

# AUTO-CYCLE UNION SIX DAYS' RELIABILITY TRIAL 1921.

*This is to Certify* that a Gold MEDAL was awarded  
to Messrs Phelon & Moore Ltd  
in respect of the 3 1/2 hp P & M Motorcycle with Sidecar entered in  
the Six Days' Reliability Trial, held from August 29th to September 3rd, 1921, starting  
and finishing at Brooklands Track, and including a circuit of the West Country.

PARTICULARS OF THE PERFORMANCE.								
Competitor's Class & No.	Machine	P & M.	Driver Mr. P. Cunningham.					
	Der. from Schedul.	Stops on Hill.	Slows.	Brakes.	Fuel.	Oil.	High Speed.	Final Exam.
Marks allotted ..	100	100	20	25	50	50	100	100
" lost ..	-	-	1	1	-	-	-	-
" remaining ..	100	100	19	24	50	50	100	100
" gained ..	-	-	-	-	20	31	3	-
Total Marks ..	100	100	19	24	70	81	103	100
Marks lost % ..	-	-	5	4	-	-	-	-

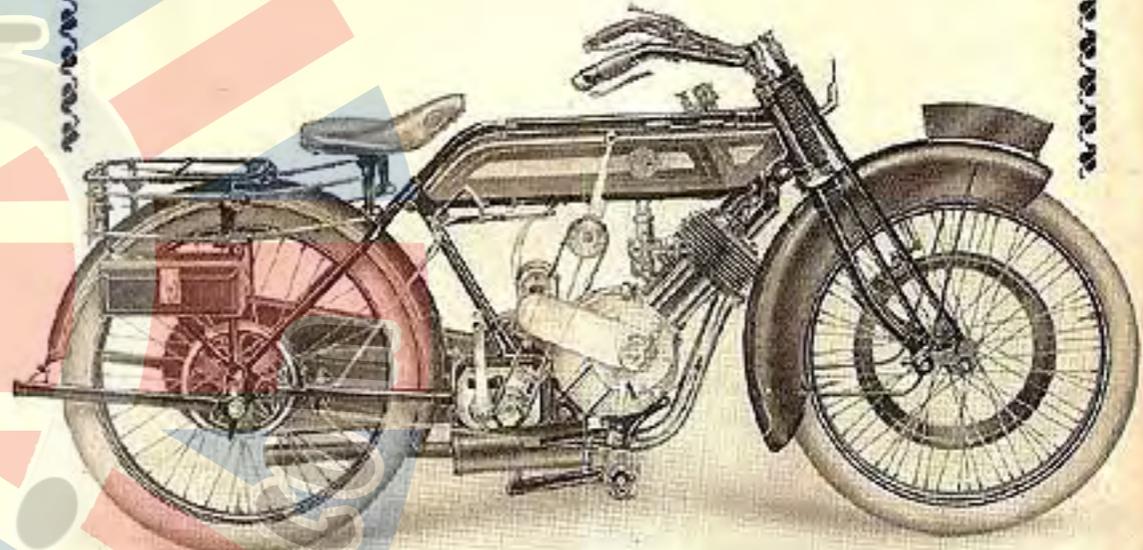
Fuel Consumption 70.2 m.p.g. Oil Consumption 99.8 m.p.g. Speed Test 34.92 m.p.h.

*Blount*  
Clerk of the Course.

*H. Nicholls*  
*J. C. Breton*  
Judges.  
Chairman, A.C.U.

# P & M

THE PERFECTED MOTORCYCLE



4-speed 4 1/2 H.P. MODEL.

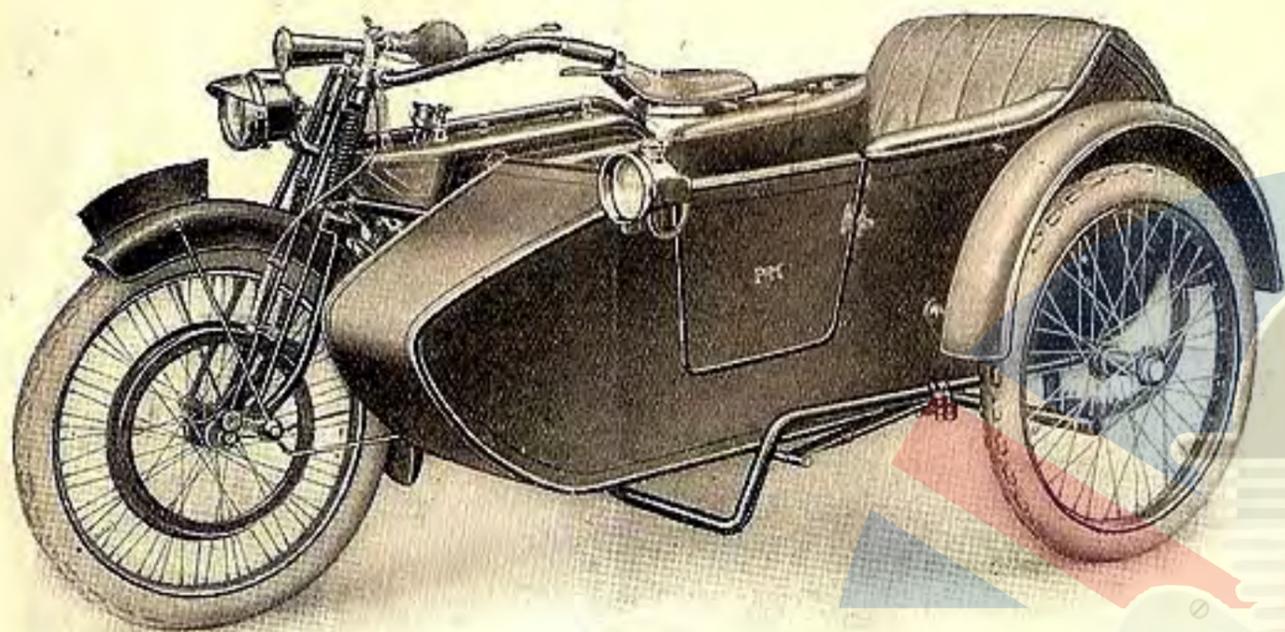
## PHELON & MOORE, Ltd., ENGINEERS.

London Depot and Showrooms:  
4, BERNERS STREET, W.1.  
Telegrams: "PHELMOR, OX, LONDON."  
Telephone: MUSEUM 647.

Registered Office and Works:  
CLECKHEATON, YORKS.  
Telegrams: "GEARED, CLECKHEATON."  
Telephone: No. 127.

SOLE AGENT:

*W. J. Stone & Co. Ltd.*  
25, Abchurch Lane, London, E.C. 4.



4-speed 4½ h.p. "A" Combination £150.

**EQUIPMENT.** The outfit is delivered fully equipped for the road with Lucas horn, front and rear lamps, a large generator supplying both lamps. Separate sidecar lamp and generator, a full kit of high-grade tools, including an oil gun. A Bluemel inflater is attached in brazed clips underneath the tank.

The License Holder is fitted on the front forks of the Motor-cycle. The tool bags are fixed on both sides of the back carrier and a large locker for tools is provided under the seat of the sidecar.

**FRAME.** The well-known unique P & M method of building the engine into the frame provides a frame with immense strength and exceptional lightness, and is designed to take the sidecar on either side of the machine without any clips being necessary. All tubes are of round section.

**ENGINE.** 3 5/8 bore x 3 1/4 stroke (84.1 x 100 m.m.) 555 c.c. Specially designed for sidecar work with cooling fins of exceptional depth. It is absolutely oil tight, and presents a perfectly clean appearance, the timing case being circular and the valves covered by spring-on plates. The exhaust valve lifter and the half-compression device are enclosed in the timing box.

Lubrication is by a slow speed plunger pump, driven from the camshaft, delivering oil through a sight feed on the top of tank. The emergency hand pump also delivers through this sight feed. The oil release discharges into the chain covers, providing automatic chain lubrication.

**P & M FOUR SPEED GEAR.** This gear is the latest development in motor-cycle construction, enabling the driver and passenger to go anywhere under any conditions with speed and comfort.

The gear box provides ratios of

5.5, 7.8, 1.2 and 17½ to 1,

and gives a two-speed footstarter for instantaneous starting whether the engine is cold or warm. All engagements are frictional, the gear being as easy to operate as the old P & M two-speed.

**SPRING FORKS.** The well-known P & M spring forks with exceptional bearings all provided with screw down greasers are retained. The fork, however, has been lightened without any sacrifice of strength.

**CARBURETTOR.** Latest type B & B Carburettor with starting pilot jet is fitted.

**MAGNETO.** E.I.C. On the P & M, ideal magneto position has been obtained.

**CONTROLS.** Ignition and valve lifter on left-hand side of handlebars. Throttle, air and front brake on right-hand side. All wires passing inside the bars. Half compression, right-hand side of engine. Engine starter right-hand side of gear box. Back brake by hand lever and pedal on right-hand side of machine interconnected. Gear lever on right-hand side of tank.

**TRANSMISSION.** By two 5/8 x 1/4 Hans Renold chains from spring shock absorber on engine shaft to the gear box, and one chain to the back wheel.

**CHAIN COVERS.** These have been re-designed, being made now in four pieces only. The front case is of cast aluminium, and all parts are removable with ease for chain adjustments, wheel removal, etc.

WEIGHT. (With empty tanks and without accessories) 280 lbs.

TANK. Holds 2 gallons of petrol and 5½ pints of oil. Petrol outlets controlled by needle valves fitted with adjustable glands.

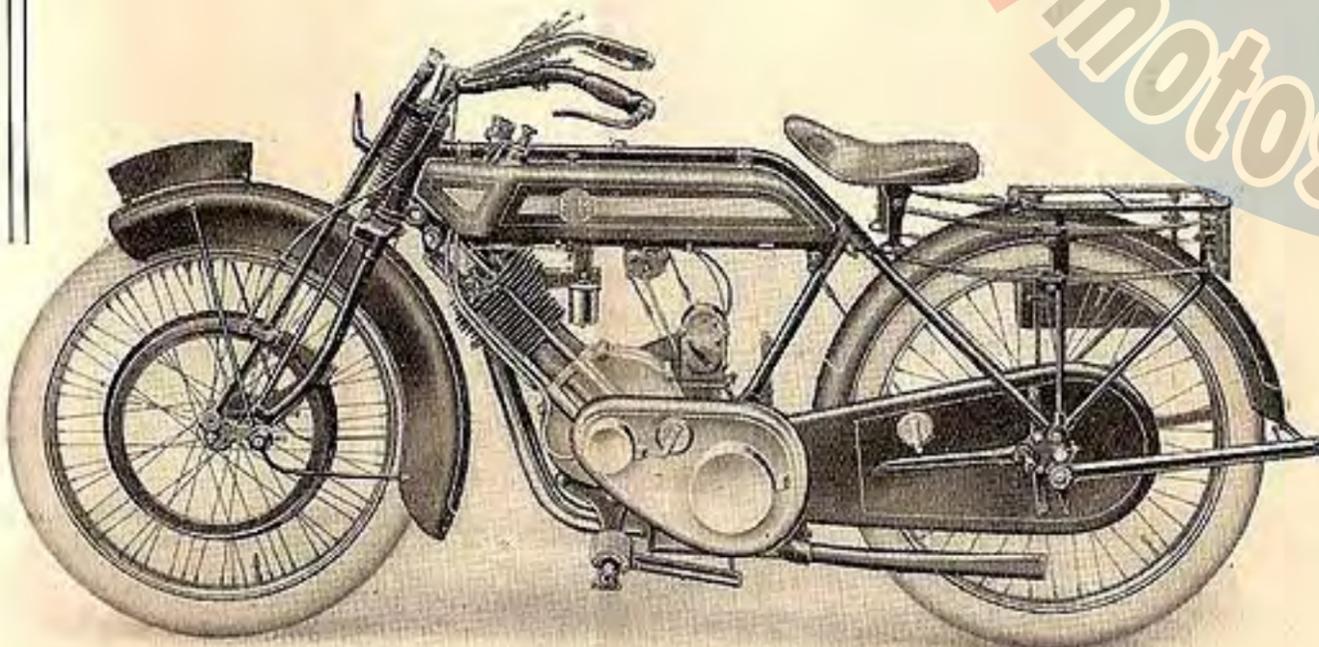
BRAKES. Contracting band on back wheel, and pivoting block working in "V" belt rim on front wheel.

SUSPENSION. Brooks B600 double cantilever saddle, giving complete comfort on the worst roads.

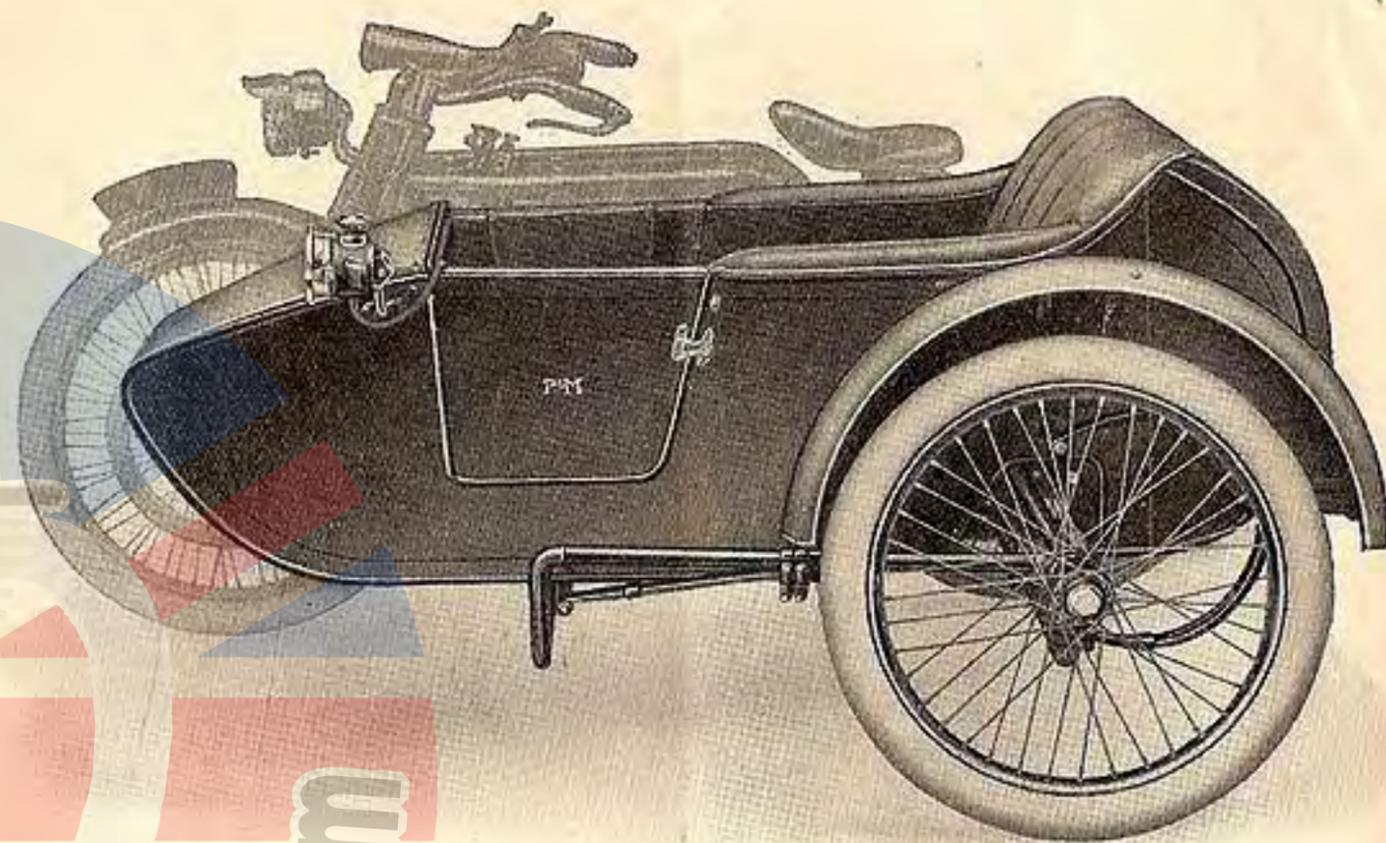
MUDGUARDS AND WHEELS. Well-balanced, single piece front mudguard and 5¼" wide back guard. 2½" Kempshall tyres—back wheel fitted with security bolts.

GROUND CLEARANCE. 10" from crank case. 5½" from footrest.

STANDS. Back stand fits into new type clip on back mudguard, and front stand is fitted under footrest with automatic spring release.



4-speed 4½ h.p. "A" Model, Solo £115.



Sidecar "A" Model, £29 10s.

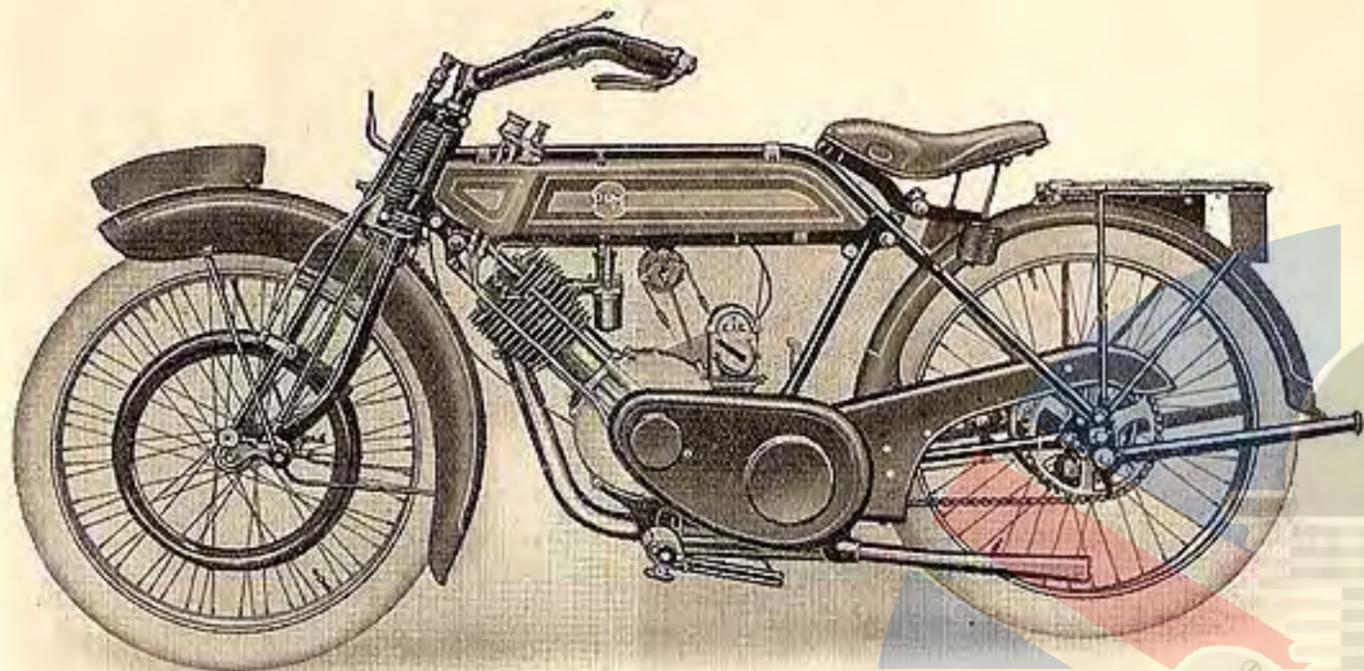
"B" Model, £28.

## P & M SIDECAR.

The chassis is manufactured throughout by us, and having been designed for P & M machine, no adjustments are provided, with a consequent gaining of strength and lightness. A further improvement is the attachment of the mudguard to the body itself, where it receives the benefit of the springs. The springing is of the underslung type, giving extreme comfort with a low position. The body is of the highest quality throughout, with an exceptionally deep back and ample space for luggage in the bulbous back. Lucas sidecar lamp and generator are fitted.



WEIGHT OF SIDECAR - 134 lbs.



4-speed 4½ h.p. "B" Model, Solo £102.

Lamps, horn and license holder not fitted. Brooks B170 saddle instead of Brooks B600 cantilever.

Front chain cover, and back chain guard instead of completely enclosed cases. Hand brake not fitted, and only one toolbag. Sidecar body fitted with movable back instead of hinged flap.

PRICE OF COMBINATION - £ 130

EXTRAS.

	£	s.	d.
Hood ... ..	3	15	0
"Bluemel" Screen ... ..	4	0	0
Child's sidecar dickey seat ... ..	3	15	0
"Tan-Sad" motor-cycle pillion seat ... ..	1	18	0
"Lucas Magdyno" set for			
"A" model combination ... ..	19	0	0
"B" model combination ... ..	22	15	0
Sidecar with polished aluminium body ... ..	35	10	0
Luggage Grid ... ..	1	18	0
Sidecar Step ... ..		17	6
Leg Shields ... ..	1	12	6
Insurance ... ..	5	0	0

In the A.C.U. 6 Days' Trial, 1921,  
the P & M won Team Prize and 3 Gold Medals.

PRESS COMMENTS:

"Daily Mail," October 20th, 1921:—

"Taking the 3½ h.p. and the 4 h.p. sidecar combination as the small man's transport, because its cost in oil, petrol and tyre wear is very low and its initial price is cheap, the P & M provides a splendid object-lesson of the increased usefulness of low-powered sidecars when fitted with four speeds."

"I spent two days on the P & M mostly trying to smash the gears with crazy gear changing on hills and on the level. At once I say that the four-speed gear-box is as foolproof and damage-proof as the old two-speed type, unquestionably one of the hardest-wearing gears on the market."

"Pall Mall and Globe," September 21st, 1921:—

"The recent A.C.U. Six days' Trials proved conclusively that the P & M fitted with 4-speed gear will pull a sidecar and extra passenger up hills far steeper than are ever actually encountered."

"The Motor Cycle," October 20th, 1921 (Judges' report):—

"The brakes on the P & M's, which provide for the outfit being held when unattended, are worthy of special notice."

"Motor Cycling," October 26th, 1921:—

"So far back as 1906 the P & M was regarded as being one of the most reliable machines on the market. Conserving the same main characteristics as the original machine the 1922 version of this time-honoured make must be conceded a place in the very forefront of British motor-cycle manufacture. While its simplicity cannot fail to impress, its improvements and refinements alike inspired by accepted engineering practice, cannot but evoke the admiration of the most fastidious critic."



Photograph by "Motor Cycle."