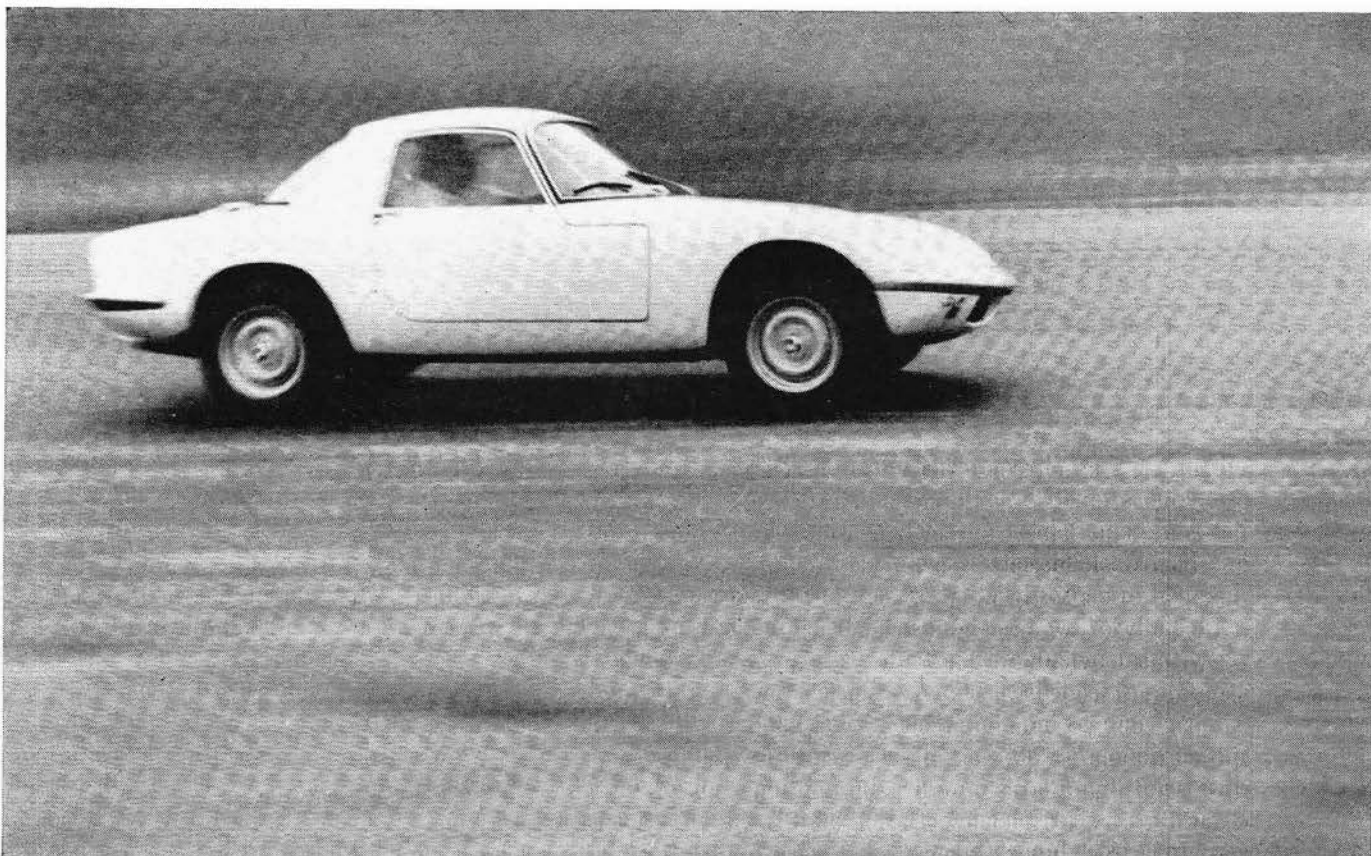




CAR and DRIVER ROAD TEST

LOTUS ELAN S2

A purist's potpourri of sophisticated engineering features, the Lotus Elan Coupe deserves its pedigree



Back in our old purist days, it didn't matter whether a car was any good or not, as long as it had all the right *stuff* under the hood. The specifications had to *read* right. Double overhead camshafts—not pushrods. One carb choke per cylinder—not a big, dumb four-barrel, even if it wouldn't start on a cold morning. And a minimum of four gears—either all-synchro or a Big Boy crashbox. A *multitubular space frame!* (Who even knew what one looked like?) All-independent suspension, even if it meant wild camber changes and even wilder handling. No need to have actually seen a car like that—much less have ever driven one. If it had the right thing in fine print on the last page of the

brochure, we were ready to buy it.

So along comes Ford and hurls their Mk. II into the crucible of racing. It's got pushrods and a big, dumb four-barrel, and it's maybe the most sophisticated piece of racing machinery ever assembled, with the possible exception of the fiberglass chassis, *automatic transmission* Chaparral. After a while, all we cared about a car's design specifications was whether or not the car got the job done.

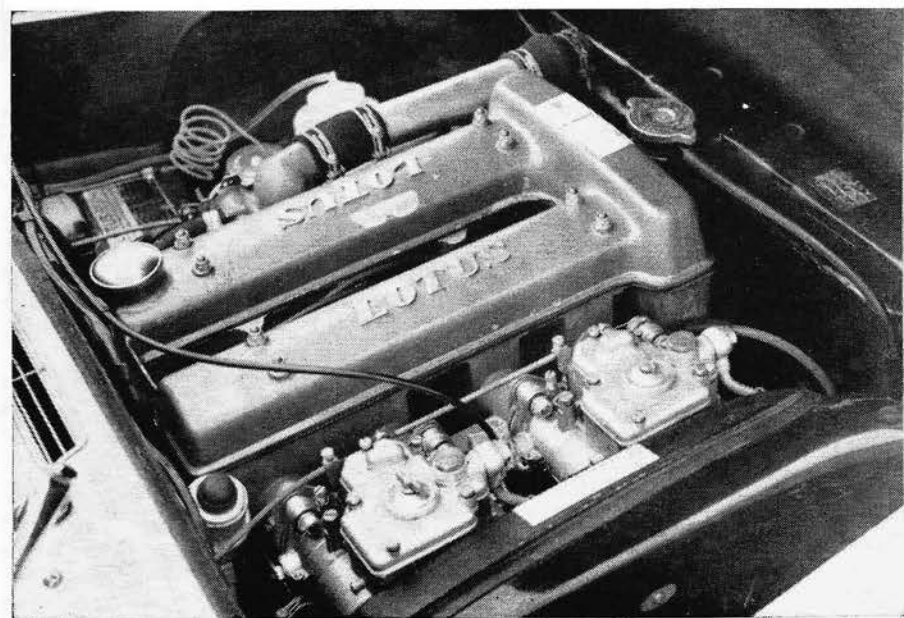
Looking at the specifications of the Lotus Elan brought it all back. Gad! What a pedigree! Here is a car that should stoke the fires of desire in every fine-print-reading purist who ever breathed. It's got everything they hold sacred (except possibly

the backbone chassis, which hasn't cut any ice with anybody since kindly old Dr. Ledwinka slid one under his Tatra three decades ago). But does all that exotica make any difference?

Stand easy, men; the answer is yes—a qualified yes. Given artificially imposed limitations, technology makes all the difference.

First and foremost, the Elan is a tiny car. It is also very much a sports car, in the best sense of the word. Starting with these criteria in mind, designer Colin Chapman has done a bang-on job. Over a dozen laps of, say, the Nürburgring, the Elan would probably get the job done faster and with less effort than any other production car in the

The handling is superlative. The Elan uses roadway very sparingly and lets go very gradually. Ride comfort is outstanding for such a light car.



world; certainly with more . . . élan, shall we say, than anything that ever came out of Detroit—which is, after all, what the whole purist bag is about.

But who does a dozen laps of the Nürburgring every morning before breakfast? Or every week? Or once in a lifetime? Not many of us. Sure, a sports car should be fun, but most prospective buyers want a healthy dose of day-in, day-out utilitarian value thrown in as well. Once the driver is ensconced in his Elan, it's as practical and enjoyable a means of transportation as any (it is, in fact, kind of a stylish, comfortable Mini-Cooper), but the car does have its limitations, mostly self-imposed.

To begin with, the Elan's size makes it difficult to get into or out of. Once inside, there's little hip room (due to the backbone frame), little headroom (styling and aerodynamic considerations), and it's also pretty tough trying to see *over* any object larger than a tall dog. And, for some insane reason, the traditionally miniscule foot pedals (a revered principle among British car designers) are huddled together in the middle of a passably wide space.

The drive train is an irritating conglomeration of disturbing sensations. The clutch engages so suddenly and so violently that the car invariably stalls. A clutch should be positive, yes, but why does it have to be feathered in over only a quarter-inch of pedal movement? The only sure way to move smartly off the line without a lot of sniggering from the bystanders is to rev the engine to the peg and drop the clutch like a bad habit. Okay, so the owner soon gets used to it; why should he have to bother?

Against this, the rest of the drive train is sloppy. The ultra-sophisticated Chapman-strut suspension demands a certain amount of lateral compliance. Ordinarily, this would be accommodated by splined half-shafts, but as the half-shafts are holding the Elan's rear wheels on, this movement is kept within limits by Metalastik rubber doughnuts surrounding the differential-mounted universal joints. This unit looks

A quarter-mile in less than 16 seconds is no mean accomplishment for a 95 cu. in. GT, but the tires seem to be the limiting factor in an 80-0 mph panic stop.

great on Formula One cars, and the fact that it allows some rubber-cushioned rotation looks—on paper—as if it might damp out torsional vibrations. In practice, it causes a disconcerting pitching oscillation every time the throttle is opened or closed—it's unpleasantly reminiscent of being rocked in a baby carriage. (Not all of us had happy childhoods.)

The only other reservations we have about recommending a Lotus center around the fact that Mr. Chapman has acquired a reputation for being a *very* shrewd businessman, in selling production cars as well as in racing. Deserved reputation or not, the Lotus retail operation in this country has been shaky from the beginning. There's a million-dollar lawsuit pending in California, filed by a former distributor who was disenfranchised. An impressive New York outlet, a swanky showroom on Madison Avenue, folded within the year. Although some of the dealerships seem literally to be here today and gone tomorrow, we obtained our test car from one of the longest-established Lotus dealers in the country. There are others, of course, and if we can't *promise* that the U.S. marketing and servicing organizations will

get any better, they at least seem to have arrested the downward spiral of confidence that has plagued them in the past.

Finally, friends, five thousand bucks is a lot of money for a funny little foreign car.

Our test car is sort of a prototype of the new Elan coupe. It is identical with the ones now being imported, with the exception of the final drive ratios. Our car had the close-ratio gearbox and 3.90 rear axle used in the Elan roadsters, but current coupes will be equipped with a longer 3.55 final drive for faster cruising at less engine revs, a higher top speed, and better fuel economy, and also a wider-ratio gearbox that features a tighter overall first gear ratio (12.6 vs. 9.8 in the test car), which should make it much easier to get the car off the line.

The coupe, which costs about \$650 more than the roadster, includes a more luxurious interior, electric windows, as well as the comfort and insulation of a fixed roof. The only option on our test car was a \$30 Canadian-made Stebro exhaust system—with a bazooka-sized tailpipe—which increased the top end performance a little and the exhaust noise a whole lot. This made it difficult to estimate the normal level of

engine, exhaust and road noises, but we suspect they're quite good.

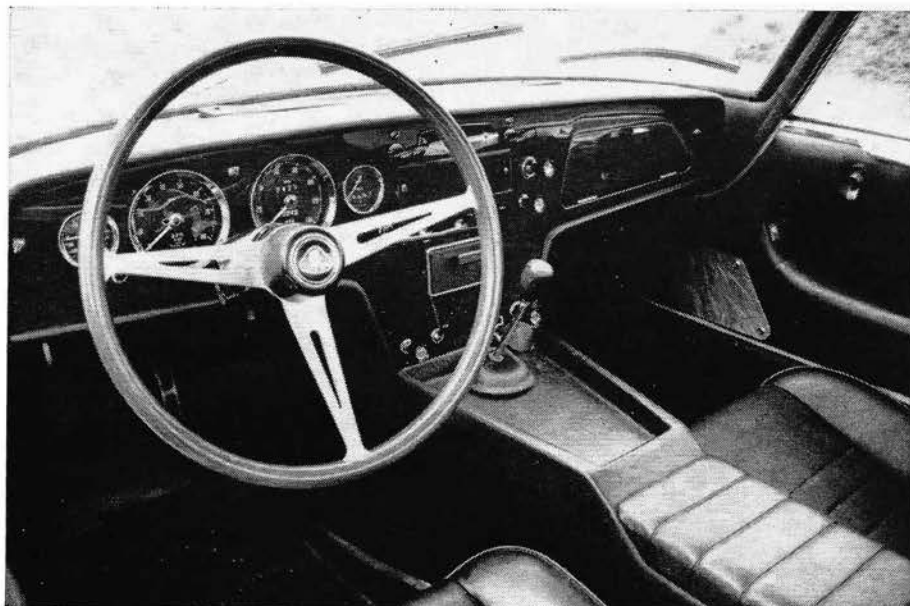
The quality control seems vastly improved over the Elan roadster we last tested (*C/D*, February '64); the fiberglass body was much better finished and the overall quality of the hardware was far higher. The laminated mahogany dashboard is nice, if you like that sort of thing, as is the woodrim steering wheel and the wood gearshift knob. There is only a small glove box for storage space (the padded doors are full of electric motors now), although loose articles could be left in the 6 x 10-inch tray surrounding the gearshift lever—the "console" itself is the stamped steel chassis.

The seats are comfortable and secure, while the steering wheel and gearshift are a long reach. The driving position is good, but the only provision for adjustment is the fore-and-aft movement of the seat, and—as mentioned—the pedals are too small and too close together. Leg room is sensational—as much as the Porsche, but narrower.

The car performs as well as you'd hope it would, being the offspring of the same outfit that engineered wins in the World Driver's and Constructor's Championships, plus the Indianapolis 500, all in the same year. The handling is superlative. Very forgiving. At one point we thought we had the car extended to the limit of a fast turn when a turtle strayed into the path of the inside wheels. The only way to avoid *Clemmys insculpta* was to broadside the Elan, from which the car and the turtle recovered nicely, thank you.

There is a dollop of initial understeer, then a gentle slide into eventual oversteer through a broad working range of neutral steer. The Elan uses up roadway very sparingly, and lets go very gradually. There is a lot of body roll, which doesn't have any adverse effects; we tried, but failed, to pick up an inside wheel. We ran the whole test with low, touring-type tire pressures (22/24 psi) in the radial-ply tires, which squealed like Cagney's (*Specifications overleaf*;

continued on page 80)



PHOTOGRAPHY: JOHN R. HEARST, JR.

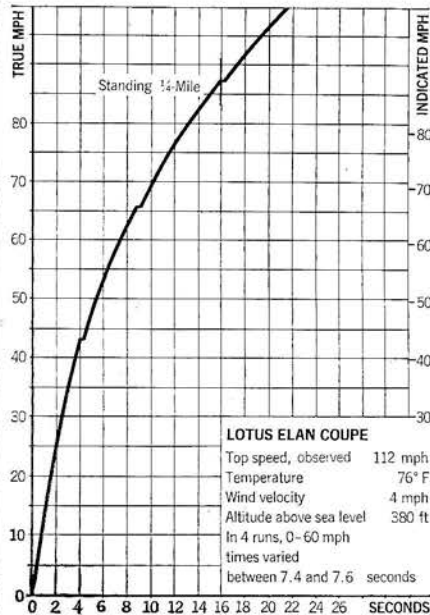
LOTUS ELAN COUPE

Distributor: Lotus/East
Box 394
Salisbury, Conn.

Price as Tested: \$4980.00

ACCELERATION

Zero To	Seconds
30 mph	2.4
40 mph	3.7
50 mph	5.6
60 mph	7.5
70 mph	10.3
80 mph	13.3
90 mph	16.9
100 mph	22.1
Standing 1/4 mile	87.5 mph in 15.9



ENGINE

Water-cooled four-in-line, cast iron block, aluminum head, 5 main bearings
Bore x stroke..... 3.25 x 2.86 in, 82.6 x 72.8 mm
Displacement..... 95 cu.in, 1588 cc
Compression ratio..... 9.5 to one
Carburetion..... 2 x 2 Weber DCOE/2 sidedraft
Valve gear..... Chain-driven double overhead camshafts
Power (SAE)..... 105 bhp @ 5500 rpm
Torque..... 108 lbs-ft @ 4000 rpm
Specific power output..... 1.11 bhp per cu.in, 65.6 bhp per liter
Usable range of engine speeds..... 1000-6500 rpm

Electrical system..... 12-volt, 57 amp-hr battery, 300W generator
Fuel recommended..... Premium
Mileage..... 22-28 mpg
Range on 12-gallon tank..... 264-336 miles

DRIVE TRAIN

Clutch..... 8.5-inch single dry plate
Transmission..... 4-speed manual, all synchromesh

Gear	Ratio	Overall	mph/1000	Max
Rev		11.38	rpm	mph
1st	2.51	9.78	6.6	43
2nd	1.64	6.40	10.2	66
3rd	1.23	4.80	13.5	88
4th	1.00	3.90	16.6	109
Final drive ratio				3.90 to one

CHASSIS

Steel backbone chassis, fiberglass body
Wheelbase..... 84.0 in
Track..... F 47.0 R 47.0 in
Length..... 145.0 in
Width..... 56.0 in
Height..... 46.0 in
Ground Clearance..... 6.0 in
Curb Weight..... 1560 lbs
Test Weight..... 1780 lbs
Weight distribution front/rear..... 48/52%
Pounds per bhp (test weight)..... 16.6
Suspension F: Ind., unequal length wishbones, coil springs, anti-sway bar
R: Ind., lower lateral links, halfshafts acting as upper links, coil springs

Brakes..... Girling discs, 9.5 in F, 10 in R, 358 sq in swept area
Steering..... Rack and pinion
Turns, lock to lock..... 2.5
Turning circle..... 30.0 ft
Tires and wheels..... 5.20-13 Dunlop SP 41 on 4.5J rim, knock-off wheels

CHECK LIST

ENGINE

Starting..... Fair
Response..... Very Good
Noise..... Fair
Vibration..... Good

DRIVE TRAIN

Clutch Action..... Poor
Transmission Linkage..... Very Good
Synchromesh Action..... Very Good
Power-To-Ground
Transmission..... Excellent

BRAKES

Response..... Excellent
Pedal Pressure..... Excellent
Fade Resistance..... Good
Smoothness..... Very Good
Directional Stability..... Very Good

STEERING

Response..... Excellent
Accuracy..... Excellent
Feedback..... Excellent
Road Feel..... Excellent

SUSPENSION

Harshness Control..... Very Good
Roll Stiffness..... Fair
Tracking..... Good
Pitch Control..... Good
Shock Damping..... Good

CONTROLS

Location..... Good
Relationship..... Fair
Small Controls..... Fair

INTERIOR

Visibility..... Good
Instrumentation..... Good
Lighting..... Very Good
Entry/Exit..... Fair
Front Seating Comfort..... Very Good
Front Seating Room..... Fair
Rear Seating Comfort..... —
Rear Seating Room..... —
Storage Space..... Poor
Wind Noise..... Excellent
Road Noise..... Very Good

WEATHER PROTECTION

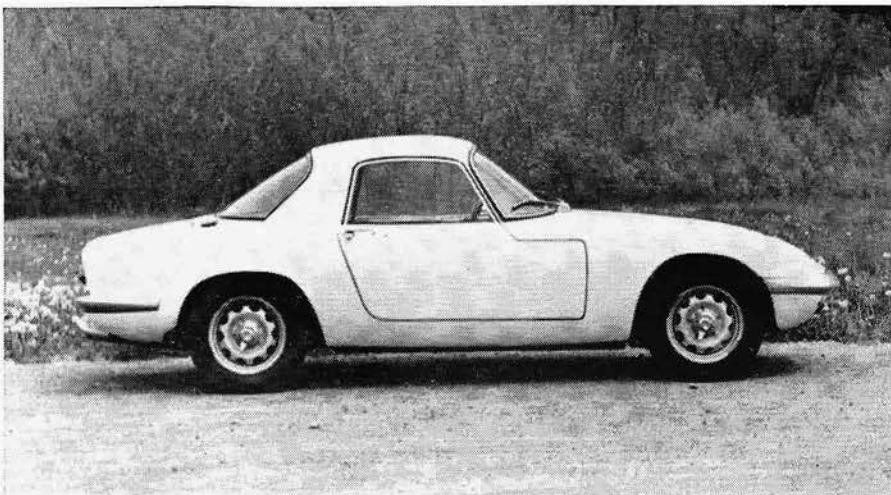
Heater..... Very Good
Defroster..... Good
Ventilation..... Fair
Weather Sealing..... Good
Windshield Wiper Action..... Very Good

QUALITY CONTROL

Materials, Exterior..... Good
Materials, Interior..... Good
Exterior Finish..... Good
Interior Finish..... Good
Hardware and Trim..... Good

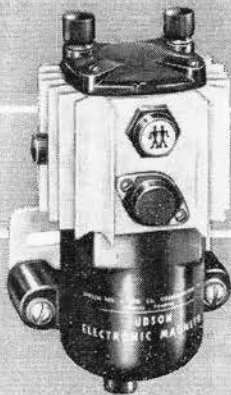
GENERAL

Service Accessibility..... Good
Luggage Space..... Poor
Bumper Protection..... Poor
Exterior Lighting..... Fair
Resistance to Crosswinds..... Excellent



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LOTUS ELAN COUPE

(continued from page 45)

Packard phaeton in a Thirties gangster movie, but which hung on like prickly pears anyway. The ride comfort was outstanding for a car of the Elan's light weight.

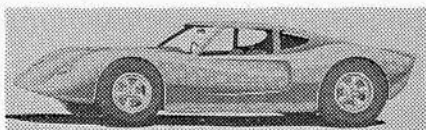
The engine is a smoking bear. The distributor in the test car had a cunning little gizmo that shuts off the juice whenever journalists try to rev it over 6500 (it'll turn seven), and it was breathing easily at that speed. It's understressed at 105 horsepower, and is tractable in traffic from 1000 rpm on up, although its pulling power isn't enough to pass without downshifting. Our acceleration runs, made with only one person in the car, were only two-tenths of a second worse in the quarter-mile than the mechanically-identical, but much lighter roadster. Still, 1320 ft. in less than 16 seconds is no mean accomplishment for a 95 cu. in. GT car.

The brakes, a four-wheel disc system, are powerful and easy to modulate. The tires seem small, even for a light car, and appeared to be the limiting factor in a .73 g panic stop from 80 mph. Several panic stops produced some fade, but this came in the form of a gradual increase in required pedal pressure rather than a sudden loss of braking ability.

Rack-and-pinion steering pinpoints the Elan with great precision. It's extraordinarily light and delicate, which should contribute to fatigue-free long-distance touring. Bent into a corner, we sometimes felt that there wasn't enough weight on the front wheels, but again, that may be characteristic of the tires. Road feel is direct at all times—a reversion to "seat of the pants" driving—and the turning circle is delightfully small. As a whole, the Elan is more maneuverable than anything on wheels but a Mini or a motorcycle.

The Elan gives away something in styling to several of its competitors; something in performance to others and something in luxury to all of them. Against this, the Elan has the Lotus name and all the right specifications which makes it a sports car that does everything a sports car is supposed to do. Like any one of a number of slim volumes of poetry, it is a minor classic, a definition-by-example of sophisticated engineering applied to a production car. Is this enough? Can the Elan with its limited objectives, limited production, limited dealer network and limited appeal survive? We hope so; the Elan deserves to make it.

c/d



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