



Bill Nilsson

*The 7R origin of the A.J.S. scrambler is unmistakable in the timing cover and hubs. The exhaust pipe is welded from nine pieces*

## Hybrid Scrambler

By VIC WILLOUGHBY

**Bold Conversion of a Road-racing**

**Model by Swedish Moto-cross**

**Star, Bill Nilsson**

THEY said it wouldn't work—as they very often do. The sceptics, that is, who argue a racer is a racer, a scrambler is a scrambler and never the twain shall meet. But it works very well, does Bill Nilsson's converted 7R A.J.S. scrambler, as he was confident it would from the start. So well, in fact, that he is romping ahead in the world's moto-cross championships.

Mark you, there is some excuse for the attitude of the die-hards. A modern racing single is a top-end-performance device which gets a fit of the sulks whenever r.p.m. fall much below the ordained high level, whereas the heroes of moto-cross cry out for bottom-end punch as well. But beefy power low down is just the feature that distinguishes Nilsson's A.J.S. The transformed racer has other virtues, too, of which more anon.

At 24, the fair-haired, compactly built Nilsson is one of Sweden's very best scramblers. So why, you may well ask, should he suddenly embark on such a strange conversion? In the first place he rode B.S.A.s until the end of last season but then the factory slashed its competitions commitments. And, of course, it's not new for a top scrambler to show strong individual preferences: there is, for example, Les Archer's Alder-shot-brewed Norton.

So Nilsson—as serious-minded a young man as you will find in moto-cross—bought Olle Nygren's 1954 A.J.S. Boy Racer and started to rehash it just after last Christmas. A plumber by trade, Nilsson did most of the work in his home workshop. First requirement was to boost engine capacity from 348 c.c. to as near as practicable to the permitted 500 c.c. The 74mm-bore cylinder barrel was bored out as far as was felt to be safe—to 80mm. Increasing the stroke (from 81 to 96mm) involved making a new pair of flywheels. Those two modifications pushed the swept volume up to a fraction under 483 c.c. A flat-top Mahle piston was specially made and, in conjunction with the increased bore size, presumably gives a squish effect.

Though he reverted to an Amal 10TT carburettor instead of the GP instrument favoured by Nygren for road racing, it is indicative of Nilsson's nous that he stuck to standard carburettor and valve sizes. That, doubtless, has a good deal to do with the lusty bottom-end power, for the engine is now a long-stroke five-hundred with comparatively modest valve and port sizes—features which traditionally give cart-horse characteristics. The large-capacity air box to keep dust out of the engine is conventional scrambles practice but the sinuous exhaust pipe, twisting snugly behind the right-hand front down tube, close round the

timing chest, inside the footrest and under the gear box, is a real gem of do-it-yourself ingenuity. The pipe is welded from no fewer than nine short lengths; only the flanged piece for attachment to the cylinder head is from the original pipe; the other pieces were cut from a B.S.A. exhaust pipe.

Length of the pipe was determined by experiment. But long before that stage was reached Nilsson's patience was severely taxed by the need to carry out innumerable trial assemblies of the engine. Reason for that was to obtain adequate clearance between valves, piston, cylinder head, connecting rod and flywheels for at first everything seemed to foul something else.

Because it was not possible to obtain suitable indirect ratios with the standard Burman racing gearbox a B.S.A. box was fitted in the frame and the mainshaft adapted to take the Burman clutch. An oil-bath primary chaincase is orthodox wear on a scrambler and to suit the model Nilsson lengthened an A.J.S. case by about an inch by cutting it and welding in strips.

Scrambling bent the front down tubes slightly so the frame was twice strengthened by welding gussets to the steering head and adjoining tubes. Further stiffening results from an increase in diameter of the vertical seat tube. Bending the top tube down at the rear permits a lower height for the Saroléa seat. Stubby, forged footrests are clamped to the frame tubes and overall width is slim; gear and brake pedals are cranked inward.

A dual purpose is served by lengthening the front-fork stanchions: wheel deflection is increased and so is static ground clearance. Rubber gaiters protect the sliding surfaces. Ground clearance is further enhanced by the substitution of a 21in steel front rim for the original 19in light-alloy rim. Rear-rim diameter remains 19in but again a steel rim is employed. Front and rear tyre sections are 3.00 and 4.00in respectively. The original one-gallon light-alloy oil tank remains but the fuel tank, of similar material, is taken from a B.S.A.

Now what are Nilsson's impressions of his expertly modified 7R? In addition to tremendous low- and medium-range power, engine starting is a dream. Because the wheelbase is on the long side, steering is a trifle heavy on very twisty going but that is more than offset by exceptional steadiness on bumps. Use of the steering damper is never called for and more than one top-notch scrambler can vouch for the superb handling on long waves—as noted when Nilsson whistles effortlessly by on the inside. Braking leaves nothing to be desired except that the front brake tends to lose efficiency in dust.

And they said it wouldn't work!