



### No. 21.—The 3.47 h.p. Overhead-camshaft Matchless.

THE products of H. Collier and Sons, Ltd., Plumstead Road, London, S.E.18, have for many years past been famous for their reliability, and a lengthy and severe road test of the latest 3.47 h.p. overhead-camshaft model Matchless has proved to our satisfaction that this machine, although it embraces so many features different from those incorporated in the rest of the Matchless range, well upholds this reputation.

At the price of £60, the L/R Super-sports, as it is termed, represents excellent value for money, and the specification is such that even the most critical rider could hardly cavil at this claim.

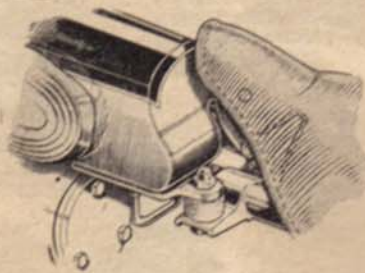
#### The Specification.

The engine has a bore and stroke of 69 mm. by 93 mm. respectively, giving a capacity of 347 c.c. It is fitted with large-diameter overhead valves operated by means of an overhead camshaft, which is carried on roller bearings in an aluminium casing supported above the detachable cylinder head. A cross-shaft at the rear of the crankcase, driven by spur gears from the crankshaft, drives through bevel gears to a vertical shaft carried inside a telescopic tubular casing, and this vertical shaft in turn drives the camshaft through a second pair of bevelled gears. The whole of the mechanism is enclosed.

The machine under review was fitted with the standard piston and had a compression ratio of 6.4 to 1, but a high-compression piston for use in conjunction with alcohol fuels is available, giving a ratio of 7.25 to 1. The aluminium piston is fitted with a floating gudgeon pin, and the con-

necting rod has a roller big-end bearing. A Sturmey-Archer three-speed close-ratio gearbox is fitted, the standard gear ratios being 5.4, 6.8 and 10.3 to 1. Ignition is provided by a Lucas magneto mounted on a platform behind the cylinder, and a two-lever sports B. and B. carburetter is employed.

A dual system of lubrication is provided, a mechanical pump supplying oil direct to the overhead-camshaft gear, from whence it passes down the vertical shaft to the crankcase. In addition to this, an adjustable sight-feed glass supplies oil direct to the drilled crankshaft, from whence it is forced to the big-end bearings. This auxiliary supply need only be brought into use for the purpose of indulgence in high speeds.



The rear tank mounting, showing also how the saddle conforms to the design.

Heavyweight girder spring forks are used, incorporating shock absorbers and a barrel spring. An adjustable steering damper is built in the bottom of the steering head, being controlled by a lever situated in the centre of the handlebars. The latter are of the sports type and



These two photographs give a good impression of the sturdiness of the Matchless and the general neatness of outline.

adjustable to suit the riding positions of different persons. The wheels are shod with Dunlop cord 650 mm. by 65 mm. tyres. Internal-expanding brakes are fitted to both wheels, the rear brake acting in a 5-in. drum and the front brake in a 4½-in. drum.

Other features of the specification include a Terry saddle, large nickel-plated bulbous saddle tank with knee-grips attached, stands to both wheels, effective mudguarding and straight-through, large-diameter exhaust pipe with nickel-plated silencer. The machine is finished in black. Its weight is approximately 225 lb.

On taking the machine over, the predominant impression after a run

*Road Tests (contd.).*

of a few miles was its docility, for, although we were mounted on a machine of the sports variety capable of speed and acceleration of a by no means ordinary nature, we were able to "trickle" along at about 10 miles per hour with the engine firing as evenly as could be desired and without a suspicion of transmission snatch. The clutch was very sweet in action and gear changing was an unusually simple matter, it being unnecessary to close the throttle at all provided the gear lever was shifted quickly into the desired notch. Usually machines of this type give a disconcerting lurch when racing changes are made, but with the Matchless this habit was entirely absent, and the drive is always taken up very smoothly.

We took an early opportunity of trying out the capabilities of the machine over rough going, and found that it was particularly steady on greasy country lanes, although the competition tyre fitted to the rear wheel was an undoubted asset in this respect. The rear brake proved to be extremely efficient in operation, despite the fact that it was necessary to apply pressure judiciously in order to eliminate skidding. The front brake was as effective as the majority of its kind, but required rather more frequent adjustment than the average motorcyclist would be inclined to carry out.

The close-ratio gearbox is, of course, not exactly ideal for hill-climbing, but the machine's capabilities in this direction are quite good, and the ascent of Cudham Church Hill, in Kent, proved a fairly easy proposition in top gear, provided one did not mind taking the awkward left-hand bend at speed.

The general "nippiness" of the engine was one of the most pleasing features, and traffic work, which is sometimes an uncomfortable experience on a mount of this type, was an easy matter for the Matchless. The acceleration in second gear was extremely good, and it was possible to thread a passage through congested traffic at a good speed by using this acceleration in conjunction with the efficient rear brake.

The 15-mile journey from home to the centre of London, which includes about seven miles of tramlines, could easily be accomplished in 40 mins. without taking any risks, and even on a wet day this time was not cut down by more than 5 mins.—despite our abhorrence of wet tramlines brought about by a number of skids on previous occasions!

During the whole of the time the machine was in our possession we did not have an opportunity, owing to weather conditions, to let it all out, but on one stretch of road a speed of 65 m.p.h. was attained and,

from the feel of the engine we should say that the makers' claim of 75 m.p.h. with the standard piston is by no means exaggerated. The machine appears to be at its best at about 45-50 m.p.h., at which speed it will carry on without any signs of flagging so long as the rider feels inclined. On bumpy roads the machine is rather given to "bucketing," but the steering damper effectively eliminates any tendency to wobbling; while the massive front forks serve to damp out road shocks to a large extent.

To a rider who is rather long in the leg the riding position becomes a

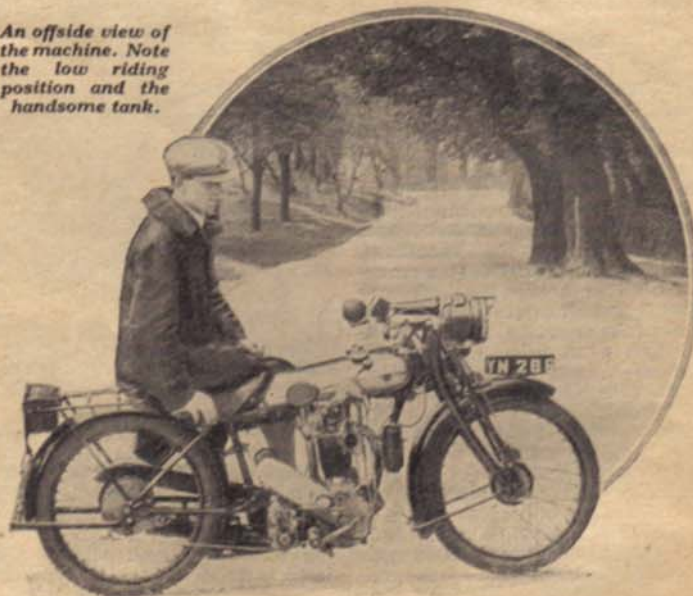


*The massive head, showing the steering-lock stop incorporated with the damper attachment.*

trifle uncomfortable on long journeys as the footrests are rather too far forward and the saddle, which is not fitted with rear springs, loses some of its shock-absorbing properties as a result. For a person of average height, however, the riding position leaves little to be desired, for the handlebars may be adjusted to suit varying requirements.

Mechanically, the engine is fairly quiet, although there is a suspicion of valve clatter at speed. This would probably pass unnoticed were the silencing system less efficient.

*An offside view of the machine. Note the low riding position and the handsome tank.*



We had an excellent opportunity of testing the reliability and general performance of the machine during the Surbiton Motor Club's recent Grand Cup Trial which was held over a severe course in the Dorking neighbourhood and included the ascents of such well-known hills as "Slippery Sam," near Wootton Hatch, Leith Hill, and miles of heavy going through the Colonial sections of Netley and Ranmore Commons. The engine showed that it had plenty of power and, despite the fact that the bottom gear ratio is but 10.3 to 1, we completed three ascents of Leith Hill and, with the exception of the last few yards, when wheelspin set in, made "feet-up" climbs.

Three attempts were necessary on "Slippery Sam," which was in a fairly bad condition. On the first two occasions we charged the bank through taking the ascent too fast, but the third time went up with ease on bottom gear with feet on rests, even in the thick mud at the top. At all times the machine had ample power in reserve.

In the Colonial sections, which consisted of deep mud, ruts and miniature watersplashes, the Matchless proved its worth, and we were able to plough our way through a good deal faster than many others. In spite of all this hard usage, the engine was running as easily as ever at the finish and ticked over as well as before. The clutch also was as effective as ever.

The machine was at all times a first-kick starter, and this is a feature which should appeal to a large number of motorcyclists.

Despite the fact that the machine will do 75 m.p.h., the petrol consumption is in the neighbourhood of 100 m.p.g.