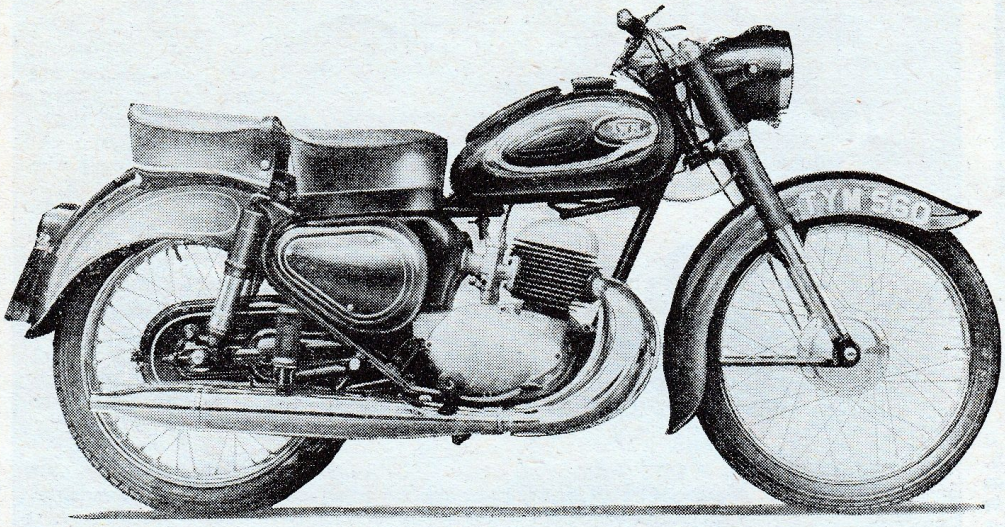
ROAD TESTS OF NEW MODELS

197 c.c. TWN Cornet

Handsome Twin-piston Two-stroke from Germany with Comprehensive Specification and Brisk Performance

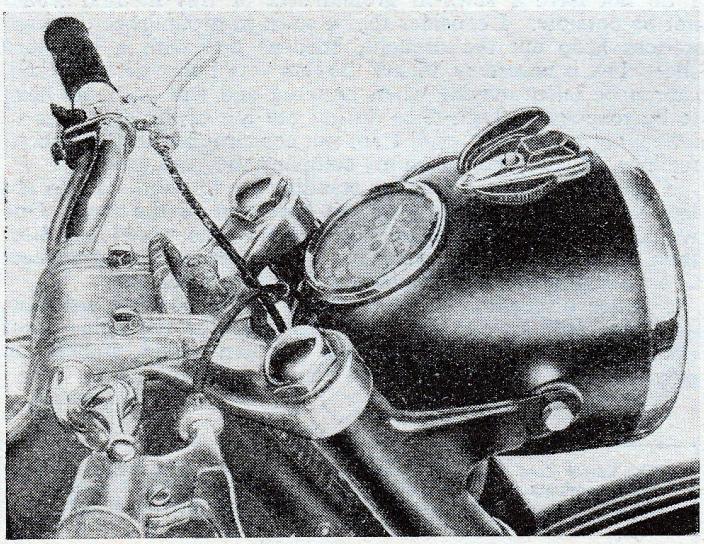


THOROUGHNESS is a traditional German trait, and in the latest version of the 197 c.c. TWN Cornet, product of one of Germany's oldest-established motor cycle factories, the tradition is more than maintained. Engine starting is achieved simply by operating a switch on top of the headlamp shell. Both driving chains are fully enclosed. Mudguards are deeply valanced. The high-grade tool-kit is complete even to a puncture outfit. And the well-produced, illustrated instruction manual is translated into English.

Similar in design to the engine fitted to the TWN Contessa scooter, the Cornet power unit has a twin-bore cylinder block in light alloy, the bores of which are hard chromium-plated by the Mahle process. Hard-chroming, of course, eliminates the need for a cast-iron or steel liner, increases the resistance to wear, and therefore ensures a long working life. The twin pistons are mounted on a single connecting rod, forked transversely just below the piston skirts, and are "in step"; that is to say, neither has any lead over the other. The left piston controls the transfer port and the right piston the exhaust port, so that the maximum separation between the incoming and outgoing charges is obtained. Excellent scavenging results.

Mounted on the left-hand extension of the crankshaft is a 12-volt Noris starter-generator—and such is the designer's faith in the efficiency of the equipment that no kick-starter is fitted. Current for the starter, ignition and lighting is provided by two 6-volt batteries, connected in series and mounted one at each side of the machine; they are housed within a stylish pressing which occupies the mid-section of the frame. The pressing also shields the carburettor air filter and silencer; the electric horn is inset into the forward face of the left-hand battery box.

A removable key controls the lights, ignition and electric starter. Beneath a hinged flap is the steering-head lock.



Starting is achieved by inserting a detachable key into the combined ignition-starter-lighting switch and turning it to the right; when not in use the keyhole is covered by a small, plastic slide. Removal of the key, leaving the lights on or off as required, not only prevents unauthorized interference with the ignition and lighting circuits, but also renders the horn push-button ineffective. A further safety measure is the provision of a steering-head lock, neatly tucked away beneath a hinged flap styled to blend with the handlebar upper clamp casting. The lock operates when the fork is turned to the right.

The Bing carburettor is equipped with an independent starting jet, controlled by means of a cable and handlebar lever. To achieve a cold start it was necessary only to turn on the fuel, operate the starting-jet lever and turn the electric-starter switch; invariably during the test the engine fired instantly, after which the lever was returned to the closed position. When the power unit was warm, of course, the use of the starting jet was unnecessary.

On the road, the power unit two-stroked regularly under only light load. Even when the engine was on the overrun, such as on downgrades with the throttle only fractionally open, four-stroking was so slight as to be barely perceptible. More remarkable still, the instant that a working temperature had been reached the machine could be throttled back to a tickover that was slow, regular and reliable—exceptionally so as compared with the behaviour of more orthodox two-stroke designs.

Clutch operation was light though, on the model tested, slightly fierce in its take-up of the drive. Once the machine was under way the high degree of smoothness and tractability of the power unit was immediately apparent; acceleration was brisk and, when full advantage was taken of its potential, the Cornet produced an all-round performance to satisfy the majority of lightweight riders. The power unit seemed tireless and, on long weekend runs, a cruising speed of between 50 and 55 m.p.h. could be maintained for hour after hour. The speedometer needle crept back only slightly when main-road hills were encountered. Calibrated in miles per hour, the instrument is built into the headlamp shell and proved to be accurate throughout the speed range. Another excellent feature is that on trips undertaken at night the needle and figures could be seen without difficulty.

Developed to meet the stringent requirements of the German authorities, the very long, large-capacity silencer (aided by the bulbous expansion chamber incorporated in the exhaust pipe close to the port) curbed the exhaust note to an inoffensive level; moreover, induction hiss was eliminated by the Knecht oil-

wetted filter and silencer, with renewable cartridge, connected to the carburettor intake and concealed beneath the saddle cushion. The total enclosure of both primary and rear chains effectively damped out transmission noise when the engine was under load. On the overrun there was a slight, but not objectionable, whine from the gear box.

Although the gear-change and rear-brake pedals are transposed as compared with British custom—that is to say, the gear-change pedal is on the left—the novelty of the arrangement faded after only a mile or two, and thereafter the foot controls could be operated without conscious thought. Nevertheless, the gear change proved disappointing. It was not always possible to make a silent change, particularly when accelerating through the gears. Further, the downward change from top to third gear was not as positive as could have been wished, and on several occasions the pedal passed through the third gear position to find a "neutral" between third and second gears. An independent neutral-finding pedal is fitted, and it proved effective from any gear.

Both front and rear suspensions provided a high degree of comfort, whether the machine was ridden one- or two-up. Provision is made for adjusting the pre-loading of the rear damper units for pillion work. All that is necessary is to turn a knurled boss on each spring cover until a spring-loaded button engages with the lower of two holes in the upper damper cap.

The upholstery of the saddle could, with advantage, have been softer and wider; and the relative positions of the saddle and footrests resulted in a knee angle of less than 90 degrees for a rider of average stature. Although provision is made for footrest adjustment through 360 degrees, movement of the right-hand rest is restricted to only one serration forward or backward because of the proximity of the exhaust pipe. Brake and gear-change pedals, handlebar and control levers could all be positioned to suit individual preferences.

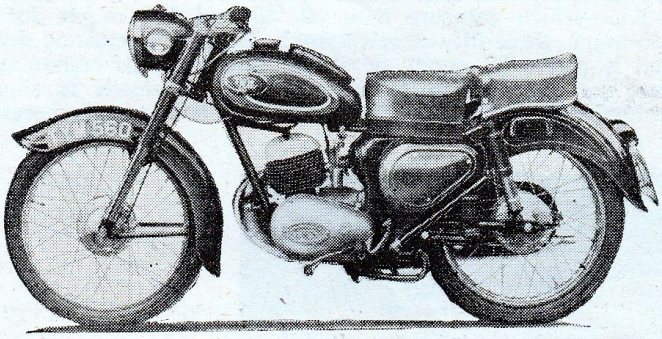
The rear brake is cable operated, and the somewhat light, forged brake pedal permitted a degree of sponginess in operation. Used together, the brakes proved most effective, and were capable of stopping the machine in 34ft from 30 m.p.h.

Throughout the entire period of the test, during which more than 900 miles were covered, the smooth but unpolished engine castings remained commendably clean and free from oil smears. The only blemish to the exhaust system was a very slight discoloration of the expansion chamber close to the port. On wet roads the mudguarding was most effective in preventing water, thrown up by the tyres, from reaching the clothing of the rider and passenger.

An advantage of the 12-volt electrical system was that the note of the electric horn was much more powerful than is usually expected from an instrument fitted to a lightweight machine. The headlamp incorporates a 35/35-watt bulb, the beam from which enabled the Cornet to make the most of its performance during the hours of darkness; the dipped beam gave a clean cut-off which appeared to satisfy oncoming traffic.

Overall appearance of the TWN is of a compact, quality mount, extremely smart and free from any suggestion of bittiness. The fuel tank has chromium-plated side panels, edged with gilt-finish plastic piping; similar piping is used to trim the battery-box lids. Gilt lining is used lavishly to trim the mudguards and valances, and the rear chaincase; lower fork legs and brake-shoe plates are of polished aluminium. The seats for rider and passenger are covered in red plastic which contrasts effectively with the black finish of the remainder of the machine. In brief, the Cornet looks just what it is—a well-built, well-designed and well-finished lightweight which should appeal to discriminating owners.

INFORMATION PANEL



SPECIFICATION

ENGINE: TWN 197 c.c. (45 x 62mm) twin-piston two-stroke. Light-alloy cylinder block with chromium-plated bores; detachable light-alloy cylinder head. Roller-bearing big-end assembly; crankshaft supported in ball and roller main bearings. Compression ratio, 6.5 to 1. Petroil lubrication. Electric starter.

CARBURETTOR: Bing 1/26/24; separate starter jet with handlebar control. Knecht oil-damped air filter and induction silencer.

IGNITION AND LIGHTING: Coil ignition. Noris 12-volt, 100-watt starter-generator; two 6-volt, 11-ampere-hour batteries connected in series. Hella headlamp, 6½in diameter with 35/35-watt bulb and 2-watt parking bulb in pre-focus unit.

TRANSMISSION: Four-speed gear box in unit with engine; positive-stop foot control, with neutral-finder pedal. Gear ratios: bottom, 21.15 to 1; second, 12.04 to 1; third, 7.90 to 1; top, 6.37 to 1. Multi-plate cork clutch running in oil. Primary chain, ⅜ x ⅜in in oil-bath case. Rear chain, ½ x $\frac{5}{16}$in and enclosed in a pressed-steel case. Engine r.p.m. at 30 m.p.h. in top gear, 2,600.

FUEL CAPACITY: 2⅝ gallons.

TYRES: Metzeler. Front, 2.75 x 19in; rear, 3.00 x 19in. Both with studded tread.

BRAKES: 5in diameter front and rear in full-width hubs.

SUSPENSION: Telescopic front fork with hydraulic damping; pivoted rear fork, controlled by hydraulically damped units adjustable for load.

WHEELBASE: 51in unladen. Ground clearance, 5⅜in unladen.

SEATS: Denfeld separate saddle and pillion; unladen height, 30¼in.

WEIGHT: 304 lb fully equipped and with one gallon of petroil.

PRICE: £159 9s 3d including British purchase tax.

ROAD TAX: £1 17s 6d a year.

MAKERS: Triumph Werke Nurnberg A.G., Nurnberg, Germany.

CONCESSIONAIRES: Claude Rye, Ltd., 895-921, Fulham Road, London, S.W.6.

PERFORMANCE DATA

MEAN MAXIMUM SPEED: Bottom: 26 m.p.h.
Second: 44 m.p.h.
Third: 56 m.p.h.
Top: 61 m.p.h.

HIGHEST ONE-WAY SPEED: 62 m.p.h. (Conditions: light tailwind, rider lightly clad).

MEAN ACCELERATION:

	10-20 m.p.h.	20-30 m.p.h.	30-40 m.p.h.
Bottom	2.4 sec	—	—
Second	3.8 sec	3.8 sec	4.2 sec
Third	7.4 sec	5.4 sec	5.4 sec
Top	—	7.0 sec	6.2 sec

Mean speed at end of quarter-mile from rest: 52 m.p.h.
Mean time to cover standing quarter-mile: 24.4 sec.

PETROIL CONSUMPTION: At 30 m.p.h., 109 m.p.g.; at 40 m.p.h., 96 m.p.g.; at 50 m.p.h., 80 m.p.g.

BRAKING: From 30 m.p.h. to rest, 34ft (surface, smooth dry tarmac).

TURNING CIRCLE: 11ft 8½in

MINIMUM NON-SNATCH SPEED: 12 m.p.h. in top gear.

WEIGHT PER C.C.: 1.54 lb.

Connected in series, the two 6-volt batteries are mounted one on each side of the machine. Rear-suspension units can be adjusted for load