



Sequence of the "new" Sprite on Lime Rock's hairpin. At approach, heavy oil in shocks keeps machine level at beginning of arc. Missing grille is our idea.



Car assumes sideways attitude as wheel is whipped into apex. The fact that car is heading at a point well inside its course indicates big slip angles.



Stiffness of shocks puts car into lean gradually, and significant response to accelerator holds the drift. Under power, Sprite now surges out of corner.



9

**DUAL-PURPOSE  
SPORTS CARS  
FOR 1959**

**AUSTIN HEALEY**

*Sprite*

**A**TTEMPTING TO RACE any car competitively without preparation is useless—you can go racing but you'll be strictly in the also-ran section. Nowhere is this more true than with the smaller varieties of production sports car where every fractional bit of power counts. So it is with the Sprite.

So new is BMC's fun-machine that there wasn't one available in prepared shape within the meaning of the term "production." Consequently we decided for the purposes of this section to set one up on our own. The shop selected to do the work was Foreign and Domestic Service, Westport, Conn. The editor and *Meistermehkaniker* Joe Virag went into consultation on just what could be done to the A-Type mill and still keep it within the production category rules. During this consultation an interesting point came up. One of the options planned for 1959 is the use of 1¼-inch SU carburetors in place of the standard 1⅞-inch units. We got in touch with Bob Said at the Nisonger Corporation, dealers in SU carburetors, to get a pair of the larger carbs. They were not only forthcoming (though they weren't installed for the test run due to lack of time) but the Nisonger people were also interested in the conversion process. It seems that they now plan to market a converted head and manifold for Sprite owners who don't have access to the likes of Mr. Virag and would Joe like to do the necessary machine work? Joe would, so duplicates of the upper half of SCI's Sprite will shortly be available by mail from the Nisonger folks in exchange for the old equipment plus a nominal fee.

First, we put 5000 miles on the engine to "season" it. Then the engine was removed, torn down, cleaned and inspected. Push-rods, valves and lifters were weighed against each other and found to be in balance. Crank, pistons, rods, clutch and flywheel were checked. Pistons and rods

showed 3 grams difference between lightest and heaviest and were treated accordingly. The flywheel was drilled for balance while the clutch was replaced as-is. The crank and flywheel assembly were given a full static and dynamic balance job.

Cylinders were bored and rough honed .002 of an inch to square up the holes and also to provide a loose fit for the pistons. These were replaced as removed, as were the bearings.

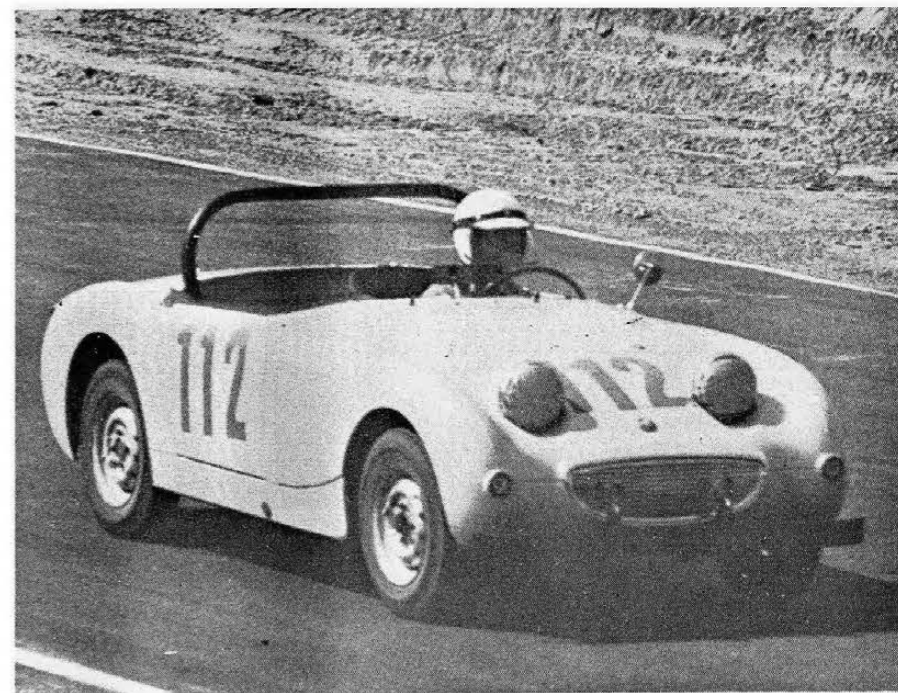
Valves were resealed with the contact area moved toward the outer edges of the face. Ports and valve pockets were polished and matched to the manifold without hogging. Hot spots between valves in the combustion chambers were machined off and the head was lap-cut to true the surface. Valves were set in and spun true.

Suspension required only minor adjustment. The original springs have a fairly high rate, so draining the shocks and refilling with Castrol R5AE 40 had a very noticeable stiffening effect. Lean in sharp turns is drastically reduced, and machine follows the dictates of the quick-ratic steering wheel without protest.

The trip to Lime Rock seated the rings so upon arrival we were ready to see what Joe Virag had wrought. After one lap, we knew we had a race car. Our test machine was as different from a show-room stocker as a Giulietta is from a Giulietta Veloce or a 150S from a 150.

As a preliminary, we took an acceleration run from 0-60. In untuned shape the Sprite turned 25.2 seconds taking more than a quarter mile. Our "tuned" Sprite did it in 20.7 seconds in considerably less than a quarter. This promised good things.

Taking a motoring lap to feel the machine out, the pace was quickened until we were cutting brisk laps—fast, but no way near the potential of the car. Times were about 1:30, as opposed to approximately 1:39 by the same driver in the untuned version. Here's where the differ-



This Sprite, as it appeared at Bridgehampton, was "Breathed on" by Ed Brown. Until a few more arrive, Sprites will run modified.

ence came in.

Prior to tuning, red line was 6000 revs. for a 60 mph maximum in third gear and an actual 82.5 mph maximum in top. Our shift point was now 6500. Though the cam was unchanged, it was verified that the power curve of the standard stick went up to 6900, so by shifting at 6500 we were well within the power range. Because of the increased rev limits we could stay in lower gears longer at full power, and when up-shifting we dropped into gear at higher revs, where the same condition prevailed. We could do an actual 70 mph in third.

Also, when we tested the showroom version last August, we mentioned a flat spot that came in at 4500 revs, and stayed to 6000. That flat area is now gone from the curve. Acceleration is even and rapid throughout the rev range, with no sign of vibration or "four-barrel jiggle" at any point.

On the course, the stiffness of the suspension and the increased power gave us a completely different set of handling characteristics. Diving into the turns, the roll seemed very slight; however the tail seemed to ease out much more readily. The transition was gentle, and could be controlled by the wheel, and the increased power gave another dimension to the control. This little one liter machine gave a pronounced reaction to the throttle!

The technique for turning is to cut the wheel sharply into the turn, standing on the accelerator. The tail goes out in proportion to the turning angle of the wheel and the throttle applied. If the ragged edge is reached easing off the throttle will decrease some of the rear-end breakaway; however we never felt the need. Fact is, we stood on it harder and eased off a bit on the turning angle, which put us through in what felt like a four-wheel drift. In any event, we were putting enough power on the road to sustain high slip angles on both front and rear tires.

BMC fits Sprites with Dunlop Gold Seals. These are excellent road tires that stick well; but for iron wear in hard drifts get a set of R3's or R5's. Don't try it with less than Roadspeeds.

On the straight, the tach needle hit 5500 revs in top gear before we had to back off for the hairpin. This meant we were doing approximately 90 mph down the short straight—higher than the flat-out top speed on the untuned version. Also, in the very short serpentine straight, we ran out of third gear revs and had to drop into fourth. Going up the steep grade again required third, but down-shifting isn't so critical when you've got a 7000 red line.

So let's take a look at what we've got. By letting the engine breathe a little, we've added to the top end without seriously detracting from the bottom. Prior to the tune, we could ride in top cog at fifteen mph without lugging. We can't do it any longer, as 20 mph is slowest feasible speed. But on the top end, the little bear screams right up to 6500 revs, and more if you wish. And the increased thrust is unmistakable.

Combining this with the stiffness of the "R" in the shocks, throttle becomes a control factor. In a turn, enough power gets to the road to maintain a high velocity. Untuned Sprites just slow down when the slide loadings on the tires offer more resistance than the power from the engine can overcome. We had no such complaint.

You can't order a Racing Sprite from the showroom at this time. But you can take the one you get to Joe Virag, who knows how to do the little things the factory didn't want to add to the cost for the purchaser who doesn't want to race. In a word, Sprite plus tender loving assembly equals Class H racer. And you won't only beat other Sprites!

—lfg

47