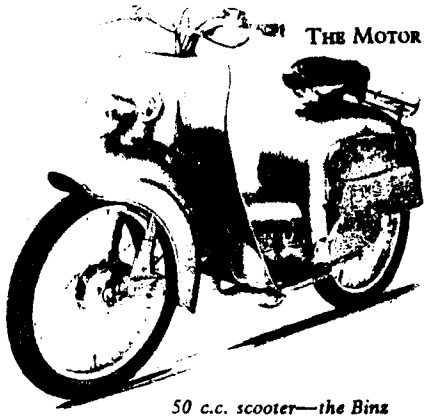
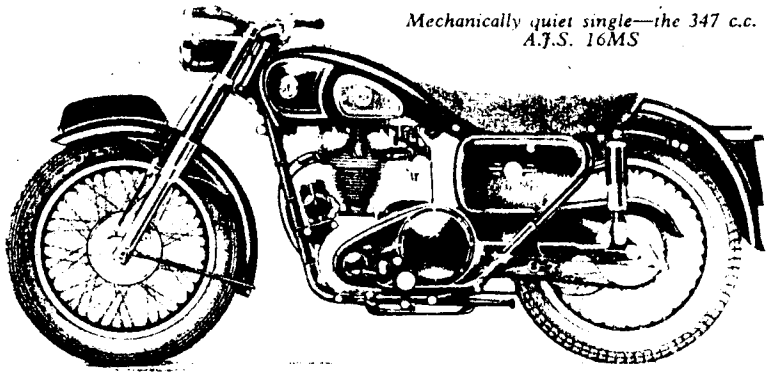
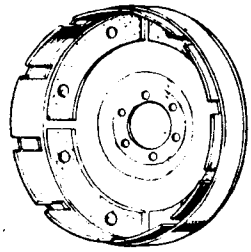
LONDON SHOW 1956



50 c.c. scooter—the Binz

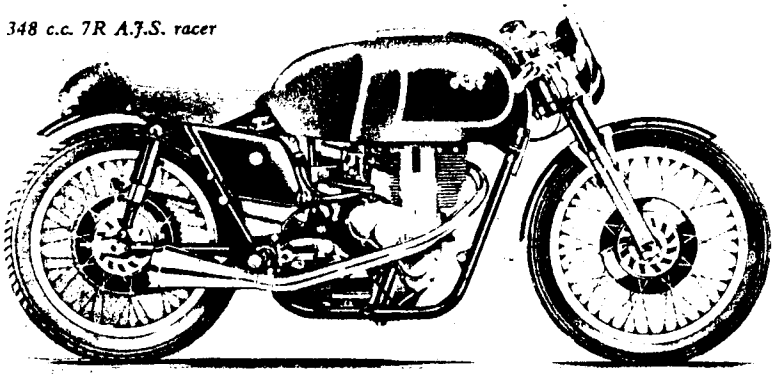
Mechanically quiet single—the 347 c.c. A.J.S. 16MS



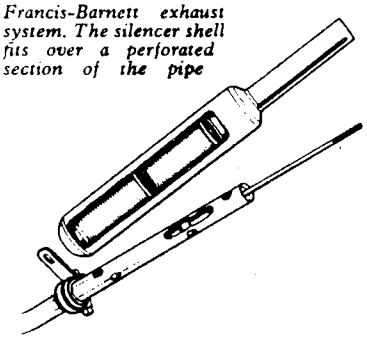


On the Ariel Square Four and Huntmaster, friction segments are riveted to the clutch drum

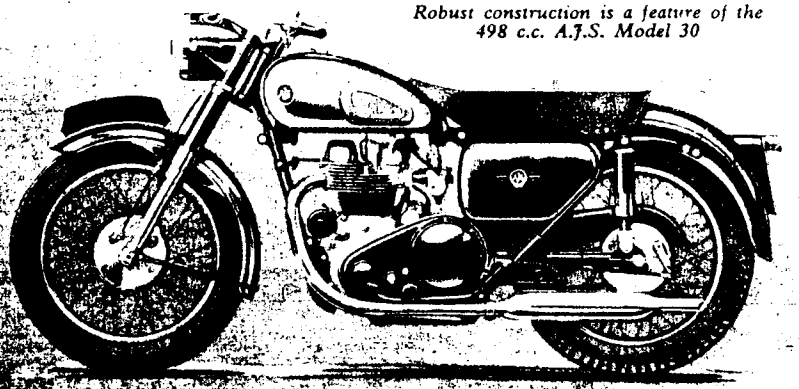
348 c.c. 7R A.J.S. racer



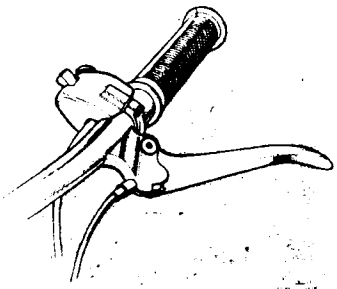
Francis-Barnett exhaust system. The silencer shell fits over a perforated section of the pipe



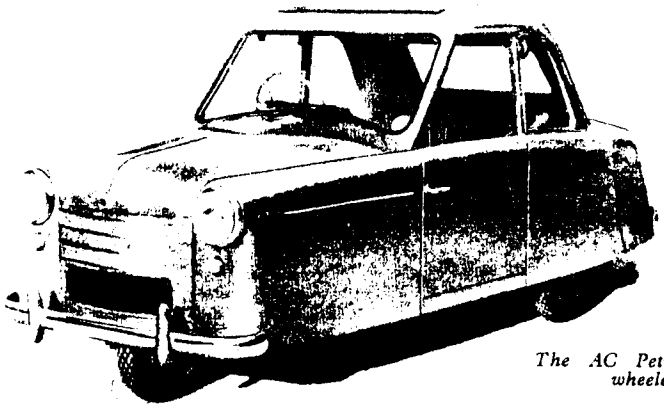
Robust construction is a feature of the 498 c.c. A.J.S. Model 30



A James detail—a hooded lever with concealed nipple



A.J.S. chromium-plated tank panels are bolted on



The AC Petite three-wheeler

RANGE BY RANGE REVIEW

AC

Over a period of years the AC Petite has established a sound reputation in the rapidly expanding field of economical three-wheelers. The latest Mark II models are notable for robust design and lively performance bearing in mind the 346 c.c. capacity.

The bench-type front seat provides comfortable accommodation for two and there is room for a child or extra luggage in the space behind. The neatly-styled body is formed by aluminium panels and can be supplied in a variety of colours. A roll-back plastic roof is fitted. The interior trim, with its plastic-covered upholstery, is simple but not stark.

The chassis is made up of channel-section steel members and carries an integral framework for the body. Front suspension consists of a trailing-link fork controlled by two coil springs and a hydraulic damper, and the independent rear-wheel suspension is by trailing arms. Girling 7in hydraulic brakes are fitted to the rear wheels. Located at the rear, the power unit is a Villiers fan-cooled two-stroke. Three vee-belts form the primary drive to a three-speed-and-reverse gear box controlled from the steering column. Final drive is by chain. The engine, gear box and differential are rubber-mounted.

A.J.S.

The A.J.S. range includes machines for most purposes, including as it does nine different models for normal road work, trials, scrambles and racing. Engine capacities range from 347 c.c. to 592 c.c. and all power units have pushrod-operated overhead valves with the exception of the famous 7R production racer, the engine of which features a chain-driven overhead camshaft.

There are two single-cylinder roadster engines, one of 347 c.c. and the other of 498 c.c. Both have a reputation for mechanical quietness although fitted with light-alloy cylinder heads. Performance has been improved for 1957 by modification of the inlet-cam profile. Ignition is by rotating-magnet magneto mounted in front of the cylinder, and the dynamo lies behind the crankcase; both instruments are chain driven.

The 498 and 592 c.c. parallel-twin roadster engines have only one major difference, namely, the cylinder-bore diameter. They are exceptionally robust, untiring units and their stamina can be attributed primarily to the use of light-alloy cylinder heads. A feature unique among British four-stroke twins is that the three-bearing crankshaft has one bearing between the crank throws. The magneto and dynamo are gear driven and are mounted respectively behind and ahead of the cylinders. As on the singles, power output has been increased by altered cam design: both inlet and exhaust cams have been modified.

In place of the Burman gear box previously used, all 1957 A.J.S. models are fitted with a box of A.M.C. design and manufacture. Of very compact layout, the gear box is notable for the pains taken to ensure oil tightness and for the unorthodox clutch thrust mechanism in which a cam arm floats between a ball and a roller.

The four roadster models all have the same type of cradle frame, of brazed-up construction with bolted-on rear sub-frame. A pivoted fork carries the rear wheel and springing is by means of three-position Girling shock absorbers which for 1957 replace the A.M.C.-made components fitted hitherto.

Full-width hubs with straight spokes are employed on both wheels. The front hub embodies a 7in-diameter brake and the rear hub is of the quickly detachable pattern. To provide a more resilient drive and to prevent chatter after large mileages, the latest rear hubs have rubber bushes between the driving pins and their holes.

The oil tank fits neatly into the right-hand loop of the rear sub-frame and is faired into a matching box on the other side which contains the battery, voltage-regulator unit and tools. Among the detail features are a long headlamp shell carrying the speedometer, ammeter and switch, and a front mudguard reinforced to obviate the need of forward stays.

Based on Gordon Jackson's winning machine in the Scottish Six Days' Trial, the new trials model is fitted with what is basically the 347 c.c. roadster engine but with a light-alloy barrel and altered compression ratio and valve timing. The frame differs appreciably from its roadster counterpart: it furnishes much greater ground clearance, the wheelbase is shorter and the rear sub-frame is integral with the engine cradle.

Power units of the 348 and 497 c.c. scrambles models, though similar in design to the roadster engines, are of shorter stroke to permit higher r.p.m. Further, the light-alloy cylinder barrel has cast-in tunnels for the pushrods. Modified inlet ports, larger inlet valves and, in the case of the three-fifty, a larger carburettor contribute to an increase in the already high power output. The frame resembles that of the trials machine save that the ground clearance is not so great.

A duplex-loop frame of welded construction is employed on the 7R racing model, as are conical wheel hubs and a large-capacity petrol tank. Apart from the adoption of the A.M.C. gear box, details of modifications for 1957 have not yet been settled.

Binz

The German Binz 50 c.c. scooter has made fantastic strides since it first appeared in prototype form at the Brussels Show in January 1955. A year later production was in full swing and the machine was beating mopeds for sales. And well it might, for abroad, where moped design has in many cases become over-elaborate, the Binz is lighter than many pedal-equipped machines—and less expensive.

Total weight is said to be under 100 lb, a factor important to those contemplating the purchase of their first powered two-wheeler. The engine is a Sachs with fan cooling and integral two-speed gear. Rectangular-section tubing is employed for the frame. The body and mudguards are constructed from five simple pressings and there is plunger-type rear springing. Front suspension is by means of an undamped leading-link fork.

Equipment includes a nose-pivoted saddle, electric horn built into the weather-shield forward of the steering head, luggage grid on the rear-mudguard pressing, a theft-proof lock, and a headlamp with inbuilt speedometer.

Buyers' Guide

The complete list of motor cycles, scooters and three-wheelers in each manufacturer's range, together with specifications and prices, is published on pages 643 to 649.

Radar Speedmeters

Demonstration of Döppler-effect Instrument Introduced to Check Speeding in Metropolitan Police Black-spot Areas

DURING the course of this week, speed checking by radar meters is being introduced in the Metropolitan Police area; the sites selected for the checks are black spots where it has been established that speeding is frequent and has caused accidents. These facts were revealed last Thursday by Superintendent E. Walker, of the Metropolitan Police Research and Planning Branch, at a demonstration of the speedmeter on Chelsea Embankment. The demonstration was attended by representatives of the Traffic Division of the Road Research Laboratory which has played a large part in the necessary preliminary work.

Described originally in *The Motor Cycle* for July 25 last, the radar speedmeter operates on an elementary acoustical principle known as the Döppler effect. The most familiar manifestation of this effect is the drop in the apparent pitch or frequency of the noise of a vehicle as it passes the listener; the magnitude of the frequency change is a measure of the speed. Whereas, in detecting the Döppler effect, the ear relies on the sound emitted by the moving object, the radar speedmeter transmits its own signals, pulses of a known and constant frequency. These pulses are directed towards the oncoming vehicle in a "beam" with a 20-degree spread, are reflected by it and picked up again by the receiver portion of the radar set. The difference between the transmitted and reflected frequencies is analysed by the meter and converted into a speed reading on a dial.

Checking the accuracy of the set is simple and certain. Part of the equipment is a box of five tuning forks of different sizes; the forks cover the speed range, in 10 m.p.h. increments, from 20 to 60 m.p.h. Each fork is precision made to have a frequency identical with that received from a vehicle approaching at the appropriate speed. Thus, if the 30 m.p.h. fork, for example, is struck and held in front of the receiver, the needle should swing to that speed indication.

The range of the speedmeter varies with the size of the vehicle: the larger it is the farther away will it reflect signals detectable by the receiver. For a large lorry the critical distance may be as much as 180ft; for a car it is around 120ft and for a motor cycle or scooter rather under 100ft. Even that last distance is sufficient for a brief steady reading on the dial to be reached with approach speeds in the range concerned.

The presence of more than one vehicle in the beam can obviously have a disturbing influence on the speed reading obtained because more than one set of reflected pulses is picked up. For this reason the speedmeter cannot be used reliably on congested roads or to pick one vehicle out of a bunch. According to the representatives of the Road Research Laboratory, the shaking of a bunch of keys by a driver or passenger (popularly believed to "fox" the apparatus) has a negligible effect. It would not be detectable at all beyond about 12ft range and, in any case, would be swamped by the signals reflected from the vehicle itself.

By the very nature of the radar equipment, an adequately high degree of accuracy is claimed for the speedmeter if it is properly used. In normal functioning the only error arises from the fact that the vehicle is approaching the instrument not directly but obliquely; the obliquity increases as the distance away diminishes. In the opinion of the experts at the demonstration, the error should not exceed 2 per cent and, since it results in an underestimate of the speed, it favours the motorist.

As used by the Metropolitan Police, the speedmeter—which is of U.S.A. manufacture—will have two indicator dials, one adjacent to the battery-powered transmitter/receiver unit and the other 200 yards along the road. Each will be under the observation of a police officer, the first of whom is responsible for selecting the offender and the second for stopping him. This scheme provides two witnesses of an offence, advance warning to the second officer and ample stopping distance for the vehicle.

Although the equipment can be operated (and sometimes is in the U.S.A.) from the interior of a parked police car, there is no intention of making it any other than fully visible—to exploit to the full its deterrent effect.

(A leading article on this topic appears on page 97.)

For the Bond

TWO Feridax accessories designed exclusively for the Bond P1 scooter were exhibited in London last week. One is a handsome one-piece windscreen in moulded Perspex. Attached by means of rods bolted through the top of the weathershield, the screen does not turn with the handlebar. Consequently there is no gap and hence no draught between the lower edge of the blade and the top of the weathershield. The price is £6 17s 6d.

Second of the Feridax items is a luggage and spare-wheel carrier which attaches to the rear ends of the sub-frame tubes and to the body rear moulding where the rear lamp is attached. Carrier price is £3 7s 6d. The makers are Feridax (1957), Ltd., Frederick Street, Birmingham, 1.

Sports Twins

FIRST deliveries on the home market of 592 c.c. Sports Twin A.J.S. and Matchless models equipped for roadster use have now been made. Basically the machines are similar to the scrambler versions (announced last September) exported to North America, Sweden and other markets. Housed in the modified scrambler-type frame is a tuned engine with 8.5 to 1 compression pistons, and the exhaust pipes are siamesed into a common silencer.

For roadster use a 3¼-gallon fuel tank of standard type with chromium-plated side panels is fitted. On the A.J.S. the fuel tank, oil tank and tool box are finished in Mediterranean blue and on the Matchless the colour is red. Covers of the front fork and the rear-suspension legs are chromium plated.

The handlebar is of orthodox shape and the standard wheels are equipped with 3.25 × 19in and 3.50 × 19in tyres front and rear respectively. Polished aluminium mudguards are fitted and the competition-pattern dualseat is employed. Lighting equipment is of the quickly detachable type.

The A.J.S. is designated 30CSR to identify it from the export model 30CS and the equivalent Matchless designations are G11CSR and G11CS. Price of either roadster model is £240, or £299 8s including British purchase tax. Makers are Associated Motor Cycles, Ltd., Plumstead Road, London, S.E.18.

Moto-Guzzi Lodola

FIRST seen in England at the 1956 Earls Court Show, the 174 c.c. overhead-camshaft Moto-Guzzi Lodola is to be imported. The clean engine-gear unit is styled in the best Italian tradition and the cylinder is inclined at about 40 degrees to the horizontal. Bore and stroke are 62 × 57.8mm and the cylinder head is of light alloy. Claimed power output is 9 b.h.p. at 6,000 r.p.m. Primary drive to the four-speed gear box is by helical gears.

The duplex frame is of welded construction. Fuel-tank capacity is approximately 2½ gallons. A telescopic front fork and pivoted rear springing are specified. Mudguards are effectively valanced and the only stays are two to the lower portion of the front guard. Wheel rims are of light alloy and their diameters are 18in front and 17in rear; respective tyre sections are 2.50in and 3.00in. Dry weight is 238 lb.

Basic price is £160 6s and the total price, including British purchase tax, is £ 99 19s 6d. The importers are Motor Imports Co., Ltd., 158, Stockwell Road, London, S.W.9.

Over £1 Million

FINES for motoring offences in England and Wales during 1956 reached a total of £1,119,542—the first time £1 million has been exceeded. Biggest amount (£176,144) came from convictions for exceeding the speed limit in built-up areas and the next highest was £170,164 in connection with careless driving.

The 592 c.c. Sports Twin Matchless in roadster form