AUGUST 1954

35 CENTS

POPULAR MECHANICS MAGAZINE

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Florida's "Blow Boat" Derby
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VOL. 102 NO. 2

What's on the mind of the driver pushing his racing car toward the four-mile-a-minute mark on the Bonneville Salt Flats?

"One Out of Three Smashes Up"

Writes Mal Hooper

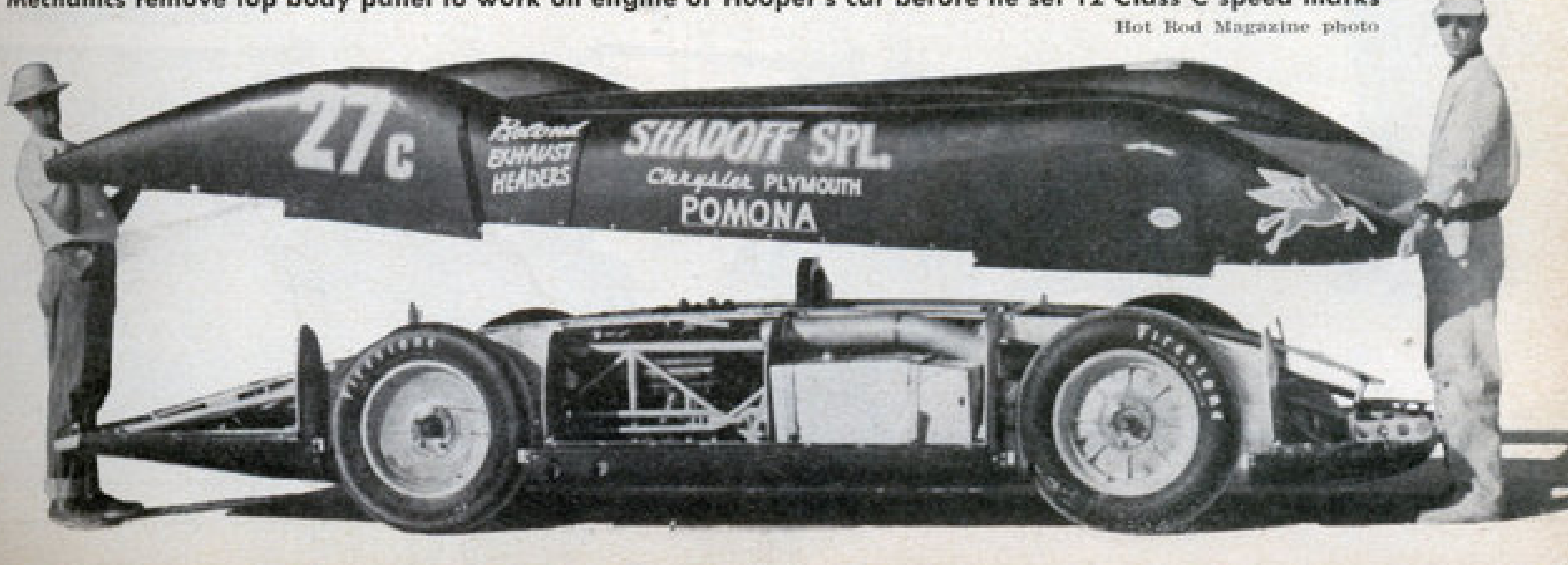
AS I HEADED for the starting line on the Salt Flats of Utah, I remembered two cars that had gone there earlier and how they had ended up—smashed to bits on the smooth, hard salt.

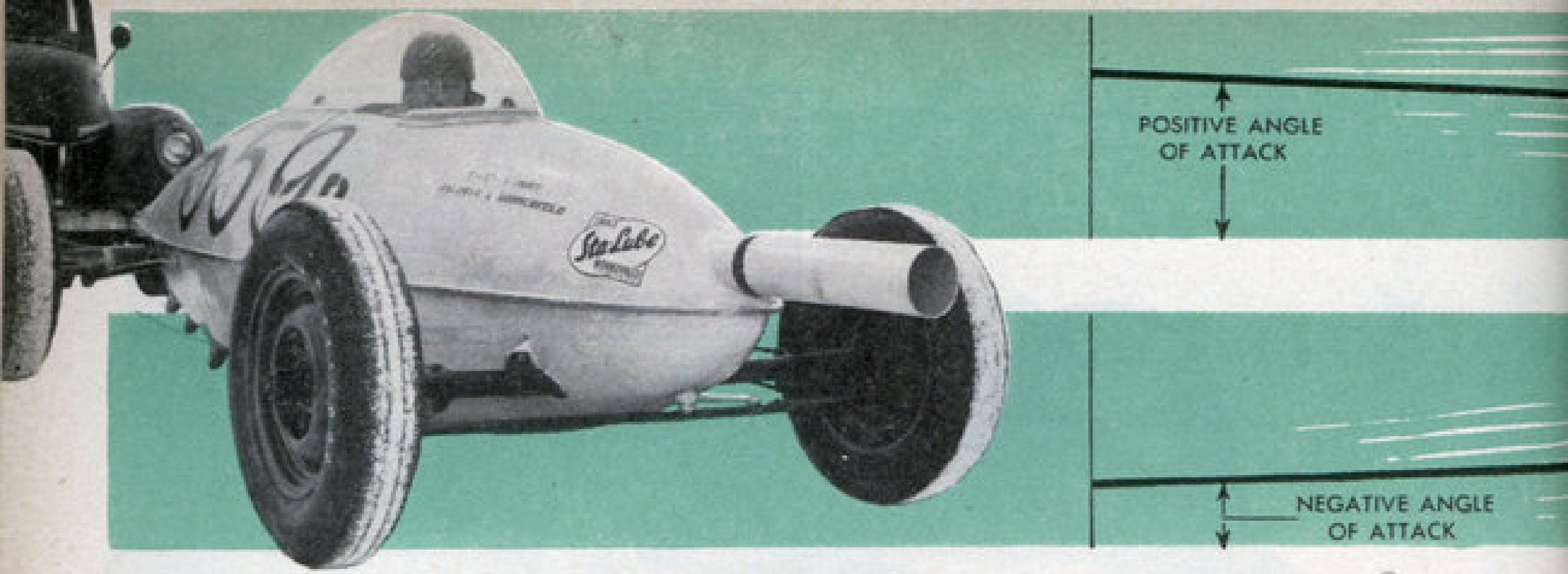
I remembered the judges in the timing stand and the spectators lining the course, tense as an oncoming streamliner began to fishtail. The car rolled over and flipped end for end, hammering itself into a mass of junk. It crashed on its back and slid past the last beam of the timing apparatus, automatically clocking its speed at more than 225 miles per hour. The car was completely ruined. Yet driver Sonny Rogers crawled out unhurt, his life saved by the roll bar and helmet.

My second memory was of Fred Carrillo. He wasn't quite so lucky when his 1300-pound streamliner began to drift away

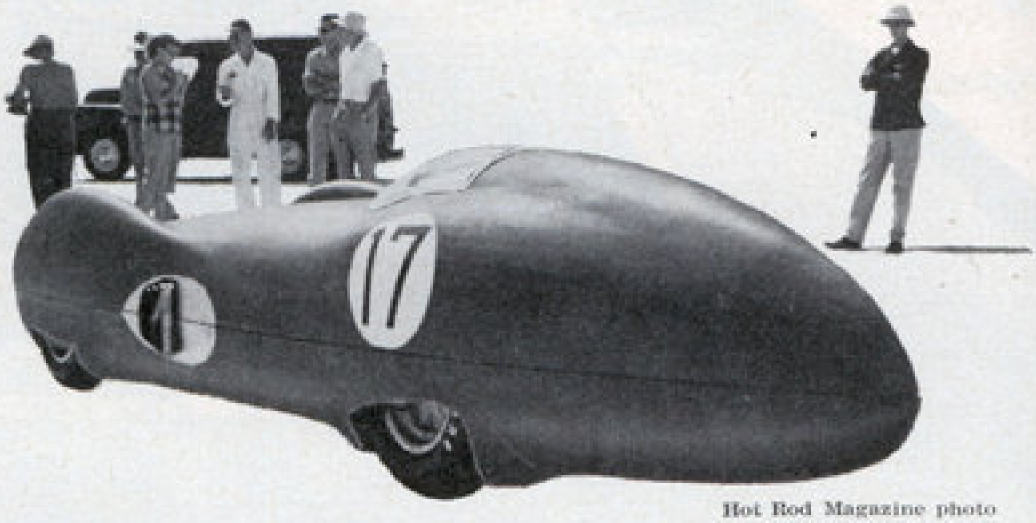
Mechanics remove top body panel to work on engine of Hooper's car before he set 12 Class C speed marks

Hot Rod Magazine photo



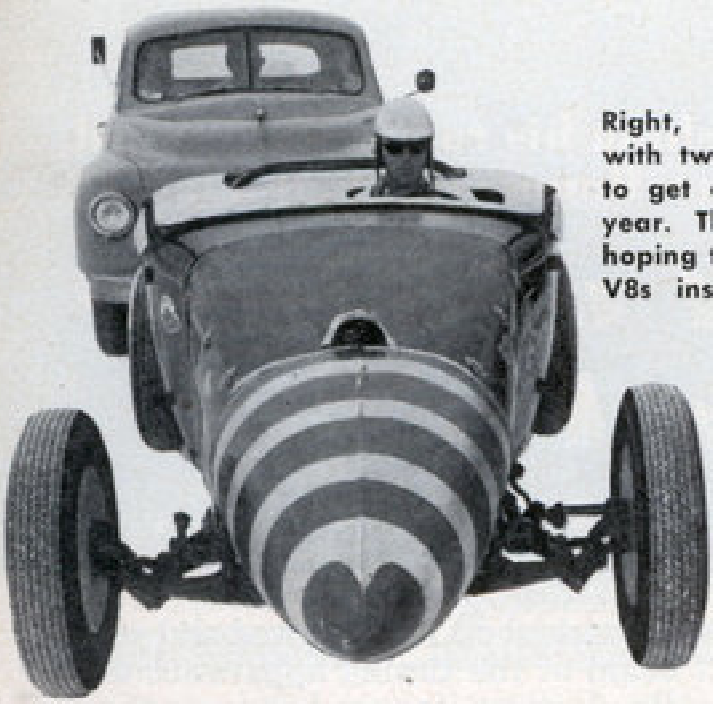


Tube extending from nose of the belly-tank lakester sucks air into its thirsty carburetor. This car covered the Bonneville course at an average 150 miles per hour



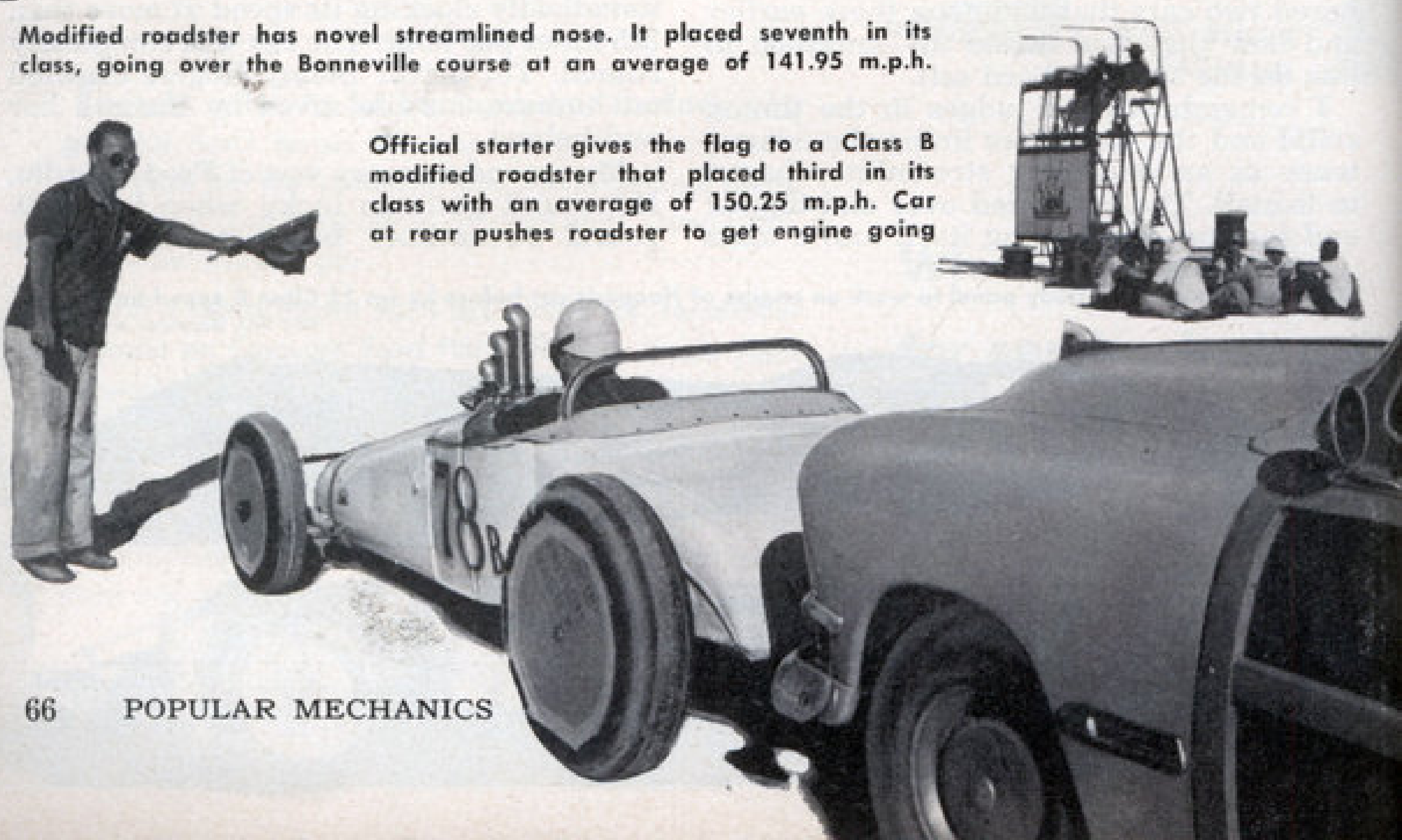
Hot Rod Magazine photo

Fred Carrillo's Class B streamliner, right, flipped over at more than 200 m.p.h. He got out with only a broken left leg and injured thumb. Car was total loss

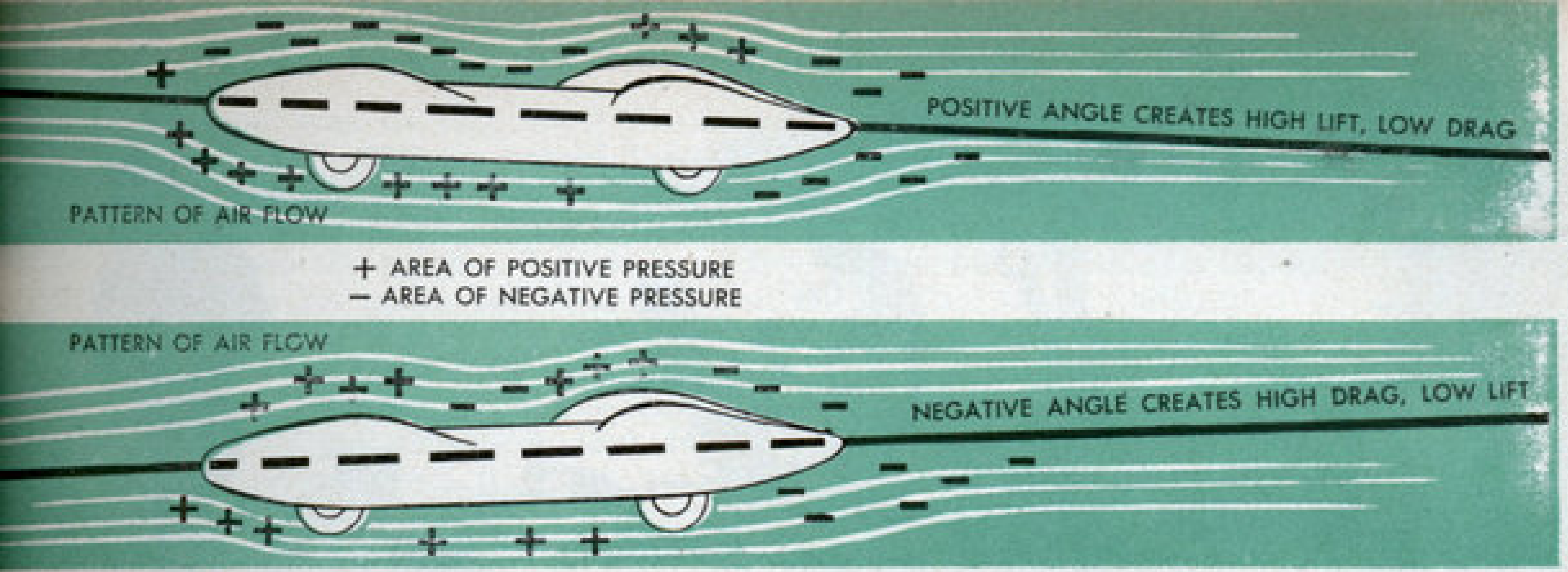


Right, LeBlanc streamliner with two V8 engines failed to get out on the salt last year. This year LeBlanc is hoping to compete with four V8s installed in the racer

Modified roadster has novel streamlined nose. It placed seventh in its class, going over the Bonneville course at an average of 141.95 m.p.h.



Official starter gives the flag to a Class B modified roadster that placed third in its class with an average of 150.25 m.p.h. Car at rear pushes roadster to get engine going



Velocity Engineering, Glendale, Calif.

Body designs determine angle of attack at high speed. Hooper's car has about two degrees of negative angle

from the black line at top speed. Carrillo corrected with his wheel and the car bounced and jumped across the salt for 2000 feet, scattering parts and pieces in all directions. It seemed impossible that Carrillo was still alive yet he emerged with no greater injury than a broken leg.

One out of every three of the high-speed streamliners that have raced against the clock at Bonneville in recent years has beaten itself to pieces on the salt.

All this was in the back of my mind as our own new streamliner approached the line to make its run for the record. Tune-up trials were over and the car had seemed perfect on its last run.

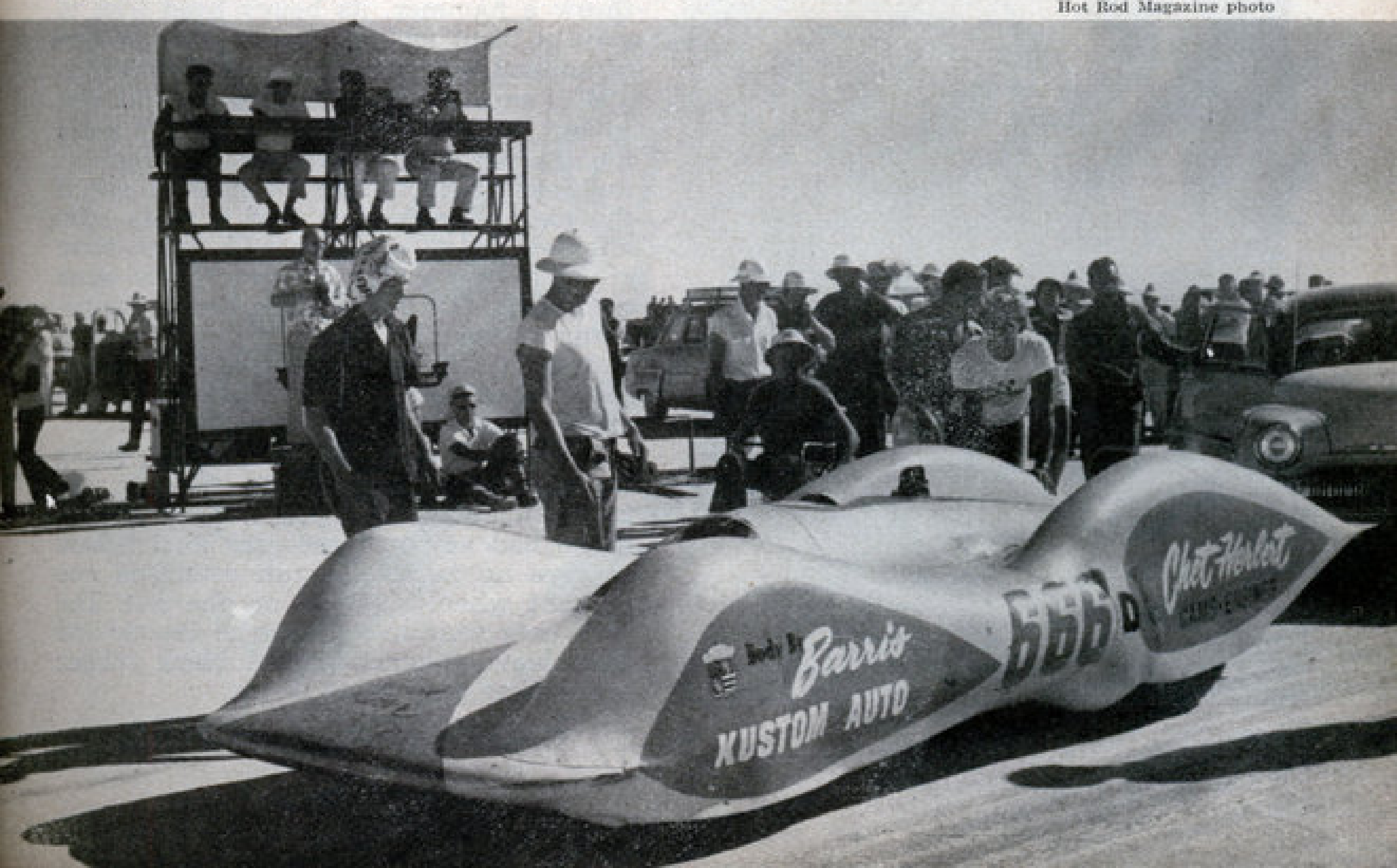
But the trials had been over a three-mile distance and now we would use the full 14-mile straightaway. Would the engine hang together for that distance and for the return run? Ray Brown had spent weeks reworking the Chrysler V8 power plant. It now produced 325 horsepower, almost twice its original power, though it had been sleeved and destroked to reduce its displacement to less than 305 cubic inches.

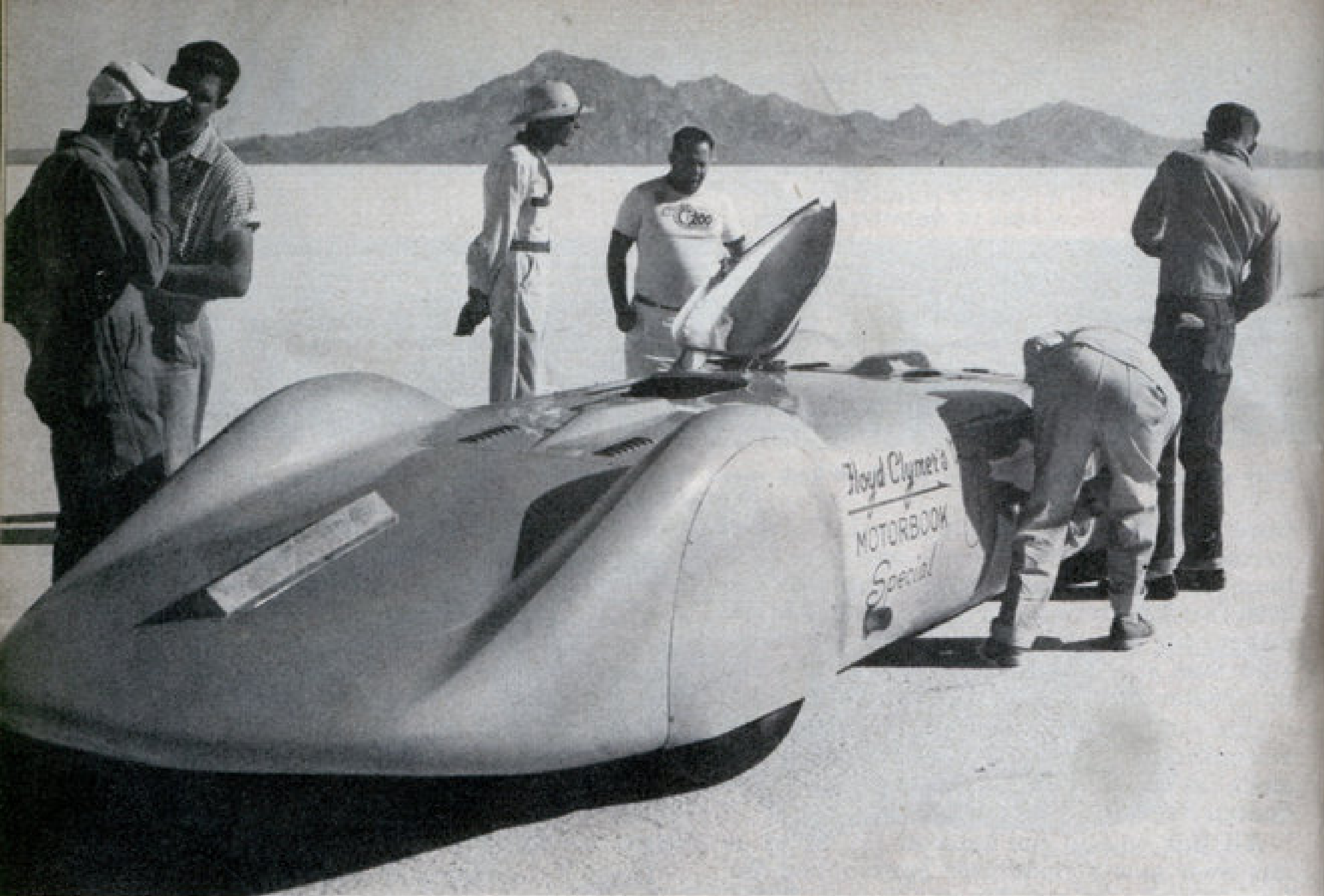
The whole team had confidence in Ray's work and so my only real worry was whether I could hold the car straight while traveling well above the take-off speed for jet aircraft. But that, too, was pretty much out of my hands. The car had been designed to be as stable as possible. It should be easy to control and there was little the driver could do if he lost control.

Dean Batchelor and John Morris of Velocity Engineering had provided about two degrees of negative angle of attack for the body. The nose tilted down just a bit. This was to prevent my becoming airborne at high speed. It would have been ideal to have designed the streamlined shape for neutral buoyancy at 250 miles per hour, obtaining enough lift from the body at that speed to almost equal the car's weight. But then a strong gust of wind could add

Outstanding for its stability, this record-breaking car made more runs than all other streamliners combined

Hot Rod Magazine photo





In the unlimited class, Willie Young (hatless, center) drove the Kenz twin-engine streamliner 255.41 m.p.h.

Placing canopy over driver before a run. Guide line is 14 miles long. You can't see the end from here

enough lift to raise the nose and I'd be off the ground. The negative angle of attack was a safety factor and insured stability and traction.

Another way the designers sought stability was to bring quite a bit of the car's weight to rest on the front wheels. The ideal is to place slightly more than 50 percent of the weight in front. When you throw a hammer, its heavy head tries to stay in front and the same principle can be applied to high-speed straightaway cars.

Still another way in which stability was sought was to give the car a high polar moment; that is, to arrange its weight as much as practical like a dumbbell, out at the ends. The idea is that it takes little effort to rotate a heavy ball, much more effort to rotate a dumbbell of the same weight. A car that has its heavy components placed at its ends tends to travel in a straight line. You want just the opposite effect when designing for maneuverability and cornering.

I wouldn't need to worry about losing traction. The rear end of the car was independently sprung and Carl Fleishmann had adjusted the rear torsion bars to give no more than an estimated one percent wheel slippage on the salt. The rear tires wouldn't bounce in the air and then leave long stripes of black rubber every time they came down.

The car was as safe as the engineers could make it, now we would find out if I could drive. I'd been at Bonneville before and I'd had my share of high-speed thrills. I've thrown the treads off both front tires at close to 200 miles per hour in a belly-tank speedster. I saw the rubber fly past my head and I knew I'd lost the treads and yet nothing happened to the car. There wasn't even any vibration; that didn't begin until the speed dropped under 100 miles per hour.

I settled down in the cockpit, strapped on the shoulder harness, and pulled on the helmet and goggles that would protect my eyes if the transparent canopy happened to fly off. The push car started to shove me ahead. At 50 miles per hour the engine began firing and I put my foot down on the accelerator. The car jumped ahead so fast it was doing better than 90 miles per hour within a quarter of a mile. At 5000 revolutions per minute on the tachometer I backed off the throttle, eased the two-speed transmission into high and put my foot on the floor again. The tach crept up to 6200 and we were really going.

There's no special sensation of speed once you get above 100 miles per hour. The white surface close to the car is just a blur and you don't look at it anyway. Your eyes are aimed along the black marker stripe that stretches all the way to the horizon.

But two things tell me I'm going fast. One is the sound of the front wheels and tires. They whine like a jet airplane going into a dive. There's no noise from the engine behind me, only the scream of the tires.

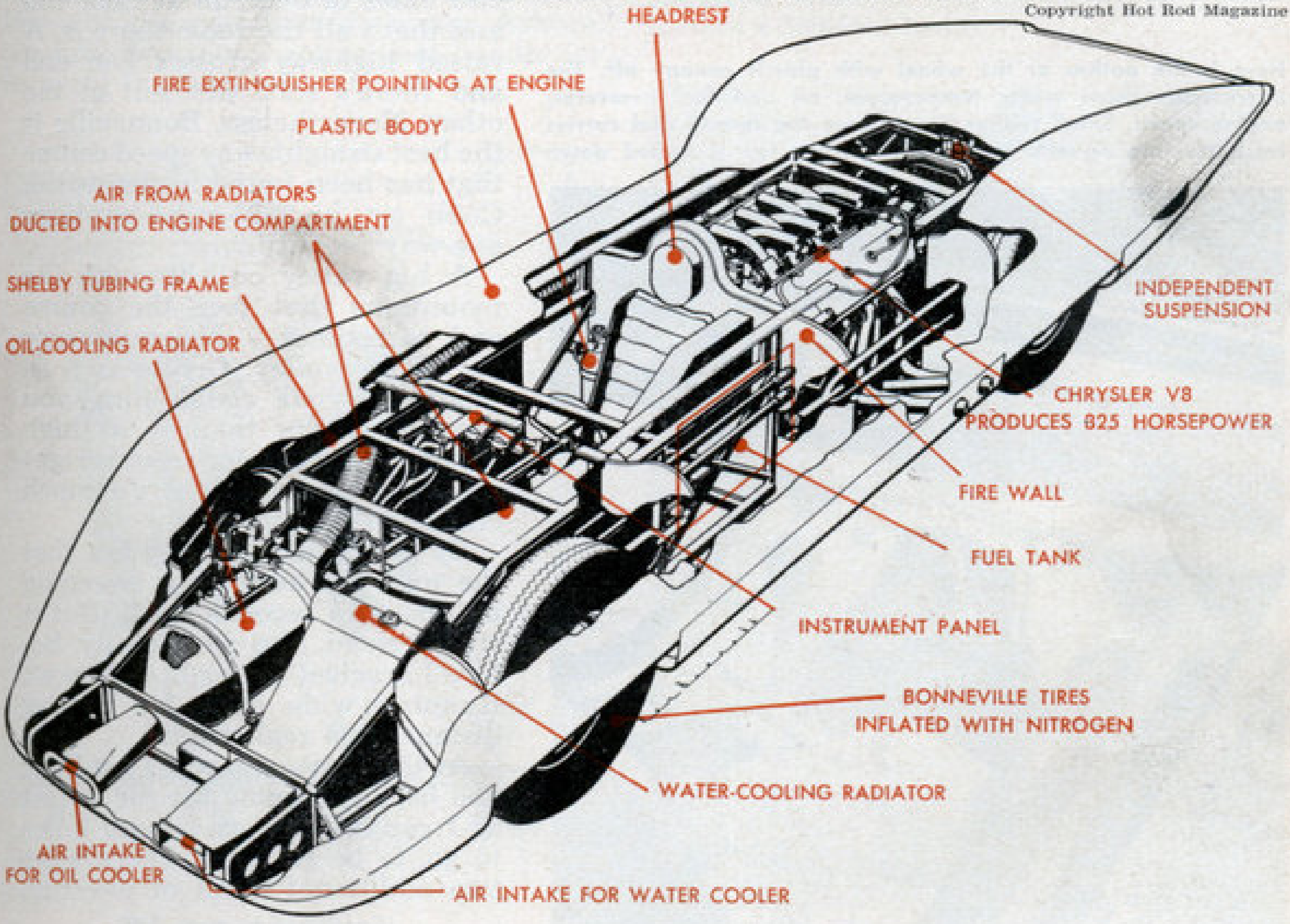
The other indication of speed is the "snowstorm" that starts in the cockpit at about 225 miles per hour. That's what it seems like. Actually, the particles are salt crystals whipped up from the surface and drawn in through the few openings in the body. They drift in and settle on my arms and legs.

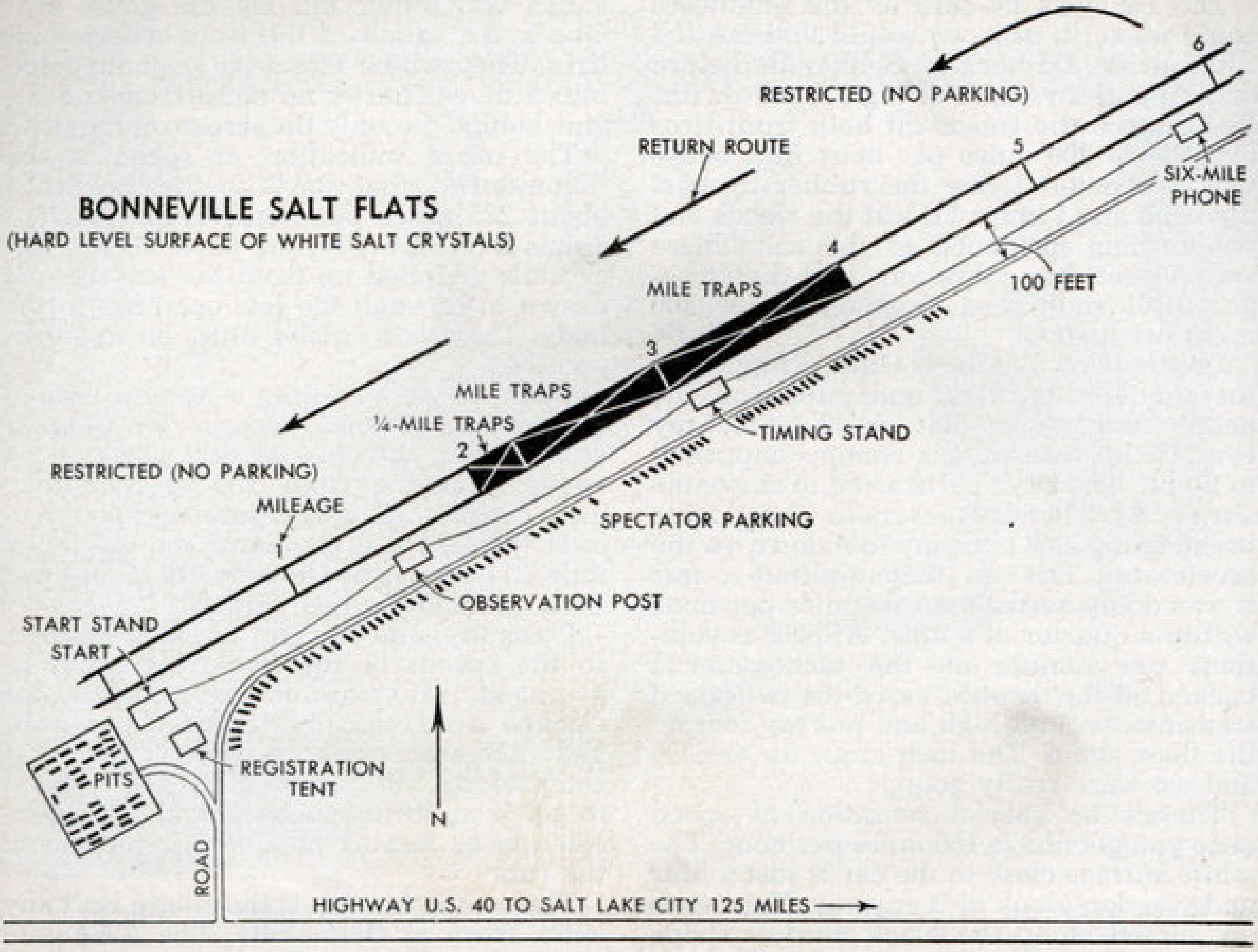
What we were seeking were new national and international records for Class C automobiles, the class of cars powered by engines ranging from 183 to 305-cubic-inch capacity. The old international records (229.77 miles per hour for the flying mile, 211.8 miles per hour for 10 miles) had been made in Germany in 1937.

I was to make one run in each direction so the speeds of the two trips could be averaged. My rate of travel would be clocked automatically in miles per hour and kilometers per hour. We knew our car could break the record, the real trick was to get it up to top speed quickly, then decelerate as fast as possible at the end of the run.

The reason for this is that there isn't any extra room at Bonneville. The AAA laid out a 10-mile straightaway course with

Sketch of what is under the skin of the car the author drove as he set six national, six international marks





Map of the Bonneville layout. Less than half of it is shown here. It is a 14-mile straightaway altogether

Here is the author at the wheel with plastic canopy off. The instruments show water temperature, oil and fuel pressures, engine speed. Small rubber hose above the second dial carries fresh air into driver's compartment when top is sealed down

two miles of overrun at each end and that's all the room there is. A raised highway crosses one end and there's soft, wet salt at the other. Nevertheless, Bonneville is the best straightaway speed course that has been found in the world. Cobb set his 403-miles-per-hour one-way record there.

A big valley cuts through the mountains that face the course and sometimes a breeze sweeps out of the valley. Gentle as it is, this crosswind could turn you around or flip the car at high speed, so you run for records right after dawn before there's much chance of a wind.

By now I was going so fast that the mile markers were sweeping by about 15 seconds apart. But it still seemed like an eternity before I reached the eight-mile post. Running wide open for a long distance is a real strain.

At the eight-mile post I got busy and began stopping the car as fast as I could. I had two more miles to go, to be sure, and there were two additional miles of overrun.

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"One Out of Three Smashes Up"

(Continued from page 70)

In four miles I had to decelerate from some 240 miles per hour to dead still.

The compression of the engine began to bring the speed down nicely as soon as I backed off the throttle but you can't afford to use this kind of brake too long. The engine would be wrecked if left in gear. Pushed by the rear wheels, the rods would stretch and the pistons would start slamming the tops of the chambers.

When the tach dropped to 3500 revolutions per minute I disconnected the power plant with the hand clutch and then the car almost seemed to pick up speed, for a streamliner has virtually no wind resistance. Nothing seemed to happen when I began pushing down on the brake pedal. The end of the measured course went by, I kept hitting the brakes and finally got the car down to a crawl. Even so, I ran into the soft salt before I could stop and eight men were needed to push the car out of the marsh and get it turned around for the return run.

The average of the two runs gave us a speed of 236.36 miles per hour for the flying mile, 215.97 miles per hour for the 10-mile distance. In all, the car broke six national and six international records. Probably we'll have to go faster still to retain these honors this coming September.

August 30 to September 6 are the dates for this year's Bonneville National Speed Trials, to be attended by hot-rod owners and automobile enthusiasts. Streamliners seeking international records will make their runs during the week following and we expect there'll be real competition in our class. Because of this, Ray Brown is adding more horsepower to our engine. So far we've used alcohol for fuel, this year we may mix 10 to 50 percent nitromethane with it. The explosive mixture will give us more speed but the big question will be whether an engine running on nitro will stay together on the 10-mile runs.

One thing we'll be needing soon is a body brake comparable to the fuselage brakes of high-speed aircraft. Speeds can go way up when we can travel wide open all the way to the finish line, then pull a lever that extends the body brake, multiplying the wind resistance of the car.

The brake surfaces will need to be located pretty far aft to insure straight-ahead travel and they would be of the split type, opening vertically. It would be suicide to attach wind brakes to the sides of the car because the slightest difference in their size or rate of opening could bring the car around in a screaming turn. ★ ★ ★