

XR-6 PROGRESS REPORT

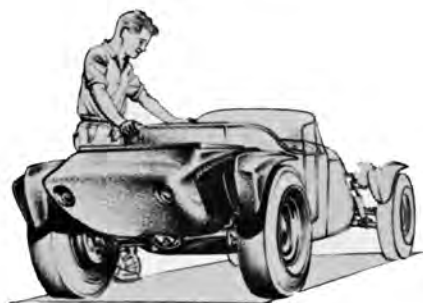
HRM's homespun street roadster begins to take shape

by LeRoi Smith

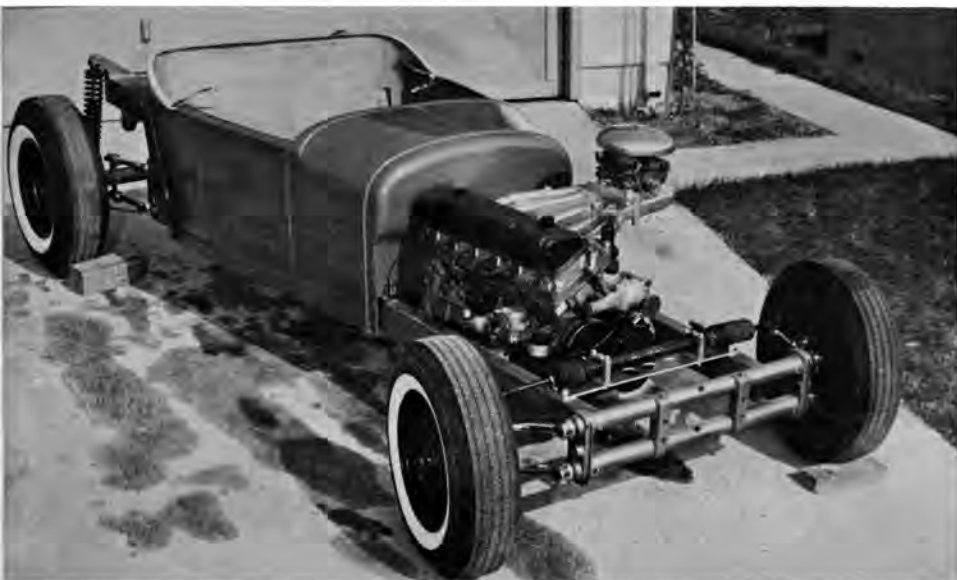
We're back again to report on developments with the HRM XR-6 (Experimental Roadster, 6 cylinder engine). Since our first story on the new car (March '62) hit the newsstands we've been snowed under with a deluge of mail. Comments have ranged from "great" to "so-what," but everyone seems to agree that the ideas being formulated in our rolling street lab are worthy of checking on further. Just as deadline neared for the March issue of HRM we were frantically bolting things together in an effort to have some semblance of a vehicle ready for the Winternationals Custom Show. Since that time we have taken a more leisurely pace.

It will be recalled that the frame of the XR-6 is constructed of 2- x 4-inch mild steel tubing with a Volkswagen front suspension and a trailing arm rear suspension using a Lancer third member assembly. One of the first things we did to the VW front end was fit a set of Triumph TR-3 Girling disc hubs. Jerry Titus of Sports Car Graphic had tipped us off that such a combination was being used by Bill Devin in his popular rear engined sports cars. We called Bill and found that to make the discs fit properly it would be necessary for a little machine work and new bearings. A trip to our local parts supplier culminated in the correct Timken bearings and cups. To make the conversion, we bought two each 05185 cups, 07097 cones, 07204 cups and 05079 cones. We had some difficulty in finding the right inner seal but finally settled on National part number 340927. To do the machine work we called on Tom Beatty and happened to catch him between race car and boat engine projects. Tom chucked the TR-3 hubs into his lathe and opened them out to fit the new bearings. While the hubs were chucked up, he took 1/2-inch off the diameter of the brake disc so that we could use the new Airheart disc brake caliper when it is available. This would allow us to keep 13-inch front wheels (we're presently using

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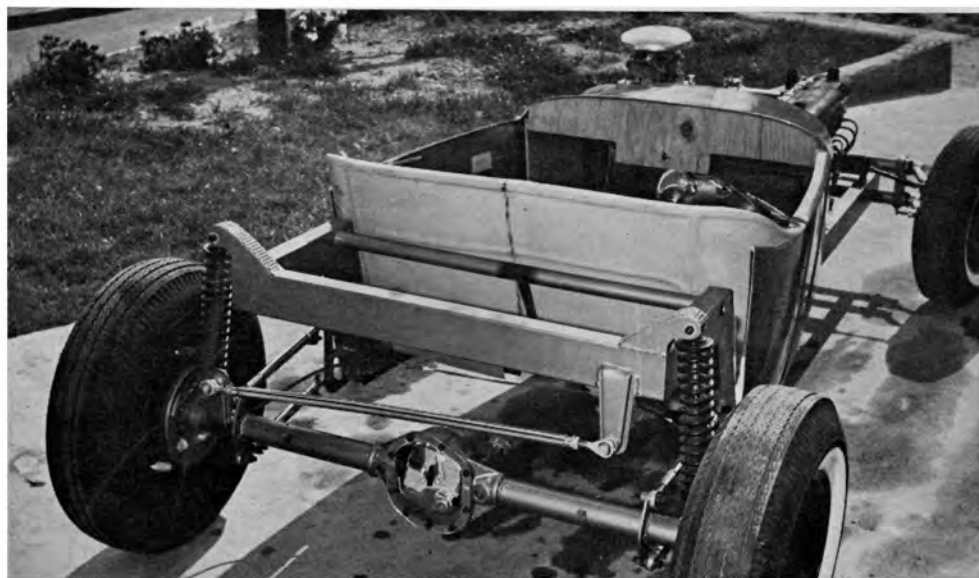


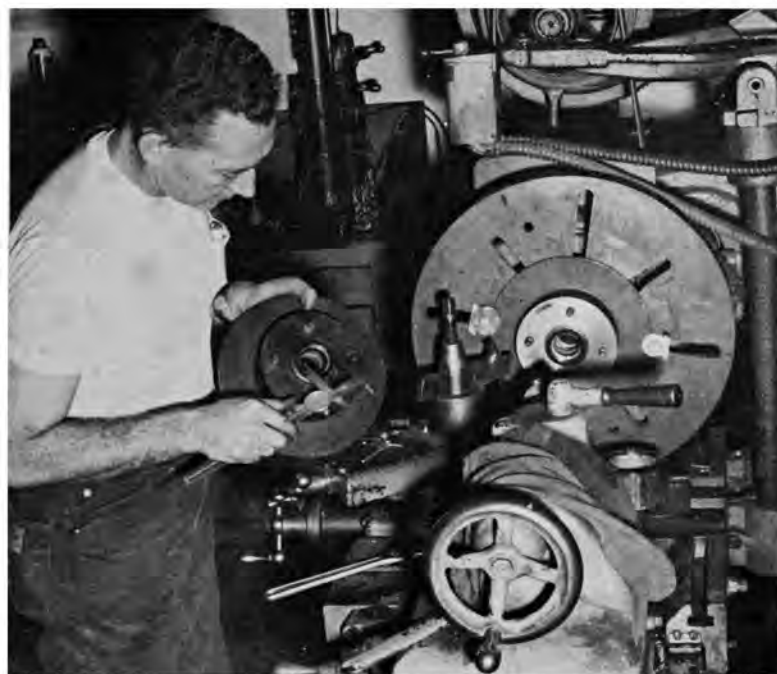
Illustrations by Steve Swaja





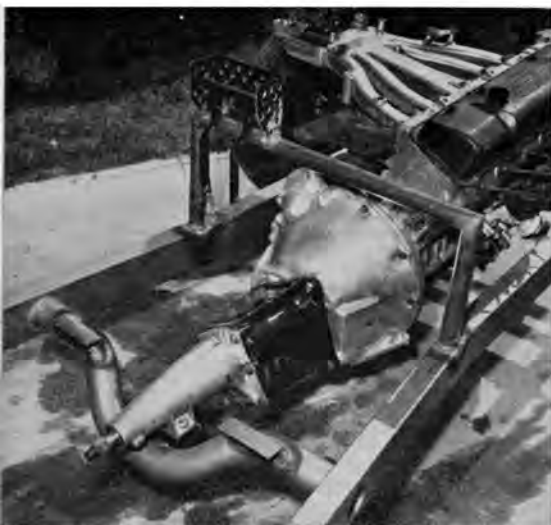
ABOVE — LeRoi Smith and his father, Carlos, do preliminary measuring prior to mounting steering wheel in the XR-6. A wood expert, Carlos is building special steering wheel, inlaid pickup bed. The sketches on the facing page were drawn up by designer Steve Swaja. FAR LEFT—Cal Automotive fiberglass '27 'T' body is channeled the width of frame. When finished it will be quick-disconnect from the chassis and cockpit. LEFT — Morris Minor rack and pinion steering gear is bolted to $\frac{1}{4}$ -inch aluminum plate between frame rails. MG extensions were fitted to stretch tie rod ends to the Volkswagen steering arms. RIGHT — Lancer rear end supports the package with plenty of clearance. With pattern plywood cockpit panels in place, body is tried on for fit. Speed Improvements built the reversed rear wheels.





ABOVE LEFT — Tom Beatty, long-time dry lakes and Bonneville competitor, measures cut in Triumph TR-3 hubs. He machined hubs to accept larger bearings and cones so that they would bolt to VW spindles, thus allowing disc brakes at front. **ABOVE RIGHT** — Curt Hamilton of Cal Automotive measures 1923 'T' body back that will be molded to 1927 bucket.

XR-6 PROGRESS REPORT continued



Corvair items) and yet have clearance between the caliper and wheel. The original VW spindle bolt and washer keeps each hub in place.

As mentioned in our original story, the problem of wheels has caused us no end of headaches. We wanted 13 inches on the front and either 14 or 15-inch items at the back. Our initial attempts drew a big, fat zero. The TR hubs cured the front, but that left the back. Finally we happened to remember Speed Improvements in Long Beach. A panic call the day before the show produced two specially made wheels, Oldsmobile 14-inch rims on 13-inch Lancer-Valiant centers. Dwayne Corn at S.I. showed us around his shop while the wheels were being made up by Eddie Potter. Those people can do virtually anything in the wheel line.

We had been experiencing some trou-

ble finding a bell housing for our engine. Acting on a tip from a fellow rodder we stopped by the Revell model factory one day and sure enough, scattered in a dozen boxes was a complete cast iron slant six engine with transmission. This engine was the prototype of the very popular slant six engine model now on the market. The Revell people gave us this assembly for the roadster, so we quickly decided to put the stock transmission behind our own aluminum 225-inch Power Pack engine instead of using the Siata five-speed gearbox. That particular trans is being readied to go behind the hopped up (we think we can get 300 inches by bore and stroke) cast iron block. The trans from Revell was in several boxes, so to save time and our wits we hauled the whole shootin' match down to Drag Machine to assemble. We dropped the boxes on the floor and ran before they had a chance to say no.

We had originally planned to use big finned brakes from a '59 Buick but after a little checking of the figures found that such huge rear brakes and such small front ones would have placed the ratio out of kilter. So it now stands that the stock Lancer rear brakes will be adequate, what with the exceptional Airheart discs up front.

With the chassis on four legs and the engine-transmission in place we began measuring for the body. Cal Automotive had already prepared a '27 'T' body to our requirements. Their '27

ABOVE LEFT — A standard 3-speed 1961 Lancer transmission is being used. The center crossmember was built to accept either standard, automatic, or Siata transmission. Tubing brace above bell housing positions modified Cannon swing pedal assembly, firewall, body.

LEFT — '27 body was separated from the integral turtle deck, the back from the '23 matched. The two components are now being mated by glass and resin.

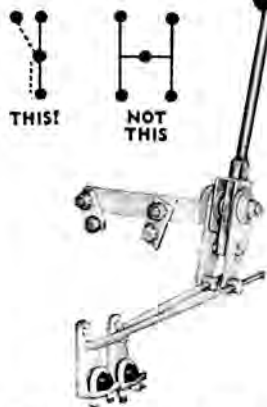
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in stock form as it comes from the mold has the deck built as a part of the complete body. Designer Steve Swaja had sketched up our dream rod using just a bucket with a simulated pickup flatbed. Following these directions, Cal Auto molded us a '27 bucket minus the deck, then molded just the extreme tail portion of a '23. The two pieces were trimmed to fit and are presently being mated with some fiberglass and resin. An extremely simple operation, the use of the "kicked up" '23 tail gives more body height directly behind the driver while the '27 body gives more foot room under the cowl. A delightful combination. We fired up our trusty Craftsman sabre saw and proceeded to cut away the firewall to clear the bell housing, pedal assembly, etc. In the process we channeled the body four inches. The body was then set aside for awhile.

Next on tap was putting the engine and transmission in place. We didn't have a hoist handy, so we placed the engine on the garage floor and with the help of a couple of buddies worked the chassis over it. The rear end spring/shock units were disconnected at the frame, thus allowing the frame to rest on the floor (without front wheels, of course). Back to our oft-used shingle pile and we had the frame blocked up slightly to the proper height. Using the original motor mounts as guides, new and smaller mounts were fabricated from 1/4-inch sheet stock and installed. A small perch was welded from the combination tubing rear motor mount/center crossmember. The power assembly was bolted in place and the frame then jacked up and the wheels and springs re-assembled.

All along we have been eyeing the small space between the VW cross tubes and where we figured the crankshaft pulley to be. Sure enough, we ended up with a hole a little more than 25 inches wide (between frame rails) and 10 inches deep. Into this space must go a radiator and some sort of steering. Obviously the VW stock steering was out, as it bolts to the upper cross tube. What we needed was some kind of rack and pinion steering so commonly used on imported cars. We probably could have used the VW steering by placing the radiator ahead of the cross tubes, but we have always wanted to play with a rack and pinion unit anyway. Preliminary checking at our local junk yards turned up many units, but none that would work. Most of the items we found (such as the MG) mount ahead of the spindle centerline. The VW spindles have trailing

steering arms like the Ford, and putting the above mentioned steering apparatus against our front end would have produced an interesting feature. When the steering wheel was turned left, the car would have turned right. So back to Bill Devin. He looked around the shop and finally located what we wanted, a Dyna-Panhard rack and pinion. This unit mounted behind the spindle centerline as we needed. However, before we had a chance to mount this gearbox, John O'Donnell from up in the San Francisco area told us of a unit he was using. So back to the wrecking yard where we purchased a Morris Minor item. The D-P steering was subsequently passed along to Motor Trend's Chuck Nerpel for his little Formula Jr. We might mention here that cursory inspection shows the MG or Sprite steering units could quite easily be converted to behind-the-centerline use merely by reversing the pinion. A little machine work would be necessary, but any machinist could do it.

We didn't know just how a rack and pinion should mount, so we checked with Frank Kurtis who is using them on his newest sports car series. He said that the outer arms should be at a slight (maximum 5 degree) downward angle with the car fully loaded. To double check ourselves, we loosened the torsion bar set screws and swung the trailing arms up and down several times to see if the wheels would go straight up and down. If the gearbox arms aren't connected properly, the distance between the steering arms and the gearbox will vary too greatly, causing the wheels to tow out or in excessively upon deflection. The outer links on the Morris gear were 1-inch too short, so we substituted MGA links which just fit.

And that brings us up to date. We are now in the process of fitting plywood flooring, Cannon swing pedals, dash, seats, etc. Present plans call for being able to drop the body on or off at will, with all the driver's controls mounted to the frame.

As we mentioned at the start of this article, we have received countless letters, most of them asking for plans and more details on the XR-6. At the conclusion of construction, we will print a set of plans and complete cost data on the car. Also, we get inquiries as to where to buy tubing, VW front ends, etc. It isn't necessary to use tubing as we have, Model A or similar channel framing being quite adequate. Nor is a VW front end essential. The XR-6 is the culmination of many ideas fostered over a period of years, but these ideas aren't the absolute end. We're already planning for our next car. Meanwhile, we'll keep you posted on our budget project as work progresses.

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