

Road Test: New 2-Liter Overhead Cam Datsun Sports

ROAD & TRACK^{ICD}

NOVEMBER 1967

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SALON: JAGUAR SS 100--ALL-TIME FAVORITE CLASSIC



SAMURAI!

*Designed by Pete Brock
Built by Troutman-Barnes*

THE CARS OF TROUTMAN-BARNES THE BRE SAMURAI



Radiator air exits through gap at base of windshield instead of usual outlet.



Compound-curved side window smoothly continues windshield curve to scoop.



The unusual door-hinge arrangement. Tit-pin clips allow quick removal.

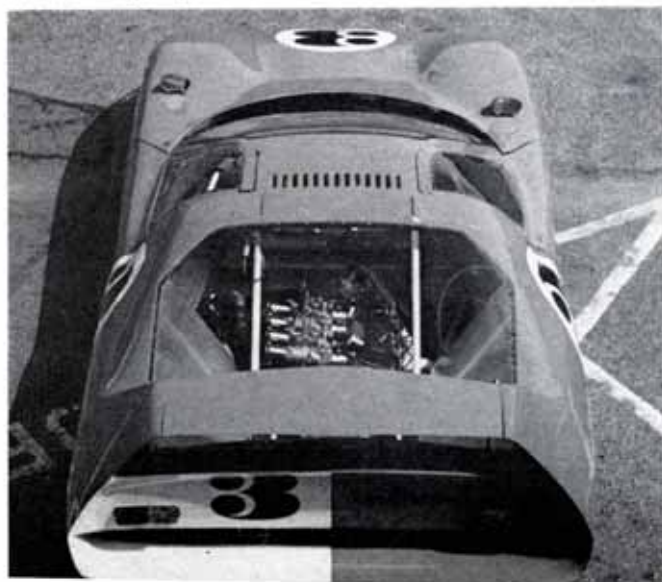


plies, it's a two-wheel car; it is powered by a Mini engine. Transport Systems had the car built to demonstrate an idea they've been kicking around for years—that the best, most stable way to go fast is to do it on 2 wheels with gyro stabilization. Soon to be running and demonstrable, the car even has automatic banking—up to 40° off vertical at 1g cornering force. Its gyro weighs 180 lb and turns 1600 rpm.

The BRE Samurai

The most recent finished product of Troutman and Barnes is a Group 6 prototype racer for Pete Brock, the BRE (Brock Racing Enterprises) Samurai. Brock, a young designer who did the body for the De Tomaso car featured on R&T's cover in March 1966, is out to establish a California school of car design that will compete with the Italian school on equal ground. At the time he conceived this car he was running Hino's American racing activity; he wanted to convince the Japanese, who are relying heavily on outside de-

Brock's "ring airfoil" dominates the rear view.



THE BRE SAMURAI

signers, that someone else besides Italy could do some advanced car design for them. Hino gave him some assistance with the job; he powered it with a Hino engine and sent it over to Japan to compete in the Japanese GP at Fuji International Speedway. By this time Hino had merged with Nissan and there was a great dissension amongst the Hino and Nissan officials as to whether the car should appear at all and possibly steal attention from the Nissan R380 prototypes. After much changing back and forth of minds the race officials eventually disqualified the car for "insufficient ground clearance."

Underneath Brock's unusual body shape the car is a thoroughly conventional prototype racer. The suspension and basic structure are from the house of Le Grand; Pete Brock laid out the car's framework using Le Grand dimensions as a guide, but extended the wheelbase 1 in. to 92 in. and the track 1 in. to 51 in. front and rear. The tubular frame is built of 18-gauge mild steel in 1- and 3/4-in. square and round sizes. Suspension is the usual unequal-arm system with adjustable anti-roll bars, front and rear, and brakes are 9-in. Airheart caliper discs with a swept area of 283 sq in. The discs are inboard at the rear.

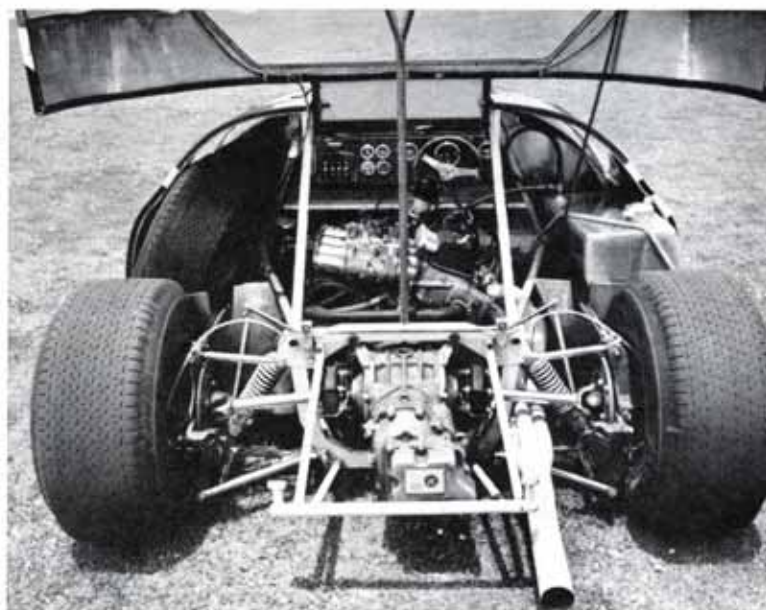
The engine, at least at present, is a 1293-cc Hino Con-tesa unit built to Group 2 racing specifications but with two 40-mm dual-throat Mikuni-Solex carburetors. The engine weighs 290 lb complete with starter, flywheel and clutch (but no headers) and develops about 110 bhp @ 6800 rpm. Engel made the camshaft, BRE tuned the exhaust system on its own dynamometer, and Mallory furnished the ignition system.

The engine drives through a familiar 5-speed Hewland transaxle (VW case) with a Porsche Carrera clutch. Rubber doughnuts and conventional U-joints are at the inboard and outboard ends of the axle shafts, respectively. Wheels are 13 x 8 in. front, 13 x 10 rear and carry 5.00/9.00-13 tires front and 6.00/10.00-13 tires rear. Weight, ready to race with a half tank of fuel, is 1170 lb.

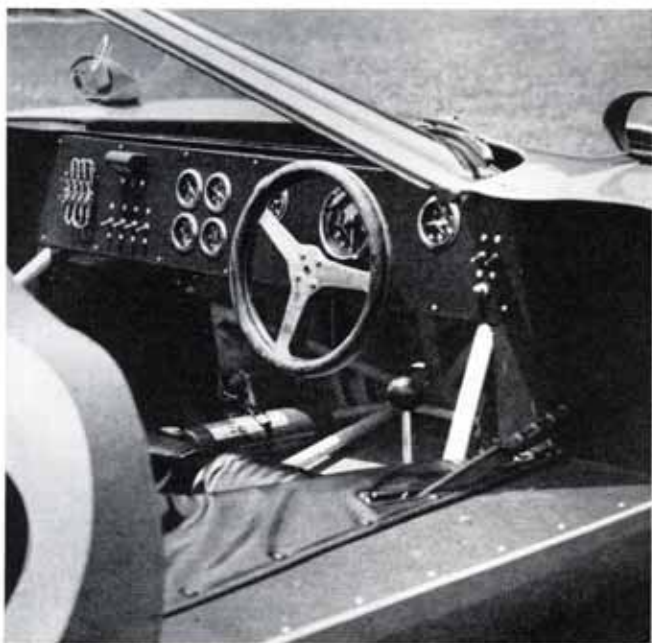
The bodywork is totally Brock's exercise, and it shows some interesting and original thinking. All aluminum, it was done by Emil Diedt and Dick Troutman at the T-B shop, though the windshield (which must be glass, per FIA regs)



Aluminum takes shape over plywood forms at T-B.



Rear section hinges forward for service access.



Cockpit is very well finished for a racing car.



Samurai's chassis components are by LeGrand.



SAMURAI

was built in Japan. The most striking feature of the body is Brock's "ring airfoil" which was used also on that De Tomaso mentioned earlier. The ring rises out of the side bodywork and goes up and over at a height far enough away from the gently sloping roof section that it can be well into the air flow over the car and away from any boundary-layer effects. The horizontal (actually curved) section is a true inverted airfoil and can be pivoted 10° by a cable and a ratchet lever. Pete says the airfoil gives 80 lb negative lift at 140 mph in its normal position, 230 lb when tilted forward the full 10°. The airfoil isn't intended as a brake, but simply as a low-frontal-area spoiler; generally it would remain in one position for a given race.

Moving forward along the smooth body we find air intakes just behind the side windows for the engine and brakes. Brock first tried intakes like these on his coupe body for the Cobra, and experience with that car showed him that the contouring of the side windows and windshield (as viewed from above) is important in determining the effectiveness of such slots. In the Samurai he has continued the plan-view curve of the windshield smoothly into the side windows, and he says that since the side window line angles no more than 7° toward the car centerline the effective air is carried dependably along the window and into the slots.

Another thoughtful feature is the hinging of the doors. Air pressure in the cockpit normally forces the door outward, and since the hinges are usually down in the lower body section most of the bowing-out takes place in the upper door section. Many doors have been ripped off because of air catching this bowed-out area. Brock has hinged the doors on the windshield post and the lower body section to avoid the problem.

The body carries two fuel tanks, one next to the engine and one behind the driver's seat, for a total capacity of 28 gal. By this time it should go without saying that the workmanship is impeccable throughout.

THERE'S ONE MORE project to tell about at Troutman and Barnes, and it is an intriguing—and surprising—one. The car is almost finished. But it's a Christmas gift for someone, and good guys that we are we've sworn not to tell about it until the appropriate time. We'll tell you about it in the February issue. For now, a simple salute to Dick Troutman and Tom Barnes for being good, dependable craftsmen to the racing and special car trade.

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