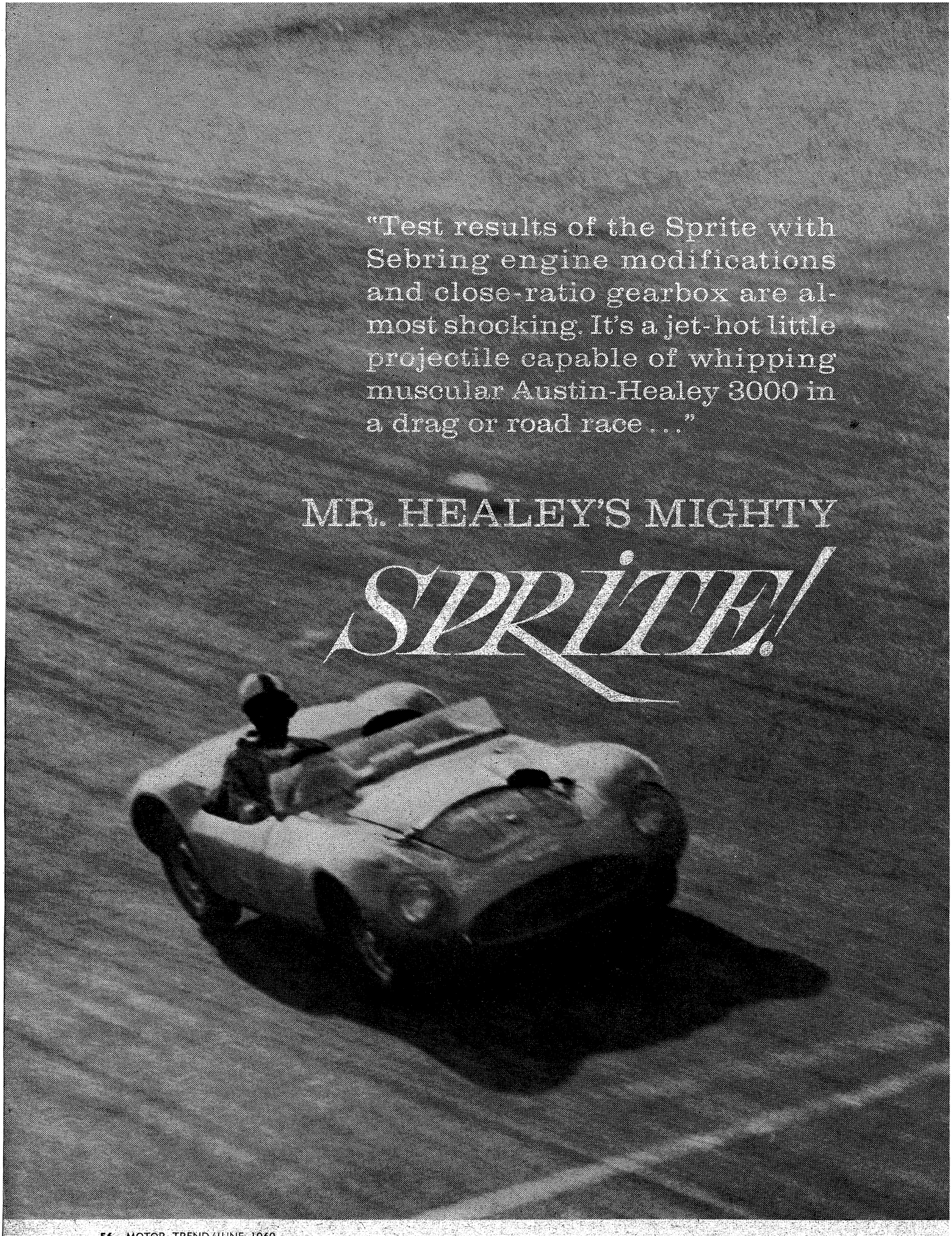
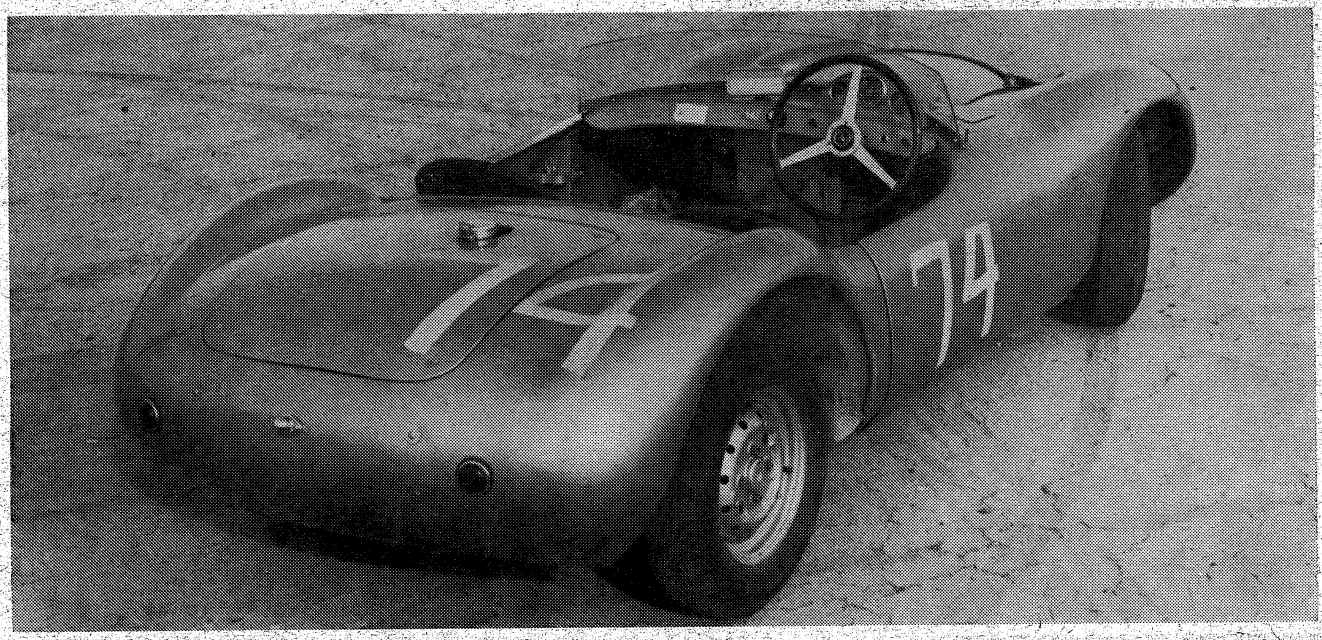

"Test results of the Sprite with Sebring engine modifications and close-ratio gearbox are almost shocking. It's a jet-hot little projectile capable of whipping muscular Austin-Healey 3000 in a drag or road race . . ."
MR. HEALEY'S MIGHTY
SPRITE!



Late-model 13-inch disc wheels get lots of clearance in wells for 15-inchers. Shortening of shell is not apparent.

by John Christy

A FEW YEARS AGO, when we first made acquaintance with a small, superb-handling little English sedan called the Morris Minor 1000, we wondered audibly what would happen if the British Motor Corp. were to take the Morris running gear, engine and gearbox and reassemble these bits and pieces into a small sportscar. We weren't long in finding out; a year or so later it was announced that BMC had assigned Donald Healey to do just that. The result, of course, was the now-ubiquitous Austin-Healey Sprite which, despite its normally moderate performance, is one of the most pleasurable small cars to drive in the world.

Thinking about this performance factor we again wondered "What if . . . ?" The answer to that one wasn't long in coming, either. Through the intercession of Mr. Healey, the writer was assigned as second driver on one of the 1959 Sebring Sprites which came in first, second and third in their class, surprising everyone present by their cornering power, acceleration and braking as well as their stamina during that grueling 12-hour affair. Most designers would have been quite happy to let things go at that, to rest on such laurels as these. Not so with Donald Healey who also makes a practice of wondering "What if . . . ?" If a stock, steel-bodied Sprite with a full windshield and hard top can perform like that, how would it go carrying 300 pounds less weight with half the frontal area? An experimenter to the core, Healey decided to find out.

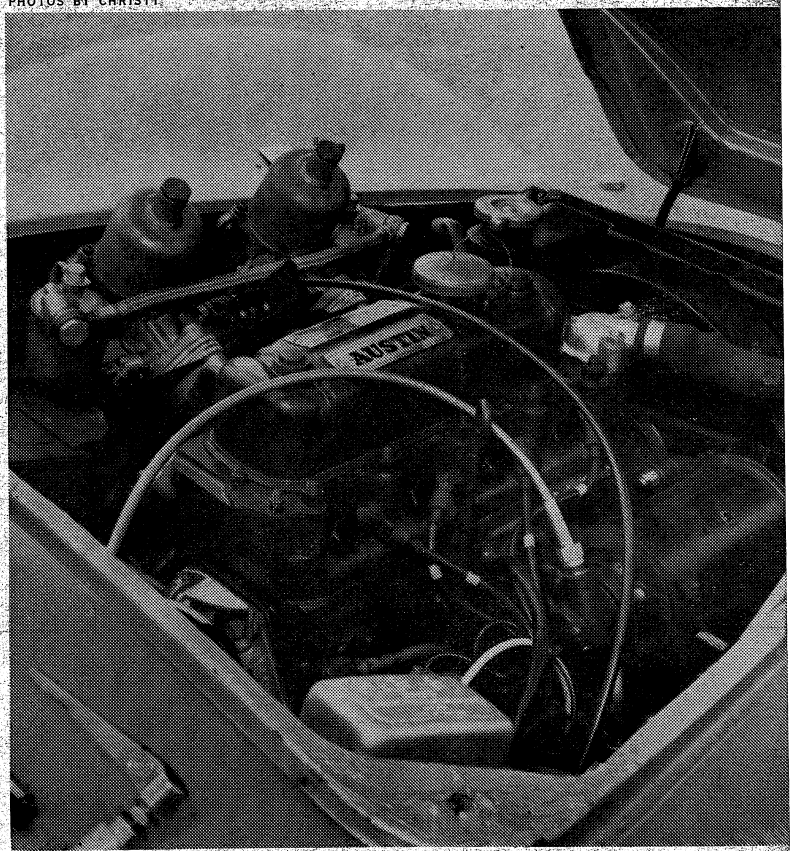
The results are almost shocking. From what amounted to a mere body change, the Sprite with the Sebring engine modifications and close-ratio gearbox becomes a jet-hot little projectile capable of whipping the muscular Austin-Healey 3000 in either a drag or a road race, eating Alfa Romeo Supers for breakfast and even staying with Club Lotuses in tight turns. These are tall claims but true ones, we know; we've driven the car on test and in competition and we can attest they aren't claims but facts.

We first made acquaintance with this latest version of the ever-developing Sprite last winter at Nassau. The entry list mentioned that Mr. Healey was entering two cars, a competition A-H 3000 and a Sprite.

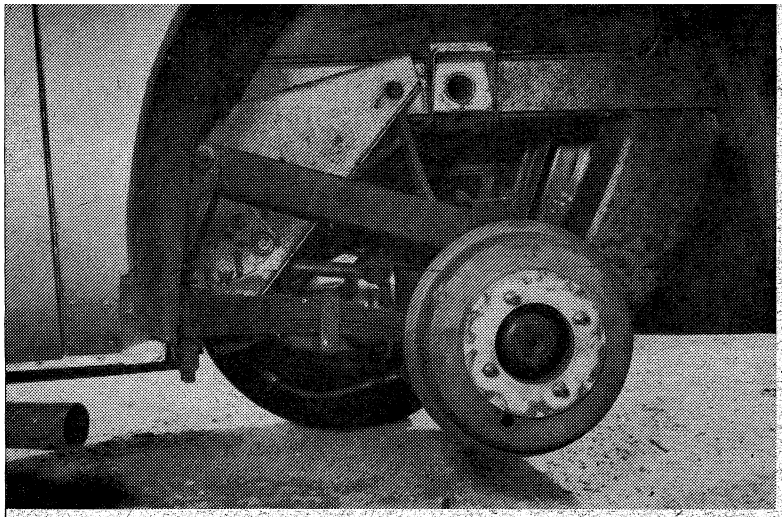
Heading for the Healey pits, marked by the ice-blue shape of a Three-Liter, we peered around . . . and tucked in behind and hidden by the bulk of the larger car was an ice-blue car with a total height about equal to an ordinary typewriter table. To be precise and honest we thought at first that someone had sneaked a Mark I Elva into the Healey fold—that is, until we recognized Ed Leavens in the cockpit. Leavens, a fellow Sprite teammate at Sebring and one of the drivers in the Sprite EX-219 record session at Bonneville, was the final tip-off. This was the Sprite mentioned in the entry list. Ed was busy warming the machine in a series of crosscut-saw raps, so there wasn't much point in trying to make conversation. We contented ourselves with a perch alongside crew chief Roger Menadue and waited to see if anything would occur.

continued

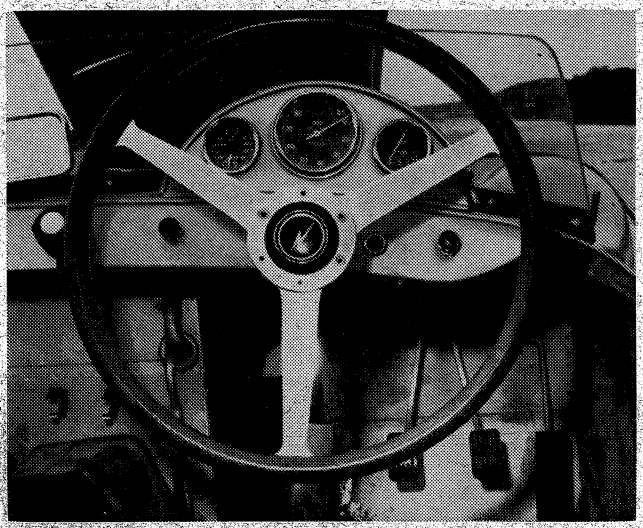
PHOTOS BY CHRISTY



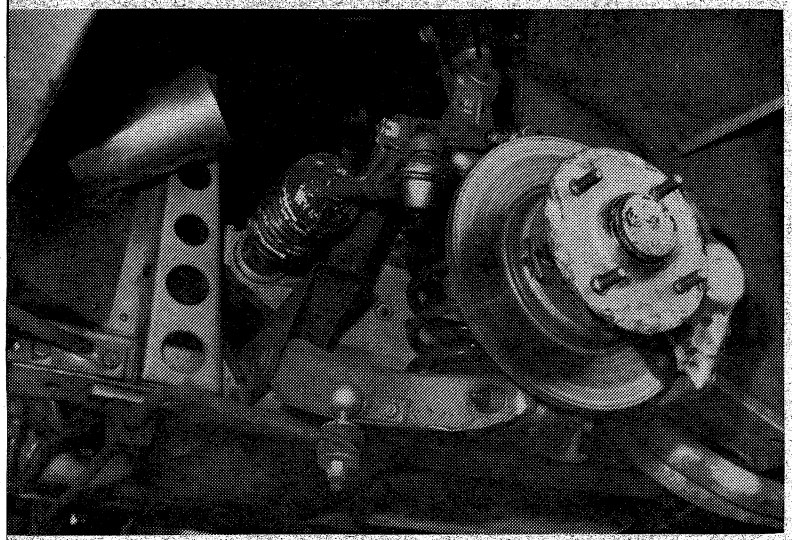
Engine is tuned to Sebring specs, using flat-topped 9.25 to 1 pistons. Tuned exhaust replaces stock manifold; 1¼-inch SU carbs have special intake system.



Rear suspension on passenger's side is standard except for removal of two spring leaves. One leaf was removed from the driver's side. Special braces (cantilevered off chassis) support body, spare and fuel tank.



The functional instrument cluster has combination oil pressure and water temperature gauges, chronometric tachometer (with tell-tale at 6800) and fuel level indicator. Flat three-spoke steering wheel is a special item.



Front suspension is stock except for optional torsion anti-roll bar. Fade-proof disc brakes, used on the front only, are planned as 1960 option. Tubular duct from wide grille (at the upper left) directs air flow to brakes.

SPRITE continued

It did. Ed took off suddenly with a chirp of rubber and an absolutely painful blast of sharp exhaust. The Oakes course is more than four miles around and though loaded with long, fast straights, can be tricky and slow in spots. Ed was around and passing by in just a shade over four minutes—a 60-mph standing lap. His next circuit was done in 3:55. Slowly but surely as he learned course and car he was progressively cutting the time down to 3:50 and then he pulled in. The grin on his face was enough to tell how he liked the car but we asked anyway.

"Terrific!" he said. "It handles like a baby carriage—doesn't seem to have any major or even minor vices at all."

Next Ed took the car out on the grid for the preliminary five-lapper for cars under two liters. At the end of the pace lap, Ed shot from the back row and by the end of the five laps was sitting neatly in ninth spot less than a second behind one of the redoubtable Team Roosevelt Bialbero Albarths (newly disc-braked for this event) and with nothing else but Porsches and Lotuses ahead of him. But the best was yet to come. After another five-lap event for big GT machines (GT at Nassau is a loose description that means you have to run your Lotus with a full-width windshield to qualify) came the main event, a 25-lap trip with everything that could qualify as GT running, including the likes of Stirling Moss in a DB-4 GT Aston and Roy Salvadori in the big Healey. The attrition in the big machinery was horrible and at the end of the 25 laps the Sprite, still running like a train, was *sixth* overall! Ahead of him were three Porsche Carrera GT's, a Lotus Elite and a Jaguar. This is a Sprite?

During the course of the race, Donald Healey's emotions alternated between pure joy and abject embarrassment as Leavens picked off big production machine after big production machine. The joy was occasioned when the Sprite was seen to whistle by Alfas, Aces and the like. The embarrassment was caused by the same business of charging out of corners and away from brand-new A-H 3000's.

"I feel as though I'm being unfair to the customers," Donald said after Ed had picked off the last of the big cousins.

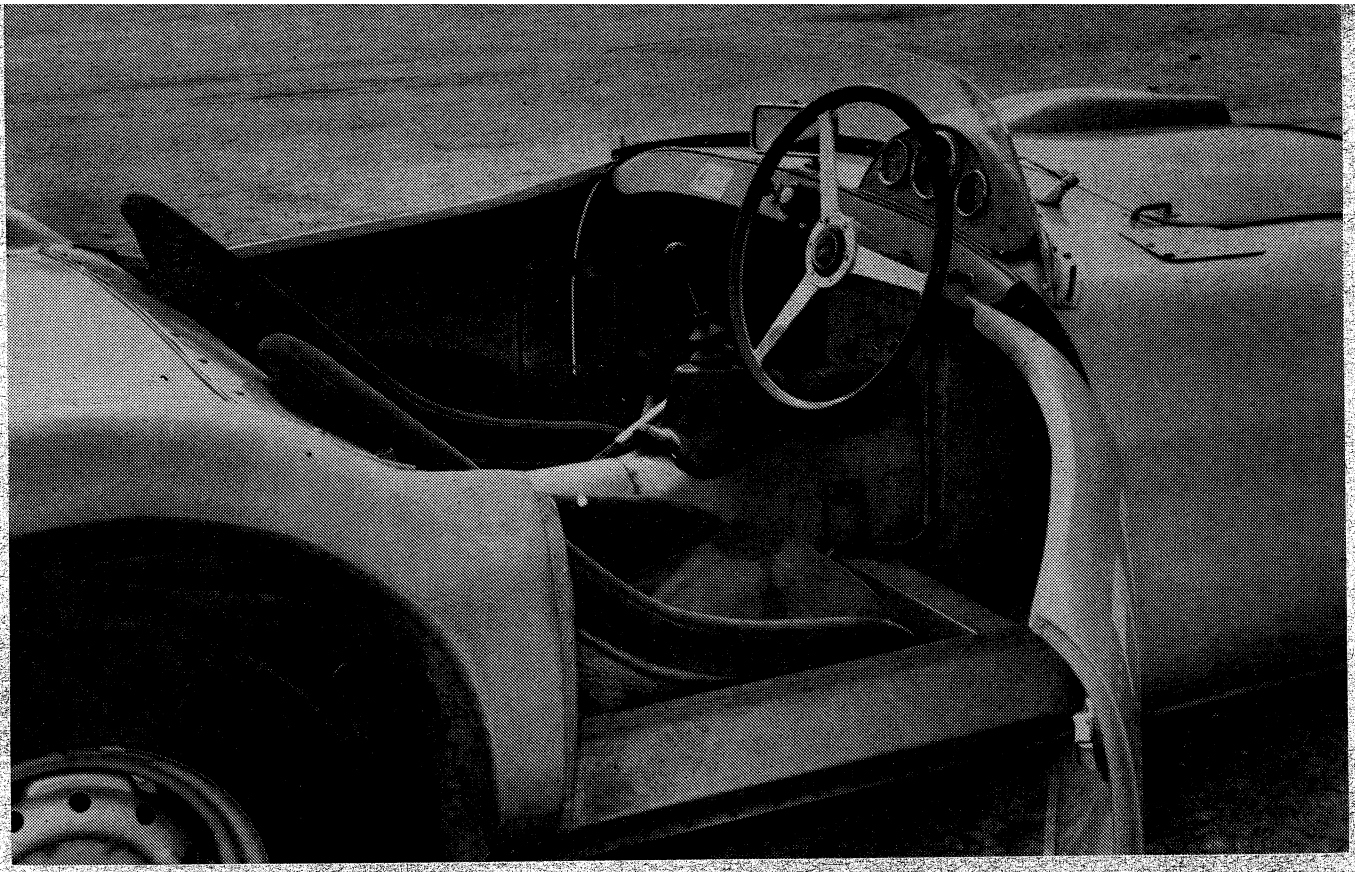
This Sprite was obviously something that needed checking out.

"Well," said Donald, "after Roger changes the rear end you can run it a bit."

A day later Roger handed over the key and pointed out that the rear end had been changed to 4.55 to 1. "Under normal circumstances, don't go over six thousand revs in low and second, and hold to six-five in third. Top you can take to seven if you can reach it," he said.

We headed for the Oakes course and the half-mile-long straight that paralleled the back stretch. On the way we had to pass another unused part of the acres of pavement on which the course is laid and where there is painted a circle some 200 feet in diameter. Putting the car in second gear we started around the circle, slowly at first, then quicker and quicker until we were barreling around the perimeter at something near 45 mph with the tail-end just hanging out and a miniscule amount of reverse lock on the wheel. At low speeds, up to about 25 mph, the car was an obvious understeerer, requiring definite inward lock on the wheel. At this point there was a long period when things appeared to sift into a sort of neutrality which gradually and predictably changed to the oversteer characteristic described above. During all this the wheel stayed light and absolutely precise. The car was obviously a final oversteerer but predictably and gently so.

From the circle we proceeded to the straight. The car had no speedometer so we resorted to timed runs to the red-line on the tach. Roger had told us that while for normal purposes the red-lines he had given us earlier were to be observed, the car would, for testing purposes and racing emergencies put up with 500 revs over the limit in the lower gears and a couple of hundred revs over in third—but please, only once or twice and then only



Fiberglass molded seats are upholstered in non-slip corduroy. Door is handcrafted of aluminum; the hardware is stock.

momentarily. Consequently for most runs we held to the six, six-five and seven instructions, the last of which was easy enough to comply with since only once did we see a full 7000 in top during this period and that was during the full bore runs.

Finally, after making several quick but not all-out runs, we decided to go flat-out using 6500 in low and second and 6800 in third, timing the shift points to get an indication of speed. The first shift to second from a standstill occurred at 2.6 seconds twice in a row. The second shift to third gear occurred at 6.7 seconds, or 4.1 seconds after the first shift. The final shift into fourth gear was made at an overall 14.4 seconds, or 7.7 seconds after the shift to third. Using the speed chart worked up by Healey for the various rear end gears, these times can be graphed and actual speeds picked off the curve at any point. These compare to a strictly stock Austin-Healey 3000 as follows:

	"Super" Sprite	Stock A-H 3000
0 — 30	2.5	3.4
0 — 40	4.1	5.3
0 — 50	6.7	7.3
0 — 60	9.6	10.9
0 — 70	12.7	13.0

From this it can be seen why Leavens could perform that feat of passing the larger Healeys that made the designer of both cars cringe with embarrassment. Beyond 70, the larger car begins to catch up and at a quarter-mile it is doing 78 or better to the Sprite's equal speed. In a standing quarter drag, though, the Sprite would take the Healey through a shorter elapsed time (E.T.) of 17 seconds flat as compared to the 17.8 seconds for the A-H. On a closed circuit road course, though, the bigger car unless geared differently would find itself hard put to make up the short E.T. of the Sprite from corner to corner and even harder put to follow through a tight bend.

Following the speed runs, though we could guess the answer ahead of time, we did a braking test. At the end of 10 stops from third gear red-line or 75 mph, plus all the necessary panic stops at the ends of the speed runs, there was no fade and no discernible pedal loss and, most important, no tendency to yaw or grab. The brakes on this competition Sprite differ from those used on the Sebring Sprites in that they are discs on the front only with ordinary drums on the back and are made by Lockheed rather than by Dunlop who made the four-disc setups used at Sebring. A saving of manufacturing expense at little or no cost in adequacy, rather than dissatisfaction with the Dunlops, is the reason for this change.

All of this naturally brings up the question of just how special this particular Sprite is. The answer, with qualifications, "Not very." The car was stuffed together in a matter of between two and three weeks by Roger Menadue following a rather hasty plan drawn up by Healey. Basically the car is a standard Sprite chassis with the heavy steel body stripped off but with the standard firewall left intact. The engine was tuned to Sebring specs, using flat-topped 9.25 to 1 pistons and the Sebring cam (which merely moves the torque curve up on the rpm scale rather than adding revs). A tuned exhaust replaces the stock manifolding, and the special intake manifold carrying a pair of 1¼-inch SU carburetors is also used. The crank is the slightly undersized nitrided (surface-hardened) unit found in all Healey competition machines but is otherwise stock as to dimensions. Unlike most competition Sprite engines this one used standard valve gear except for the heavy-duty springs.

Because of the lighter weight, the standard Sprite front suspension, except for a torsion anti-roll bar, was deemed to be sufficient. The optional shock absorber valves were used in the rear but the rear springs were weakened by removing one leaf from the driver's side and two from the passenger's side. This bit of rough-and-ready chassis tuning worked beautifully, crude though it may seem at first blush. We found that out on the 200-foot circle, taking the car around in both directions. Behavior was the same either way.

Hooked onto the engine was the Sprite close ratio gearbox with the following ratios: Top 1 to 1, Third 1.35 to 1, Second 1.99 to 1, First 3 to 1.

First gear felt just a shade too low as borne out by the very short period of 2.6 seconds allowable in that cog from a standstill to red-line. Second may or may not have been a tiny bit low but third was ideal with lots of scope at any engine speed from 3000 to 6500 revs.

The end result of this work is a car that we can only term an ideal automobile for those who wish to make the transition from

continued on page 76

DO YOU WANT A REAL JOB ??

Polish car windshields for $1.00 per minute—Learn in 5 minutes to polish out wiper blade scratches on car windshields with our new kit adapted to ¼" drill.

Complete instructions & material now for only $29.50.

Every car dealer & service station a prospect—where could you start a business for so little?

PUTNAM WINDSHIELD SERVICE
3800 Manatee Drive S.E.
St. Petersburg 5, Florida

Enclosed find money order for $29.50 for your new polishing kit.

NAME_____
ADDRESS_____
CITY_____
ZONE____ STATE_____

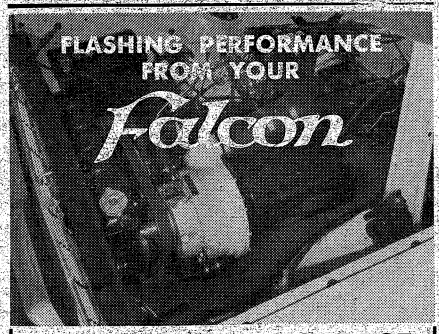
CURE THAT GAS EATER...
with triple-action
MILESMASTER®

Mail Coupon for free pamphlet: "THE TRUTH about FUEL PRESSURE REGULATORS"
Authoritative engineering answers explain why over a MILLION installed in cars and fleets to save 15 ways including:
Save up to 20% on Gas • Stop Stalling, Vapor Lock, Flooding
Stop Rough Idling • Stop Hard Starts, Jerky Acceleration
Improve Filtration, Stop Fuel Clog • Reduce Carburetor Wear
Insist on Milesmaster —get up to 36 to 40 EXTRA miles in a tankful of gas! It's the "3-in-1" quality Leadership Fuel Pressure Regulator.



MONEY BACK $6.95 GUARANTEE

For free "TRUTH" Pamphlet, mail this coupon with your name and address in margin. No obligation. Sold only at retail through 40,000 auto service outlets on Money Back Guarantee. Milesmaster, Inc., Dept. 104 1550 East 74th Place, Chicago 19, Illinois. 607



OVER 60% INCREASE
IN PERFORMANCE
Supercharger and kit— **$199.50**

	Stock	Supercharged
0-60	21.0 Sec.	12.6 Sec.
Quarter Mile	62 MPH	76 MPH
Top Speed	85 MPH	115 MPH
Average Gas Mileage	23.5 MPG	21.2 MPG

Write for complete information

PAXTON PRODUCTS
929 Olympic Boulevard, Santa Monica, California

Buick Road Test

continued from page 45

Considering the power accessories on the test Invicta—a factor in the amount of extra work the engine must do other than driving the wheels—plus a 3.23 to 1 rear axle ratio, fuel consumption was good. Heavy city traffic mileage varies noticeably, according to the use of full throttle on getaway. Under very congested traffic conditions, with many rapid starts—and this includes those ramp-type San Francisco hills—we recorded 11.6 mpg. More conservative driving in ordinary level street traffic with minimum use of full throttle, increased mileage to 14.2 mpg, and there was one tank of fuel (same brand used in entire test) that gave 15.1 mpg and included some freeway driving.

Out on the highway where the engine was driving just through the torque converter, miles per gallon began to go up. The illusion of speed in the Invicta is disarming because of its quiet operation and low wind-noise level, so high-speed cruising will be limited only by one's adherence to state laws. Tempted by this driving ease several times during one 156-mile run on divided highway with light traffic, we maintained 65-mph speeds with some spurts to 85 and recorded 17.3 mpg at an average speed of 57.4 mph for the distance.

Premium fuels are required with the Invicta's 10.25 to 1 compression ratio, and even then there will be some ping due to carbon buildup from city driving that will clear out, such as our test car did, as soon as the car is driven at good steady highway speeds for 20-30 miles.

The 1960 Buick Invicta can put a lot of fun back in driving, whether it be around town or between towns. Detailing and trim are excellent, and once you're behind the wheel there is a feeling that the comfort and driving ease are not just coincidence but were carefully designed and engineered into the car. Because of the wide variety of public wants that must be satisfied within a rather restricted price range, it is impossible to state or prove without qualification just which is the "better" car. But after "living" with the Invicta for nearly a month, we believe that it is not only among the best in its class but is the best car Buick has ever built.

Mighty Sprite

continued from page 59

small-bore production equipment to small sports-racing machinery such as the Lotus, Lola or Elva, normally a rather disconcerting process to drivers used to production cars. A sports-racing car is worlds apart from the normal sportscar in such attributes as acceleration, handling and overall "feel," so much so in fact that they require an "unlearning-plus-learning" process. The "Super" Sprite seems to bridge this gap in an entirely viceless way and gently leads the neophyte racer into the ways of the racing car without entirely wrenching him out of the familiar though not ideal ways of the production vehicle.

When we had gotten all the information we could during the test and from Roger Menadue we delivered the car back to Healey. There was one more question that demanded asking and only he could give the answer. The question and its answer had to wait—Healey had one for us.

"How would you like to run it in one event?" he asked. It seems that Leavens had been called away and Healey was going to spread the riding chores (chores?) around. The writer got one ride, Augie Pabst got another and regular Healey team driver Phil Stiles was picked for the main event. Whether it was the rear end change or whether it was Ed Leavens' consummate skill or a combination of both defies guessing but none of us quite equalled Ed's performance. None of us exactly blotched the Healey escutcheon either, Augie getting in one storming lap at three minutes, 45 seconds. It might have been that the use of the higher rear end ratio may have allowed more use of the lower three gears than was possible with the 4.55 ratio—more than once we ran out of third gear just when it seemed to be needed—but it would take a retest with the 4.22 gears to be even remotely sure. What *is* sure is that Leavens had us by three to five seconds a lap on the average except for Augie's sizzling 3:45, a lap time that Ed had approximated as regularly as a train and one that Augie admitted later he had had everything hanging out on every turn.

The question we had wanted to put to Mr. Healey earlier was the natural capper: "Will the car be produced for the market?" The answer was vague. Healey was emphatic in pointing out that this was a prototype. He did admit, however, that he would *like* to put it into limited production in the same way the AH 100-S was built. The answer will have to depend on the demand and inquiry from those who would like a small, inexpensive sports racing car. How expensive? Healey feels that a Sprite like this could be built to sell for around $2500 in the U.S. In any case, production or not, three copies have been ordered by an Eastern dealer and the order was tentatively accepted.

In any event, those who feel that a semi-race car of this sort is their dish of tea can get in touch with Mr. Healey in care of the Healey Motor Car Co., Warwick, England.