IMPRESSIONS OF CURRENT MODELS

The 74 c.c. Two-stroke

MANURHIN "HOBBY"

Fully Automatic Transmission on an Economical French-built Scooter

IN the French-manufactured Manurhin "Hobby" scooter, the sole British concessionaires, A.F.N. Ltd., have secured a utility lightweight scooter which provides the nearest approach to electric traction that an internal combustion engine-propelled machine can reach. It is, in fact, the two-wheel equivalent of the "two-pedal" car.

Made under a D.K.W. licence, the new "Hobby" supersedes the automatically-variable gear version of yester-year by virtue of a transmission system that does *everything* itself. All the power from the 74 c.c. single-cylinder two-stroke engine is, in effect, fed into a self-engaging clutch and, through a belt and expanding-contracting pulleys, is automatically related to load, throttle opening, engine and road speed. (The system is explained and illustrated on the opposite page.)

The Manurhin version of the "Hobby" also has wider tyres, a more powerful engine, better body styling and a pillion seat, as described in our issue of July 31 last. Because of its self-adjusting belt-drive transmission, it is known in France as the "Beltomatic."

The new "Hobby" is a machine eminently suitable for anyone who requires an easily-manoeuvrable lightweight runabout suited to the stop-and-start type of journey. And, as the test example returned an overall consumption of 115 m.p.g., the "Hobby" has a powerful appeal on the grounds of economy.

In view of the unique character of the machine, an ambitious test plan was evolved to prove it fully (or break it!). It not only passed with flying colours, but showed abilities which the tester, frankly, had not expected.

First, the "Hobby" was hacked around London's streets. In the City especially, this is a gruelling business for any vehicle—and any rider. But the "Hobby" made simple work of it. One motored along on 42 RMG, shut the throttle, braked with either or both brakes (powerful stoppers, too), waited behind, say, a lorry with the motor idling ever so reliably and then, to move off, simply revved up and pulled away. What could be easier?

The clutch engaged automatically as the r.p.m. rose in a manner as smooth as a conventional lever-controlled plate component, the gear started in "low" for the take-off and then, all by itself, raised the ratio at exactly the right rate for maximum acceleration until it was fully high, the throttle was wide open, the engine speed correct and 38-40 m.p.h. was on the accurate speedometer. This gait could be, and was, maintained until the scooter was baulked.

Undoubtedly, the "Hobby" is *the* vehicle for heavy traffic use. The transmission permitted prolonged idling without the danger of wear to moving parts and full drive was immediately available at a tweak of the wrist.

And the take-off up to the legal limit was, thanks to the rightness and the continuity of the gearing, better than that of a "125" and nearly as good as a "150's"—all from 74 c.c.

Secondly, a long country run was undertaken, hills being deliberately sought. For instance, on Ditchling Beacon, Sussex, an adversary of considerable standing for any lightweight, the "Hobby" earned a still bigger measure of respect. Not only was the hill taken without flagging, the gearing adjusting itself automatically to the varying gradients, but it proved possible to make a stop-and-restart test on the steepest part with a 12-stone photographer, plus his equipment. It is true that the "clutch" groaned a protest as the belt gripped the pulley faces, but move off and upwards the scooter did.

Other hills, like notorious Bury near Arundel, the "Hobby" cake-walked. In short, we could not find any metalled gradient that could defeat the transmission. On a loose surface like that of a clinker car park, the drive is sufficiently positive to produce wheelspin, which also speaks well for the motor!

These two types of testing, including a good deal of flat-out driving, did not force the consumption below 115 m.p.g. of 20 : 1 petroil mixture. Obviously, more sedate usage would mean even better returns.

It was rather amusing to see the surprise on other drivers' faces when one departed from traffic lights with only a movement of the right wrist. But they were also surprised when they discovered that their pleasantly-purring shadow could corner as well as they.

BRIEF SPECIFICATION

Engine: 74 c.c. single-cylinder two-stroke; bore 45 mm. by stroke 47 mm.; iron cylinder; tinned aluminium alloy head; c.r., 6 : 1; claimed b.h.p., 3 at 5,000 r.p.m.; Bing carburetter.

Transmission: Automatically-variable gearing incorporating centrifugally-controlled clutch; primary drive by Vee-belt and expanding-contracting pulleys; countershaft drive to output sprocket; final drive by chain.

Frame: Central tubular frame with full enclosure.

Wheels: Steel rims, carrying 2.75-in. by 16-in. Michelin "Zig-Zag" tyres at front and rear; hubs incorporate 4½-in. dia. brakes, full width at front, offset at rear.

Lubrication: Petroil; test carried out with 20 : 1 proportion.

Electrical Equipment: Flywheel generator with external h.t. coil; 4½-in. dia. headlamp; tail-lamp; horn; ignition cut-out and idling control.

Suspension: Telescopic front forks, controlled by springs, hydraulically damped; rear springing by swinging fork, movement controlled by rubber buffers; spindle adjustment by abutment bolts.

Tank: Steel fuel tank of 1½-gal. capacity with three-position tap.

Dimensions: Wheelbase, 53 in.; ground clearance, 7 in.; unladen seat height, 31 in.; dry weight, 166 lb.

Finish: Maroon or pale pastel green, with usual parts polished or plated.

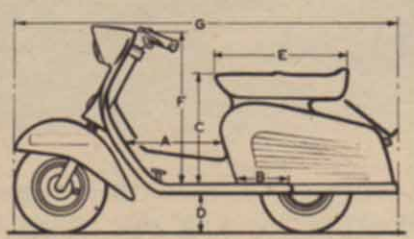
General Equipment: Full kit of tools; tyre pump; 60 m.p.h. Huret speedometer; pillion footboards and seat; steering head lock; luggage hook; prop stand.

Price: £115 plus £28 9s. 3d. P.T. = £143 9s. 3d.

Annual Tax: 17s. 6d.

Makers: Manurhin, 1 Bld. Malesherbes, Paris 8.

Concessionaires: A.F.N. Ltd., Falcon Works, London Road, Isleworth, Middx.



A, 16 in.; B, 10 in.; C, 20 in.; D, 8 in.; E, 23 in.; F, 25 in.; G, 76 in.; Overall width, 24 in.

Good roadholding was a strong point, though firm suspension sometimes transmitted jolts rather too sharply for comfort.

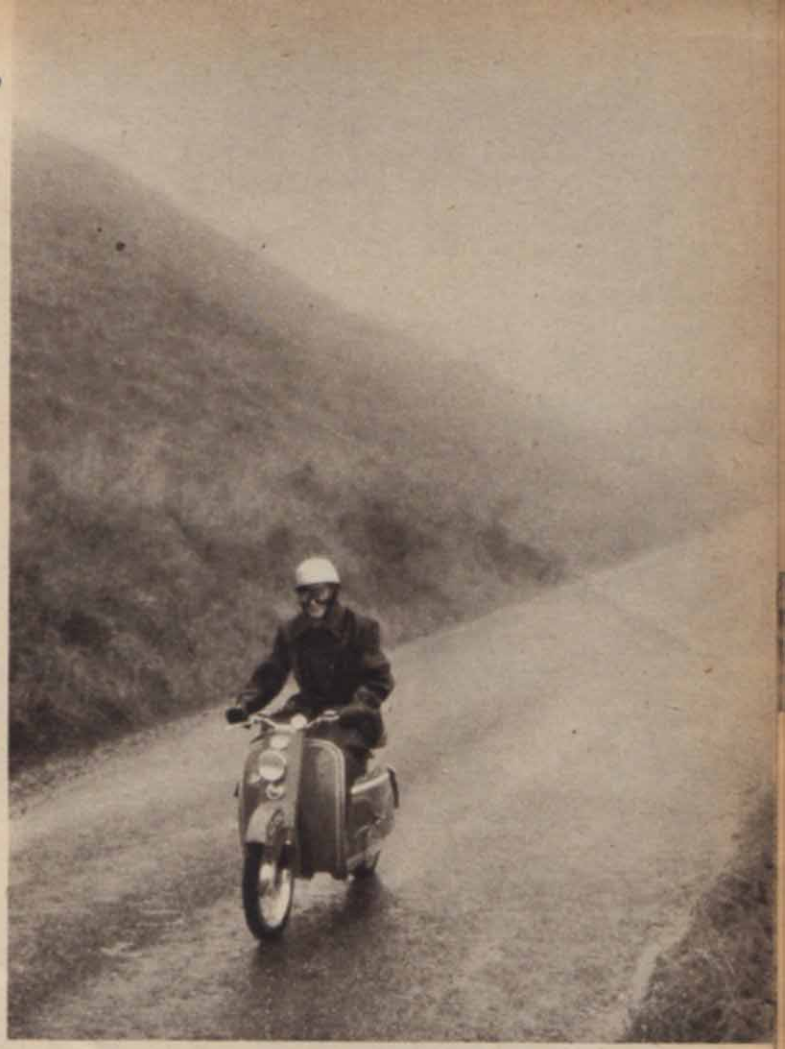
Braking power was quite adequate for emergency stops in town and more than equal to sustained checking, or killing all speed, on descents like that on the Beachy Head road into Eastbourne.

Direct lighting is featured with a control cluster on the left bar. Both beams were usefully intense, bright and of the proper definition for their respective tasks. No pilot light is fitted. A matching switch on the right bar provides a complete cut-out position for stopping the motor and an intermediate position bringing into circuit a micro-switch which, by interrupting the ignition as the revs rise, automatically keeps idling right down for a prolonged stop and avoids any danger of unpremeditated clutch engagement when the machine is stationary.

Starting Drill

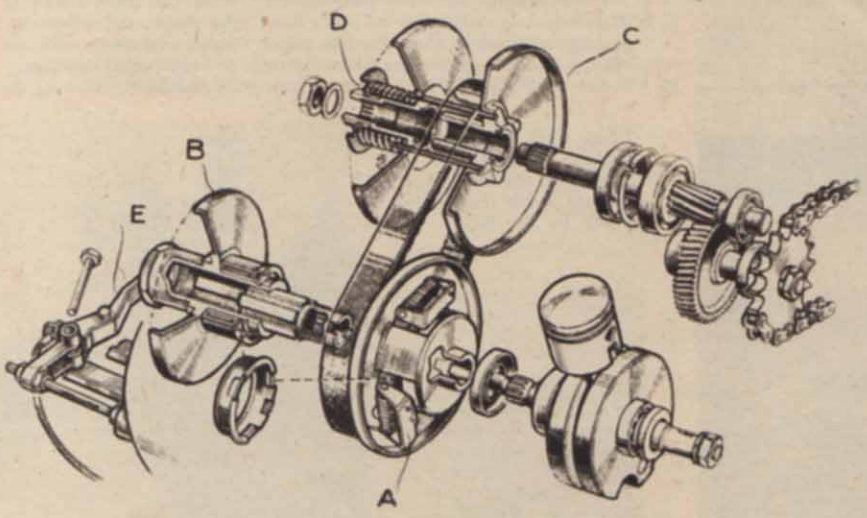
Starting was satisfactory, a couple of pulls on the handle protruding from the nearside of the enclosure being enough. For a cold start, it was advisable to leave the scooter on the prop-stand so that the mixture was artificially enriched by the raised petrol level, in addition to use of the choke. As soon as the throttle was opened, the choke automatically returned to the "full air" position. Hot starting was just too easy.

That, then, is the Manurhin "Hobby" lightweight utility scooter—a machine which, thanks to its two-control riding procedure, bids fair to set a new fashion in stepless transmission systems, and which introduces all who ride it to a new conception of easy and quite foolproof scootering.



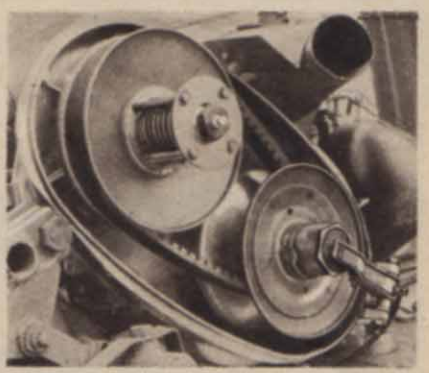
Both the 74 c.c. engine and the brakes were equal to steep main-road hill work. Here the "Hobby" makes a wet descent of Ditchling Beacon, Sussex, where a stop-and-restart test was carried out on the steepest part with a 12-stone passenger.

"ROBOT" TRANSMISSION : HOW IT WORKS



THE Manurhin transmission consists of the original D.K.W. "Hobby's" variable-speed drive, simply but ingeniously adapted to provide automatic clutch operation in addition to automatic "gear-changing".

The variable-speed gear employs two conical-faced expanding pulleys. On the inner flange of the engine-shaft pulley are three bob-weights (A), mounted on cranks which engage with a lip on the hub assembly of the axially-free outer flange (B). As the bob-weights fly outwards under centrifugal force, the pulley "closes" and the belt is forced to ride up its conical faces. At the same time, belt tension "opens" the counter-shaft pulley, one face of which (C) can move axially against the pressure of coil spring D. The effective diameter of the driving pulley is increased, that of the driven pulley is reduced and the gear ratio is raised.



The variable speed gear; note the micro-switch at the end of the driving pulley hub.

The manually-operated clutch of the original D.K.W. gear pulled flange B outwards so that the belt was disengaged from the conical driving faces and could idle over the "free" outer roller of the hub assembly. In the Manurhin gear, B is located slightly farther outward on its shaft so that it lies in this idling position until, with rising engine revolutions, the bob-weights draw it inwards and effect "clutch engagement." Accidental engagement is avoided by a micro-switch (E) which bears against the end cap of pulley B and cuts the ignition before the pulley has moved inwards far enough to take up the drive. The micro-switch is in circuit only when the handlebar ignition switch is in its intermediate position.

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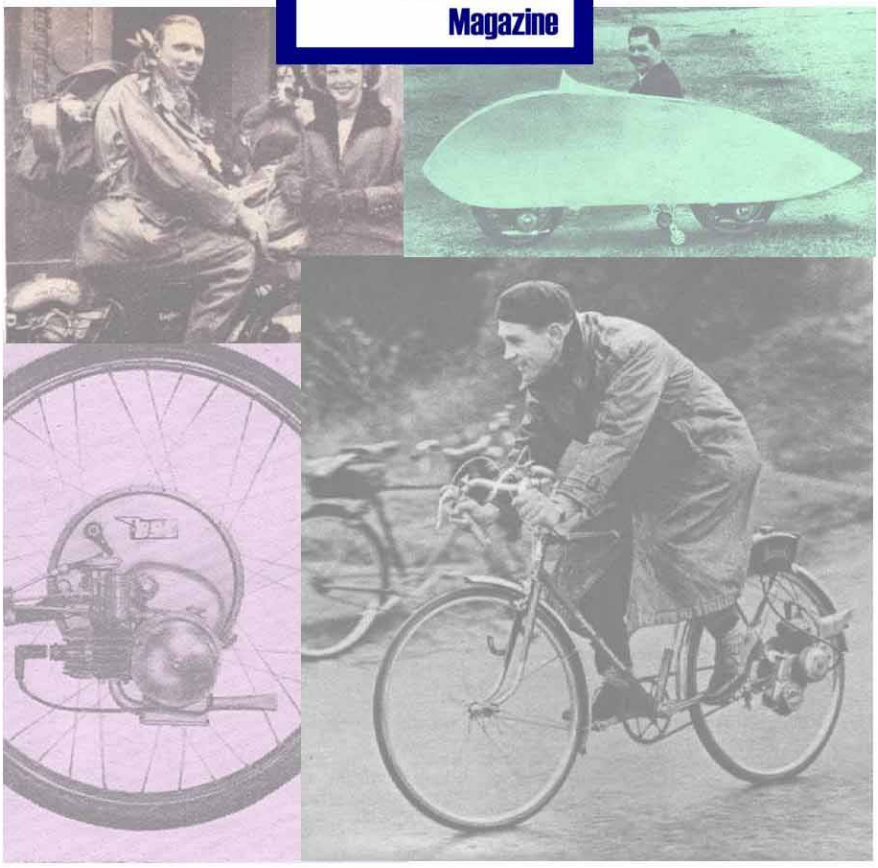

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