

Riley Elf and Mini Cooper (1152 TT5) SPEEDWELL CLUBMAN ENGINE

SPEEDWELL

ROAD TEST REPORT

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Improving the performance of popular cars.

SPEEDWELL RILEY ELF 110 m.p.h. from 1,150 c.c.

To capture emotions in words is always difficult, and driving this Speedwell-tuned Riley Elf is really an emotional experience. It is the fastest Mini (and fastest Riley) we have ever tested, with a best one-way maximum of 110 m.p.h. backed up by a mean of 109 m.p.h.; and acceleration is of the earnest kick-in-the-back variety. Yet throughout the range from fast idling at about 1,300 r.p.m. to the safe maximum of 7,500 r.p.m. the engine is sweet, smooth and docile without the slightest temperament.

The basis of the conversion, which can only be supplied with a new car, is the current Riley Elf Mk. II. However, the original 997 c.c. engine is removed and bored out by 2.5mm to 67.1mm and a Mini-Cooper crankshaft is fitted to increase the stroke by nearly 5mm to 81.3mm. The result is a capacity of 1,150 cc.. From here the engine is tuned to deliver over 90 b.h.p. gross by means of a special camshaft, aluminium cylinder head, and two 1.5in. S.U. carburettors, plus a Speedwell branch exhaust system with twin-tailor silencer. The engine in our test car had been on the test-bed just before it was fitted, and the peak performance figures were 93 b.h.p. gross at 7,400 r.p.m. and 78 lb. ft. torque at 5,500 r.p.m. (Compared with 40 b.h.p. gross at 5,250 r.p.m. and 52 lb. ft. at 2,700 r.p.m.)

With a power increase of no less than 130 per cent it comes as no surprise that the car is transformed. These is an extra 1,600 r.p.m. usable in all gears which extends the speed ranges with the standard gearbox to the useful maxima show overleaf. It is worth noting that the Speedwell Riley has a maximum of 77 m.p.h. in third, the same as the mean in top of the original car. Yet virtually no bottom-end tractability is lost, and the car will pull away quite happily from as low as 20 mph. in top.

Cruising on motorways in the fifties feels perfectly natural, and it is indeed a compliment to the Issigonis design concept that the standard chassis poses no stability when called upon to handle all the extra power. At 110 m.p.h. the ride is a little lively, but most of this might be attributed to the Michelin X tyres that were fitted. Standing starts, even in the dry, called for a special technique in feeding the power to the road as wheelspin was very easily provoked. Wide section wheels with Dunlop SP tyres (optional on the Mini Cooper S) would be an obvious choice if they could be obtained. Speedwell took some more figures with the car on ordinary-sized SPs and reckoned about 1sec was saved in getting away.

On corners the car could be made to run wide, or dive in simply on the throttle. Once or twice we were surprised to have to lift off in a sweeping bend (although this may have been courage failing rather than cornering power), in order to keep the little car on its line. Mini drivers will be used to this technique which is more pronounced on this car because of the extra power.

Brake modifications are confined to fitting harder linings and a vacuum-servo unit to reduce the pedal loads. Because the linings had not fully bedded in, we were able to make them fade quite easily, but were told they should improve with more mileage, although a conversion to discs would give greater security.



Prices (at 1st June 1964)

	£	s
1,150 c.c. Riley Elf, with brake servo	875	0
Oil cooler	13	10
Electronic rev counter	17	10
Rear anti-roll bar	7	0
Restall de luxe seats, each	25	0
Gold sunshine roof, fitted	60	0

P.T.O. ▶

Several extras were fitted to our car, and some of these must be regarded as essential. It would be very short-sighted to try to run such a car without a rev counter, as the safe limit of 7,500 r.p.m. is reached very quickly indeed and in the lower gears care is needed to avoid going into the "red". The Speedwell electronic unit fitted gives a steady reading, and has an easy-to-read scale. For motorway use, or even a continental holiday, it would be risky not to have the optional oil-cooler as well. Our car maintained its oil pressure even after some 10 to 15 miles at over 100 m.p.h. with this aid.

Almost incredible as it may sound, the overall petrol consumption for just over 500 miles of exciting driving was 32.2 m.p.g. Against this, one must offset a total of nine pints of oil in the same period, which even allowing for the extra piston clearances is excessive.

Although rather expensive (£25 each) the latest Restall front seats are very comfortable and infinitely adjustable for rake. They can be reclined fully by another mechanism, so that the normal setting is not lost. Most important though, they suit the Mini driving position—a point to watch with special seats.

This car was also fitted with the German Golde sunshine roof that includes a Perspex wind deflector, and even



Only clues to 93 b.h.p. under the bonnet are the aluminium cylinder head and twin SU carburetors. On the left is the brake servo unit and low down on the right is the optional oil cooler.

Performance Data

Figures in brackets are for the Wolseley Hornet tested in AUTOCAR of 16 August 1963.

Acceleration times (mean): Speed range, gear ratios and time in seconds:				
m.p.h.	0-15 to 1	0-32 to 1	0-58 to 1	0-66 to 1
10-30	—	— (7.4)	4.6 (9.5)	2.9 (—)
20-40	11.2 (10.7)	6.6 (7.5)	3.6 (3.6)	—
30-50	11.5 (11.5)	6.9 (9.4)	3.7 (—)	—
40-60	9.5 (10.4)	3.7 (14.1)	—	—
50-70	9.3 (25.1)	6.3 (—)	—	—
60-80	11.5 (—)	—	—	—
70-80	14.4 (—)	—	—	—
80-100	25.3 (—)	—	—	—

Overall fuel consumption for 500 miles; 32.2 m.p.g., 8.8 litres/100 km (25.3 m.p.g.; 8.0 litres/100 km).

Fuel consumption through gears to:			
40 m.p.h.	—	—	3.4 sec. (5.0 sec.)
50	—	—	5.6 (9.7)
60	—	—	7.9 (15.7)
70	—	—	10.7 (24.1)
80	—	—	14.3 (40.6)
90	—	—	19.6 (—)
100	—	—	27.4 (—)
150	—	—	46.6 (—)

Standing quarter-mile 17.6 sec (22.4 sec)			
Maximum speeds in gears:			
Top (mean)	m.p.h.	k.p.h.	
3rd	108.6 (77.2)	175.4 (124.6)	
2nd	110.6 (76.6)	177.1 (123.6)	
1st	77 (50)	124 (30)	
1st	58 (40)	93 (24)	
1st	38 (24)	48 (20)	

"Absolutely standard" inside, except for the electronic rev counter (with red line at 7,500) and the tall de luxe seats. On the right of the floor is the little pedal for spinning the front wheels.



at 90 m.p.h. there was no buffeting inside the car with the roof open.

In its basic form with just the engine and brake conversions, Speedwell Performance Cars Ltd., 763 Finchley Road, London, N.W.11, can supply this "Executive Riley Elf—the answer to a business man's dream" as they call it—for £825. What we would deem the essential extras add about another £50, and then there are the unavoidable charges for delivery and number plates; but even so for less than £900 one owns a car that has very few rivals for performance and fun value.

There is only one serious criticism of the car and that is noise level*. Inside, the engine and road noise seem much less than on other Minis (the Riley variant does have more sound-deadening material as standard), but outside the exhaust note becomes decidedly deafening when power is called for. It is not that the car cannot be driven quietly, for as soon as a head turns one can lift off and potter past with hardly a burble, but the temptation to drive hard even in towns is so difficult to resist that perhaps the deterrent value of this fault makes it justifiable.

Memories of the car are vivid, but one of the most lingering is the impressive way it seemed to pick up its skirts and go when the road cleared, with a squeal and a snarl that really meant business.

* SPC Note: Supertone 85 now fitted on all engines.