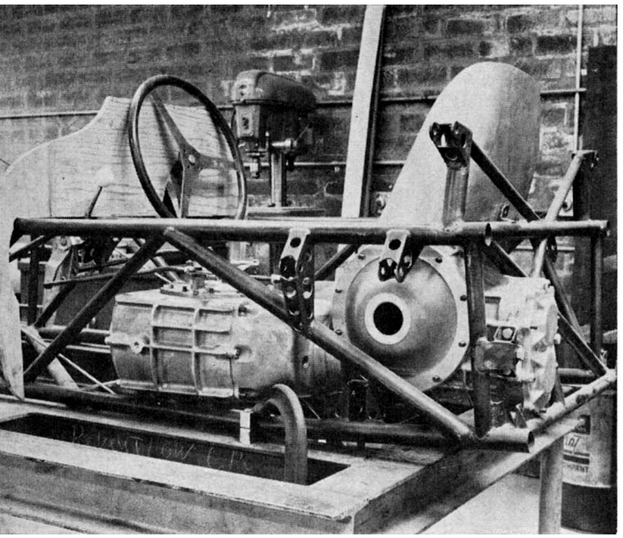
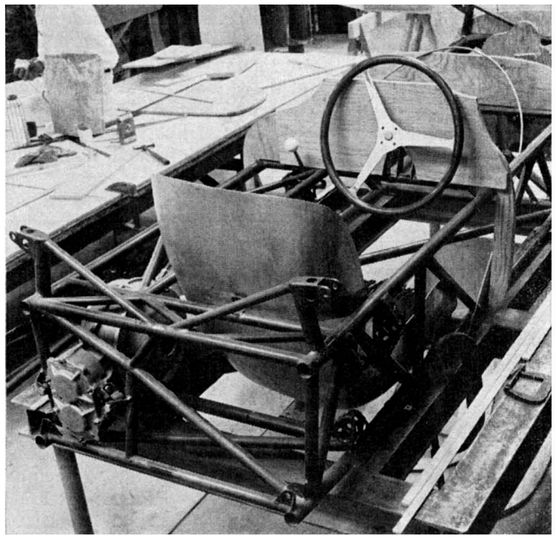
THE SECOND FRONT

U.S. competition subdued, the battleground moves to the Continent as the RAI crew completes Formula I Scarabs





PHOTOGRAPHY: POOLE

THE BEST NEWS to hit the automotive sporting enthusiast in years is the announcement that Reventlow Automobiles, Inc., will produce Formula I cars to compete in Europe for the remainder of the current formula (through 1960).

The ability of this organization to produce winning cars in a short period has been ably demonstrated by the competition record of the Scarab sports cars.

Some die-hard enthusiasts have bemoaned the fact that the Scarab sports models used such large-displacement engines (5.5 liters). But we should not overlook the fact that these were modified production engines with rocker-arm overhead valves, competing for the most part against double overhead-cam racing engines.

Neither should it be overlooked that, in spite of the money Reventlow could bring into the project, their competition came (again for the most part) from factories with years of racing experience to call on. And in many cases they raced against drivers who were *supposed* to be superior to the Scarab drivers. The results speak for themselves.

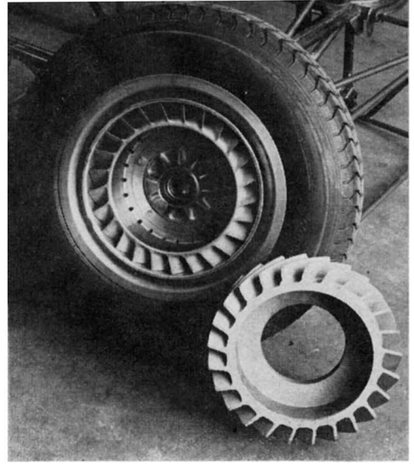
RAI plans, for the present at least, call for building three Formula I cars, two of which will be raced. Drivers will be Reventlow himself and Chuck Daigh. The third car will be a "work" car for practice and the distinct possibility of furnishing parts for one or the other of the two race cars.

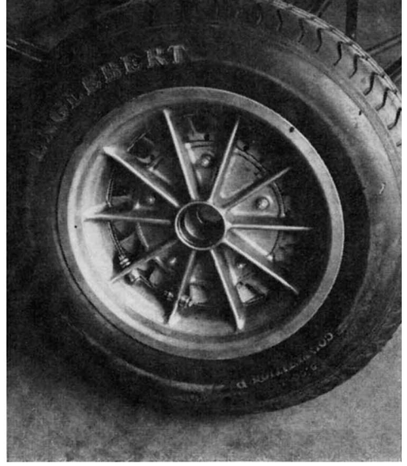
The frames for all three cars are finished. The bodies, engines and running gear are still being constructed by the 14-man crew.

The frames are space-type of 1.25 inch-diameter 4130 tubing with 0.040 wall thickness. The secondary tubes are of varying sizes from 0.5- to 0.75-in. diameter and also of 0.040 wall thickness.

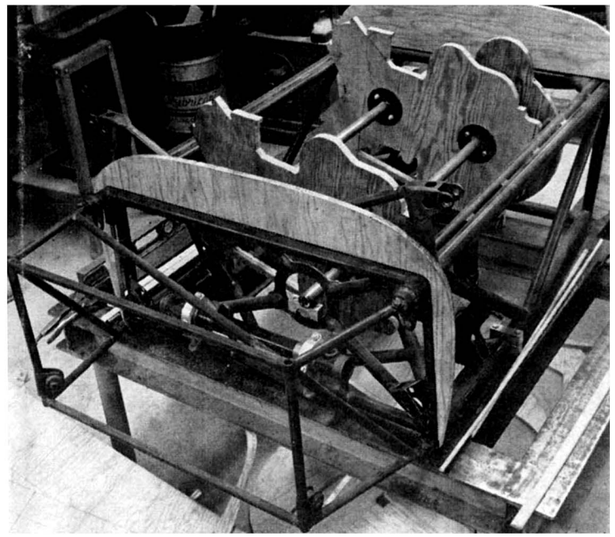
Following a combination of Mercedes W-196 and U.S. racing car practice each engine

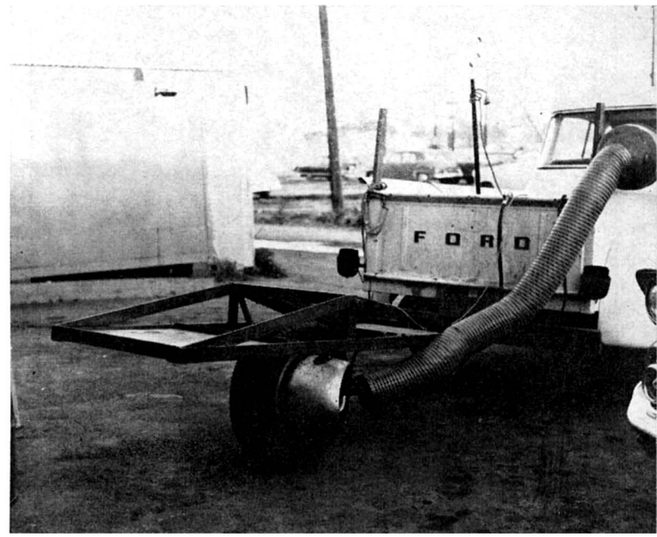
(*continued on page* 76)

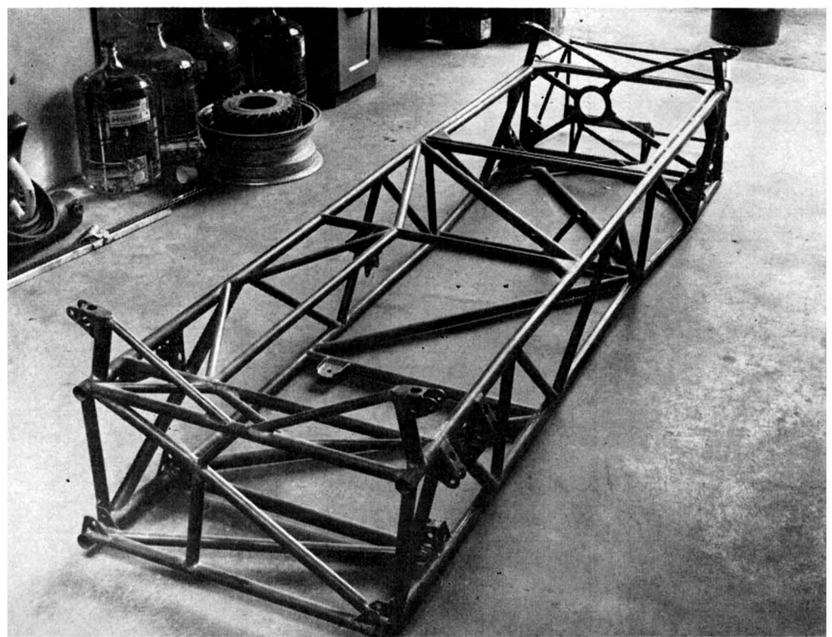




Two views of the special wheel and brake drums built by the crew for testing. The wheels are 15 inch-diameter cast magnesium and the rather small brake drums are of cast aluminum. Fins on the brake drums are cast diagonally to the direction of rotation to scoop air from the inside and direct it through the wheel to the outside. These units are for the front only; the rear brakes may be inboard. Below is the brake testing rig described in the text. The platform is for weighting test apparatus to check calculated test data.







These photos show two separate frames, the one on the jig being a prototype for the two to follow. The ring and pinion housing is a U.S. midget quick-change center section made by Halibrand, and the transmission is an RAI product using 4-speed Corvette gears with a 5th gear added in a case of original design. The brackets outboard of the rear end are for the A-arms of the independent suspension; above them are the attachment points for the spring/damper units. Up front a mock-up of the 4-cylinder, 2.5-liter engine shows its almost horizontal position. The rack housing for the rack and pinion steering can just be seen and, above it, the Offy-type front engine mount.

THE SECOND FRONT

(continued from page 38)

will be mounted 10° off horizontal on its right side, which places the driveshaft on the left side of the car.

The 5-speed transmission, which is made up of a Corvette 4-speed gear assembly with a 5th gear added for starting, is mounted in front of, but not in unit with, the Halibrand quick-change rear end. This places the transmission beside the driver. A simple linkage runs forward to a non-gated shift lever.

Drive from the differential, which may incorporate a ZF limited-slip assembly, goes through four Rzeppa constant-velocity universal joints to the independently sprung rear wheels.

Suspension on all four wheels is by unequal-length A-arms and Monroe coil spring/damper units. The front and rear A-arms are very similar, although not interchangeable. The front and rear springs will also have different spring rates.

The engines are 4-cylinder, in-line water-cooled units and were designed by Leo Goosen, of Meyer-Drake Engineering. The engines are being built by Frank Coons and Jim Travers, whose shop (Traco Engineering) is next door to the RAI shop in Culver City. The engines will be known as Scarabs, not Meyer-Drakes.

The crankshafts are forged of chrome-vanadium steel and will run on five plain bearings. Two valves per cylinder, at an included angle of 60°, are actuated by twin overhead camshafts with desmodromic mechanism similar to that used by the Mercedes W-196 and 300-SLR. The cams are driven by a train of spur gears off the front of the crankshaft.

Both the cylinder block and head are of light alloy, with the liners pressed in. Cylinder heads with single plugs and with two plugs per cylinder are being tested; the spark for both is from a Scintilla magneto. Drive for the magneto, and for the water pump, is also taken off the front of the crankshaft.

Carburetion units to be tested are the Hilborn constant-flow injection and twin two-throat Weber carburetors. A Bosch direct injection system would be desirable and has been ordered, but so far they have been unable to get one.

All wheels will be exposed, but the bodies themselves will be quite aerodynamic and will look like a cross between the last year's Vanwall and the Ferrari Super Squalo.

Wheelbase is 90 in. and the tread, front and rear, 50 in. Wheels will be 15 in.-diameter magnesium of RAI design (a test wheel is shown). The brakes are not yet decided on, but tests are being made with several types. The front brakes will be mounted outboard; the rear brakes will be outboard too, or (like BRM) behind the differential.

The brake-testing rig, towed behind a pickup truck, can be loaded to simulate any condition desired. As the brake is applied by the operator in the pickup bed, gauges indicate heat dissipation and pull on the test rig drawbar.

Construction is proceeding quite rapidly, with the engines promising the biggest holdup. We will keep R&T readers posted on the progress as fast as developments (and our deadlines) permit.