

# On the Four Winds

By "NITOR"

**MATTER OF WEIGHT** Last week's first leading article discussed the question of machine weights in a general sense. One of the statements, if you remember, was that the 174 c.c. Swedish Husqvarna, scaling under 165 lb, was heavier than some of the models tackling the annual Epsom to Brighton adventure—the Sunbeam Pioneer Run. Here are a few facts you may find interesting. At the Stanley Show in 1904 (the Earls Court of that era) Humber exhibited a machine suspended on the end of a spring balance. And the reading on the balance? Just 72 lb! As the years passed and the motor cycle progressed beyond the motorized-cycle stage poundage figures increased. The Triumph for 1912 (an "average" machine, if there was such a thing at that time) scaled 180 lb. The Levis two-strokes about then came out at between 35 and 110 lb depending on the equipment. At the Pioneer Run Jim Sheldon described that model as the nearest thing of its day to the modern Husqvarna. Big twins of the period scaled between 200 and 270 lb and smaller-capacity twins under 200 lb. By 1914 the Triumph had gone up to 210 lb and the Levis to between 86 and 125 lb, while the Rex-J.A.P. weighed 278 lb. And so on we went, with weights increasing and increasing as design became more complex and reliability had to keep pace with performance. Give me a six-fifty scaling 350 lb dry and I will ask no more.

**NEGATIVE TRAIL** Probably you spotted in "Sports News" for March 27 that the front fork on Bill Boddice's latest racing outfit has a slight negative trail. This item of news forms an interesting sequel to Vic Willoughby's and Eric Oliver's experiences (described in *The Motor Cycle* for February 27) on the beneficial effect of trail reduction on a road-going outfit. Eric, it will be recalled, was one of the first to experiment with really small trails and he finally settled on zero trail at full bump—about  $\frac{1}{4}$  in positive at static-load position. That, he found, gave him the best compromise between lightness for cornering and directional stability on the straights. Cyril Smith has for some time been using a nominal  $\frac{1}{4}$  in trail. Having visions of even so small a negative trail as  $\frac{1}{8}$  in (Boddice's figure) causing the wheel to execute a sharp swing to full lock if deflected by a bump, I sought the views of one or two tyre boffins.

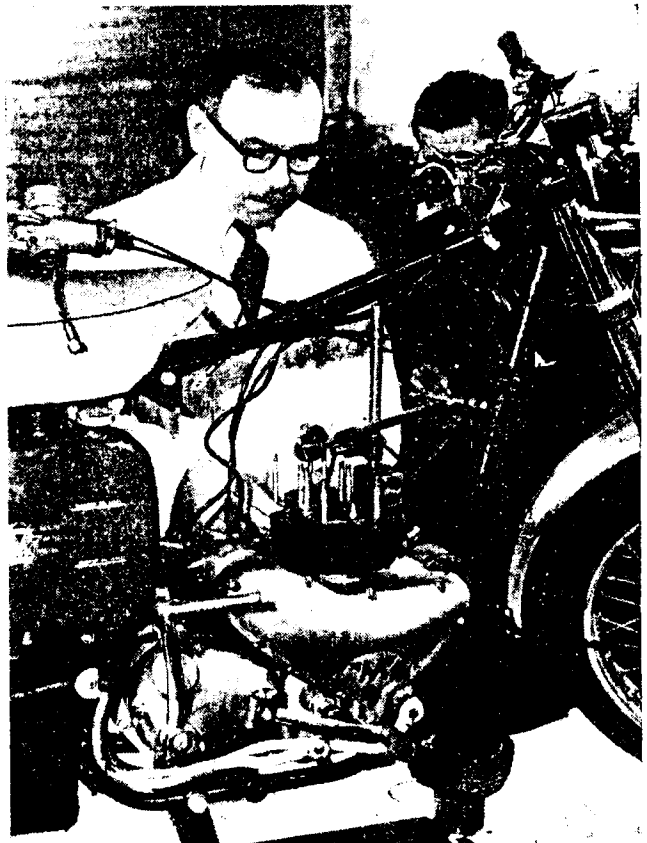
**TYRE AND TRAIL** Two factors are involved in the self-centring effect on a sidecar front wheel: one, of course, is the trail and the other is what the experts call the self-aligning torque of the tyre—its tendency, because of distortion of the rubber, to resist deflection from a straight-ahead course. This self-aligning torque is far from negligible and so long as it is greater than the deflecting torque resulting from negative trail, the steering will be directionally stable. But the variations of these two factors with speed do not follow the same laws, so one can envisage a negative trail which gives stable steering at one speed but not at another. Also to be borne

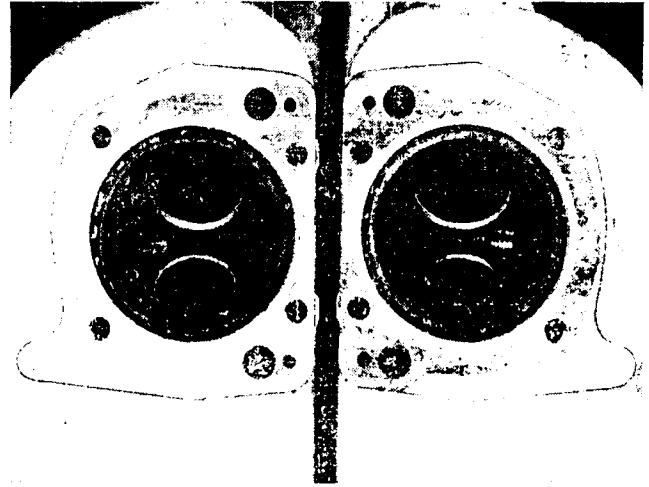
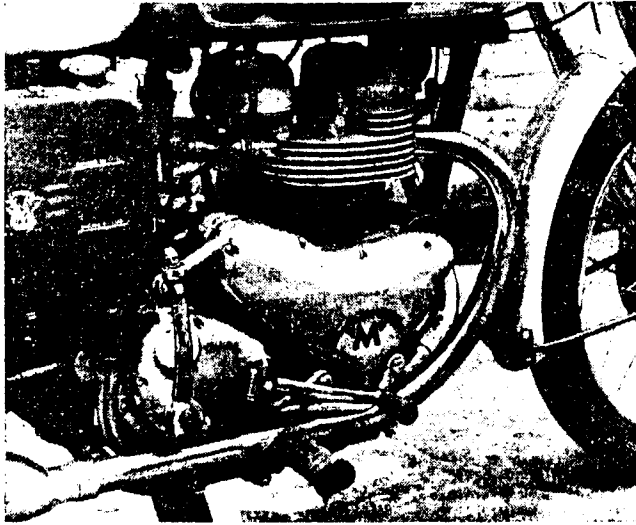
in mind are changes in wheel loading through acceleration and braking, and in the trail itself through suspension movement; this last will naturally depend on the geometry of the fork used. It all seems rather complicated to me, with a fair amount of "suck it and see" thrown in.

**SIAMESED EXHAUSTS** What are the odds that the siamesed exhaust system is due for a boom on four-stroke parallel twins? I suppose that the post-war Sunbeam was the first in the field but, of course, separate pipes would hardly have been practicable on a longitudinal-crankshaft layout. Discounting a few special I.S.D.T. models where weight had to be minimized and accessibility was at a premium, the Triumph Trophy was next, followed by the Sports Twins from Plumstead. (Each pair of pipes on the Ariel Four is also, of course, siamesed.) Then, within two weeks, we get four new models so equipped—the Norton Nomad enduro for the U.S. market, and the three roadster Royal Enfields. Just about two years ago my colleague "Micrometer" dilated on the considerable merits of the siamesed exhaust system—it can be lighter, quieter, less costly, give better accessibility and even result in more power. "Micrometer" advocated its use, especially for sidecar outfits where the lack of symmetry was no disadvantage. Now that the ball is really rolling, let us hope that it will gather momentum.

**THAT MATCHLESS** After riding Vic Willoughby's ton-in-the-hour Matchless (see pages 462-465) to the factory following a further 400 miles of road work, Alan Baker was present last week when the engine was stripped. His first impression was of the remark-

*A member of the A.M.C. inspection department checks the stroke of the Matchless engine under the watchful eye of the Technical Editor*



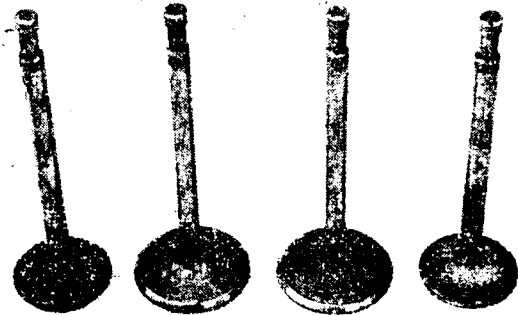


ably oil-free exterior of the power unit which had not been cleaned since before the M.I.R.A. trip. In spite of the flogging, the only seepage that could be detected was from the forward end of the primary chaincase and from the gear-pedal bush; even those leaks were minute. When the cylinder heads came off it was seen that, as is usual on these engines, the right cylinder had been getting slightly more oil than the left. There was some carbon—probably acquired during the later road mileage—but the general condition up top was exemplary. Exhaust valves showed no signs of excessive heat and light grinding would quickly have restored the seats to pristine condition. Both plugs were fit for many thousands more miles.

**TIMES HAVE CHANGED** Lifting the barrels revealed that the rings were free and the state of the pistons was excellent save for slight picking-up on the thrust face of the right piston. In case anyone should suspect a larger capacity than 592 c.c., measurement by the inspection department confirmed that, at 72.8mm, the stroke was as catalogued; bores, too, were the nominal 72mm, and wear on their thrust axes was less than 0.00075in. The skirt of the left piston was still within manufacturing limits but, because of the picking-up, the other piston was nearly half a thou down. Cams, followers, rockers and gudgeon pins were as near perfect as makes no difference and no wear could be detected in main or big-end bearings. Primary chain adjustment was still spot on. In short, the engine was pulled down merely for interest's sake. And to think that not so many years ago it was rare for any parallel twin even to top a genuine 100 m.p.h.—far less maintain it for an hour.

**ANOTHER PROBLEM!** Many of the readers who provided answers to the lubrication problem I posed in the issue dated March 27 suggested that I should pass on similar teasers whenever they arise. And it so happens that S. D. Smith, of Greenford, Middlesex, ended his letter by presenting a problem of his own. Here it is, in his words. "I have a 125 c.c. two-stroke which has a maximum speed on the level of about 42 m.p.h. Its mileage is about 17,000. Until recently the engine would start readily and accelerate normally up to about 30 m.p.h. At 35 m.p.h. the power would fade and the engine begin to run very irregularly. On occasions it would cut out altogether—almost as if the ignition had failed. But the ignition system was checked and everything found to be in order.

*Above left: Oil tightness was first class. Above: The greater quantity of oil reaching the right cylinder is clearly shown by the darker colouring of the combustion-chamber deposits. Valve-seat condition was excellent. Below: The slight oiling bias is again indicated by the different appearance of the two sets of valves, particularly the (smaller) exhausts*



The engine was decoked (though the barrel was not disturbed) and the silencer cleared with a  $\frac{1}{16}$ -diameter rod in accordance with the manufacturers' instructions. The carburettor was dismantled and cleaned. For the first few miles after all that a cure seemed to have been effected, but soon the trouble was as bad as ever. A repeat check was made and again no fault was found." So there you have it. I know the answer but I'm not publishing it today. Let me see what you have to say about it first!

**THAT MAN CAN RIDE** I see him most mornings, as he emerges from a side turning in Kingston and joins part of my route to London. In his fifties, I would say, he is always immaculately turned out, always on the same spotless LE Velocette, always occupying just the right section of the road. Even admitting that the LE's exhaust whispers so softly, that man is just about the most unobtrusive rider I know. I have never heard the LE's horn. His hand signals are clear without being ostentatious. His gear changes are executed in very leisurely style—indeed, everything he does appears to be done without haste. Yet he wastes no time and, on bigger machines, I am content to shadow him until our routes diverge. I have no idea who he is. But should he read these words I hope he will accept them as a compliment. He is a motor cyclist of the old school—and I doff my helmet to him.