-inch section, cut as shown in Figure 2, and welded to the side members. The axle, welded to the frame, also serves to reinforce the structure. To make sure no warp creeps into the finished frame, the various members should be laid upside down on a flat surface when welding. When completed, the top is level all over.

For the hitch bars, 2-inch channel steel is used, being bent in the form of an A, and welded on the underside of the frame, making an exceptionally sturdy job. A triangular parking stand is bolted between the ends of the channel. This swings up under the trailer when not in use. The upward slope of the hitch bars is illustrated in Figure 3, with the parking-stand dimensions. A standard hitch, made by Ziegmeier, Bay City, Mich., and shown in the photo, is well suited to this trailer, but it is possible to use other makes.

An ingenious axle, with independent springs, or knee-action, was designed especially for this trailer, making possible the exceptional clearance of 11 inches. Heavy coil springs, set between the chassis frame and a yoke carrying the wheel spindle, form a very compact unit, and not only provide easy riding but keep the wheels up close to the chassis, and eliminate long springs, shackles, bolts, clips, and so on. In Figure 4 is shown the method of securing this type of axle to the frame.

In case you prefer to use a conven-

CONSTRUCTION DETAILS OF CHASSIS AND BODY

The drawing above shows the way plywood is used to form sides and roof of sleeping compartment, and shelter. At left are details of the chassis and springs as well as the method of applying body covering and molding.
One of the trailer wheels, showing the specially designed knee-action spring. Leaf springs may be used, if you wish

The special bumper of the trailer, which can be let down when you reach camp to furnish support at rear. It is held in position by wing nuts.

The cast-steel knee, for the patterns of which dimensions are given, will give a bunch drop (or greater if you wish), and brings the wheel up close to the chassis. It is welded to the tubular-steel axle, and has a seat for the spring. The chassis frame should have a plate, welded to the side member, to carry the spring-hanger rivets at the forward end, and the shack bolt at the rear. Select a light spring, or remove some of the leaves from any standard spring, bearing in mind that the moving load will be only 650 pounds, plus equipment. This type of axle naturally will not have so much clearance as the model shown in the photos. The knee is used with a leaf spring because a one-piece forged axle of sufficient weight cannot be bent at a right angle, and, unless this was done, the wheels would be too far below the chassis, making the trailer look top-heavy.

The first step in building the body is laying the floor of 3/8-inch plywood. This is cut to the exact size of the chassis frame, and secured with 3/8-inch carriage bolts through end and crossmembers, but not along the sides. Later, bolts will be put through the sills at the base of the walls as well as through floor and frame.

For the side walls, also, 3/8-inch plywood is used. On wrapping paper, glued together in a rectangle 3 feet 8 inches x 10 feet, lay out 4-inch squares, and trace the outline shown in Figure 6. Both walls of the body are identical. Notches for the intermediate ceiling beams are 5/8 inch deep, those at the ends 2 inches, as in Figure 7. This drawing also gives the locations of the forward and rear bulkheads, or partitions. Spruce sills, 13/16 x 1 inch, are screwed and glued along the bottom edge inside each side wall.

The body can be erected directly upon the chassis if the wheels are removed and the frame raised on blocks about 3 or 4 inches from the floor. With the wheels in place, the top is rather awkward to work on.

The floor plan, shown in Figure 7, gives an idea of the general arrangement of the built-in conveniences, and shows how the two doors in the forward partition open into the closet and shelves. This compartment, as well as the entire body, is shown in the cutaway perspective, Figure 8. Plywood cleats serve as door stops. Shelves also are of plywood, with a 3/8 x 3/4-inch strip under the forward edge of each. On the forward side of the rear bulkhead is a large shelf, or bin, for bedding, duffel, and other equipment, well out of the way over the sleepers' feet. A spruce beam, 3/4 x 2 in., runs across the top of each bulkhead, with the beams between them being 3/4 x 1/4 inch. The bulkheads are further reinforced with vertical cleats in the corners.

Brass or galvanized screws and nails and cassein waterproof glue should be used throughout. Flathead screws should, of course, be countersunk. Before the glue sets, check corners with a square.

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The Materials You Need

**CHASSIS**

- 2 pieces 2 1/2 x 2 1/2 x 16 in. steel angle bar
- 2 pieces 2 1/2 x 2 1/2 x 48 in. steel angle bar
- 2 pieces 1/2 x 1/2 x 48 in. steel angle bar
- 2 light springs (with shackles, U-bolts, rebound clips)
- 2 cast-steel knuckles
- 2 wheels
- 2 pieces 1 1/4 x 48 in. channel steel
- 1 piece 3/16 x 1/2 x 48 in. strap iron
- 1 belt 1 1/4 in.
- 1 pair trailer fenders

**BODY**

- 9 pieces 3/4 x 48 x 120 in. fir plywood
- 1 piece 1 1/4 x 48 x 26 in. fir plywood
- 1 piece 1 1/4 x 30 x 48 in. fir plywood
- 1 piece 1 1/4 x 48 x 48 in. fir or other plywood
- 1 piece 1 1/4 x 48 x 48 in. fir or other plywood
- 2 pieces 1 1/4 x 48 x 60 in. fir or other plywood
- 5 pieces 3/4 x 1/4 x 48 in. spruce
- 2 pieces 3/4 x 2 x 48 in. spruce
- 2 pieces 13/16 x 1 1/2 x 48 in. spruce
- 4 pieces 13/16 x 1 3/8 x 48 in. spruce scrap material for shelves
- 2 pairs brass 2-in. butterfly hinges
- 2 latches
- 4 sets continuous window hinges
- 1 door lock
- 1 slide bolt
- 10 sq. ft. copper fly screen
- 1 1/2 ft. aluminum corner strip molding
- 2 ventilator brackets
- 1 greas 1-in. No. 7 flathead brass screws
- 8 yd. 48-in. imitation leather, or canvas
- 17 yd. sponge-rubber weather strip
- 15 3/4-in. carriage bolts
- 3 pt. cassein waterproof glue
- 3 pt. rubber cement (1 qt. cassein glue, if canvas is used)
- 30 ft. armed wire
- 2 sockets, 2 switches
- 2 plugs, etc.

**KITCHENETTE**

- 1 handle for lid
- 2 nickelled drawer handles
- 3 wood drawer pulls
- 1 lever-handle sink faucet
- 2 sets standard refrigerator hinges
- 1 standard refrigerator latch
- 40 sq. ft. 1/4 in. plywood
- 2 5-ft. panel 1/8 in. composition board
- 3 6-ft. panel 1/8 in. insulating wall
- 1 strip 8 ft. x 1/8 in.
- 1 license plate holder
- 1 bumper
- 11/2-in. material can be used, if obtainable locally in proper sizes

**MISCELLANEOUS**

- 1 inner-spring mattress, and bedding
- 1 folding table
- 1 folding camp chairs
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With beams and bulkheads installed, the roof is laid. Plywood ¼ inch thick is used, and, over the sleeping compartment, it is installed with the visible grain lengthwise. This piece reaches only to the middle of the beams along the top of each bulkhead. Over the nose or forward compartment, another sheet of 8-inch plywood is put on with the grain crosswise. It is so placed because of the more abrupt curve here. Cross gusset and braces are used to secure the plywood to sides and beams. The covering over the kitchenette is a separate unit and will be described later.

For a first-class job, the whole inside of the body should be given a coat or two of clear shellac before the roof is laid, and the underside of the roof panels should be similarly treated. Spar varnish can be used instead of the shellac.

The model in the photo is covered with durable imitation leather, laid in rubber cement, and aluminum corner strips over the edges covering the joints as well as the tasks. If desired, canvas can be used for covering, if stretched tightly and then coated with waterproof glue is applied to the walls and top. After the first coat of paint is thoroughly dry, smooth with a coarse sandpaper, paint, and sandpaper again with increasingly finer grades until the surface is smooth enough to suit you.

Half-round metal molding is placed over the joint between body and chassis frame.

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Simple Instructions on Putting the Final Touches to a Mobile Camp That Will Enable You to Cover More Ground in Greater Ease

By H. Sibley

With the chassis and sleeping compartment built according to the instructions and drawings given last month, we are now ready to start on the kitchenette of our lightweight trailer. The general dimensions of the extremely compact and convenient kitchenette are given in Figure 8.

It is constructed of ¼-inch plywood, and, where framing is visible in front, of Philippine mahogany. Drawer rails and cleats may be of pine. The built-in conveniences include a cupboard with sliding panels, a bin or dish rack, large drawer, and a chromium-plated workbench top, a galvanized water tank, breadboard, and refrigerator. A pair of rails, fixed to the cupboard next to the workbench, permit the gasoline camp stove to be pulled forward for greater convenience in cooking.

Since building the cupboard is more or less of a cabinet job, all joints should be true, square, and neat as possible, especially in front. Plywood is used for sides, top, and shelves, as well as for the large drawer, which has a ½-inch-thick front, with rabbeded ends. It is important that this drawer be made to slide freely. This holds true, also, for the panels in the upper part of the cupboard. The track for the panels is simply a 1-inch-wide piece of Philippine mahogany, with two rabbeded grooves in the top edge. Brads and casein glue are used throughout the cupboard. The finished job is given two or more coats of shellac.

The water tank holds ten gallons, and, like the drawer, extends nearly to the rear wall of the cabinet. The front of the tank is painted aluminum, and has a nickelated drawer pull and tap. A standard filter cap is set into the top.

It is possible to purchase a small ice box ready-made, but the box for which details are shown in Figure 10 is quite satisfactory, having a capacity of about 45 pounds of ice. First, a frame is built of ¾ by 1½-inch pine, and a galvanized box set inside it. The turned-up front edges of this galvanized lining are tacked to the front frame. Inside the metal box are
a substantial ice shelf and a drain. A 1-inch space is left in front and back of the shelf to permit circulation of air when the box is closed. The edges of the shelf are bent up about one half inch to keep melted ice from dripping upon the food below.

This much done, place a section of 1-inch insulating board over the galvanized lining of the sides, top, bottom, and backs. On the side next to the wall, the insulation should stop two inches from floor to let bottom frame member fit over side sill. Now cover the other side, the back, and the bottom of ice-box with plywood. The top is covered with 1/4-inch composition wood, and a neat frame of the same material covers the front, except, of course, for the opening for the door.

The door consists of a 1/4-inch plywood panel, with a rectangle of 1-inch insulating board on the face, and covered with galvanized iron as shown in the sectional drawing, in Figure 10. Rubber weather strip, fitted to the inside edges of the door, makes it airtight. A mahogany frame, with mitered corners, is nailed around the outside edges. The door is attached with nicked refrigerator hinges, and held shut with a refrigerator latch. As the door must be fitted very snugly, it is well to make sure the frame is carefully squared up at the start.

A swinging beverage rack can be made to fit alongside the ice box. Details are shown in Figure 11. The shelves are of 1/4-inch plywood, with three 1-inch mahogany corner posts. The shelves are cut to accommodate a dozen glasses and a bottle. The unit, being hinged, can be swung forward out of the way when meals are being prepared on the workbench.

Dish racks are not shown in the draw-
ings, as the owner will prefer to install them to accommodate individual outlet.

The racks can be built into the compartment which, in the drawings, is given over to a bin, or it can be built as a separate unit in the space above the icebox.

The large, hinged cover over the kitchenette compartment forms a shelter while cooking is being done, and, properly made, should fit closely when down. The frame consists of four curved beams of 1/2-inch plywood 1 1/2 inches wide, and the 3/4 x 3/8-inch end pieces and spacers shown in Figure 12. The curve of the beam will, of course, be the same as that of the side wall of the kitchenette compartment. Ends of the two middle curved beams are rabbeted one quarter inch into the end members. The spacers are separate blocks.

Between the middle beams a wall is formed with spacers, to accommodate the light socket and switch. A beam, one filler block, and the top end piece are bored for the armored light-cable. Assemble the frame with screws and casing glue, install the armored cable, and then lay on the 3/4-inch plywood panels top and bottom, first applying casing glue to the panels and end members. The plywood is laid with the visible grain crosswise, and extends about 3/4 inch beyond the frame on sides and bottom, so there will be ample clearance for the side in closing it. Aluminum molding is screwed to the side and bottom edges as shown, and fitted with weather strip to make a dust-proof job.

Two brackets are screwed on the under side at each edge to carry the braces which hold the top open. The cross member of the chrome-plated brace, between the small brackets, serves as a towel rack. Sockets attached to the sides of the kitchenette take the lower ends of the brace, and clips, screwed to the under side of the roof, hold it firmly when top is closed. The top is attached by means of a continuous hinge that extends the entire width. The handle and lock are the standard type used in automobile door handles.

Both doors of the sleeping compartment are alike except for the fact that only the one on the curb side has an outside lock, the other being secured by a bolt on the inside. They are cut from 1/2-inch plywood. The ventilating window is hung on a continuous hinge at the top, and has a notched arm to hold it open, as shown in Figure 13. The ample width of the doors makes access to the sleeping compartment quite easy. Copper screen is secured to the door openings by a molding frame around the inside. Either aluminum corner strip or molding is placed around door, and the window opening. Around the inside edge of the door, sponge weather strip is cemented. This fits against a door stop frame, rendering the sleeping compartment dust-proof. Between the window and the swinging end of the door, a wood brace is screwed on the inside to keep the door from twisting or splitting. The lock is a sturdy night latch.

The lighting layout will be determined by the owner's special requirements. In Figure 14, the wiring shown is a circuit that can be plugged into an outside 110-volt current, only the tail light drawing current from the car battery. One bulb is located on the forward bulkhead and serves as a dressing and reading light. The other is located on the under side of the hinged kitchenette lid. The regulation tail-and stop light is mounted on a bracket at the left rear side. Ruby reflectors should be set in the chassis frame, one on each side. These are required by law in some states, and, even in those in which their use is not compulsory, they will be found a valuable safeguard in night driving.

Because at some time you may camp where 110-volt current is not available, it would be wise to install a second circuit, which can be plugged into the car battery. The same wiring can be used if a two-way switch and the proper sockets and bulbs for a six-volt circuit are provided.

This trailer, as illustrated, has been thoroughly tested under all possible conditions, and will tow at high speeds without away. Its sturdy construction is assurance of a long life on the road, and a pleasant, carefree life outdoors for the builder.