IMPRESSIONS OF CURRENT MODELS

The 74 c.c. Two-stroke

D.K.W. "HOBBY"

A Lightweight Scooter with a Novel Automatic Transmission System

AN example of one of the smallest scooters on the market, so far as engine capacity is concerned, the D.K.W. "Hobby" has recently been subjected to a test evaluation by members of the staff of this journal. The machine was collected, from the Isleworth headquarters of the concessionnaires for the marque, A.F.N., Ltd.

The first impression gained, and one confirmed by every staffman who rode the "Hobby," was of the machine's exceptional steering qualities. Equipped with spoked wheels of reasonable size and possessing a sensible wheelbase, its all-round handling placed it at the head of its class.

By the time a few miles had been covered it was found possible, even though the engine was new, to cruise at a steady 28-29 m.p.h.—only the "30" limit precluded further exploratory grip-twisting at this stage. The noise from the exhaust was a very genteel buzz, coupled with excellent mechanical quietness.

The clean enclosure of the front fork assembly and the "pull-up" starting handle on the left of the rear enclosure may be seen in this view of the "Hobby." (Below) Handling was outstandingly good.

A "Pull" Starter

At traffic stops, the engine would settle to a fairly reliable tick-over, two-stroking evenly. If the engine did stop, it could easily be restarted by the simple, left-hand-operated pull-starter, without dismounting or turning in the saddle.

The "Hobby" is unique among scooters on sale in this country in having automatic transmission. Only when starting from rest is it necessary to employ the conventional clutch lever. This fitting is provided with a ratchet to hold it in the "disengaged" position while the engine is started. Failure to observe this simple precaution on one occasion left the tester playing the scooter at the end of its starting wire much as an angler plays a fish—but this one didn't get away!

The clutch lever was decidedly heavy to operate on the model tested, but since it was not needed once the "Hobby" was under way, this point was not so noticeable as it would have been on a conventional machine. Vee-pulleys and belt primary drive provide the basis for the automatic transmission. Older readers will no doubt recall the Rudge-Multi and Zenith Gradua of yester-year, but the D.K.W. system differs in that the "gear" change is controlled by a centrifugal governor, not by the rider, who merely has to operate the clutch and regulate his speed by use of the throttle and brakes. This procedure, although the "old hand" may find it strange at first, is essentially so simple that a novice can learn to control the mount in a minimum of time. The absence of gear-changing left the rider with plenty of "spare" time. There was no question of "revving" the little mount up through the gearbox; for maximum acceleration one just gave a maximum turn to the grip, and this produced a getaway better than that of the general traffic stream in Central London. Further, the increase of speed with a relatively constant exhaust note was less trying to the ears of bystanders than the "peak-revs.-in-each-gear" method.

It was not only its good acceleration and cruising speed of 30-35 m.p.h. that endeared the "Hobby" to our testers. The ability to crawl along without touching the clutch at less than a walking pace or to drive flat-out at 40-42 m.p.h. without any semblance of waver; the knowledge of powerful yet smooth brakes ever-present; and the high standard of comfort provided by the excellent suspension, coupled with generous shielding, all added up to give the little "Deek" a soft spot in our hearts.

For much of the test period, the large Steib windscreen described in our January 24 issue was on the machine, and this gave excellent additional protection without adversely affecting the performance. Made of "Plexiglass," it is sufficiently flexible to avoid damage if accidentally knocked, yet much more rigid than celluloid screens. So equipped, with its simple controls and ease of starting, the "Hobby" should make a great appeal to women riders, and its economical running—over 120 m.p.g. driven hard—is an especial asset at the present time.

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. 6.5 : 1; claimed b.h.p. 3 at 5,000 r.p.m.; Bing carburetter, type 4/14/1.

Transmission: Automatically variable gearbox in unit with engine; automatic change; ratios from 24.4 to 8.3 : 1; primary drive by Vee-belt; final drive by chain.

Frame: Central tubular frame with full enclosure.

Wheels: Steel rims, carrying 2.50-in. by 16-in. tyres at front and rear; hubs incorporate 5-in. brake at front, 4½-in. at rear.

Lubrication: Petroil; test carried out with 1 : 24 proportion.

Electrical Equipment: Flywheel magneto-generator 6-v. 17-watt output; 15 by 15w. head lamp; 2w. tail lamp; horn.

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

Tank: Steel fuel tank, of 1.4 gal. capacity.

Dimensions: Wheelbase 53 in.; ground clearance 4¼ in.; unladen seat height 29 in.; dry weight 176 lb.

Finish: Cream enamel with usual parts polished and plated.

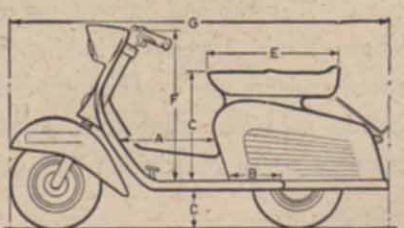
General Equipment: Full kit of tools; tyre pump; 55 m.p.h. speedometer; pillion foot boards.

Price: £106 13s. 4d. plus £25 12s. P.T. = £132 5s. 4d.

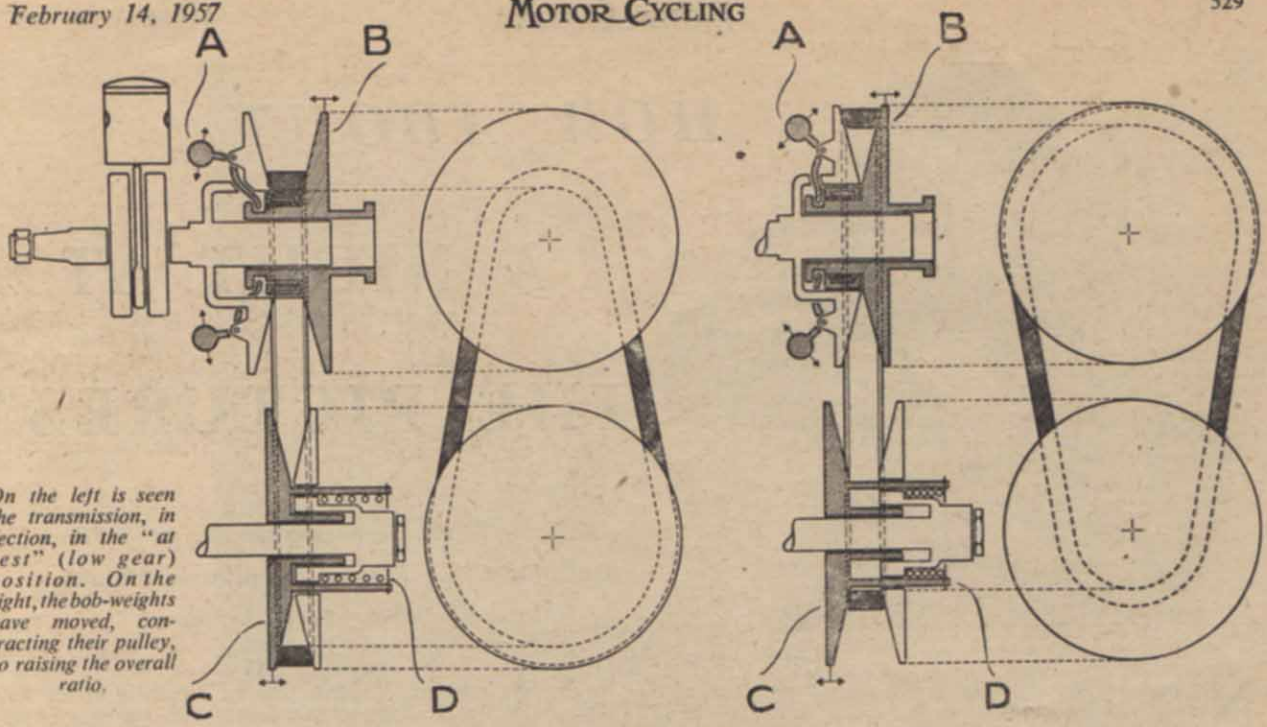
Annual Tax: 17s. 6d.; quarterly, 4s. 10d.

Makers: Auto-Union G.m.b.H., Duesseldorf, Western Germany.

Concessionnaires: 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.

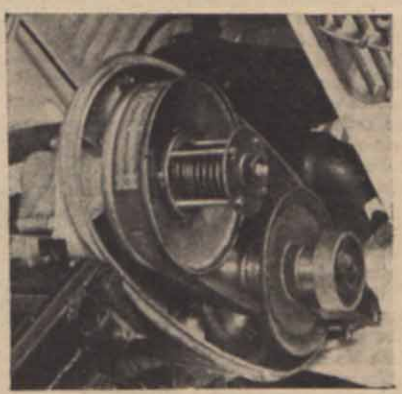


On the left is seen the transmission, in section, in the "at rest" (low gear) position. On the right, the bob-weights have moved, contracting their pulley, so raising the overall ratio.

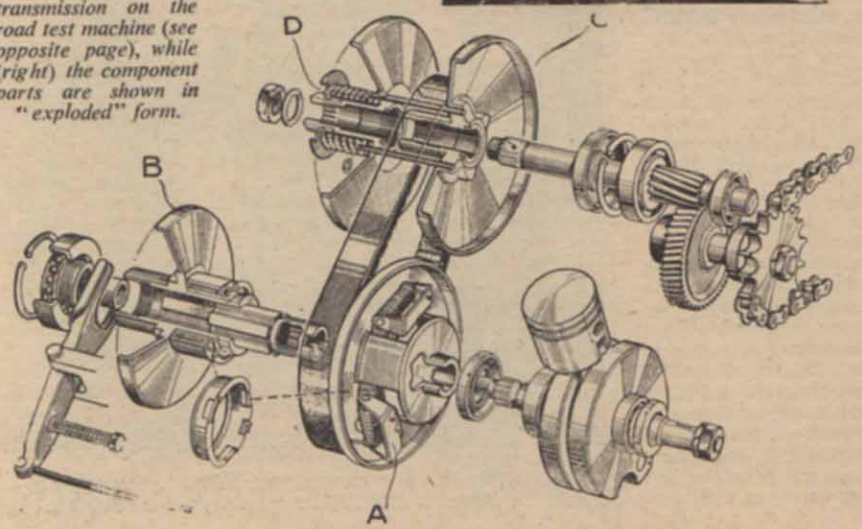
The D.K.W. Automatically Variable Transmission

A New Variation on an Old Theme

IT is refreshing in these days of somewhat stereotyped design to find a scooter employing a primary transmission which is a complete breakaway from what has become standard practice nowadays. Belt drive . . . old-timers may start to tell tales of woe, of how belts used to break and how they would slip. Ask them where the belts broke and they will tell you that it was always by the fastener—these fittings would snap or pull through the canvas, but the belt *never* snapped in the middle. Ask them when belts slipped and the answer will be "When they got wet." Use an endless belt and keep it in the dry and, obviously, all these snags will be eliminated. And so, in practice, they are, for when a D.K.W. "Hobby" scooter was recently tried by this journal's staff (see opposite page), belt trouble was neither expected nor experienced.



Above right is seen the transmission on the road test machine (see opposite page), while (right) the component parts are shown in "exploded" form.



It is not the belt drive, however, that is the greatest novelty on the "Hobby," but the system of employing expanding pulleys to provide gear ratios infinitely variable between fixed limits, on the lines of the early Rudge "Multi" and Zenith "Gradua" machines. There is an important difference between the modern system and its ancestors. In the D.K.W. example, an ingenious centrifugal governor alters the gear according to the engine speed, so freeing the rider of all necessity for gear-changing. A simple "clutch" (actually the two halves of the engine-shaft pulley are split so that the belt is not gripped in the "disengaged" position) facilitates starting and stopping.

How does it work? The accompanying drawings make explanation a simple matter. On the engine shaft pulley, three bob-weights (A in the sketches) control the outer flange (B) by means of cranks and a lipped groove. Centrifugal force causes the bobweights to fly out, so closing the pulley and raising the gear ratio. The countershaft pulley consists of a moving flange (C) controlled by a coil spring (D). When the bob-weights cause the pulley on the engine shaft to contract, the pressure of the belt expands the countershaft pulley against the coil spring pressure so maintaining adequate belt tension. The limits of movement are clearly defined in the drawings at the top of the page.

In the lower drawing, it will be seen that the bob-weights have a coil spring round each of them. These springs are used to return the governor weights to their resting position (reducing the gear ratio), and also to return the outer flange when the "clutch" is used.

"Too simple," you say—but it works, and works wonderfully well.

G.T.S.

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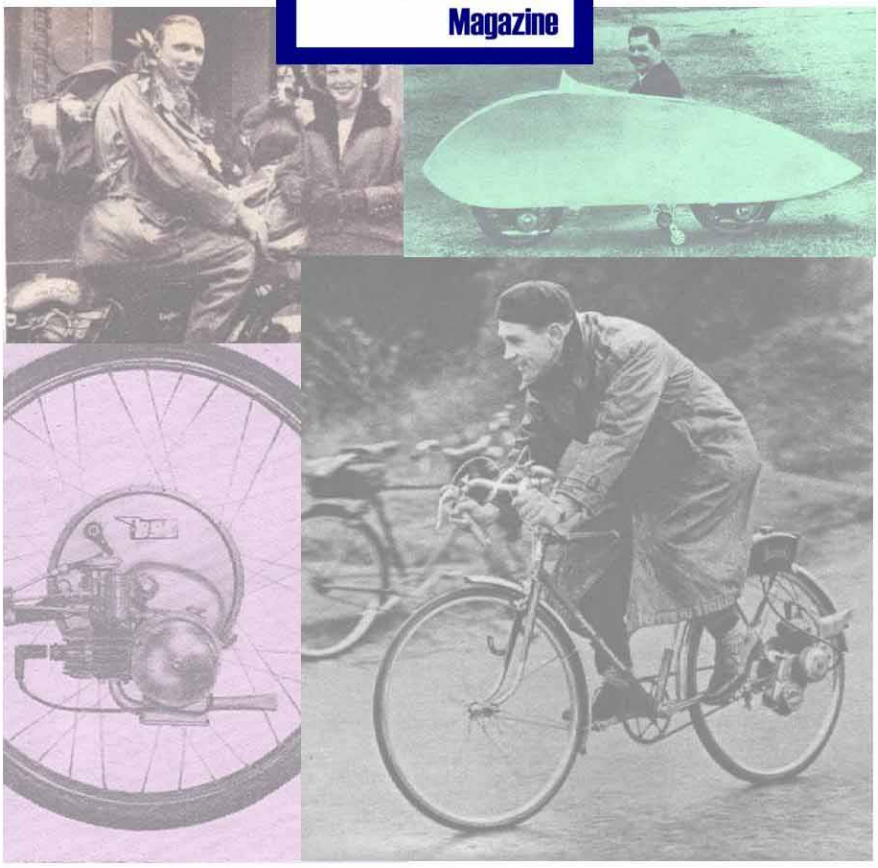

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