

*Not to be sold in the U.S., but when it comes
from Colin Chapman it's worth knowing about*

BY TONY HOGG

COINCIDENTAL WITH THE introduction of the new Lotus Europa was an announcement to the effect that the car positively will not be marketed in America, or even in England, for at least a year and that it is not a replacement for the Elan. Inevitably, some examples may filter into America through private owners, but drastic modifications would be necessary to comply with the safety regulations and the uniform vehicle code before it could be licensed for use in the U.S.

The object of the Europa, as its name implies, is to break through the barriers of the European Common Market, commencing with France. France is a fertile but untilled sports car market and the first year's production, estimated at 500 cars, will be shipped there. In order to lessen the import duty, Renault has cooperated by producing a specially modified 78-bhp version of the Renault 16 engine and transmission which can be installed without any further modification by Lotus. In conjunction with the Europa, a competition version designated the Lotus 47 will be run in suitable events and has in fact been run successfully at the Christmas meeting at Brands Hatch.

A surprising feature of the Europa is that the time taken

from its conception to the appearance of the finished product was a mere 18 months. There are two reasons for this. The first is that a small specialized company such as Lotus does not require a long development period. The second reason was the necessity for the commencement of production to coincide with the opening of the new Lotus factory set in the wilds of Norfolk.

Norfolk is an agricultural area 100 miles northeast of London and with the current labor shortage in England, Colin Chapman undoubtedly went there in order to milk the surrounding country of its supply of local garage and farm machinery workers. In this way he has not only been able to obtain labor, but labor that has not been hardened by toil in the automotive salt mines of Coventry and Birmingham. At a time when Rootes is being swallowed whole by Chrysler and Jaguar is slowly being ingested by BMC, it is a pleasure to see a young, imaginative and enthusiastic company that is expanding and thriving.

The Europa is designed to give a performance similar to the Elan, but at a price that is competitive with the MGB. To achieve this object without resources equivalent to those of the British Motor Corporation has entailed a certain

LOTUS EUROPA

amount of compromise, simplification, and the use of as many production components as possible. However, it is still an entirely original design, worthy of Colin Chapman, and it is another step forward toward the day when Lotus joins the Big League of car manufacturers.

The basis of the Europa is a backbone frame similar to that of the Elan. This frame, which is a box section and fabricated from 16-gauge sheet steel, is Y-shaped. The mid-engine is located in the fork and the front suspension is mounted on a cross piece attached to the opposite end of the Y. The front suspension is by unequal length A-arms and the majority of the components come out of Triumph parts bins. The steering is by rack and pinion with an adjustable telescopic steering column, which is another Triumph part somewhat modified. The suspension uses conventional coil spring/shock absorber units.

The rear suspension is considerably more complicated and is obviously a Colin Chapman product. The major components are very long box section radius arms pivoted at the Y frame almost at the division of the Y. The radius arms are attached at the other end to a downward extension of the hub carriers at a point beneath the level of the wheel rims. Coil spring suspension units are attached at the same point with their opposite ends secured to a detachable box section crossmember passing over the transmission. Long lower links are pivoted from a plate bolted to the back of the transmission case and the upper links are the fixed-length drive-shafts which each incorporate two universal joints.

All this is rather tricky work because it means that the lateral loads pass to the engine/transmission unit and from there to the frame through the flexible mountings. Therefore,

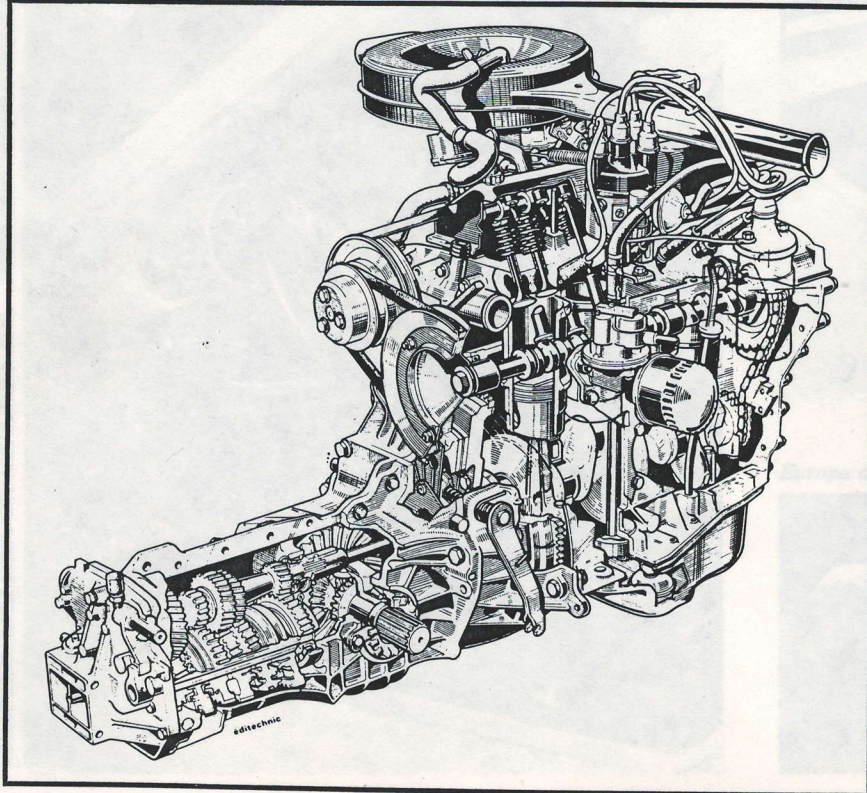
the mounts are designed to give as much freedom of movement to the engine/transmission unit as possible, provided it is not lateral movement. At first glance the system has the appearance of a swing axle layout, but this is not the case at all. It is in fact quite similar to the layout used by Chevrolet for the Corvette and later Corvairs, and it also bears some resemblance to the system favored by Jaguar. With two people aboard there is considerable negative camber at the rear, presumably to compensate for a rearward weight bias despite the fact that the car is very much mid-engined.

The separate fiberglass body is rubber mounted and it obviously has been the subject of serious wind tunnel testing in an attempt to lower drag to compensate for the limited power available. From the front the appearance is reminiscent of the Elite and the whole body was designed around two standard Ford bumpers to reduce production costs. Another cost saving feature is that the compound curved glass of the side windows is fixed, so that alternative arrangements for ventilation have to be made. Air is taken into the compartment in front which houses the spare wheel and radiator, and part of it passes through the radiator, which is mounted on the right side. The flow is assisted by a thermostatically controlled fan and the air is exhausted into the right wheel arch.

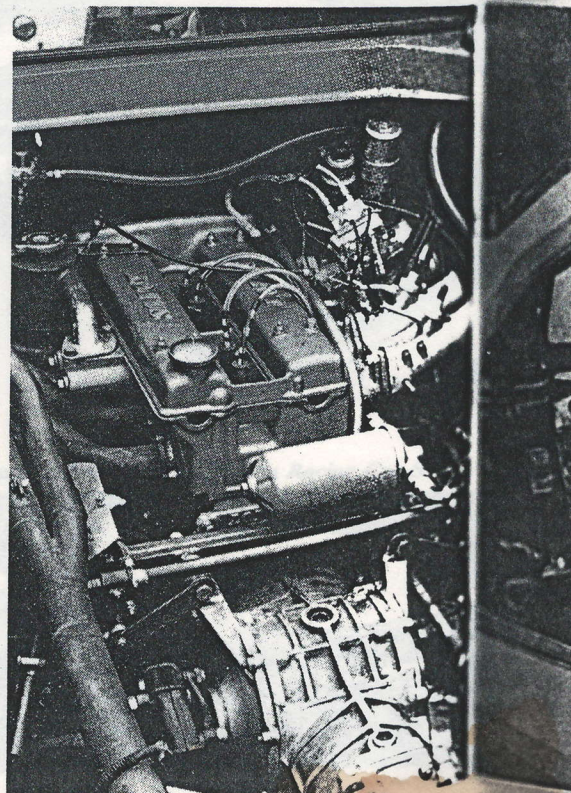
An additional fan in the compartment is used to pressurize a plenum chamber from which the air passes to cool air vents in the cockpit or through the heater. The air from the interior is exhausted through a vent above the rear window.

The comfort of the seating position is worth the contortions necessary to get in. The seats are steeply reclined and separated by the wide central frame member, as in the Elan. The windshield also seems to be more horizontal than vertical and it is swept by a single heavy-duty wiper. The seats are fixed and provision is made for adjustment of the pedals and steering column, but as both these operations require a wrench some inconvenience would be experienced by, say, a husband and wife who were of considerably different sizes.

The 1470-cc Renault 16 engine and gearbox as modified for use in Lotus Europa.



Twincam Lotus-Ford engine in Lotus 47.



Two small luggage compartments are provided, one in front and another over the transmission at the rear of the engine compartment.

The engine and transmission assembly was designed for the front-drive Renault 16 and it is reversed for the Lotus. Undoubtedly this unit appealed to Chapman, because it is of modern design with such features as alloy construction, 5-bearing crank and wedge-shaped combustion chambers. For the Europa, Renault modifies the engine and the complete units are delivered with no further work required, covered by Renault's 12-month warranty. The bore and stroke are 76 x 81 mm for a capacity of 1470 cc and the peak power has been increased from 58 bhp net at 5000 rpm to 78 bhp net at 6000 rpm. This has been accomplished by increasing the compression ratio to 10.25:1, increasing the diameter of the intake valves, altering the valve timing and using a 2-barrel carburetor with 26-mm venturis.

The all-indirect transmission remains the same but the differential is changed to give a ratio of 3.56 instead of the standard 3.77. On Dunlop SP-41 tires of 155-13, the car is geared to give 17.95 mph per 1000 rpm and with a rev limit of 6500, the maximum speed is about 115 mph and the speeds in the gears are 33, 53, and 80 mph. Because of good aerodynamics and light weight, the car should be able to reach the maximum it is geared for but will probably not accelerate as quickly as the Elan in the initial stages due to its lower power.

In order to promote the Europa, a competition version called the Lotus 47 is to be run in 1967. A feature of the Europa is that there is sufficient room in the engine compartment to accommodate almost any engine/transmission combination, and the 47 is powered by a 1600-cc Cosworth Ford with Tecalemit-Jackson fuel injection coupled to a Hewland 5-speed transmission. The engine installation has necessitated some modification to the chassis in the area of the engine compartment but the essential backbone system is retained.

The front suspension is similar in layout to the Europa but it has been made adjustable for the track car. In the rear, the long fabricated radius arms have been discarded in favor of a system that incorporates normal radius rods, single top links, and lower A-arms. The fixed-length drive-shafts of the Europa have been replaced by shafts with conventional U-joints outboard and rubber doughnuts inboard. The brakes are Girling discs all around instead of the front/rear disc/drum arrangement of the Europa. The body is the same except that, in normal competition fashion, it seems to have sprouted louvers and vents in odd places and the interior trim is reduced to a minimum.

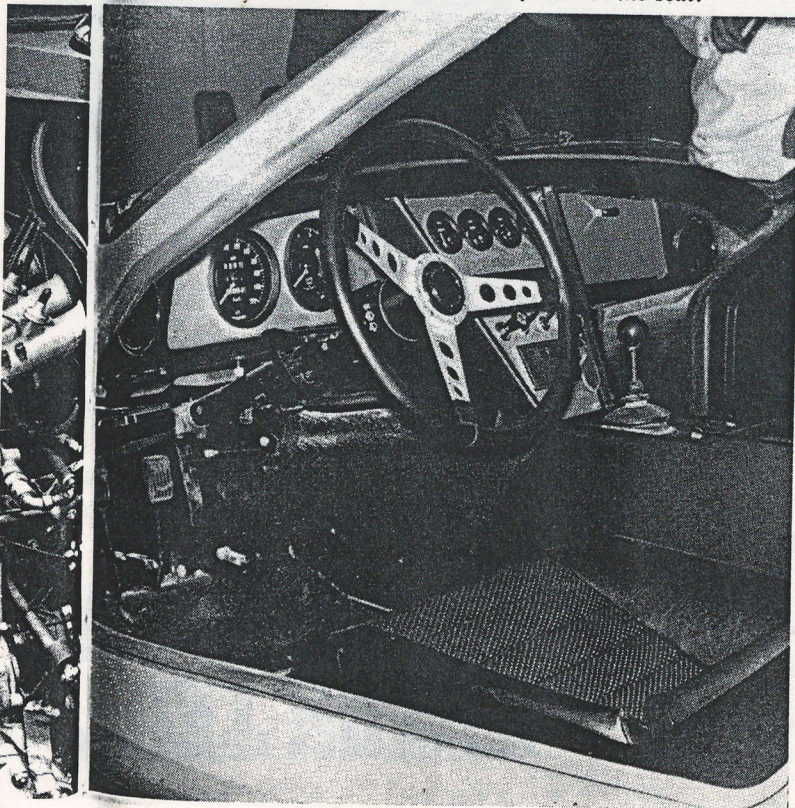
At the Christmas meeting at Brands Hatch, one car led from start to finish and the second car, which stalled on the line and was penalized one minute for a push start, worked its way up into second place. With a power output of some 160 bhp from the Cosworth engine, the Lotus 47 should be a demon on the circuits, but with the FIA getting more and more stuffy over homologation, one wonders when the necessary 50 will be built.

Arrangements for marketing the Lotus 47 have not been announced and no price has been set for the Europa. The price in France is not an accurate guide because it is the result of an extremely involved calculation, which takes into account various different taxes and transportation charges that would not be applicable to the American market. However, pure guesswork points to a POE price in America, when or if the Europa is offered for sale, of about \$3000.

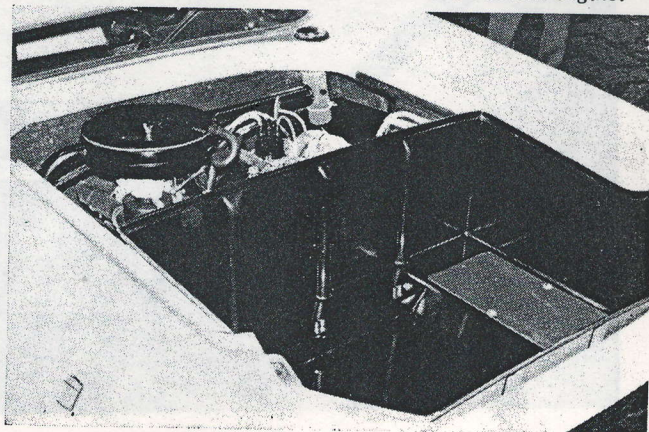
The Europa is aimed at a younger age group than the Elan and to some extent it can be considered as a replacement for the Lotus 7. Therefore the price has been kept as low as possible, even if this has meant sacrificing comfort and convenience to sheer performance.

However, we feel confident in predicting that this new Lotus model will be well received by the younger generation of sports car drivers, even if it doesn't receive the all-important Ralph Nader seal of approval.

7. *Ingress isn't easy, but worth it once you're in the seat.*



Rear luggage compartment is located behind Renault engine.



Europa as it appeared on stand at London Racing Car Show.

