LITTLE-KNOWN FACTS ABOUT ANTIFREEZE

MECHANIX ILLUSTRATED

The How-To-Do Magazine

STILL 25c NOVEMBER

Build This Beautiful
WOOD-BODY SPORTS CAR!
Easy-to-Follow Plans
Complete in This Issue

McCAHILL TESTS THE '65 PLYMOUTH & COMET

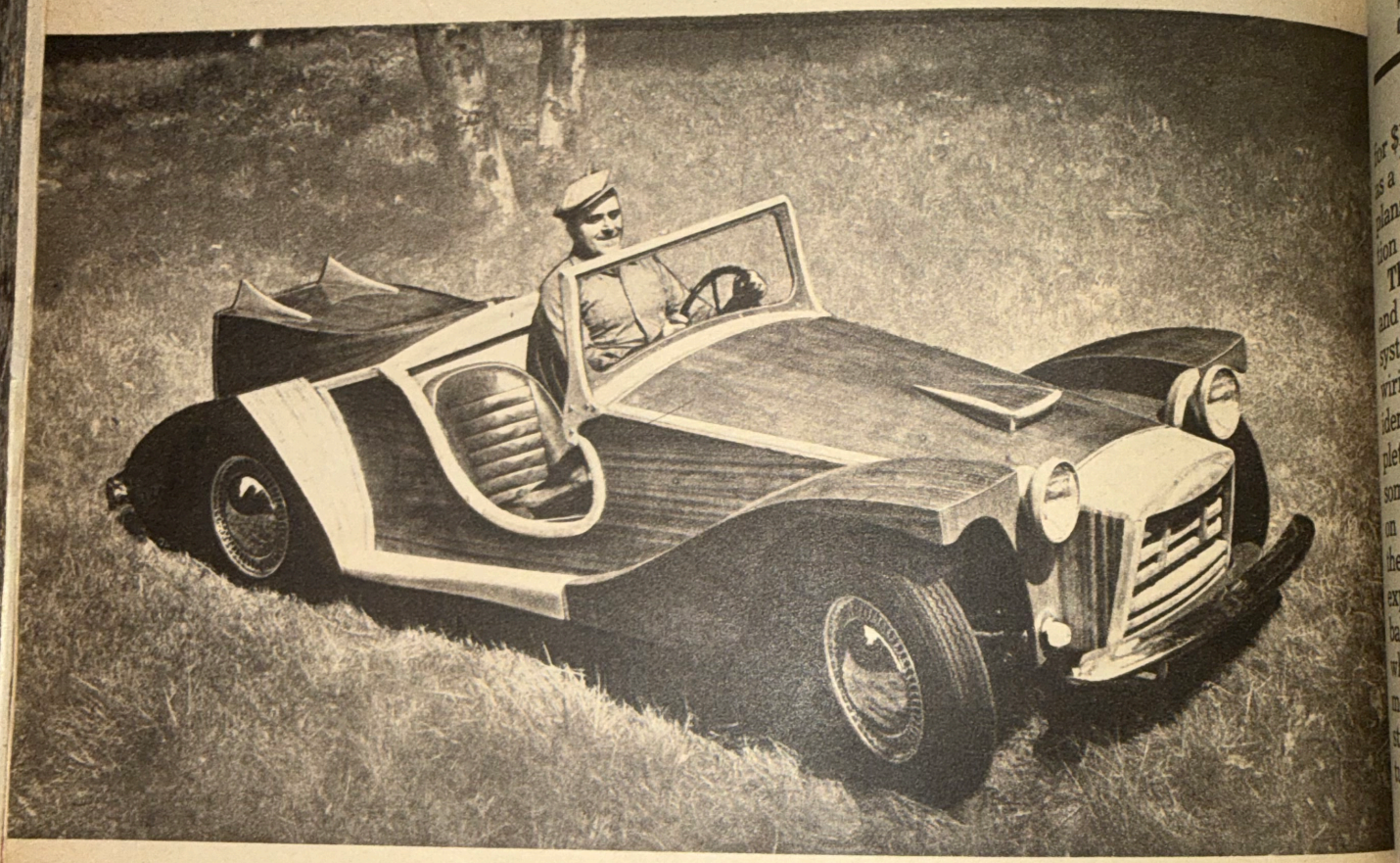
HOW TO CONTROL WE... UNG

COVER STORY

BY ROSARIO CAPOTOSTO

the PLYWAGEN

Build MI's elegant sports car. It has a mahogany body and a VW chassis.

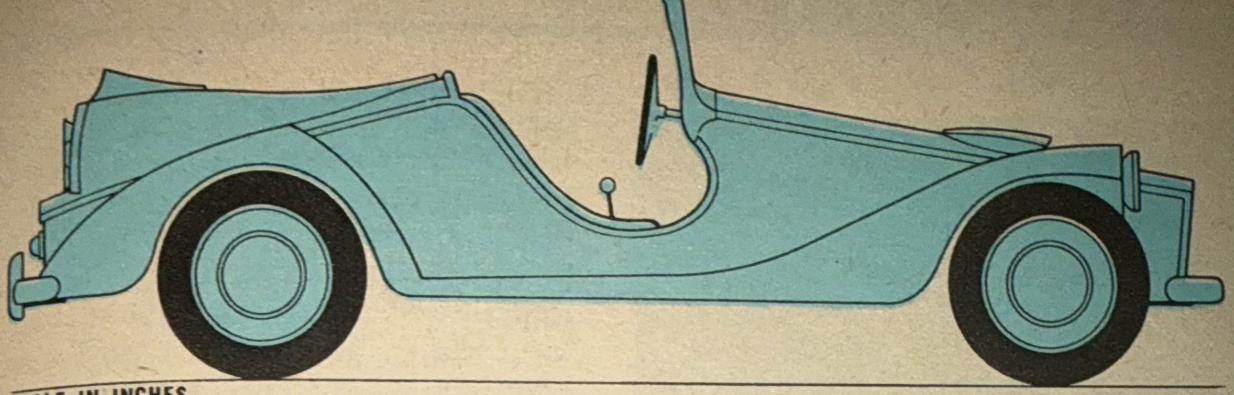


IF you want to feel like the king of the road, just roll down the highway in MI's Plywagen. There can be no doubt about what is causing all the commotion and comments when this rig passes. Stopping for a traffic light or pulling into a service station never fails to create a sensation. Everybody seems to exhibit an amazing fascination for this automobile.

It's a gratifying experience that more than compensates for the long hours we spent in designing and building this car.

The body is covered with magnificent ribbon-stripe mahogany set off with maple trim—a car with class to spare. Graceful contours from bumper to bumper are blended harmoniously to form a smooth flow of lines. The finish consists of three coats of clear marine varnish which gives the wood a deep amber color of unsurpassed warmth and beauty.

The rear-end treatment suggests the business end of a jet engine. However, underneath it all is a simple, substantial Volkswagen chassis. A VW was chosen because of its compact chassis and its reputation for trouble-free operation. Besides, it was available and its flat chassis was handy for body-building purposes. We found the battered buggy on a used car lot, with a beat-up body but a good chassis. The deal was closed



SCALE IN INCHES

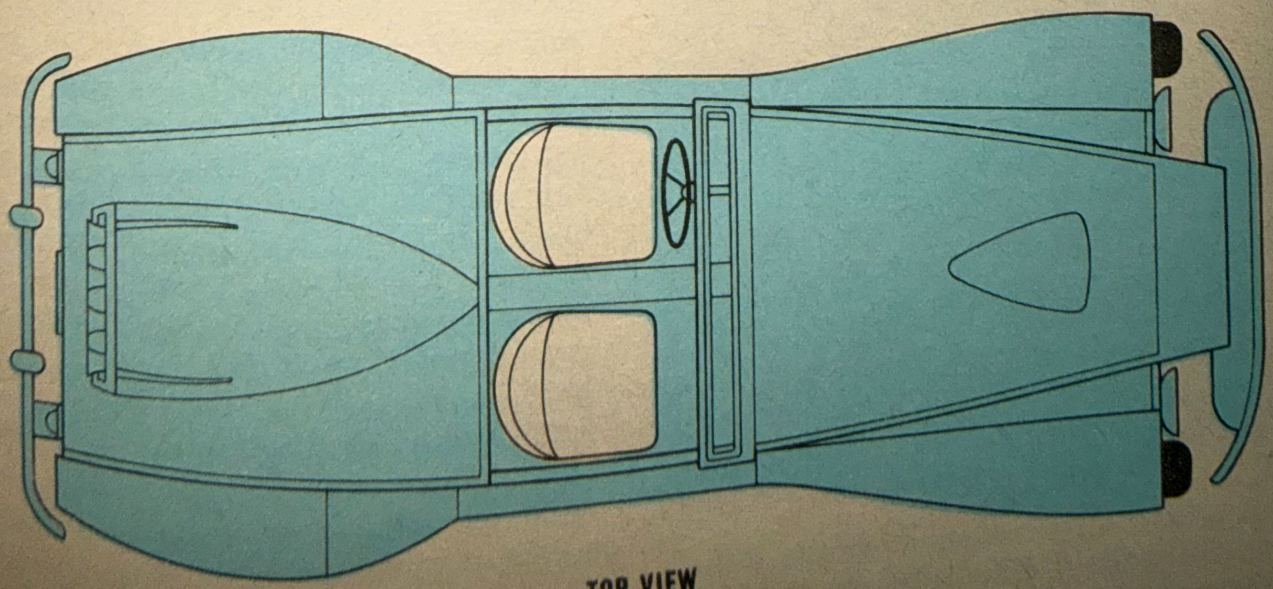
0 5 10 15 20 25 30 35 40 45 50 55 60

SIDE VIEW

for $150. Other small cars could be used as a basis for the Plywagen, though the plans necessarily would require alteration to fit the new chassis.

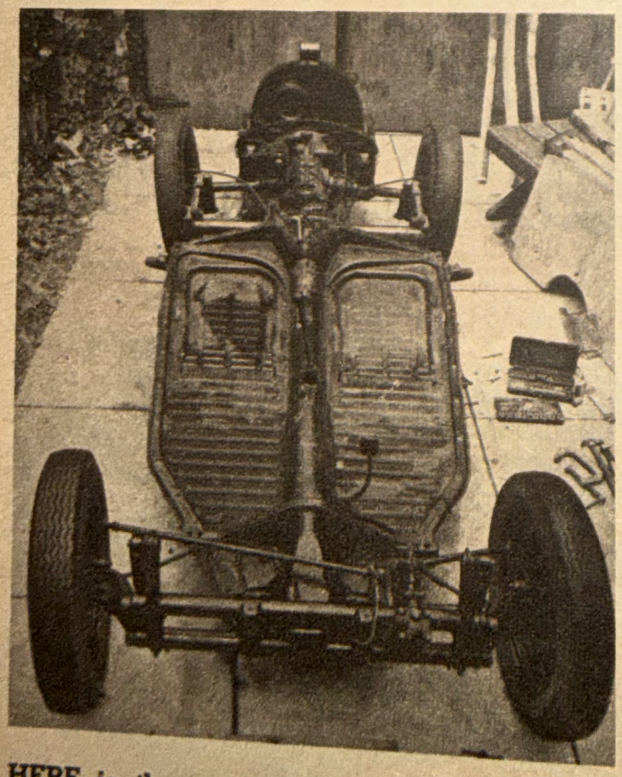
The first step was to remove the body and carefully undo the entire electrical system (there's an amazing amount of wiring in an auto). Each wire was identified with a taped label. Completely stripped, the chassis looked somewhat like an oversize ironing board on wheels, with only the protrusion of the engine at the rear. With the chassis exposed and dimensions available, a balsa scale model of the chassis was whittled, complete with wheels. Next, modeling clay was used to form a body style. After frustrating hours of sculpture, the final shape was decided upon.

Next move was to visit a lumber dealer to select six sheets of quarter-inch marine grade mahogany plywood panels (U.S. Plywood's ribbon-stripe mahogany), each 4x8-ft., plus maple for the trim and yellow pine 2x4s for the main framework. Several boards of ¾-in. waterproof fir plywood also were purchased for use on fenders, dashboards, etc. Since the VW is a four-passenger car and the new design was to be a two-seater, the steering column, foot pedals and shift required repositioning. By trial and error a 14-in. shift *toward* the rear was decided upon. The steering column was extended by cutting it in half, inserting a steel pipe of proper length and then brazing the joints. Moving the shift stick was time



TOP VIEW

THE FIRST step, after you have purchased a wrecked VW or other suitable car, is removing body from chassis. Save bolts.



HERE is the stripped-down chassis, ready for body-building. All rusted areas should be carefully sanded smooth and painted.

consuming but not especially difficult. A hole was cut into the tunnel and the shift rod cut down to fit the new location alongside the future driver's seat. Treatment of the foot pedals called for the installation of an extra set of pedals behind the original ones. They were tied together with steel tie-bars to achieve a tandem action, the original pedals still performing their functions. The hand brake was not moved as its position was such that it could be reached from the new seat location.

Construction. The body consists of two main sections—front and rear—separated by a plywood bulkhead at the rear of the seats. The front has a removable, bolted-down hood. For access to the engine, the rear hood hinges at the bulkhead. Fenders were bolted on and are removable.

The body is unique in that it is a curve all the way—there's hardly a flat surface on it. Furthermore, there isn't a single nail or screw holding down any part of the mahogany plywood skin. The main body is made of quarter-inch stock, the fenders are heavyweights: quarter-inch mahogany over ¾-in. fir plywood, for a total of one inch. There's plenty of wood-bending on this project so some pointers on the subject will be helpful at this point.

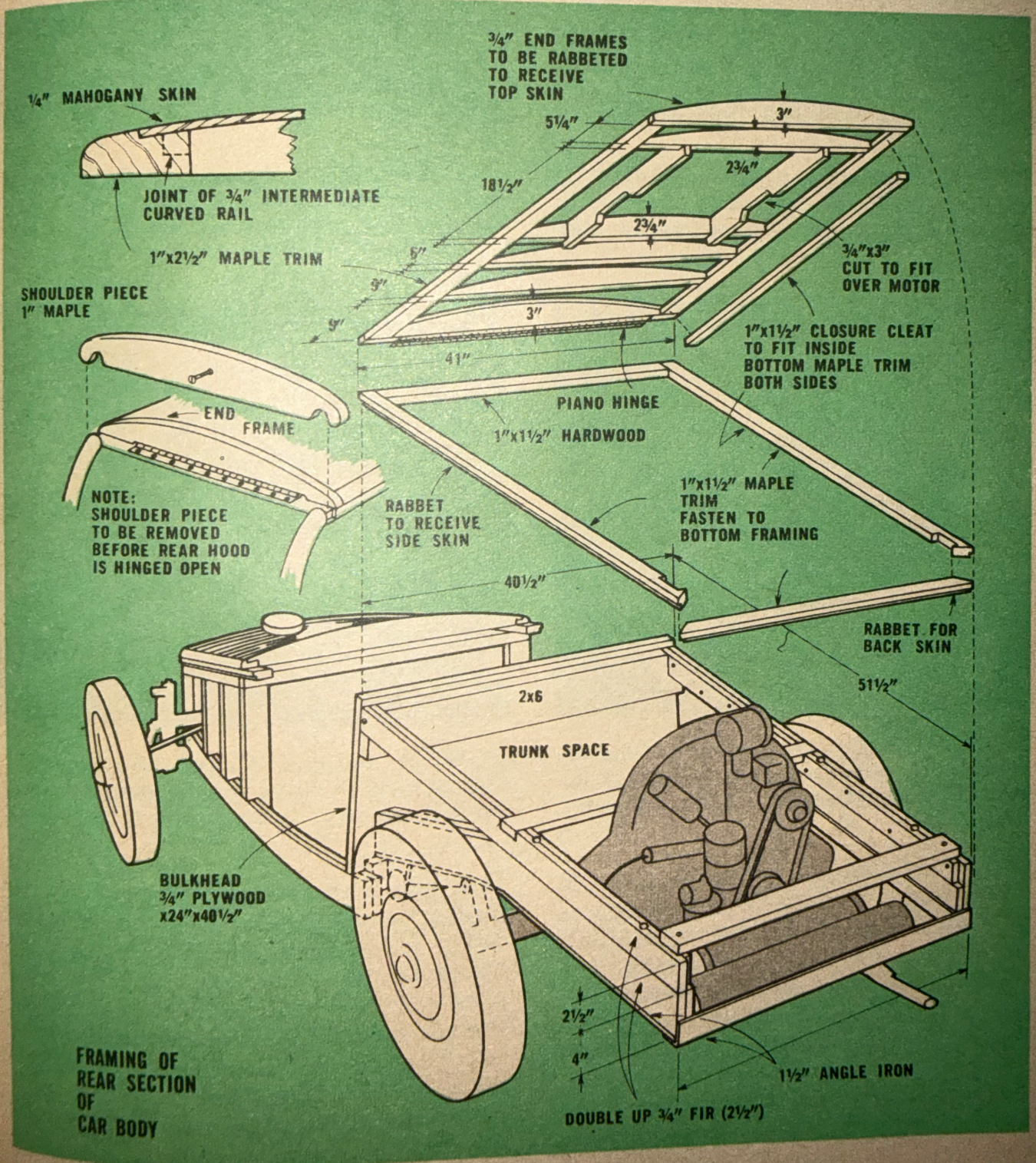
Bending Wood. A quarter-inch plywood board will bend only slightly while ¾-in. plywood will not bend at all. But a ⅛-in. or $\frac{3}{16}$-in. thickness can be bent. Thus when a series of parallel saw cuts are made part way through the back of, say, a ¾-in. board at intervals of about one inch (or closer, depending upon the degree of bend) the thickness of the ¾-in. board measured at its thinnest point would be $\frac{3}{16}$-in. if the depth of the saw kerf is $\frac{9}{16}$-in. A board so treated can be bent quite readily. However, boards in this condition are quite delicate until they are glued to supporting members so they must be handled gingerly. All the fenders and hood sections were bent this way.

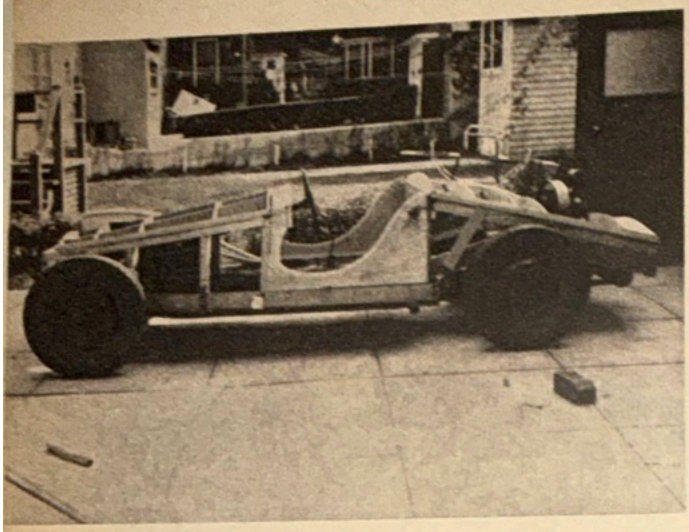
This piece is form-fitted and just drops into place. It must be removed before the rear hood is opened. Otherwise, the hood will be damaged.

Now for the final touches. The seven-inch sealed beam headlamps (check your motor vehicle bureau for state requirements) are set into lathe-turned bowls which were attached to brackets

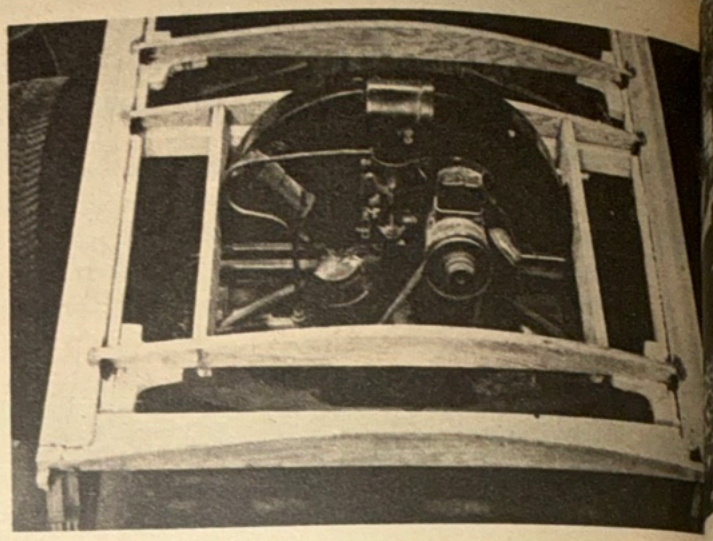
PLANS AVAILABLE

Large scale plans are available for building this car. They include extra detail drawings and additional photos. For your set, send $5 to Mechanix Illustrated Plans Service, Greenwich, Conn. 06830. Ask for plan No. PW-11-64, Plywagen when sending order.

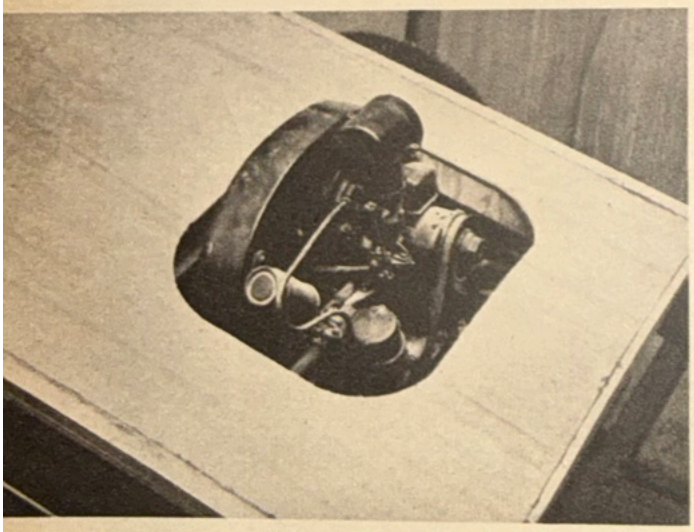




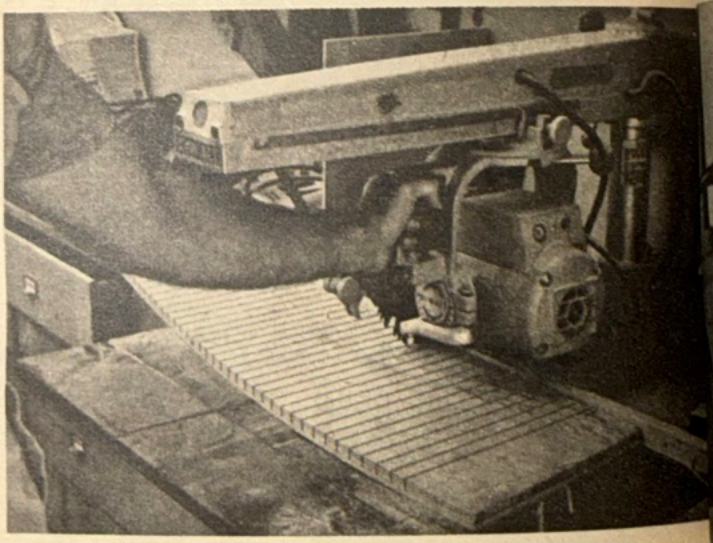
THE FRAME nearing completion. Side panels are made of ¾-in. plywood, edged with maple to contrast with the mahogany skin.



THE REAR HOOD frame ready to receive the mahogany paneling. Note the reinforcing blocks installed at all of the rib ends.



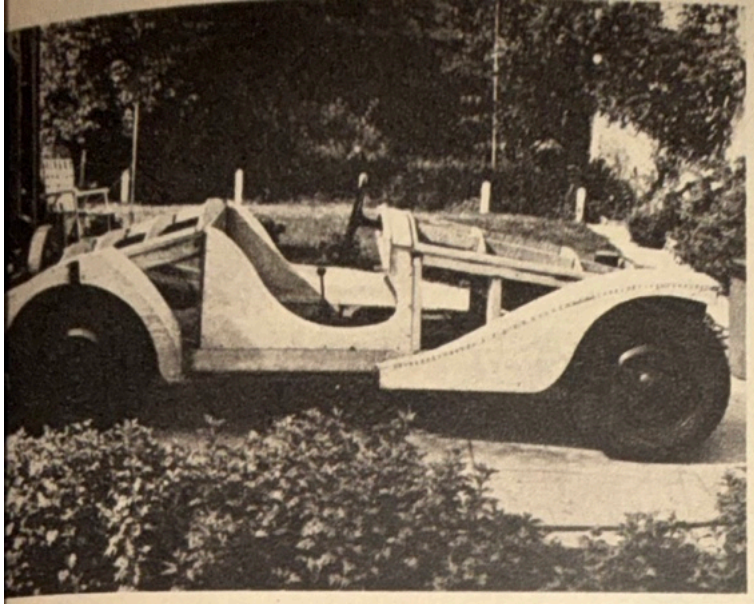
THE HOLE for the engine protrusion is cut out after the panel is in place. Provide the necessary clearance for good ventilation.



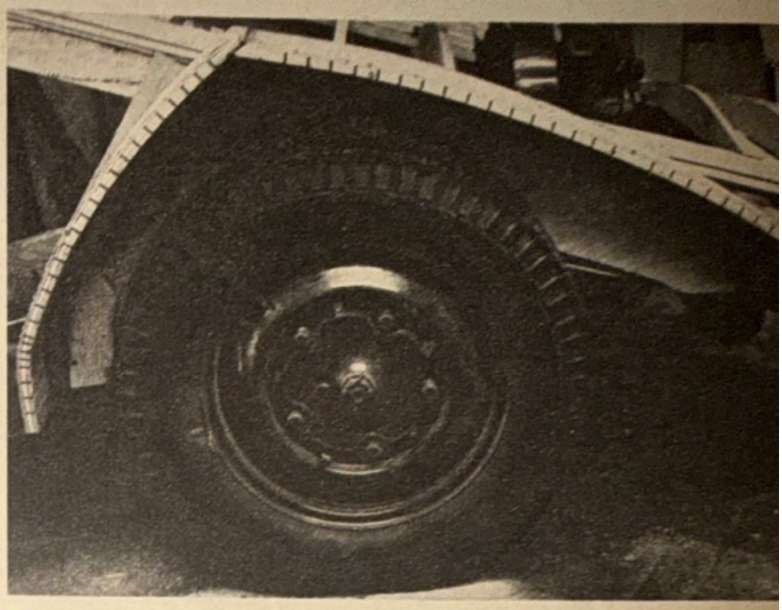
HOW the back of the plywood panel is "broken" in order to permit bending. This job is done on a radial arm saw as shown.

with three bolts. Washer spacers permit adjustment for aiming. The interior was lined with blue U.S. Rubber Naugahyde set off with a pair of bucket seats in a contrasting orange. The best method of upholstering is the simplest: quarter-inch fir plywood panels are cut to fit in sections. For the floor, one piece for each side will do. These are lined with foam rubber (except the floor panels) then covered with Naugahyde, which is pulled tight and stapled at the back.

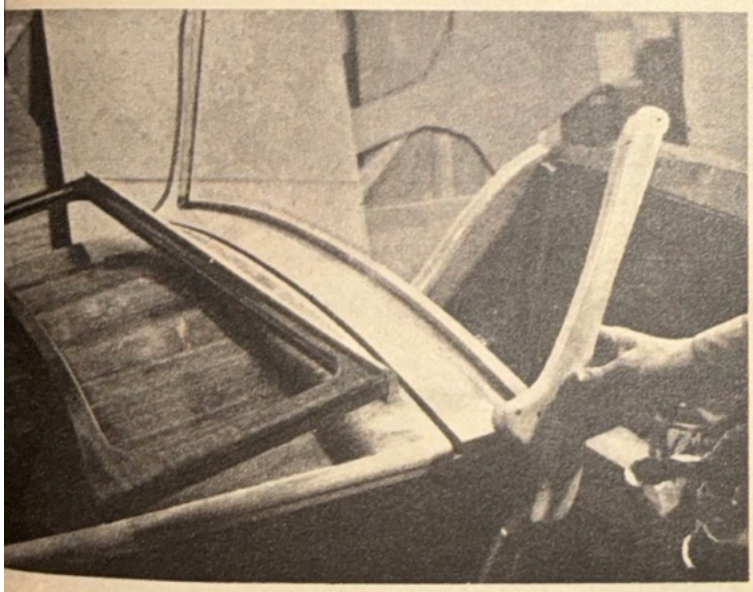
The finish consists of Woolsey Sealux Super-Luster clear varnish. This was preceded by a paste filler followed by a thinned-down coat of varnish for sealing. Next, three coats of straight varnish with light sanding between coats. A waxing with fine steel wool finished off this part of the car.



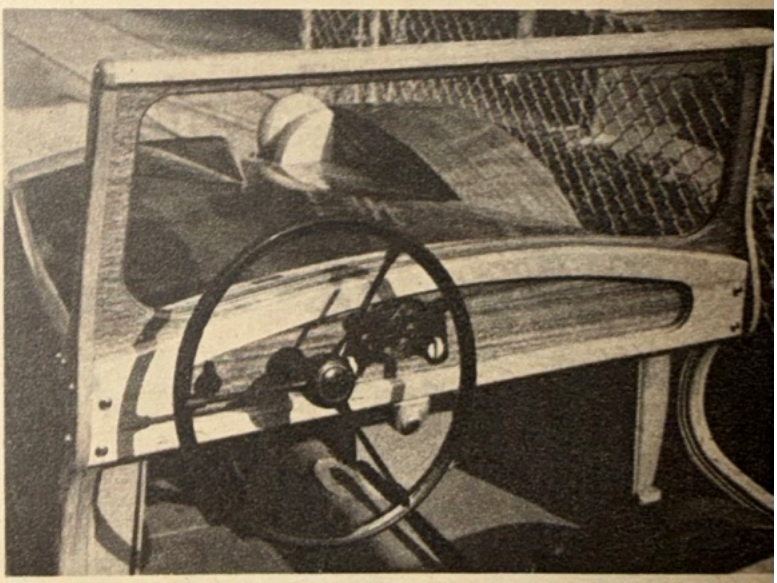
THIS VIEW of the car shows it with the two right-hand fenders in place. Check wheel clearance for turning and bouncing.



VIEW of the left rear fender before the outside panel is attached. Note the saw kerfs in the plywood to permit bending.



THE WINDSHIELD uprights ready to be screwed to the body. The windshield frame will slide into the pair of rabbeted uprights.



THERE IS no need to gook up this car with a fancy dashboard. The simple treatment of the dash bespeaks quiet elegance.

The installation of new signal taillights and reinstallation of the electrical wiring completed the project.

Just to make sure that everything was in apple-pie order, we brought the car over to a VW dealer and asked him to check out the brakes and steering gear. Except for spark plug replacement and timing of the distributor, everything checked out A-okay-jake. In fact, the dealer was so intrigued with the car he wanted us to let him display it for a few days, in lieu of a bill!

Registration procedure varies with each state. As a rule you must furnish a receipted bill for the major parts going into the construction of the car. Write to your own motor vehicle department for advice. And pretty soon you, too, will be king of the road! •