16 Team business: what price success?

When Suzuki entered the grand prix maelstrom in 1960, they knew the path to success would be cheque-strewn; victory would be the result of a no-holds-barred contest.

But president Shunzo Suzuki was a committed believer in racing, and realised that developing the untapped European market would cost a small fortune, and that racing success would promote motorcycle sales. At all times the race team budget was unlimited.

ISHIKAWA 'Whenever we had trouble, we would telephone or telex Japan and the factory would make new parts for us—even overnight—regardless of the material or labour costs. All parts were flown out to us in Europe; no expense was spared.'

Degner put it another way.

DEGNER 'I don't know exactly what their racing budget was but they didn't mind whether it was £100,000 or half a million. They wanted to have success for their production business. That was very important, so there was no budget.'

Spares were showered on the Team like confetti, particularly in the early years when the machines were developed on the GP circuits. Whole machines were air-freighted to Europe to replace damaged or suspect models.

ANDERSON 'I have no real criticism regarding spare parts availability. Trying to get stuff from A to B is always a problem, but they always did their best and certainly, I never missed anything for lack of spares.'

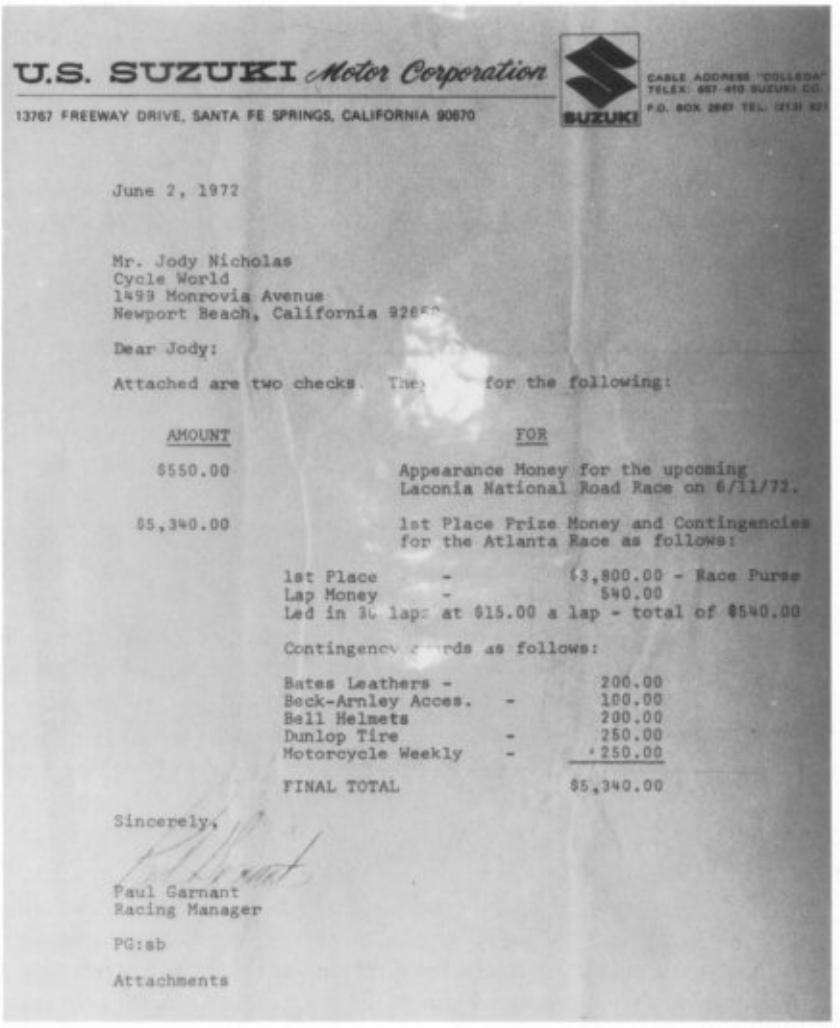
The returns to Suzuki would be immense, but only if their racing efforts were successful. In terms of promoting the Suzuki brand image, grand prix successes would bring more world-wide publicity than any form of specialist advertising. Race reports appear in daily newspapers and GP racing is covered extensively in motorcycle magazines read by potential Suzuki customers throughout the world. As a spin-off Suzuki would benefit from technical advances resulting from classic competition. As war-time stimulates great strides in engineering knowledge, so would racing teach Suzuki in extra short time the problems associated with high-performance two stroke motorcycle engines. This was shown in 1973 when Makoto Hase designed the RG500.

HASE 'There were two underlying purposes; technical development with feed-back to the production machines, and of course publicity for the market. Even now the purpose is the same.'

Once on the racing merry-go-round, Suzuki became intoxicated and dizzied by its constant movement. Even after Suzuki's disappointing 1960 and 1961 seasons, they couldn't afford *not* to race; having heavily invested in the project, surely success was just around the corner? If Suzuki abandoned racing, they would be remembered only for their failures. Shouldn't the battle be continued to its ultimate conclusion? It is certain these arguments were considered whenever the escalating racing budget was reviewed.

With a racing programme, Suzuki risked a great deal apart from the cold hard cash; they could have lost face when the Degner defection story broke, or if they had failed in their do-or-die 1962 season. Benefits were derived from racing by the riders, but just what were their fees? Anderson, easily the most successful Suzuki rider ever, wouldn't reveal his fee but said that his factory and oil contracts made him the highest paid rider with the exception of Mike Hailwood—reputed to net about £15,000 a year.

ANDERSON 'As far as *total* earnings were concerned, I think Jim Redman



U.S. SUZUKI *Motor Corporation*

13767 FREEWAY DRIVE, SANTA FE SPRINGS, CALIFORNIA 90670

SUZUKI

June 2, 1972

Mr. Jody Nicholas
Cycle World
1499 Monrovia Avenue
Newport Beach, California 926[illegible]

Dear Jody:

Attached are two checks. The[illegible] for the following:

AMOUNT	FOR
$550.00	Appearance Money for the upcoming Laconia National Road Race on 6/11/72.
$5,340.00	1st Place Prize Money and Contingencies for the Atlanta Race as follows:

1st Place - $3,800.00 - Race Purse
Lap Money - 540.00
Led in 3[illegible] laps at $15.00 a lap - total of $540.00

Contingency [illegible]rds as follows:

Bates Leathers	-	200.00
Beck-Arnley Acces.	-	100.00
Bell Helmets		200.00
Dunlop Tire	-	250.00
Motorcycle Weekly	-	250.00
FINAL TOTAL		$5,340.00

Sincerely,

Paul Garnant
Racing Manager

PG:sb

Attachments

Jody Nicholas' $5340 pay-slip after winning an Atlanta race on his ZR11. Contingency money was payed only if the machine bore the sponsor's decals and the rider declared his interests prior to the race
Author

17 Behind closed doors: secret racing projects

The Suzuki machines that the spectators see racing on the grand prix circuits represent a great deal of development on the part of Suzuki's research department. Their brief is simple; produce the most powerful yet tractable two stroke racing engines possible irrespective of cost.

With time and experienced personnel limited, this policy must have appeared idealistic to the hard-working engineers in Suzuki's race-shop. During the racing season, they were permanently engaged in developing the current hardware, and had no time to dream up new ideas. This constant search for the impossible explains why Suzuki, from the start, split their racing support team into two groups. In this way, more engineers experienced at first hand the problems found on the race-track, and moreover, when they returned to Japan, were able to translate the requirements of the riders into metal.

Nevertheless, there *were* a number of engines, indeed complete machines, that were produced and tested in secret—in some cases without the riders' knowledge. The RS65 is a good example; a 125 cc engine built in 1965 to replace the RT65 for the 1966 season.

Suzuki had learned the benefits of water-cooling whilst testing the RT64A, and also seen the power-bonus of multi-cylinder engines with the RZ63 model. Surely a logical step would be to build a water-cooled 125 cc square-four?

By scaling down the RZ65 motor, Suzuki expected to overcome some of their RZ65 problems. Seichi Suzuki—an engine designer and technican, *not* the rider with the same name—designed the new RS65 motor.

> SUZUKI 'I returned from Europe in the fall of 1965 and immediately commenced work on the RS65 with Yoshihiku Suzuki and Makoto Tajima. Takeharu Okano was in overall charge of the project. The plan was to reduce the stroke and have more cylinders and more power.'

The design soon crystalised—the whole project only took a few weeks from drawing board to dynamometer testing; for the first time four separate crankshafts, each with inboard drive gears, were specified. Thus the two front and two rear cranks were all geared together with power take-off via a primary shaft running above and aft of the rear cranks. The primary shaft also drove the water-pump and tachometer. At its right-hand end, a primary gear drove the clutch and input gears whilst the final drive was via a separate shaft—which also drove the oil-pump—positioned behind the output gearshaft for sprocket alignment reasons. Thus, the crankcase halves sandwiched a total of six shafts. Only two cylinder castings were used, one each for the left and right hand banks, each cylinder incorporating two transfer and the appropriate boost ports. The

exhaust layout mirrored the RZ65 as did the intake arrangements; rotary disc valves. The gearbox-mounted Kokusan magneto was driven via the secondary gear.

The engine soon produced the same power as the RT65 machine and more was expected with further development, but it was decided to install it into a chassis for track testing.

SUZUKI 'Both Mitsuo Itoh and Yoshimi Katayama rode the RS65 at Ryuyo but both complained of slow steering response which had been the problem with the RZ63 model. The wheelbase was much longer than the RT65 because the engine was so long in order to install the six shafts. The project was abandoned and we began work on the RJ65, a development of the RS65.'

Makoto Hase joined Suzuki as an engine designer in 1962, and from then until his transfer to the race department in 1966, he had worked on the T250 roadster and a 50 cc motorcycle engine.

HASE 'When I joined the race department, the RS65 was running on the dynamometer and had also been track-tested in Japan but without a good result because of some problem with oil temperature.'

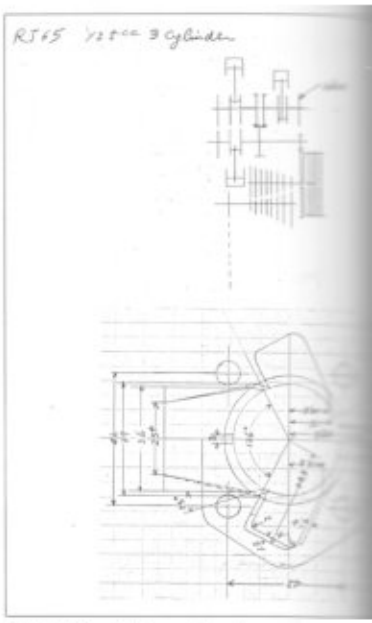
Takashi Nakamura recalls that the RS65 was run in practice for the Japanese GP in 1965 but was not used in the actual race.

The design team considered the means to reduce the engine's length; the crankshaft power take-off was the problem. For maximum durability and lightness, it *had* to be taken from between the cylinders and anyway, it couldn't be taken from a crankshaft extremity because of disc valve obstruction. Their solution was obvious; a three cylinder engine. With the right rear cylinder and crank of the RS65 removed, the left rear crankshaft could be extended across the engine behind the right front cylinder allowing the deletion of a separate primary shaft; the left rear crankshaft extension drove the clutch via a gear. This arrangement produced a more compact crankcase. Thus Suzuki's first three cylinder engine was born. It was thought the three cylinder engine would overcome the narrow power band of the RS65 without sacrificing power per se. But what were Seichi Suzuki's objectives?

SUZUKI 'My purpose was to have more revolutions than the RT65—more power not torque. Power was first. The RK65 had the highest bhp per litre then—about 290—and this was the target but we knew it was impossible to match it with a 125 cc engine.'

In layout, the RJ65 was similar to its forebear, the RS65. A three cylinder 'square-four' housed in a shorter and lighter crankcase. It was running on the test-bed within 12 weeks and immediately produced 30 bhp at 14,500 rpm. Not really enough. After further development, it produced 34 bhp at 15,000 rpm, more than the RT65 and even more than the later RT66. The RJ65, too, was test ridden at Ryuyo and whilst handling was improved, overall performance was not much better than the RT65 and the prototype RT66 which was being tested at the same time. The reason?

SUZUKI 'The RJ65 power unit was heavier than the twin cylinder RT65 and its power band was still too narrow. Adding gears may have solved this



Seichi Suzuki's notebook reveals the layout of the ill-fated RJ65 model: three separate cranks geared together and driving an 8-speed transmission. In its day, the lower porting diagram would have been priceless to a rival company. (See also p 2)