



## NORMAN "LIDO"

First Test of New Ashford-built Moped Fitted with the Villiers Two-stroke Engine

THIS is a test with a double interest, for not only is it the first to be published of the brand-new Norman "Lido" moped, but it is also the first independent assessment of the Villiers 3K engine/gearbox unit which may easily become the standard power plant for British machines. And it is a pleasure to be able to report that both machine and engine emerge with honour from the ordeal!

Though new in production here, the "Lido" is, of course, basically an established design, the rights having been bought when Normans acquired the Achilleswerke, in Germany, a year or so ago. Nonetheless, months of development work have been undertaken in this country, and several features of the German model which were unsatisfactory have been redesigned. The result is impressive. I rated the original "Lido" one of the most comfortable machines I had ever ridden . . . but that was before I tried the Norman version. It rides beautifully. "Majestic" is, I think, the only word which can fully convey the smoothness and steadiness of the machine, with its soft suspension and cunningly-located handlebars, saddle and pedals. You feel that you could get aboard and just ride for hours. Its that sort of a machine.

Its handling, too, is excellent, with that taut steering which only comes when the manufacturer has calculated all the complicated factors to a nicety. In fact, the only fault I could discover on the cycle side was that the front suspension could be bottomed on unmade roads. On the other hand, one drawback

of the early "Lido" has been solved. In a previous test, I criticised the "snatch" to the right when the front brake was applied; on the Norman machine there is no trace whatsoever of this tendency. The brakes can be clamped hard on without any trace of a swerve, and with surprisingly little dip on the front end. Both brakes are smooth and fairly powerful, and braking figures would have been better still if the rear "stopper" had not been prone to locking.

Though the "Lido" has extensive shielding I found no evidence of rattle or noise-magnifi-

Normans have certainly rung the bell with their Villiers-powered two-speed "Lido," and its lucky rider has a mount fit for the smartest company.

cation, and the restyled grille over the power unit did not interfere with the engine cooling.

And what of the engine? I'd say that Villiers have a potential champion here. It could be run at full throttle for miles at a stretch, once I had cured a tendency to "pick up" by lifting the throttle needle one notch; and would return a 26 m.p.h. cruise at little more than half throttle. Its starting was good, and acceleration off the mark very smart indeed . . . in fact, up to 15 m.p.h. it would "hold" a 175 c.c. scooter!

Hill climbing, likewise, is well up to par. The Villiers likes a fairly early change, though it will pull exceptionally well in top gear if the rider demands it. But its real strong point is that it will haul away like a steam engine at just under 10 m.p.h. on a really steep climb, while easier gradients could be taken in bottom at about 15 m.p.h. without any sign of over-revving.

### Smooth Motor

Throughout its main operating range, the Villiers unit was sweet and smooth, though high-frequency vibration set in above 30 m.p.h. on the over-run. It was also completely clean in use, and commendably well silenced. In fact, it was probably the absence of much in the way of an exhaust note which brought the persistent "rustling" sound of the engine-speed clutch into prominence . . . the only mechanical noise I could detect.

All equipment on the machine is, of course, British, and all worked well. The lights are very good indeed, with a wide beam which has a good cut-off, thanks to the built-in cowling around the lamp. The horn is adequate, but once or twice I became a little annoyed when the back-peddalling mechanism failed to free itself cleanly, and I would also have preferred a rather longer twist grip to the gear change.

These, however, are matters of detail. What is important is the fact that here is an all-British two-speeder with handling and performance good enough to match the imported models, and with styling and specification ahead of most. We'll be seeing a lot of the Norman "Lido"—and of the Villiers 3K engine.

CENTAUR.

### Performance

**Speed:**  
Maximum 30 m.p.h. in 26 sec. from rest.  
Flying 1/10th mile, 28 m.p.h.  
Standing 1/10th mile, 19 m.p.h.

**Acceleration:**  
0-10 m.p.h., 3 sec.    0-20 m.p.h., 11 sec.  
0-15 m.p.h., 5 sec.    0-25 m.p.h., 15 sec.

**Economy:**  
At 20 m.p.h., 126 m.p.g.  
At 25 m.p.h., 116 m.p.g.

**Hill Climbing:**  
Time for hill, 1 min. 46 sec.  
Change, top to bottom, at 0.2 miles.  
Hill 0.5 miles long; max. gradient 1 in 10; av. gradient 1 in 16.

Braking:	Front	Rear	Both
From 20 m.p.h.	28ft.	35ft.	19ft.
From 25 m.p.h.	54ft.	53ft.	34ft.

**Peddalling:**  
Comfortable pedalling speed, 5 m.p.h.  
Tester's rating: fairly hard to pedal.

Tester's Weight: 200 lb.

### Specification

**Engine:** Villiers 3K two-stroke; 40 mm. bore x 39.7 mm. stroke = 49.9 c.c.; c.r. 7 to 1; 2 b.h.p. at 5,500 r.p.m.

**Transmission:** Two-speed gearbox built in unit with engine; engine-speed clutch; kick starting; chain primary and final drives.

**Frame:** Welded up from steel pressings; swinging-fork rear springing; swinging-link front forks.

**Tank:** 1½-gal capacity.

**Lights:** Integral front and rear lamps fed direct from Villiers flywheel magneto-generator.

**Wheels and Brakes:** Both brakes 4-in. internal expanding in full-width hubs; chromium-plated rims and rust-proof spokes; 2.00-in. x 23-in. Dunlop white wall tyres at front and rear.

**Equipment:** Electric horn; centre stand; luggage carrier locking tool box; tyre pump; tool kit; number plates.

**Finish:** Duo-tone dove grey and blue enamel or duo-tone green enamel, with chromium-plated details.

**Weight:** 121 lb.

**Makers:** Norman Cycles Ltd., Beaver Road, Ashford, Kent.

**Price:** £74 11s. inc. P.T. Speedometer £2 9s. 6d. inc. P.T. Legshields £2 2s. 6d. Windscreens £2 10s. 9d.

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