Three ENFIELD Models now Marketed

Lightweight Two-stroke and Two 350 c.c. Machines —500 c.c. Model in 1946

ANNOUNCEMENT of their motor cycle programme reveals a range of four machines to be marketed by the Enfield Cycle Company, Ltd., Redditch. Three machines are now in production, the 125 c.c. R.E. and the two 350 c.c. models known as the G and the CO. Early in 1946 the 500 c.c. model J will also be in production.

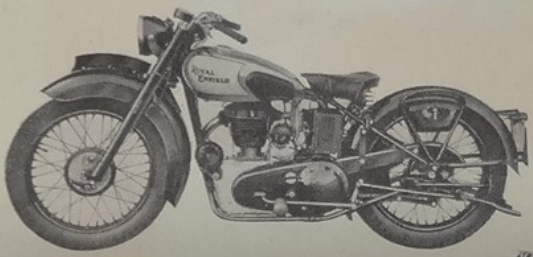
Planned shortly before the war, the 125 c.c. machine went into production after hostilities began and has been used in large quantities during the war by parachute and airborne troops under arduous and exacting conditions.

Light in weight, the machine is powered by a two-stroke engine with the gearbox built in unit and driven by a fixed-centre primary chain running in an oil bath. Rollers are employed in the big end and this bearing is wider than heretofore. A detachable aluminium head is fitted. Engine lubrication is by the addition of oil to the petrol, one part of oil to 24 of fuel. A measure is fitted to the petrol tank filler cap, the mixture being two measures to each gallon.

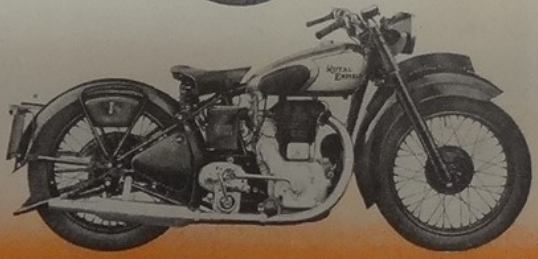
A single plate clutch is used and the gears are hand controlled.

Ignition is provided by a flywheel-magneto which also supplies current for an adequate driving light, even at low engine speeds. Output is 6 volts, 27 watts. An aluminium cover encloses the flywheel and a cover is provided for access to the contact breaker. In the headlamp a 6 volt, 24 watt double filament main bulb is used with a 6 volt, 3 watt pilot bulb. For parking purposes a dry battery is used, carried in the shell of the headlamp.

Greater frame strength has been obtained by the use of a molybdenum front down tube. Lugs are dispensed with, the frame being all welded and of the diamond type. A central prop stand is fitted. Pressed steel blades are



Note the forks and ribbed front brake on the model G. Royal Enfield



A Sturdy 500 c.c. o.h.v. Royal Enfield model J

used in the front forks, and the springing is obtained by the use of rubber bands.

Internal expanding brakes are fitted, 4in. diameter at the front and 5in. at the rear.

Finish is in black enamel with a frosted silver motif on the tank and chromium plating to the bright parts.

Maximum speed is between 40 and 45 miles per hour with a petrol consumption of 100 to 120 miles per gallon, according to the manufacturers' figures.

In the centre of the range is the model G, with an actual engine capacity of 346 c.c. Most obvious feature of the machine is the adoption of telescopic forks, hydraulically damped, and using exceptionally long enclosed springs. Three inches of movement is provided either way. It is claimed that these forks give perfect steering.

No Pressure Build Up

Due to the design of the internal oil valve, the damping effect is progressive and it is not possible to bottom the forks under any conditions. Another good feature is that air inside the forks is able to move freely and compensate for any movement of the oil. This, together with the provision for the release of air in the forks, avoids any possibility of a pressure build up.

The air breather is under the top fork plate. A gauze filter cleans the air as it enters the fork, the oil in the tubes keeping the filter moist. Lubrication is automatic. Topping up is simple, a bolt is removed at the bottom of each fork tube and oil added by removing a cap at the top and pouring the lubricant in until it just begins to run out at the bottom. When the oil has ceased to run, the bolts and caps are replaced.

The front wheel spindle is held in a saddle. Removal is accomplished by undoing two bolts and removing the cap. The front mudguard is deeply valanced and supported by a stout inverted Y bracket.

Tube removal is simplified on the rear wheel by the specially designed rear hub, which allows this to be done without removing the rear wheel.

An important modification is the use of molybdenum steel tubing for all main tubes in the brazed-up cradle frame.

Six-inch brakes are fitted, front and rear, with light alloy cover plates. Pillion foot rests are standard, as are also the three tool boxes. Pillion seats are extra.

A spring-up rear stand and a prop stand are included in the specification.

A single port overhead valve engine provides the power. All valve gear is totally enclosed and automatically lubricated. Tappet adjustment is carried out by removing a small cover at the base of the push rod enclosure.

An aluminium alloy piston is fitted, form-turned oval to permit the use of close clearances. Two compression rings and one scraper ring are all located above the fully floating gudgeon pin, which is of generous dimensions and secured endwise with circlips.

A light alloy connecting rod is fitted with a floating bush to the big end. Main bearings have a double row of rollers on the drive side and a single row on the timing gear side.

Engine oil is carried in a compartment cast integrally with the crankcase, and having a 4-pint capacity. Oil is forcibly fed through felt washers to the big end and to the back of the cylinder. Part of the return oil goes direct to the sump and part to the rocker gear, draining down the push rod enclosure tubes, after which it is picked up by the timing gear and returned to the crankcase. Only one oil pipe is used, to the rocker gear.

Appearance of Balance

Carburation is through an Amal instrument, fitted with a large air filter filled with steel wool in oil. The filter is located under the saddle and is about the same size as the battery on the other side. This gives a good appearance of balance.

Transmission is by chain, the primary chain running in an oil bath. A four-plate clutch with cork inserts is housed in the primary oil bath casing.

An interesting feature of the gearbox is a short secondary lever situated just rearwards of the gear change lever fulcrum. When second, third or top gear are engaged this lever also moves out of its neutral position. Depression of this neutralizing lever, with the clutch out, returns the gears and the

gear lever to neutral. This is an idea with much to recommend it, removing as it does the tiresome business of searching for neutral.

Lucas Magdyno lighting is fitted as standard. Speedometers are extra, the drive being in the rear hub.

This machine is finished in black with a chromium plated tank and frosted silver panels, and chromium finish to the plated parts.

The model CO, a special export machine, is a modified version of the G model. Finished in black with a black enamelled tank, gold lined, it differs from the foregoing model principally in that it is fitted with girder type forks, the neutralizing lever is not fitted to the gearbox, a heavier rear wheel is fitted with a 7in. brake and the connecting rod is of steel. This CO machine is based on the type supplied to the armed forces.

Due for production early in 1946, the model J is similar to the model G, differing mainly in the engine, which is of 499 c.c. capacity. The layout of the engine is somewhat similar to the 346 c.c. job, differing, apart from size, in the valves, a larger inlet having been adopted. In the lower half of the engine double row rollers are used each side on the main bearings. A 7in. rear brake is also standard.

ROYAL ENFIELD SPECIFICATIONS

	RE	G	J
ENGINE			
4-stroke or 2-stroke	2	4	4
No. of cylinders	1	1	1
Bore (mm.)	54	70	84
Stroke (mm.)	55	90	90
Capacity (cc.)	125	346	499
Max. power (b.h.p. at r.p.m.)	3·25 at 4,250	15 at 5,250	20 at 4,750
Compression ratio	5·5	5·75	5·5
Valve position	—	Overhead	Overhead
Valve mechanism	—	Push-rod	Push-rod
Pistons	Alum. alloy	Alum. alloy	Alum. alloy
Piston rings : Compression	2	2	2
Oil control	—	1	1
Type of main bearings : Driving side	Ball	Double roller	Double roller
Timing side	Ball	Roller	Double roller
Type of big-end bearing	Roller	Floating bush	Floating bush
Carburettor	Villiers	Amal	Amal
Throttle control	Twist grip	Twist grip	Twist grip
Air control	—	Lever	Lever
Lubrication system	Petroil	Dry sump	Dry sump
ELECTRICAL			
Ignition	Flywheel Mag.	Magdyno	Magdyno
Ignition control	Fixed	Lever	Lever
Plug size	14 mm.	14 mm.	14 mm.
Dynamo charging	—	A.V.C.	A.V.C.
Battery capacity	—	6v. 12 a.h.	6v. 12 a.h.
Lighting	Magneto	Magdyno	Magdyno
GEARBOX and TRANSMISSION			
Clutch	Single-plate	Multi-plate	Multi-plate
Clutch operation	Hand	Hand	Hand
Gearbox : Number of speeds	3	4	4
Control	Hand	Foot	Foot
Primary drive	Chain	Chain	Chain
Final drive	Chain	Chain	Chain
Overall gear ratio : Top	7·8	5·65	4·9
Third	—	7·23	6·4
Second	12·7	11·75	8·8
First	22·9	17·85	13·5
FRAME			
Type of frame	Welded tube	Cradle	Cradle
Rear suspension	Rigid	Rigid	Rigid
Rear brake control	Foot	Foot	Foot
Front brake control	Hand	Hand	Hand
Front forks	Pressed steel	Telescopic	Telescopic
Shock absorber	—	Hydraulic	Hydraulic
Tyre size : Front	2·50—19	3·25—19	3·25—19
Rear	2·50—19	3·25—19	3·25—19
DIMENSIONS			
Wheelbase	48 in.	54 in.	54 in.
Ground clearance	5¼ in.	5 in.	5 in.
Width over bars	26 in.	28 in.	28 in.
Saddle height	27 in.	28½ in.	28½ in.
CAPACITIES			
Petrol	1½ gals.	2¾ gals.	2¾ gals.
Oil	—	4 pints	4 pints