

OCTOBER 1979 65p

BRITAIN'S
RACING
MONTHLY

Motorcycle RACING



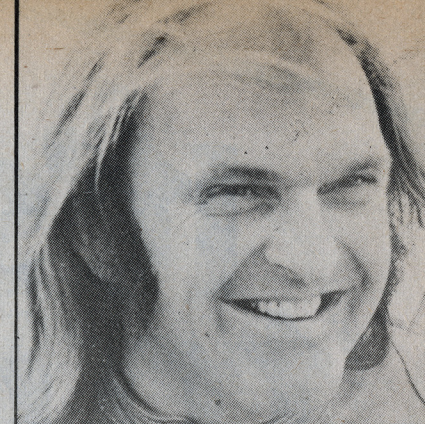
**WORLD
SERIES**

- what it
may mean

**Heat's on
in 250 thriller**

**8 great colour
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Tait's 'Triumph-ant' rides



AGAINST the total dominance of the 500cc MV Agusta in world racing throughout the '60s, all that any rival could hope to achieve was to finish second.

For most of those years MV went without competitive opposition, for after 1957 when Gilera and Moto Guzzi withdrew works support, there was little effort by manufacturers to challenge MV until Honda produced their first 500 'four' in 1966/67 and again, finally, when Yamaha and Suzuki produced two-strokes which eventually eclipsed them in the mid '70s.

Most results from those days show a single cylinder Manx Norton or a G50 Matchless filling second place; but there were notable exceptions. One such occasion was at the 1969 Belgian GP on the ultra-fast Spa-Francorchamps circuit where Agostini's MV 'three' was chased home by Britain's Percy Tait on a pushrod ohv Triumph derived from the twin-cylinder Tiger '100' roadster.

Although Agostini's win was another of his customary record-breakers — he averaged 125mph, the loudest cheers went up for Percy Tait who brought his Meriden-built Triumph into second place at 116.51mph — and was the only rider not lapped!

Third place in fact went to Alan Barnett on a G50-engined Kirby-Metisse; for by that time, Norton and Matchless production racing machines had been out of production for some seven years.

Indeed, for more than ten years after 1962, no new 500cc production racing machines were produced anywhere in the world and by 1970 those seemingly ageless British singles were becoming more and more difficult to keep competitive from the shortage of vital spares.

Colin Seeley attempted to keep the G50 concept; as did others, to a lesser extent, with Norton, but it was a losing battle — the traditional single was dead — but there were no worthwhile alternatives.

It was this situation which led to the introduction of 750cc racing; indeed, I submitted a plan to the ACU which was forwarded to the FIM in 1968 which led to the introduction of 750cc racing and, subsequently, Formula One.

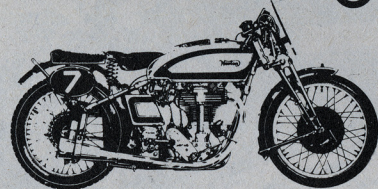
However, no alternative was ever regarded to replace 500cc as the upper limit for classic races; where roadster-based engines were never considered strong enough or fast enough for serious grand prix racing.

But curiously, and for a totally different reason, 750cc racing brought about the development of this month's 'Great-Bike' — Percy Tait's 500cc Triumph twin — but before we come to this, we need to recall initial circumstances.

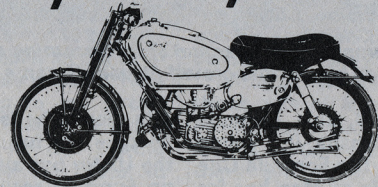
Triumph's main market for exports was America where, under AMA rules, racing was centred on using modified roadster

A determined Percy Tait keeps his 500 Triumph at the front of this particular tussle during the 1967 Hutchinson 100 at Brands Hatch.

Great racing



bikes of yesteryear



by Charlie Rous

designs which favoured 750cc side-valve vee-twins — Indian and Harley Davidson; with opposition from ohv machines being limited to 500cc. Overhead camshaft 'racing' engines were banned after the 'Garden-Gate' Norton victories at Daytona in the late '40s.

Despite the value of prestige for exports, British manufacturers made little effort to combat the American-built 750cc side-valvers on their own ground; but from the efforts of American privateers it was continually apparent that 'works' prepared British 500cc roadsters could have been extremely competitive.

Too late to prevent their eventual downfall, but Triumph finally got the message in 1966 and 1967 when, under the brilliant direction of development engineer, Doug Hele, American rider

Buddy Elmore won Daytona at a record 96.33mph. But this was only a prelude performance, for when the Coventry team returned to Florida in 1967, Californian Gary Nixon won at 98.23mph with Elmore in second place and they both lapped the entire field!

The entire Triumph contingent all finished 7th, was in third place and would 8th, 9th and 15th. Dick Hammer, who finished 7th, was in third place and would have finished a lap ahead with the two leaders had he not been forced to stop for fuel.

Had the supporting Triumph riders been more experienced, the team could well have made a clean sweep of the first six places — for the machines were all near identical in performance.

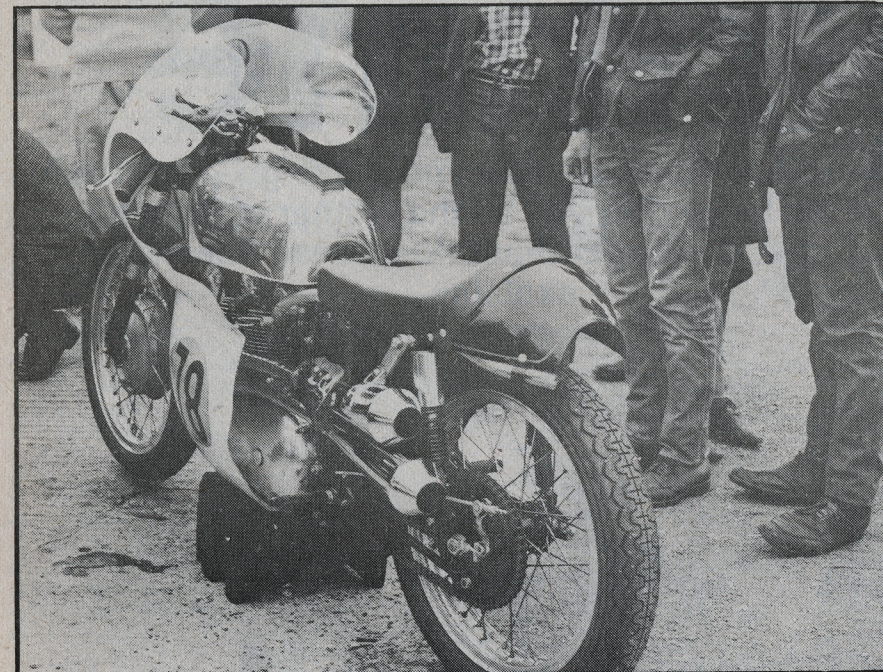
For the fans at home, Triumph, regrettably, did not parade with the same proud, open appearance of supporting a 'works' team as they had at Daytona — where their success gave a new identity to the Tiger '100' — but slunk, uncommitted, behind the personal efforts of Tait and Doug Hele's team of mechanics who developed the racing 'Daytona' by going racing at weekends in their own time.

The extraordinary thing about 'Percy's 500' — for that is how this machine was always known, was that it looked so little different from standard. The only apparent modification was the fitting of twin Amal GP racing carburettors, the racing fuel tank and a bigger front brake.

Also, considering the 1966 and 1967 Daytona success, which gave Nixon a speed of 136mph around the banked speed-bowl, it is equally astonishing that no effort to 'tune' these engines for racing was made before October 1965.

In fact, Percy recently told me, the first idea of using the unit-construction T100A design, came from Geoff Duke when he raced a 250cc Royal Enfield for Geoff during 1964.

"This certainly put the idea into my head," said Percy, who was then a factory test-rider covering a minimum of 1000



There was certainly nothing spectacular about the external appearance of the 500 Triumph twin when it made its British debut in 1966. Top right: Percy Tait.

miles a week — apart from racing at weekends.

From 'thinking-about-it', the opportunity to go-ahead came with the factory decision to prepare a batch of 'special machines' — urged on by the American subsidiary — who realised the need for racing success to help sell machines in the United States.

The improvement was startling. From a standard output of 35bhp at 8000rpm, Hele soon produced 45bhp at 8200!

To have found 10bhp with so little an increase in rpm was remarkable, but Doug told me some years ago that it came with only fundamental improvements such as fitting a longer over-lap camshaft; twin carburettors and open megaphone exhausts.

More astonishing, as development progressed, Hele subsequently produced well over 50bhp at 8000rpm and the final engine which Percy raced in 1970 ran at 9000 — an another 'experimental' motor ran to 10,000!

Most significant throughout however, was the spread of useful power over a wide rev range. There was, he tells me, only a slight drop from 50bhp at 7700; while 44bhp was still effectively available at 6500.

Doug Hele's cam design played an essential part in this along with tapered shaping for the inlet ports, and work on the combustion chambers and piston crowns which culminated in a squish design.

Most vital were the rubber, canvas reinforced inlet manifold connectors for the carburettors. Just 'any' rubber was no good. A need to use the correct grade

was vital to maintain efficient carburation above 6000rpm.

I know this to be true for it was a persistent problem with my own machine, a 'Daytona' engined Rickman Metisse, which the late John Hartle rode in 1967.

This engine, built with 'advice' from the works mechanics, was a total flop. It had all the right bits inside it, but we never did get the carburation right and John was killed while racing a G50 at Scarborough before its development was complete.

But its Percy's bike we're discussing and he tells me that the success of its engine was the dedicated work of mechanic, Jack Shemans, who built the engine and conducted all test bench work.

He also tells me that the only real difficulty with the 500 was its inconsistent handling, and both the front and rear suspension settings needed to be altered virtually every time it was raced.

"This was very peculiar," Percy recalls, "Arthur Jakeman, who now works for Mike Hailwood and Rodney Gould, took care of the frame parts and was always at the meetings. And you could bet, every time we raced, the bike would need its suspension altering, you might recall," he said to me, "I never went very fast in the opening practice; but I usually got better later and was fastest of all in the last practice session. This was because we were working on the springing."

Having covered probably more mileage on Triumph machines than any other person — Percy's test work was a minimum of 1000 miles a week for more than 20 years — that's well over a million

miles, it's fair to say that he must have had a good knowledge of their idiosyncrasies.

From this, he told me of an occasion at the Isle of Man TT when Rodney Gould was to have partnered him on a 500 'Daytona' in the Senior TT.

"I tested all our bikes at MIRA and I suggested to Doug Hele that Rodney should have the best one; I also suggested that Rodney might like to follow me round the TT circuit to sort out the bumps which a Triumph doesn't like ... but he declined.

"Do you know, Charlie," Percy said, "there is a magnificent picture of Rodney with that 500 coming down Bray Hill sideways! He turned off at Quarter Bridge and never rode it again."

"What few people realise," Percy went on, "is that those 500cc racers provided a great deal of development for the standard production machines. I had an engine lock up at the TT when a crankshaft bolt snapped; it dropped out and locked against the camshaft. From this failure, we traced it back and discovered a bad batch of bolts at the factory.

"We also tried a five-speed gearbox and this also locked up and threw me off. The five-speed cluster was made by Rod Quaife. There was nothing wrong with it, except that he had to make the five pairs of gears a bit thin to squeeze them into the space of a four-speeder, and this caused them to break. So, after that I went back to four gears."

When Percy mentioned tracing the broken crank bolt back to a bad batch at the factory, I asked, and he confirmed that every major component in the 'works' 500cc racing machines was a standard part. This I followed up by asking if he felt a production version of his racer would have been feasible — and his answer was an emphatic, Yes!

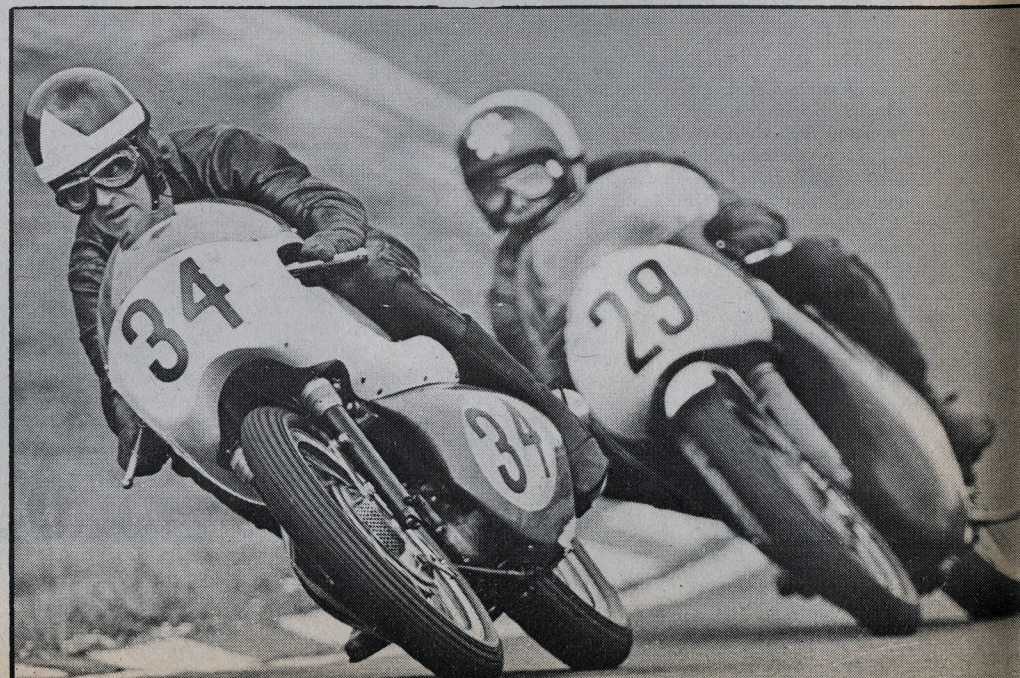
"No doubt at all, about that," he says. They could have been built and would have needed no more maintenance and attention than any other racing machine of the time — certainly not as much as the modern stuff which need replacement cranks and pistons every few hundred miles.

The end of the 500cc twin racer came with the coming of the 750cc three-cylinder 'works' machine which dominated this class in 1970 — John Cooper beat Agostini's MV at both Mallory Park and Brands Hatch.

The interesting fact is that all the data from the 500 twin was used to produce the 750 'three'.

Percy Tait still has his original 500cc twin — along with seven spare engines. It is being rebuilt and Percy, never having threatened to hang up his leathers, is planning to race it again in post-vintage events next year.

Move over lads, Percy's coming.



MOTORCYCLE RACING