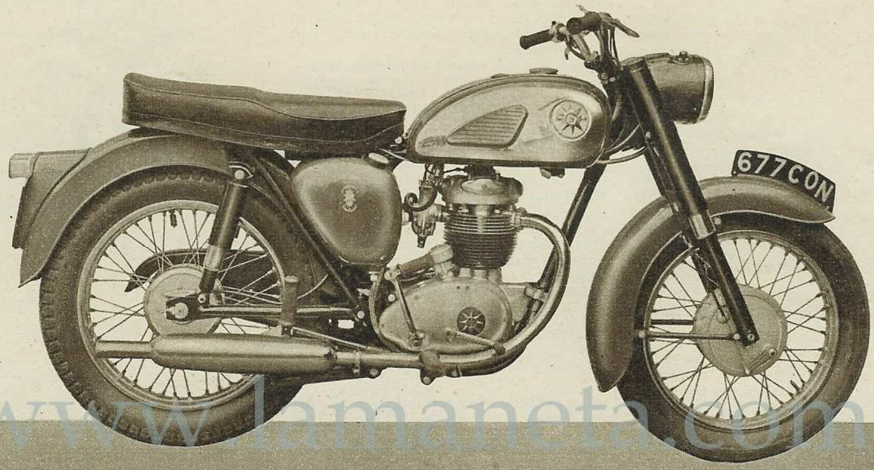


ROAD TESTS OF NEW MODELS

343 c.c. B40 Star B.S.A.

NEW LIGHTWEIGHT THREE-FIFTY COMBINES SNAPPY PERFORMANCE WITH ECONOMY, EASE OF HANDLING AND GOOD ROADHOLDING

STUDY almost any three-fifty of a few years ago and what do you see? In nearly every case, you find a model sharing a common frame, wheels, cycle parts and other components with a sister five-hundred. In order to withstand the stresses imposed by the bigger engine these components had to be robust—far more so than demanded by the three-fifty. And since favourable power-to-weight ratio is one of the most important factors in the quest for good all-round performance, the three-fifty invariably began life under an illogical handicap. It was robust, yes. But acceleration, economy, braking and handling (and even manhandling) were inevitably less good than they might have been.

Today, however, the picture has changed and the one-time Cinderella moves in the royal circle. Three-fifty engines occupy modified versions of 250 c.c. frames. Such a model is the B.S.A. 343 c.c. B40 Star—one of the latest arrivals on the new "potent-lightweight" scene.

Very similar in appearance to its 249 c.c. C15 Star sister, the B40 engine is distinguished by the absence of an external push-rod tube; the rods are enclosed in a tunnel cast integrally with the cylinder barrel. Additionally, 18in instead of 17in-diameter wheels are used and the front fork is of heavier design, and similar to that of the B40's predecessor—the B31. As compared with the C15, the B40 has a larger cylinder bore so that the engine is now fashionably over-square and, of course, the crankcase is stiffened up to cope with the higher power output.

Trim and eyeable, the B40 not only looks small—it is small. Sitting astride it, one is immediately conscious of a machine that is light, handleable, easy to manoeuvre in confined spaces, and compact enough to be confidently managed by the most timid learner.

Viewed as here, the B40 appears trim and cobby

The handlebar gives an upright riding position and the footrest location allows a comfortable leg angle. The rear-brake pedal lies directly beneath the left foot, and the gear pedal may be operated merely by pivoting the right foot on the footrest. Front-brake and clutch-lever pivot blocks are welded to the handlebar; but since the angle of the levers is just right for easy manipulation, that is an advantage rather than a drawback. Knurled adjusters are provided for front-brake and clutch cables. Horn button and dipswitch are combined in one unit on the left of the bar, within easy reach of the thumb.

Coil ignition these days is synonymous with ease of starting. Even after a frosty or damp night in the open the B40 responded to the second or third prod. With the engine cold, pronounced piston slap was audible but, as the temperature rose, so the slap died down until barely apparent. Otherwise, the mechanical noise was no more than a subdued rustle from the pushrod-operated overhead valve gear.

Although at a glance the B40 may be mistaken for a two-fifty, the illusion is soon dispelled. Punch at the bottom end of the engine-speed scale is most satisfying and, indeed, would do credit to an average five-hundred single of a few years ago. Solid, beefy power is on tap through the lower and middle r.p.m. ranges, endowing the machine with deceptively snappy performance.

The manufacturers have taken full advantage of the excellent power-to-weight ratio and geared the model on the high side. Normal upward gear changes were made at 15, 25 and 30 m.p.h. in built-up areas. Although the model was willing to plod along at 30 m.p.h. or so in top it was happier nearer the forty mark. A vibration period occurred between 28 and 30 m.p.h. in third gear, and 38 and 42 m.p.h. in top. Otherwise the engine was commendably smooth.

A beefy single-cylinder engine is all too often betrayed by a noisy exhaust. No such objection could be levelled at the B40. At all engine speeds, the exhaust is well muffled, if a shade flat to motor cyclists' ears.

Hill-climbing was effortless. Most main-road gradients were easily surmounted in top with very little falling off in speed. Only the steepest main-road hills called for third, and then the model romped up, making light work of the going.

On average, give-and-take going, the B40 cruised just as happily at 60 m.p.h. as at 45 m.p.h. The former figure was often held for long periods, and a steady 65 was well within the model's capabilities. Surprisingly high averages could be achieved without fuss.

The gear ratios are well chosen and match engine characteristics almost perfectly. Gear-pedal movement was short and required little effort and the clutch was also light and smooth in its take-up of the drive. Overall, the transmission was reasonably smooth and snatch-free and quiet except for a trace of whine in third gear.

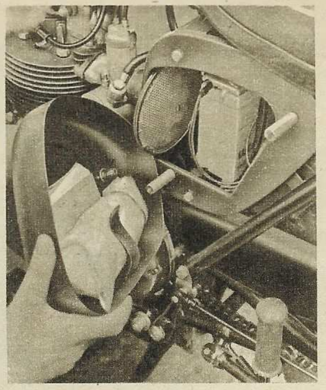
A bleed from the primary chaincase kept the rear chain adequately oiled. In 500 miles the chain was adjusted once only—to compensate for bedding down.

Roadholding, steering and braking were superior to what might be expected bearing in mind that the machine is built to sell at a keen price. The steering was light and positive at all speeds. An excellent lock permitted easy manoeuvring. Stability on all types of surfaces, wet or dry, proved to be of a high order and instilled not only confidence but enthusiasm from the word go. Bends fast or slow could be rounded rapidly without any trace of wavering or snaking, pretty well regardless of surface. The absence of top hamper was pleasantly noticeable at all times.

As with all high-performance light machines, a comfortable one-up ride means fairly soft springing which may be too soft when a passenger is carried. With the B40, the manufacturers have sought a compromise. Thus, with a 14-stone rider aboard, both front and rear suspensions were on the hard side, yet with a nine-stone passenger, the rear springing tended to bottom on sharply undulating surfaces. Adjustable rear springing units should solve the problem.

Braking was fully in keeping with the performance. Powerful, progressive and free from juddering, both brakes did all that was asked of them. Water seeped in the front brake during heavy rain on two occasions but soon dried out after intermittent applications. The bother was not experienced at other times under equally wet conditions. Regardless of conditions, the rear brake retained its power. In the very wet weather experienced during the test, the deeply valanced, shapely mudguards gave excellent protection.

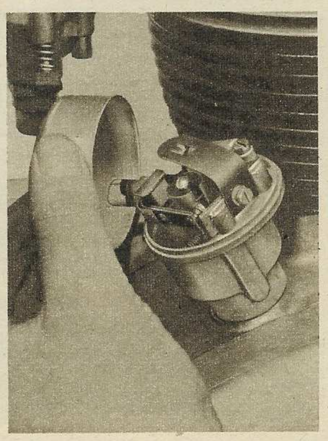
For long out-of-town trips, deeper

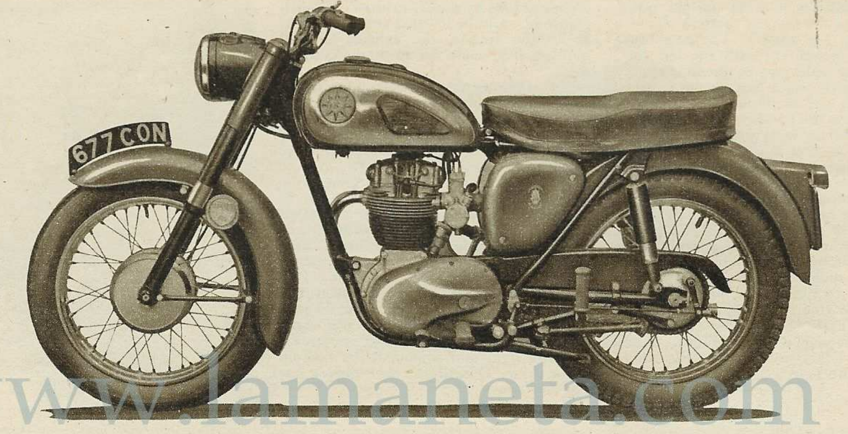


Left: Adjusters for the chain and rear brake are of straightforward, orthodox type

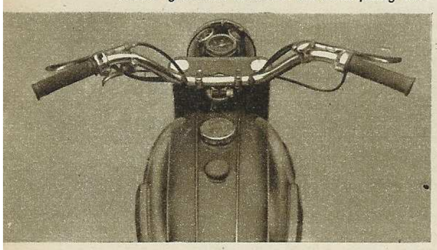
Above right: The tool roll is retained by a clip inside the tool, battery and air-filter compartment lid

Below right: A simple, self-tapping screw secures the contact-breaker cover—neat, simple, efficient





Above: the B40 bears a close resemblance to its smaller sister, the C15 Star; the heavier front fork and greater wheel diameter, however, give a clue to its identity. Below: Layout of the handlebar controls is extremely neat. The rubber grommet conceals the tank fixing bolt



padding of the dual-seat would be an advantage; but otherwise very long runs were accomplished without discomfort. The fuel-tank capacity, of three gallons, gives a useful range of approximately 245 miles. However, to be on the safe side, fill-ups should be made at 200-mile intervals as the tank tap is not of reserve type. In 500 miles of town-and-country riding, the average fuel consumption was about 86 m.p.g. Over that mileage, just half a pint of oil was required to top up the tank.

Provided after-dark cruising was restricted to the fifties, headlamp lighting was adequate, but no more than that. Cut off when the dip-filament was in use appeared to be fairly dazzle-free. Housed in the tool-and-battery compartment beneath the seat, the horn was muffled and too weak to be of real value.

Maintenance is mainly straightforward. The rear chain is easily adjustable—by unlocking the spindle nuts and drawing the wheel back in the usual way—but the valve clearances require rather more work. Unless the fuel tank is removed, not a difficult task since it is retained by one bolt, the inlet adjuster cannot conveniently be reached. The slotted inspection covers require the use of a screwdriver yet there was no screwdriver in the kit. The cover of the tool-and-battery compartment is retained by two slotted screws which proved tricky to replace in daylight and nearly impossible to secure after dark.

Finished in black and royal red, with chromium-plated tank panels, the B40 is an attractive and practical addition to the ranks of the new breed of lightweight big 'uns. It is a worthy successor to, and a healthy advance on, that great worker—the B31.

SPECIFICATION

ENGINE: B.S.A. 343 c.c. (79 x 70mm) overhead-valve single-cylinder. Plain, steel-backed, copper-lead, big-end bearing; crankshaft supported in a ball journal bearing on drive side and a steel-backed, copper-lead bush on timing side. Light-alloy cylinder head: cast-iron cylinder barrel. Compression ratio, 7 to 1. Dry-sump lubrication; oil-tank capacity, 4 pints.

CARBURETTOR: Amal Monobloc with air filter; air slide operated by handlebar lever.

IGNITION and LIGHTING: Lucas 60-watt RM 13/15 alternator mounted on drive-side mainshaft. Lucas 6-volt, 13-amp-hour battery. Lucas 6in-diameter headlamp with pre-focus light unit and 30/24 watt-main bulb.

TRANSMISSION: B.S.A. four-speed gear box in unit with the engine and with positive-stop foot control. Gear ratios: bottom, 14.25 to 1; second, 9.4 to 1; third, 6.78 to 1; top, 5.22 to 1. Multi-plate clutch with cork friction material. Primary chain, ⅜in duplex in cast-aluminium case. Rear chain, ½ x 0.305in. Engine r.p.m. at 30 m.p.h. in top gear, 2,080.

FUEL CAPACITY: 3 gallons.

TYRES: Dunlop: front 3.25 x 18in ribbed; rear 3.50 x 18in Universal.

BRAKES: 7in diameter front; 6in diameter rear.

SUSPENSION: B.S.A. telescopic front fork with hydraulic damping. Pivoted rear fork controlled by Girling spring-and-hydraulic units.

WHEELBASE: 52½in unladen. Ground clearance, 6in unladen.

SEAT: B.S.A. dual-seat; unladen height, 31in.

WEIGHT: 307 lb fully equipped, with full oil tank and approximately half a gallon of petrol.

PRICE: £169 18s 11d; with purchase tax (in Great Britain only), £205

ROAD TAX: £1 17s 6d a year.

DESCRIPTION: *The Motor Cycle*, 8 September 1960.

MAKERS: B.S.A. Motor Cycles, Ltd., Small Heath, Birmingham 11.

PERFORMANCE DATA

MEAN MAXIMUM SPEED: Bottom: 34 m.p.h.
Second: 52 m.p.h.
Third: 66 m.p.h.
Top: 75 m.p.h.

HIGHEST ONE-WAY SPEED: 76 m.p.h. (conditions: light three-quarter wind; rider wearing two-piece suit and overboots).

MEAN ACCELERATION:

	10-30 m.p.h.	20-40 m.p.h.	30-50 m.p.h.
Bottom:	2.8 sec	—	—
Second:	3.2 sec	5.0 sec	6.0 sec
Third:	—	7.4 sec	8.2 sec
Top:	—	9.2 sec	9.4 sec

Mean speed at end of quarter mile from rest: 66 m.p.h.
Mean time to cover standing quarter mile: 19.6 sec.

PETROL CONSUMPTION: At 30 m.p.h., 112 m.p.g.; at 40 m.p.h., 110 m.p.g.; at 50 m.p.h., 96 m.p.g.; at 60 m.p.h., 80 m.p.g.

BRAKING: From 30 m.p.h. to rest, 31ft 6in (surface, dry tarmac).

TURNING CIRCLE: 14ft.

MINIMUM NON-SNATCH SPEED: 18 m.p.h. in top gear.

WEIGHT PER C.C.: 0.88 lb.