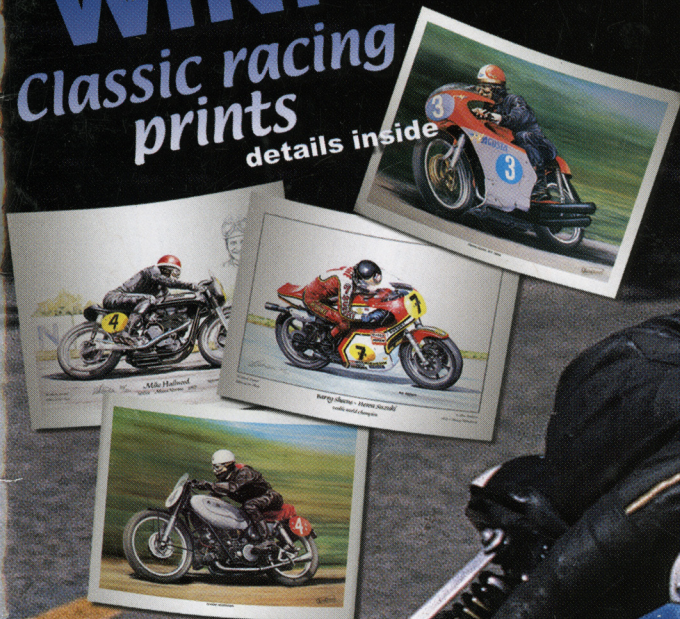


Classic Racer

PERCY'S PROGRESS

A brace of 500 GP
Triumphs on test

WIN!
Classic racing
prints
details inside



GOODWOOD REVIVAL: STARS COME OUT TO PLAY
THE FLYING BEDSTEAD: INGENIOUS AUSSIE TRIKE
FESTIVAL OF SIDECARS: THREE WHEELER EXTRAVAGANZA
SCARBOROUGH GOLD CUP: IHRO AT OLIVER'S MOUNT

104 November/December 2003
£3.25



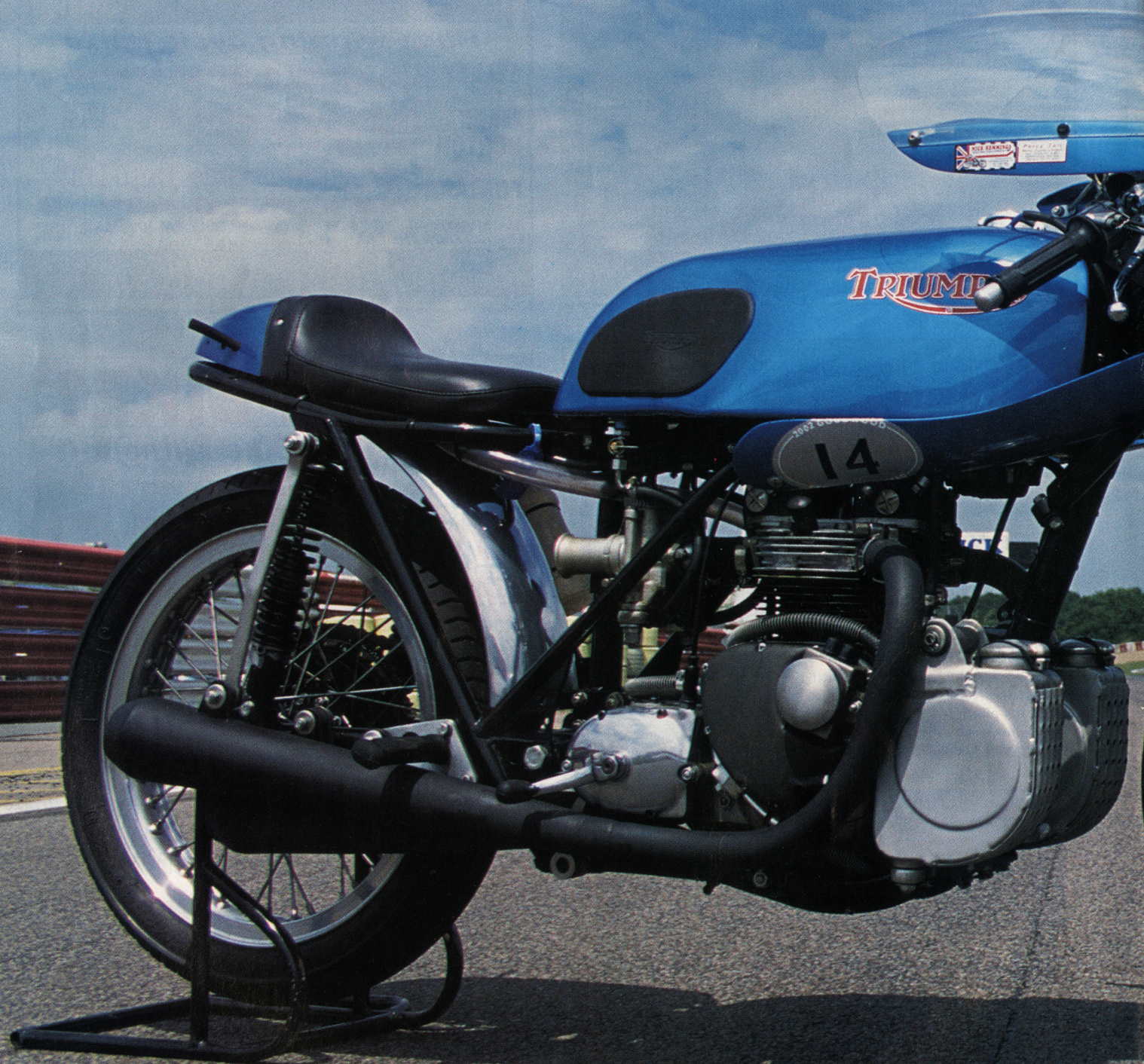
9 771470 446018



11

When Percy met **Buddy**

In the late Sixties, Triumph proved they could build a competitive 500cc racer, based on a humble roadster. Following on from Mick Duckworth's report on Mick Hemmings' restoration of the Percy Tait GP twin, **Alan Cathcart** compares it to a replica of the earlier American version.



Growing up in the Sixties, just 20 miles from Meriden, I was well aware of our local hero, Triumph's Percy Tait. Percy combined 1000 miles a week on development machinery with owning a pig farm in Little Shrewley, the next village. He commuted via test bikes including prototypes and trick development specials, which impressed me with their speed and exhaust note. Percy's finest hour, in a 30-year racing career, outranks his Trident success in the 1971 Bol d'Or at Le Mans, winning the MCN Superbike title, or any of his many other race victories. That moment came in the Belgian GP at Spa-Francorchamps in July 1969, when, a month after breaking a collarbone at the TT, when an experimental Quaife five-speed 'box locked up, Percy made a rare continental trip for only his third ever race outside the UK, to ride the factory 500cc twin in the Belgian GP. Against him and his pushrod racer were Ago's MV3, the Linto and Paton twins and the myriad Manx and G50 singles. Many of these failed in the hour-long GP – the fastest race yet run, Ago lapped at over 130 mph and averaged 125 mph – but it was Percy's Triumph which came second at a remarkable speed of 116.51 mph, the only rider not to be lapped by Ago, albeit by 200 yards! Apart from slight detonation on the penultimate lap, Percy reported a trouble-free run to Triumph's best-ever GP result.

Despite commercial success in their American market from successive Daytona victories, 1966 with Buddy Elmore, and 1967, with Gary Nixon and Elmore second after both had lapped the entire field, Triumph obstinately refused to sanction any competition activity not specifically related to customer models. This meant Production TT and mainland victories with modified roadsters, but no open-class road racing. This ignored the gaping market for a

fast, dependable 500cc privateer mount, both at home and in GPs, where the short-fused Linto and short-supply Paton provided little alternative to the ageing singles. This meant, for home fans, Triumph did not appear to have the same focused view on racing as its US affiliate, whose success had boosted American sales and given a more sporting identity to the Tiger 100. Instead, it was left to the late Doug Hele, the firm's brilliant development engineer, and his team of mechanics to go racing at weekends with modified road bikes in what was effectively their own time. Of course, budgets could be stretched to 'test parts under extreme conditions', but it was at the behest of Triumph's US importers that the 490cc T100 engine was ever tuned for racing, as late as October 1965, in response to the AMA's 500cc ohv limit. The result was startling. From a standard output of 35 bhp at 8000 rpm, Hele produced 45 bhp at 8200 rpm, then by 1969, 52 bhp at 8700 rpm, all measured at the gearbox, and resulting in a top speed at MIRA of 139 mph – helping explain that incredible 116 mph average.

Mick Hemmings needs no introduction. He was quick off the draw when Percy, by then retired from racing and the proprietor of a Coventry Suzuki dealership, advertised a stock of factory racing hardware from the defunct factory. Short of the £3000 asking price, Mick teamed up with fellow Triumph racer Rob Prior to buy the cache, then by agreement, took two-thirds of the lot, including the special works engine used at Spa, which Percy confirmed in writing was his second-place power unit. The one-off duplex Reynolds chassis which housed the Spa engine was later recycled into an off-road special, and has since been lost. Included however was a modified single-downtube T100 frame from the race shop, with lowered seat and extra stiffening tubes added on each side, back in 1969, by chassis guru Rob North, together with gusseted swingarm pivots, and this now houses the works motor. Percy said this was the TT chassis for the five-speed engine, which chucked him off, and the frame shows signs of repair which confirms this – though this must have resulted from its second TT crash that year, when Pickrell stepped off with oil on the rear tyre. A works bronze-welded Reynolds 531 swingarm is fitted, with short



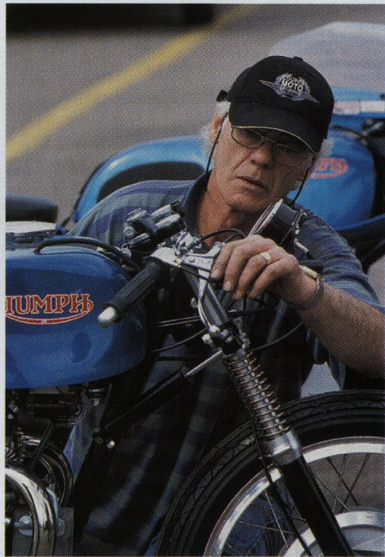
Standing proud – Triumph's top twins.



S&W shocks, as used by Triumph's American race team, while up front there's works $1\frac{1}{4}$ in forks with shorter 19in stanchions and revised internals, matched to a 210mm Fontana four leading-shoe brake, identical to the one used by Percy, to stop a bike weighing just 292 lbs (132 kg.) dry – much lighter than a Manx of the period, but with comparable performance. Rear brake is a seven-inch Triumph SLS with ventilated backplate – a common factory raceshop mod. Another 'works part' is the mounted half tennis ball, which carried a damp sponge for wiping flies off goggles – Percy always used this, even in the Seventies when he was one of the first to switch to his trademark open-face Jet helmet.

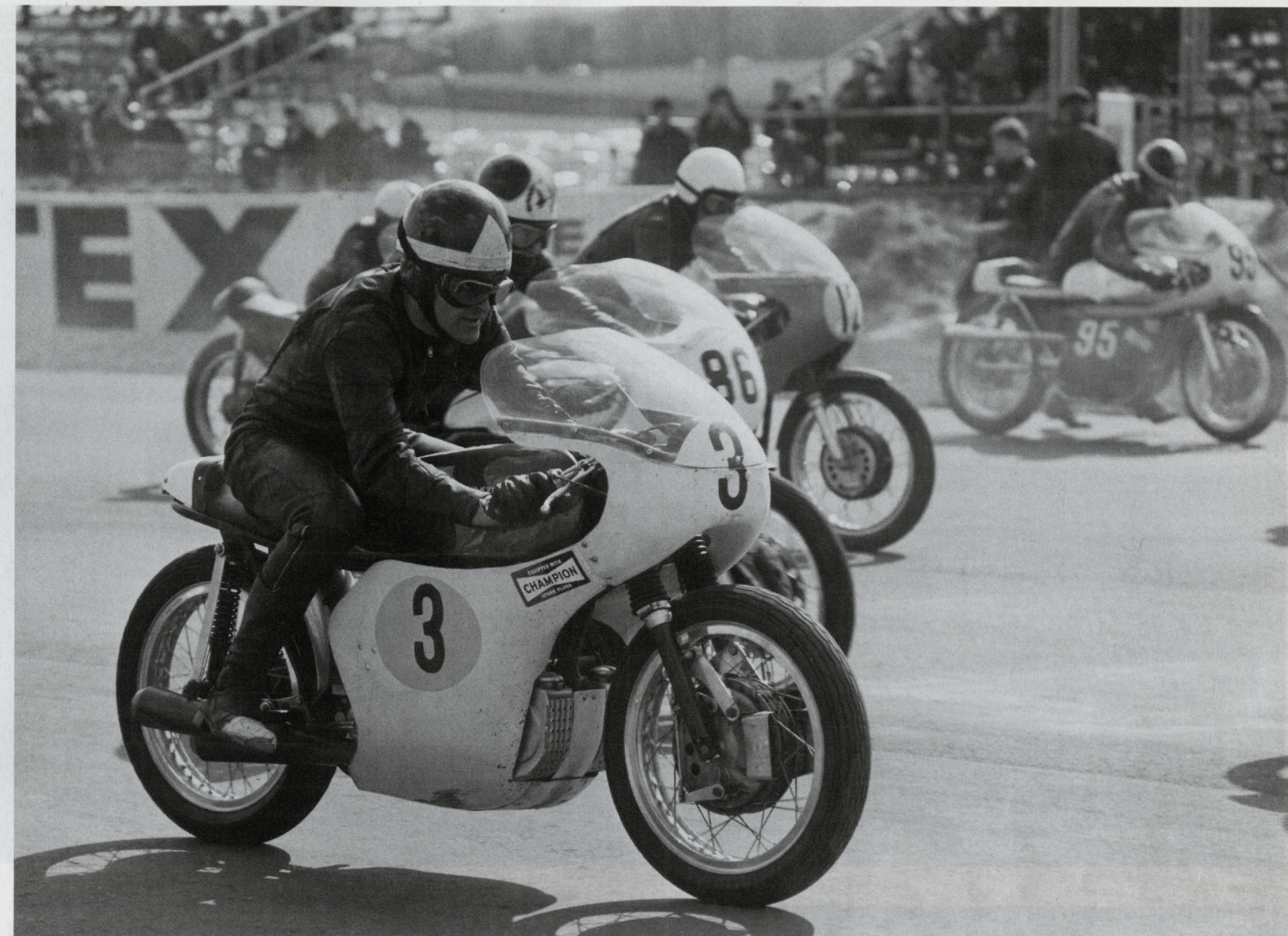
However, due to work load, it took almost two decades for the Tait treasure trove to be reassembled, Mick finally completing it a couple of years ago with advice from Hele's two key assistants, frame wizard Arthur Jakeman and engine specialist Jack Shemans. "I won't race the Triumph, because if something happened to the engine, it'd be impossible to repair because the parts just aren't there and there's no means of replacing them," says Mick. "That's why I run it with just the top section of the fairing, so people can see just how special the engine really is."

Yet the basis for this works racer is a modified



dry-sump Tiger 100 road engine using essentially the same materials as stock (no titanium pushrods or conrods, or other exotica), improved by Hele's painstaking development, and Shemans' expertise. Measuring 69 x 65.5mm, the 490cc engine has been pushed to 499cc with plus 40 pistons – Triumph's common practice at the time for their 500-class racebikes. The roller-bearing one-piece bottom end comprises a polished, special EN24 steel 360-degree crank, carrying equally polished stock alloy rods, mounted by sandcast pistons delivering 11.5:1 compression, with a pronounced squish, thanks to modified crowns and an altered combustion chamber within the carefully reworked eight-stud cylinder head. This features tapered inlet ports, and special valve seats have been machined to produce a slightly wide valve angle so as to allow bigger 1.467 in. ($1\frac{15}{64}$) inlet and 1.312 in. ($1\frac{1}{16}$) valves to be fitted. It has been welded up to space out the four outer holding-down bolts, which now pass directly through the head and the iron barrel's alloy sleeves, bolting directly into the crankcase, to stop the assembly moving because of the squish bands, which Jack Shemans spent three days scraping by hand into the head. Quite radical TH6 cams with greater lift and duration than anything else Triumph are employed, with alloy pushrods, S&W valve

TOP: Cathcart gets down to it on the Tait GP500.
ABOVE: Mick Hemmings prepares the Triumph at Mallory.



springs, titanium valve caps, and polished, lightened line-contact rockers, hence the special magnesium rocker boxes.

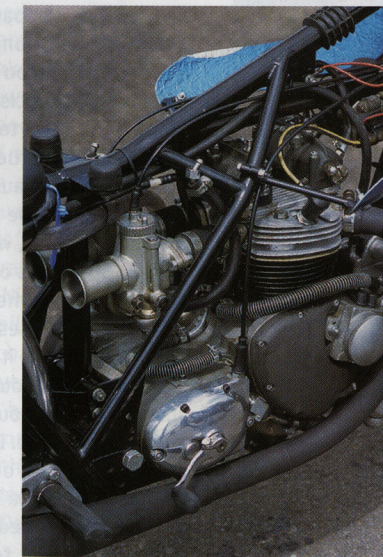
Two separate reverse-cone megaphone exhausts are fitted, with a pair of $1\frac{1}{4}$ in. Amal GP2 racing carb's with a central matchbox float chamber. Other trick hardware includes twin rubber-mounted Speedwell oil tanks carried fore of the crankcases and with fluted heat radiators in their leading edges which protrude beyond the fairing for extra cooling. There are magnesium outer covers on both sides of the engine, the right carrying the Lucas 3ET Energy Transfer ignition unit, driven off the exhaust cam, with remote contact breaker and powered by an alternator. This does away with a battery and improves the spark at 42 degree fixed advance. After his TT experience, it's understandable why Percy opted for the established four-speed close-ratio 'box for Spa – a special cluster even closer than the optional customer close cluster. This special 'box wasn't with the Hemmings acquisition, so it now uses a kit cluster fitted in the works casing, but with no provision for a kickstart. Standard duplex primary chain and three-spring oil-bath clutch are retained, the latter with an aluminium basket.

Having finally found time to reassemble the Tait bike, Hemmings kept the momentum going to

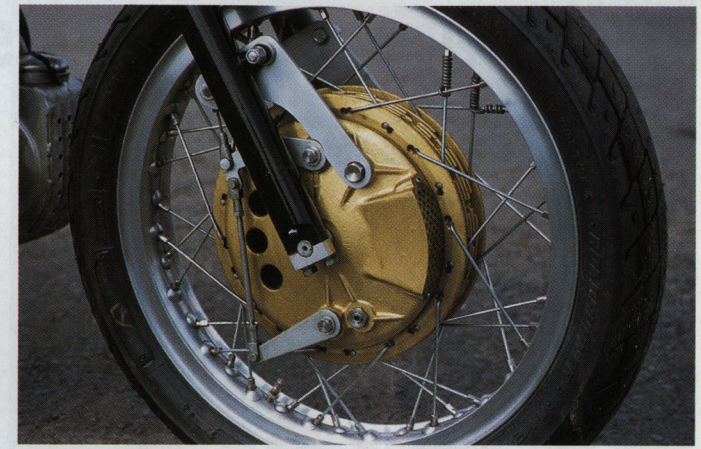
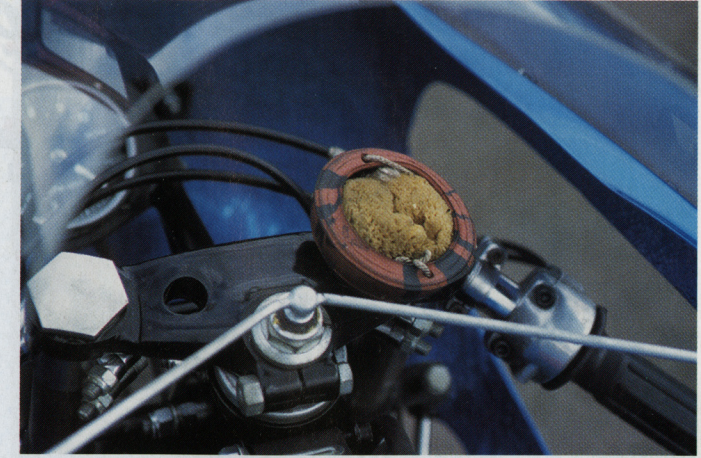
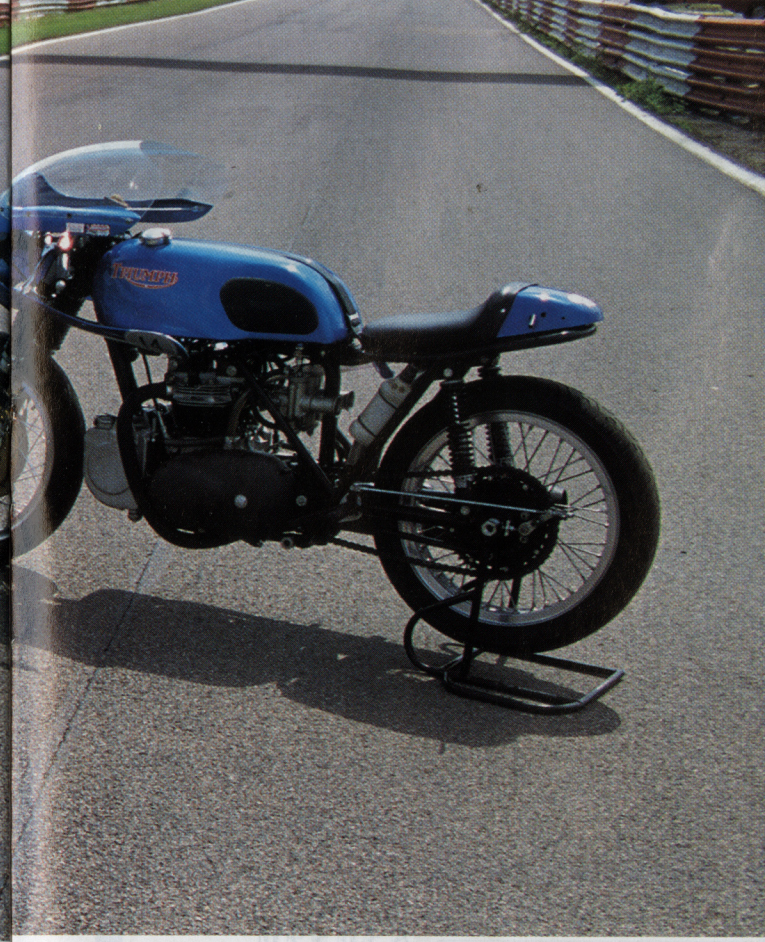
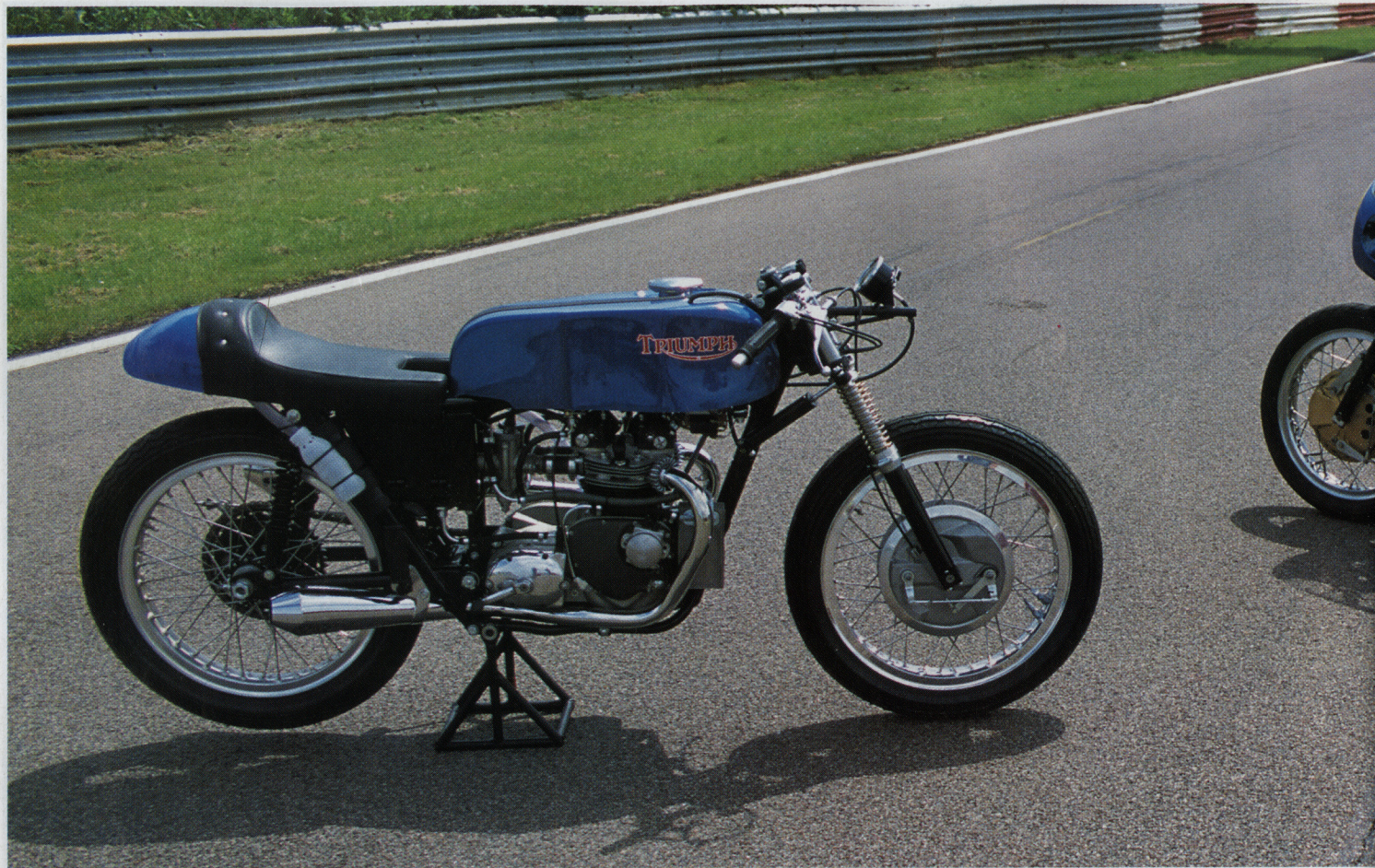
produce a second 500cc Triumph racer, from Percy's parts haul. "I had enough bits to build a second engine almost identical to the Spa motor," he says, "which was originally going to be a spare for the number one bike, but included were works Daytona 200 fuel and oil tanks, another set of works forks, and this fascinating alloy front hub,

probably one of the Triumph cheats for Production racing. It's only a twin leading-shoe, but it's more special than the Fontana – so we took a standard T100 frame which Martin Russell modified to accept the right-hand exhaust, and built a replica of the bike Gary Nixon and Dave Aldana raced in 1968, with 19in wheels and the one-up, one-down exhaust layout. I had a good chat with them when they came over for Goodwood, and they gave me lots of tips."

Having completed this second bike just before the Post-TT, Mick invited me along to ride it on its shakedown, as well as the Percy racer. Firing up produced a concert performance from the open exhausts, definitely a 'Made in England 360-degree parallel twin' – plus the distinct vibration of said layout, necessitating a park on level ground when warming up, otherwise it'll vibrate down the hill on the stand as you do so! "Yes, it does buzz a bit," admitted Mick, "but Pickrell reckoned they smoothed out at 10,000 rpm, and



TOP: Percy blasts the Triumph off the line, somewhere in England. Note BSA of Tony Smith in background.
ABOVE: With management against a dedicated race effort, Hele's team had no option but to develop the T100 roadster – the results were remarkable.



that's why he revved them so high, but he didn't have to pay for the bits to mend 'em! 9000 revs is tops, because there's no more power higher up, even with the trick cams."

Persuading the engine to rev that high proved an acquired skill, because though it pulls hard from way down low, there's a hefty flat spot between 5000 and 6500 rpm which means you have to wind it up on the smooth, light-action clutch out of slower turns like the hairpin or chicanes, till the engine clears and motors away with impressive speed. It accelerates better lower down than my own G50, even with four-speeds compared to my six-speed Schafleitner. Clutch it hard, and the twin pulls strongly in second gear to the 9000 rpm change-up point (bottom gear is too low for track use, though it does help a bump-start) with a swift, precise change on the direct, one-up, right-foot lever to third, and then top – even though, still geared for Montlhéry, it wouldn't pull a true fourth gear at Mallory. "It's a skill to ride it hard," says Mick, "because rather than the carb needles or jetting being faulty, I'm sure the flat-spot is a combination of the extreme cams and the megaphones, which give impressive top end. That's why it went so well at Spa – lots of long, fast stretches taken wide open, rather than fiddly sections where you'd have to use the clutch to coax it into the powerband. Horses for courses..."

Well, yes, but it coincides with the worst of the vibration, which though smooths out a little above 7000 revs, is so finger-numbing after just a few laps, you have to admire Percy's endurance in bearing it for an hour-long race. Looking at the heavy carb' assembly, I wonder if this isn't the source of the problem, for Mick has been forced to use standard Daytona mounting rubbers, rather than the unobtainable canvas – reinforced rubber connectors employed by Hele. These were carefully chosen to prevent fuel frothing and optimise carburation

above 6000 rpm. According to Hele, 'any' grade of rubber wasn't up to the job. I suspect the lack of these is causing frothing in the rigidly mounted chamber, and would explain the poor midrange carburation. The problem was exacerbated at Mallory when Mick later found some of the engine mounting bolts had loosened.

The Triumph has a much lower build than a G50 or Manx, so you sit low on the bike in what is nevertheless a relatively rangy, quite comfortable riding position, akin to my Ducati Supermono. The low-slung stance helps minimise frontal area for extra top speed – well, it would if the Triumph's screen were cut back properly to allow your head behind it, a problem of which Mick is aware, and needs to address with a hacksaw! The Triumph's low build makes it easy to flick from side to side, both in slow corners, or on the power. It's also more stable over bumps because of this, aided by the good response from the modified forks, which though seemingly short of rebound damping by bouncing under heavy braking, didn't chatter over the bumps exiting Gerards, plus the surprisingly good ride quality of the S&W shocks. I'll admit I looked slightly askance at these at first – until I tried them, when I found that, in spite of their short travel, they eat up bumps as well as the Girlings fitted to the Elmore/Nixon replica, and feel a touch more compliant. The Triumph handles well. Percy preferred this single-downtube frame to the duplex Reynolds chassis he used on his Spa bike, but then discarded for his next race, reverting to a single-tube layout for his final continental sortie, when he won the non-championship Swedish GP. Even the extra grip from modern Avon racing tyres doesn't deliver a hinge in the middle of the strutted frame when hard on the throttle out of Edwina's, plus it steers well through fast turns, with lots of stability round Gerards or the Devil's Elbow, with the engine running hard, on full song. This bike is made for faster

circuits – especially as it stops so well from high speeds, with a wonderful response from the best drum brake in the business up front. Fontana knew his trade for sure.

Switching to the Elmore/Nixon replica for its maiden shakedown run proved interesting, because though the carburation wasn't right, hitting a wall at 6500 rpm, there was much less vibration below this mark than on the Tait bike, making it more enjoyable – just not as fast, yet. Playing around with the needles and jets gradually improved things, so that by the end of the afternoon I had it revving to 8500rpm. When Mick gets it set up right, the Elmore/Nixon replica will be a good ride, especially since it handles as well as the genuine Tait GP bike, even on the triangular tyres. Maybe he might convince himself to race it, just the once or twice, or...

The Tait works Triumph 500 is a significant bike, which represents the end of an era, as the ultimate stage in the Triumph factory's development of the T100 engine, which had earned two Daytona 200 victories, as well as that runner-up slot in the Belgian GP. The advent of the CB750 Honda, and BSA/Triumph's own triples, meant that US road racing rules changed to F750 for 1970, one year after lifting the ohv capacity ceiling to 750cc, for the AMA dirt-track series, had spelt the end of the trail for Triumph's 500cc racers in America. This meant that, henceforth, the British firm's racing was concentrated on the triples, using the lessons learned on Tait's 500 to quickly develop a potent pushrod three-cylinder challenger to Honda's cammy four. At the end of 1971, Doug Hele even had the satisfaction of beating Ago's MV, when John Cooper twice defeated the Italian star pairing in the space of one week, at Mallory Park and Brands Hatch. I bet that made up for Percy almost being lapped two years earlier at Spa!

PHOTOS BY: KYOICHI NAKAMURA



TOP: Triumph's 500cc twin racers demoralised the Daytona opposition for two years in succession. Hemmings replica is a tribute to the work of Doug Hele.
 ABOVE: Though still in need of fine tuning, our tester felt the Nixon/Elmore replica was a nicer machine to ride.

TOP RIGHT: Half a tennis ball, containing a damp sponge – another ex works trick part!
 ABOVE RIGHT: The Tait machine sports a genuine Fontana 41s front brake, as per the original.