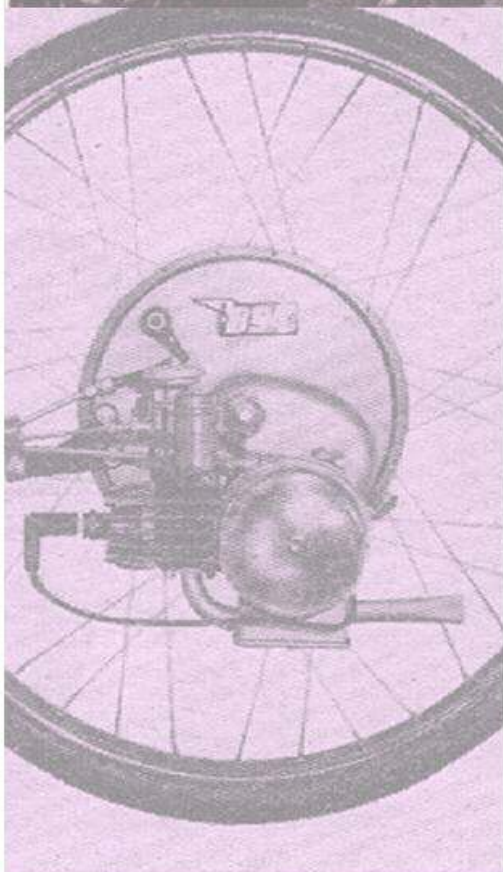


IceniCAM Information Service



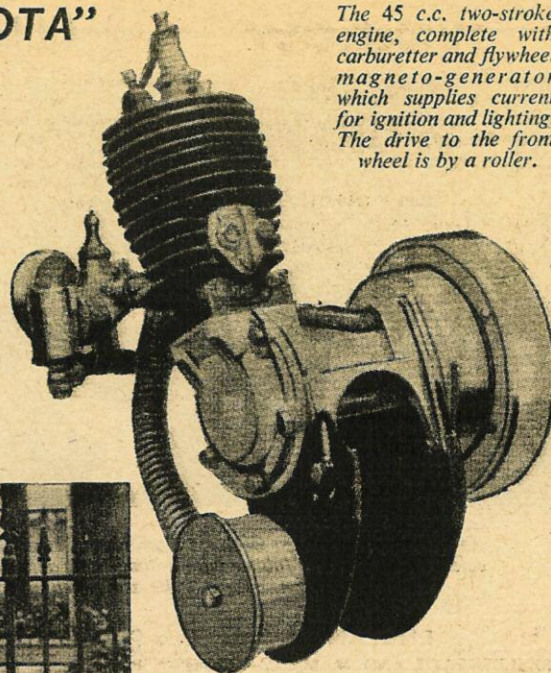
A NEWCOMER to the now rapidly expanding range of motor units for attachment to pedal cycles was announced last week as the "Cymota." This unit is an all-British project, being constructed by Motor Components (Birmingham), Ltd., and distributed by Blue Star Garages, Ltd., whose head office is at High Street, Hampstead, London, N.W.3. In addition to distribution through the Blue Star Garages' 50 branches in Great Britain, it is intended to make the engine obtainable at all leading stores, motor and cycle agents.

The "Cymota" is a forward-fitting unit designed for attachment to the front forks and handlebar stem of the machine, and it is claimed that it will fit every type of bicycle. It is unusual in that the whole of the unit is encased in a sheet metal covering that incorporates cooling louvres and a built-in head lamp. In actuality, the unit is supported on a back plate being

THE "CYMOTA" AUXILIARY ENGINE

Details of a New, Completely Enclosed Two-stroke Unit for Attachment to a Bicycle

The 45 c.c. two-stroke engine, complete with carburetter and flywheel magneto-generator which supplies current for ignition and lighting. The drive to the front wheel is by a roller.



With the power-unit concealed beneath a bonnet, the "Cymota" is an extremely neat attachment which may be fitted to any normal pedal cycle.

pivoted at the rear and guided in slots at the front. Pressure of the Carborundum-faced driving roller on to the front tyre is by a spring, while a cam-operated lever, projecting at the off-side rear of the back plate, lifts the engine clear of the tyre. This lever is not intended to be used as a clutch but simply provides a free-wheel effect for coasting downhill or when it is otherwise desired to use the cycle without engine power. The petrol tank is mounted under the cover and the tap projects to the rear on the near side. It is not necessary to lift the "bonnet" when refilling the tank.

45 c.c. Capacity

The engine is a 45 c.c. three-port two-stroke, with a bore of 38 mm. and stroke of 40 mm. One casting forms the housing for engine and flywheel generator and the driving roller is mounted in a tunnel between the two components. The over-hung crankshaft is carried in ball main bearings and a further ball bearing sup-

ports the outer end of the driving shaft in that part of the housing which contains the generator. Phosphor-bronze is used for the big- and little-end bearings and the main-shaft assembly is a one-piece forging. An alloy piston, with two unpegged compression rings, operates in a cast-iron barrel fitted with an alloy cylinder head of special shape and incorporating a decompressor.

The assembly of the driving roller on the main shaft is interesting. This shaft is of two diameters with a longitudinal slot and two dished steel washers compress the roller between two rubber washers. The steel washers are spigoted to engage with the main shaft slot and the whole assembly is locked by a nut.

Ignition is by a Miller flywheel generator/magneto and the head lamp and rear lamp are of Lucas manufacture. A parking battery is mounted on the rear of the engine backplate.

The method of operation is as follows: Having turned on the petrol tap, closed the choke of the Amal type 308

carburetter, and engaged the roller with the tyre, pushing forward the machine was simply itself and that the unit fired within a few feet. Steering appeared to be in no way affected by weight on the front wheel. Since there is no clutch, and the drive is engaged with the machine stationary and the engine dead, there is no question of the engine pulling away from rest. Initially, the machine is put in motion by the rider pedalling. Manoeuvrability, turning round in the road and negotiation of traffic proved to be extremely simple, the engine pulling evenly down to a brisk walking-pace speed. Up an incline estimated at 1 in 30, and against quite a strong headwind, a speed of 12 m.p.h. was reached, while there was no difficulty in maintaining a steady road speed of approximately 20 m.p.h.

Easy to Ride

A "Motor Cycling" representative found that starting the machine was simplicity itself and that the unit fired within a few feet. Steering appeared to be in no way affected by weight on the front wheel. Since there is no clutch, and the drive is engaged with the machine stationary and the engine dead, there is no question of the engine pulling away from rest. Initially, the machine is put in motion by the rider pedalling. Manoeuvrability, turning round in the road and negotiation of traffic proved to be extremely simple, the engine pulling evenly down to a brisk walking-pace speed. Up an incline estimated at 1 in 30, and against quite a strong headwind, a speed of 12 m.p.h. was reached, while there was no difficulty in maintaining a steady road speed of approximately 20 m.p.h.

It should be mentioned that the machine tested had a prototype engine and production units will have a slightly increased power output. It should also be pointed out that the prototype had a screwed rod and hand-wheel engagement for the roller with the tyre, but the production types will have a simple lever.

The "Cymota" is claimed to provide the cheapest form of mechanical transport—250 miles per gallon, or 9 miles for 1d. The basic ration of 9 gallons per six months provides approximately 375 miles of travel per month and the Road Fund licence is 8s. 9d. per annum. The price of the unit, including the lighting equipment, is £18 18s., free of purchase tax, the licence holder and horn being extra. The combined "bonnet" and front mud-guard can be in any one of five different colour finishes. Fitting is simply a matter of bolting up three clips and fixing the handlebar lever.