Reprinted from "The Motor," April 3, 1957

The Motor Road Test No. 15/57

Make: Berkeley **Type:** Sports Two-seater

Makers: Berkeley Coachwork (Sales and Export) Ltd., Biggleswade, Bedfordshire

Test Data

CONDITIONS: *Weather: Mild, damp weather, with strong wind blowing down course. (Temperature 55°-58° F., Barometer 29.6 in. Hg.). Surface: Intermittently damp tarmac.*
Fuel: Premium grade pump fuel (approx. 95 Research Method Octane Rating) with addition of ½ pint S.A.E.30 oil per gallon.
Tested with hood and sidescreens erected.

INSTRUMENTS

Speedometer at 30 m.p.h.	1½% fast
Distance recorder	1½% fast

WEIGHT

Kerb weight (unladen, but with oil and fuel for approx. 50 miles) ...	6½ cwt.
Front/rear distribution of kerb weight	62/38
Weight laden as tested	10 cwt.

MAXIMUM SPEEDS

Flying Quarter Mile

Mean of four opposite runs ...	62.1 m.p.h.
Best one-way time equals	65.5 m.p.h.

"Maximile" Speed. (Timed quarter mile after one mile accelerating from rest)

Mean of two opposite runs ...	61.6 m.p.h.
Best one-way time equals	63.9 m.p.h.

Speed in gears

Max. speed in 2nd gear	41 m.p.h.
Max. speed in 1st gear	25 m.p.h.

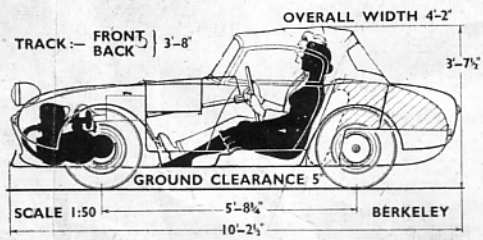
PETROL CONSUMPTION

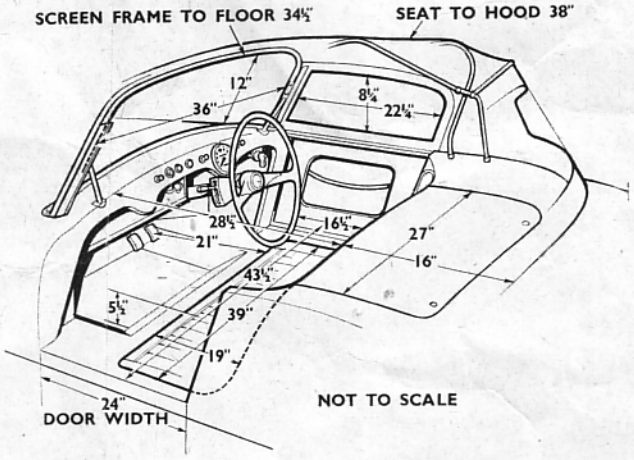
73.5 m.p.g. at constant 30 m.p.h. on level (oil consumption, 1,180 m.p.g.).
71.0 m.p.g. at constant 40 m.p.h. on level (oil consumption, 1,135 m.p.g.).
55.0 m.p.g. at constant 50 m.p.h. on level (oil consumption 880 m.p.g.).

Overall Petrol Consumption for 911 miles, 19.1 gallons, equals 47.7 m.p.g. (5.9 litres/100 km.).

Touring Fuel Consumption (m.p.g. at steady speed midway between 30 m.p.h. and maximum, less 5% allowance for acceleration) 58.3 m.p.g.

Fuel Tank Capacity (maker's figure) including reserve 3½ gallons





ACCELERATION TIMES from standstill

0-30 m.p.h.	10.3 sec.
0-40 m.p.h.	16.1 sec.
0-50 m.p.h.	30.6 sec.
Standing quarter mile	28.2 sec.

ACCELERATION TIMES on Upper Ratios

	Top gear	2nd gear
10-30 m.p.h.	22.7 sec.	11.1 sec.
20-40 m.p.h.	20.2 sec.	11.0 sec.
30-50 m.p.h.	23.0 sec.	—

STEERING

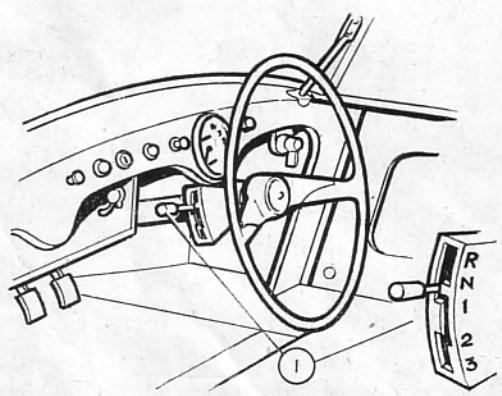
Turning circle between kerbs:	
Left	26½ feet
Right	29 feet
Turns of steering wheel from lock to lock	2¼

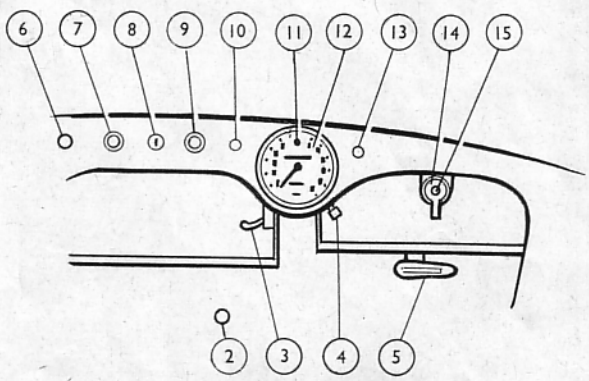
BRAKES from 30 m.p.h.

1.00g retardation (equivalent to 30 ft. stopping distance) with 50 lb. pedal pressure
0.70g retardation (equivalent to 43 ft. stopping distance) with 25 lb. pedal pressure

HILL CLIMBING at sustained steady speeds.

Max. gradient on top gear 1 in 15.4 (Tapley 145 lb./ton)
Max. gradient on 2nd gear 1 in 8.9 (Tapley 250 lb./ton)





1, Gear lever. 2, Headlamp dip button. 3, Choke control. 4, Trip distance re-setting knob. 5, Handbrake. 6, Lights switch. 7, Horn button. 8, Ignition switch. 9, Starter button. 10, Panel light switch. 11, Dynamo charge warning light. 12, Speedometer and distance recorder. 13, Screen wiper control. 14, Direction indicator switch, and, 15, Warning light.

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The Berkeley Sports Two-Seater

Small but roadworthy, the Berkeley adds good looks and finish to a very sporting character.

In Brief

Price: £382 7s. 6d. plus purchase tax £152 12s. 3d. equals £574 19s. 9d.

Capacity	328 c.c.
Unladen kerb weight ...	6½ cwt.
Acceleration:	
20-40 m.p.h. in top gear ...	20.2 sec.
0-50 m.p.h. through gears	30.6 sec.
Maximum top gear gradient	1 in 15.4
Maximum speed	62.1 m.p.h.
Maximile speed	61.6 m.p.h.
Touring fuel consumption ...	58.3 m.p.g.

Gearing: 11.8 m.p.h. in top gear at 1,000 r.p.m.; 34 m.p.h. at 1,000 ft./min. piston speed.

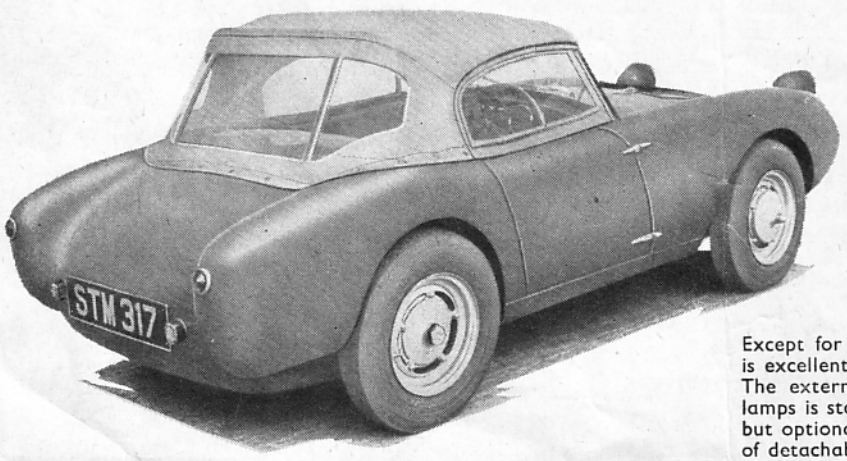
Excelsior 328 c.c. Engine and a Light, Reinforced Plastics Structure Provide Miniature Sports-Car Performance

IN the boom period for miniature cars which began some months ago, and has received a further boost from petrol rationing, it is perhaps natural that the tiny two-seater Berkeley should be placed at first glance in the same category as the rest. The formula is the same; a small two-stroke, air-cooled engine in a very light chassis; and there is no doubt that with suitably light-footed driving it can be extremely economical of fuel. But there, more or less, the resemblance ends.

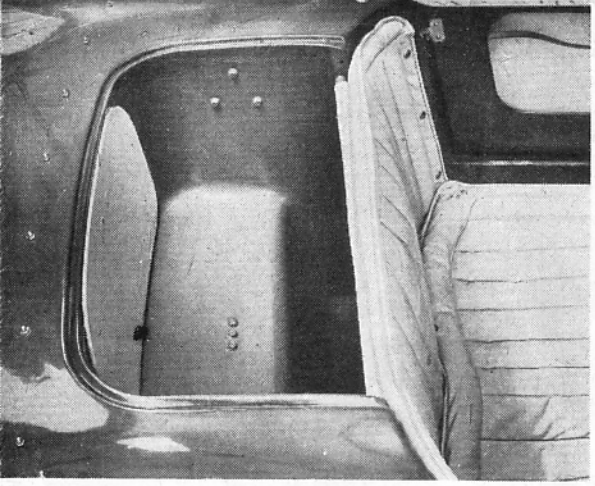
The majority of miniature cars have limits of performance which make them predominantly suitable as local run-abouts, possibly as additions to a family stable already containing a full-sized car, but with the Berkeley's diminutive 328 c.c. come a mean maximum speed of over 60 m.p.h. and an apparently tireless capacity for cruising at very little short of this under normal conditions. It thus becomes an entirely practical proposition as an only car, for the man with sporting inclinations but modest means and modest demands for carrying capacity.

Sensibly, in view of the car's purpose, dimensions have been kept to just about the minimum tolerable by human frames travelling long distances. That is to say, a six-foot man of average proportions can sit in it with his legs not straight, but not impossibly bent, and his hair just touching the folding hood, although to lean forward or back would bring his head in contact with the hood frames. Two such men can sit side by side with adequate room for their hips, but freedom for the driver's shoulders is only possible if the passenger sits a little sideways. This particular dimension could be increased by several inches if the tops of the doors, which curve inwards at shoulder height, were cut away to some extent, an improvement which might well tip the scales with many buyers.

The fact is that the majority of men, and certainly the majority of their wives, do not measure up physically to this scale, and will find nothing to complain of in the space provided. The single-piece seat is not adjustable in the normal sense. Both seat and squab being constructed of a thin layer of upholstery upon stretched rubber straps, can however be altered to accommodate individual shapes by tightening or slackening the rubber. The design of the integral body structure, of plastics with light-alloy reinforcement, entails wide boxed side-members in the part occupied by passengers, so that foot- and seat-wells are rather narrow, and tightening the rubber bands helps to avoid a hard edge to the seat for a heavy person. Photographs accompanying this report provide all the evidence necessary that the Berkeley is very low, a feature which has a favourable effect on performance and road holding; entering the car, especially with the hood up and more especially with one passenger already installed, is a fairly acrobatic performance, but although the seats may sometimes be below pavement level the sills are generally high enough for the doors to be opened without obstruction.



Except for low side windows, visibility is excellent even with the hood raised. The external mounting for the headlamps is standard in the United States, but optional in Britain. Wheels consist of detachable rims bolted to the brake drums.



Alternative uses—child or luggage—for the aperture behind the seats. In the former case the spare wheel is transferred to a shelf under the facia (arrowed). An opening panel in the rear (*extreme left*) reveals a stowage in the tail for hood and sidescreens.

The Berkeley Sports Two-Seater

The hood is a little cumbersome to erect, with a two-piece frame which is completely detachable for stowage in the rear, but in conjunction with sidescreens it makes the car completely weatherproof, and not a drop of even heavy rain found its way to the interior. Draughts of some kind are practically inseparable from an open car, and for the few who are troubled by them the most troublesome in the Berkeley occur between the hood and top of the windscreen. On the whole it is snug enough for the kind of owner who does not yet look for such comforts as an interior heater, a difficult item to arrange with a small, front-mounted engine, depending for its cooling upon natural circulation of air.

After an initial production run with a comparable engine of another make, the Berkeley is now issued with an enlarged version of the two-cylinder Excelsior Talisman, a two-stroke unit with petroil lubrication which is mounted well forward of the driven front wheels, and which behaves with model virtue. Whether hot or cold (when the choke is needed almost momentarily), it is started with ease and absolute silence by a 90-watt Siba Dynastart, and rapidly reaches a temperature at which its full 18 b.h.p. can be developed. The torque, moreover, is even and good at all speeds above about 25 m.p.h. in top gear, and it can be driven more slowly than this without jerkiness provided the engine is kept pulling. A two-stroke twin is, of course, the equivalent in its rate of power impulse to a four-cylinder four-stroke, which together with the extremely light weight makes the Berkeley very flexible by miniature-car standards. The uneven firing on over-run, on the other hand, is a nuisance that has been only partly overcome by very springy rubber engine mountings—one of which failed during our test but has now been altered on production cars—and the same lumpiness is trying with the car at rest.

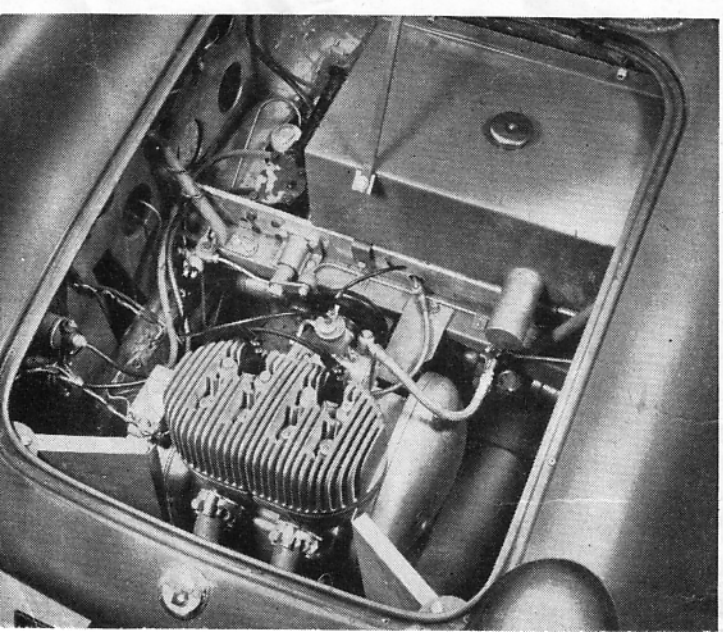
Sporting Habits

The Berkeley, however, is unlikely to spend much of its time at rest, or in pottering at 20 m.p.h. in top gear. In spite of a performance which cannot now be reckoned as sporting, particularly with two passengers added to its very low weight, it is, in scaled-down fashion, very much a sports car. The 70 m.p.h. which it touched on a downhill stretch in a strong following wind raised no protest from an engine turning at almost 6,000 r.p.m., and a comfortable 5,500 r.p.m. allows 40 m.p.h. to be reached in the second of three gears. Exhaust noise, as with most small two-strokes, is considerable when the engine is pulling; and its volume rises in proportion to the speed, so that prolonged fast cruising becomes something of a mental strain. In common with an earlier design by Laurie Bond, the car has the outlet of a very brief exhaust system ahead of the scuttle (in this case, below the engine undertray), where the noise is more readily transmitted to the occupants, together with some fumes if the hood is closed.

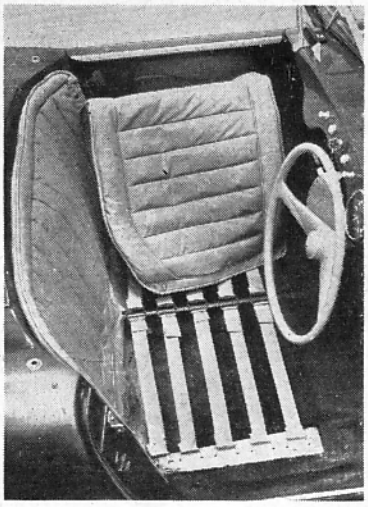
Considered in the context of a sports car in the older, more spartan tradition, the exhaust note would not be thought excessively loud, although it is penetrating, and the engine has the merit of being instantaneously responsive to the accelerator. A motorcycle type of three-speed gearbox, fitted with reverse, connects it to the front-wheel differential, gears being selected by a quadrant lever on the steering column. Rigid and positive in action, this is further improved by a gate mechanism in the quadrant, similar to that found on the tank of a pre-war, hand-change, motorcycle, which ensures positive selection of the right gear. The clutch is mechanically operated, light but inclined to be harsh.

It is in the qualities of suspension and steering that the Berkeley most fully earns the title of sports car, two matters in which it is most affected by the employment, unique in a British four-wheeler, of front-wheel drive. Once only since the war has that system been used here, and with low power and light weight it is resoundingly successful. Girling suspension units, which combine a coil spring and telescopic damper, are fitted to independently-sprung wheels mounted on wishbones at the front and swing-axles at the rear. The moulded "chassis" appears torsionally very stiff (it is completely free from scuttle-shake) and the suspension geometry accurately worked out. As a result, the road-holding would do credit to heavier and more powerful vehicles, making the Berkeley very nearly foolproof at all speeds of which it is capable.

It is, in fact, very difficult to make the wheels slide on any but the most slippery of roads. In contrast to the majority of rear-drive cars, the normal tendency is to quite pronounced oversteer with the car decelerating, which can be converted to understeer by opening the throttle. In other words, it is not only possible, but desirable for stability to accelerate round a corner, and in these conditions a sharper corner or a more slippery road only accentuates the understeer, without causing a sudden break-away. With such a low centre of gravity, roll is negligible, yet in spite of a kerb weight of only 6½ cwt., riding comfort is excellent even over really bad surfaces; limited ground clearance has to be borne in mind nevertheless. The ultimate resistance to abuse by a chassis



Forward mounting of the engine brings into view the plugs, coils, petrol tap and reserve control, brake fluid reservoir and almost all other items needing attention. The battery is inside the car.



Rubber straps are adjustable for tension in both seats and squabs.

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structure constructed of unorthodox materials is something which cannot be determined in a test of only a thousand miles or so. No undue rattles appeared, but the passenger's door became increasingly difficult to open and shut.

A well-placed small steering wheel controls very light and positive steering, with less than the usual amount of self-centring action. To maintain its very pleasant character it is advisable to lubricate the steering and suspension joints at least as often as the recommended 1,000-mile intervals. A little jerkiness in the transmission is noticeable at the extremes of a lock which allows a turning circle of 26½ feet in one direction, 29 feet in the other.

Braking performance on the test car was excellent on paper, with 100% effectiveness for only 50 lb. pedal pressure, but slightly disappointing in practice owing to ovality in the drums which caused severe judder at some speeds. Brake heating troubles should be unknown, with more than generous lining area in drums which are completely exposed to the air, the wheels being no more than rims bolted to the outside of the drums. A pull-out type of handbrake is fitted.

The raised headlamps which are a standard fitting for the United States, and optional (instead of lamps flush with the wing) in this country, throw a wide rather than penetrating beam, adequate up to about 55 m.p.h., and may somewhat reduce the all-out speed.

Simplicity of design can, and in the case of the Berkeley does, bring an additional reward in simplicity of maintenance, a point especially interesting to the kind of owner to which it will most appeal. Engine and gearbox are laid bare when the bonnet is opened, with sparking plugs in the forefront, and gravity feed fuel tank and reserve tap easily reached. Raising the tank an inch, and perhaps tilting it slightly forwards, would make sure that the whole reserve supply was effective; at the moment a small quantity is inevitably left in the tank on a flat or uphill road.

The 12-volt battery is placed inside the car, to the left of the passenger's foot-well where it causes little obstruction. Above it is a large shelf which is left without a lip so that the spare wheel can be carried there if extra luggage or a very small child are to be fitted into the space behind the seats. Behind this again, the hollow tail of the car provides a stowage large enough for the hood, its frame irons, the tonneau cover and the wheel jack. A deep separate shelf ahead of the driver and pockets in both doors completes the carrying space.

Such intelligent planning is important, to give the Berkeley its maximum usefulness. In a world where few people can afford two cars, but many prefer fresh air and fun as part of their money's worth, it should find a wide market.

The Berkeley is very low, as this picture shows.

Specification

Engine

Cylinders	2 (air-cooled)
Bore	58 mm.
Stroke	62 mm.
Cubic capacity	328 c.c.
Piston area	8.2 sq. in.
Valves	None, two-stroke
Compression ratio	7.4/1
Carburetter	Amal
Fuel pump	Gravity feed
Ignition timing control	Automatic
Oil filter	None, petroil lubrication
Max. power (gross)	18 b.h.p.
at	5,000 r.p.m.
Piston speed at max. b.h.p.	2,040 ft./min.

Transmission

Clutch	Albion multi-plate
Top gear	5.27
2nd gear	8.43
1st gear	13.85
Reverse	17.25
Propeller shaft	None, front-wheel drive
Final drive	Open chain
Top gear m.p.h. at 1,000 r.p.m.	11.8
Top gear m.p.h. at 1,000 ft./min. piston speed	34

Chassis

Brakes	Girling hydraulic
Brake drum internal diameter	7 in.
Friction lining area	65 sq. in.
Suspension:	
Front	Wishbones with Girling coil spring and damper units
Rear	Swing-axles with Girling coil spring and damper units
Steering gear	Burman worm and nut
Tyres	5.20—12 tubed

Coachwork and Equipment

Starting handle	No
Battery mounting	Inside cockpit, beside passenger's footwell
Jack	Lever type
Jacking points	under chassis, 2 front, 1 rear
Standard tool kit:	Screwdriver, plug spanner, tommy bar, box spanner, 2 open-ended spanners, C-spanner, coach-key for boot, tool roll.
Exterior lights:	2 head/side, 2 tail, 4 indicator
Number of electrical fuses	None
Direction indicators	Amber flashing, non self-cancelling
Windscreen wipers	Electric, non self-parking
Windscreen washers	None
Sun vizors	None
Instruments:	Speedometer with decimal trip distance recorder.
Warning lights:	Dynamo charge, indicators.
Locks:	
With ignition key	Ignition
With other key	Bonnet
Glove lockers	None
Map pockets	Two in doors
Parcel shelves:	Two under facia, one on rear deck when child's seat unoccupied.
Ashtrays	None
Cigar lighters	None
Interior lights	Panel light
Interior heater	None
Car radio	None
Extras available:	Tonneau cover, clock, ammeter, petrol gauge, over-riders, luggage grid.
Upholstery material	Vynide
Floor covering	Rubber
Exterior colours standardized	Three
Alternative body styles	None

Maintenance

Lubrication: Petroil mixture, ½ pt. S.A.E.30 oil (reducing to 1/20th gal.) per gallon of petrol.	
Gearbox	½ pint, S.A.E.40
Steering gear lubricant	S.A.E.40
Chassis lubrication	By grease gun every 1,000 miles to 14 points
Ignition timing	5/32 in. on piston b.t.d.c.
Contact-breaker gap	0.025 in.
Sparking plug gap	0.018 in.
Sparking plugs	KLG FE70D
Front wheel toe-in	Nil
Camber angle	2½°
Castor angle	Nil
Steering swivel pin inclination	6°
Tyre pressures:	
Front	14 lb.
Rear	12 lb.
Brake fluid	Girling crimson
Battery type and capacity	12-volt, 23 amp. hr.