

TECHNICAL REPORT:

LOTUS 40

There were many troubles with the Lotus 30 ... the Lotus 40 attempts to solve them all, and may just do it.

BY JOHN BLUNSDEN

AFTER NEARLY TWO SEASONS OF INDIFFERENT FORTUNE, the 4.7-liter Ford-powered Lotus 30 is being replaced by another car — a Lotus 40 — of similar basic design, but updated to accommodate the newer and more effective 5.8-liter (351 cubic inch) Ford powerplant.

The first public appearance of the new car was in the Austrian Grand Prix (held this year for sports and GT cars on the bumpy Zeltweg circuit on August 22), when Team Lotus driver Mike Spence drove it with a 289 Ford installed. It retired with minor engine trouble while leading.

A rush workshop program then took place at Cheshunt to re-equip the car with the larger unit, and have it ready in time for practice before the International Guards Trophy (see pages 34-35) at Brands Hatch, on August 30. But the team hit troubles, and after a panic session, the car was rushed down to the circuit to enable Jim Clark to qualify it during the final five minutes of practice.

The car was unsorted, and a handful. In the race (before which certain of the more obvious problems were dealt with) Clark had a busy time, and eventually retired. The Lotus 40 clearly needed what the Lotus 30 failed to get — an early development/test program by the factory — to make it fully competitive with its current rivals. This has now been put in hand.

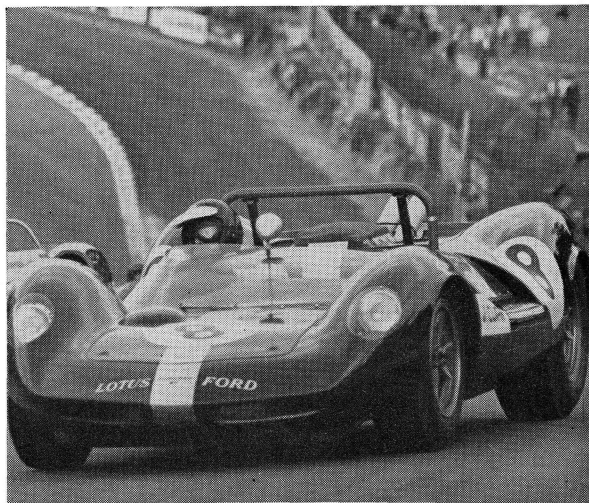
Although a logical development of the Lotus 30, the new car has many detail differences. There is a longer nose section to prevent lifting at high speed, and the rear spoiler (fitted by so many private owners of '30s' to keep the back end stable) has been incorporated in the new design. Chassis accessibility is considerably improved, and although the power unit is still reached through a 'trap door' panel, there is a useful cutaway of the rear cockpit bulkhead to give extra working room. The dashboard has also been cut away at the bottom to give much needed extra knee room.

The oil cooler has been brought back amidships from in the nose, although the twin batteries are still up front, beneath the spare wheel, which now has a larger compartment, being a 15 instead of a 13 inch size. The air intakes are fully ducted to the radiators, and brand new 11¼-inch diameter ventilated disc brakes are fitted all around. The wheel rim widths are 7½ inch at the front and 8½ inch at the rear.

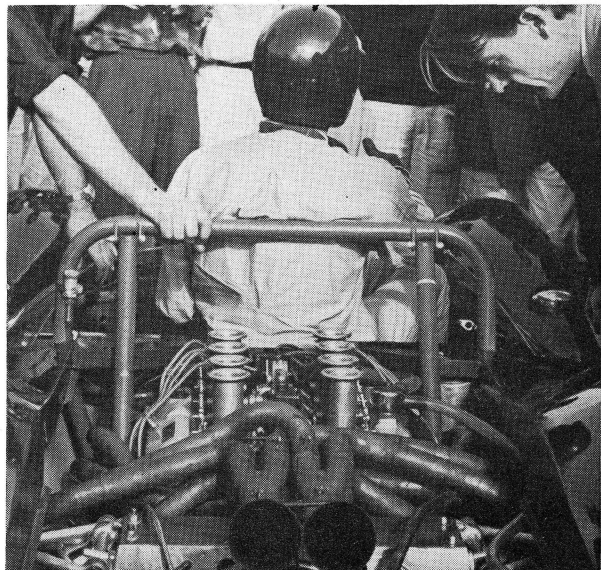
The fuel filling system is completely revised, two fillers now being provided on each side in place of the single central filler on the 'production' Lotus 30. The two side tanks each drain into the central tanks contained in the chassis backbone.

About three months of intensive development work has been put into the 351 powerplant, which has a block one inch taller than the 289. Apart from obvious changes, such as different pistons, rods, and crank, the newer unit has a modified injection system, a revised water system allowing more coolant through the block, bigger inlet manifolds and a cross-over exhaust system. Unlike the 289, which was rubber mounted, the 351 is solidly mounted in the chassis. It is mated to the latest heavy-duty Hewland gearbox.

One of the first results of the Brands Hatch experience has been the conclusion that insufficient rubber is getting on to the road, and the hacksaws have been busy on the body above the wheel wells, making room for larger tires. It may well be that by the time the car next appears in public, it will have lost some of its smoothness in profile, but Lotus campaigners will gladly trade a bit of style for added competitiveness. All the indications are that this newcomer from Cheshunt is unlikely to have the long and painful adolescence which was suffered by its immediate predecessor.



The new Lotus 40 first ran at the Austrian GP, then at the Guards International at Brands Hatch, above. It will be in the U.S. this Fall.



Feeling that the 4.7-liter (289 CI) Ford engine of the Lotus 30 was under-powered, Colin Chapman is using a 5.8 (351 CI) in the new 40!