Lotus Farina

We have all heard of the Lotus Cortina, but what if there had been a Lotus Farina, based on the Austin A40 Farina? In the 1960's the BMC Mini Cooper was very successful as a rally car in particular the Monte. But they were struggling to find a car which would be suitable for other types of motor sport events, for example rough, long distance events eg the Liege. BMC's competition department came up with the idea of re-engineering the Austin A40 to accommodate an MGB engine. The BMC competition committee minutes of the 16/10/63 record that there was in fact a suggestion that the A40 be fitted with an MGB engine with a power output of 140 b.h.p.

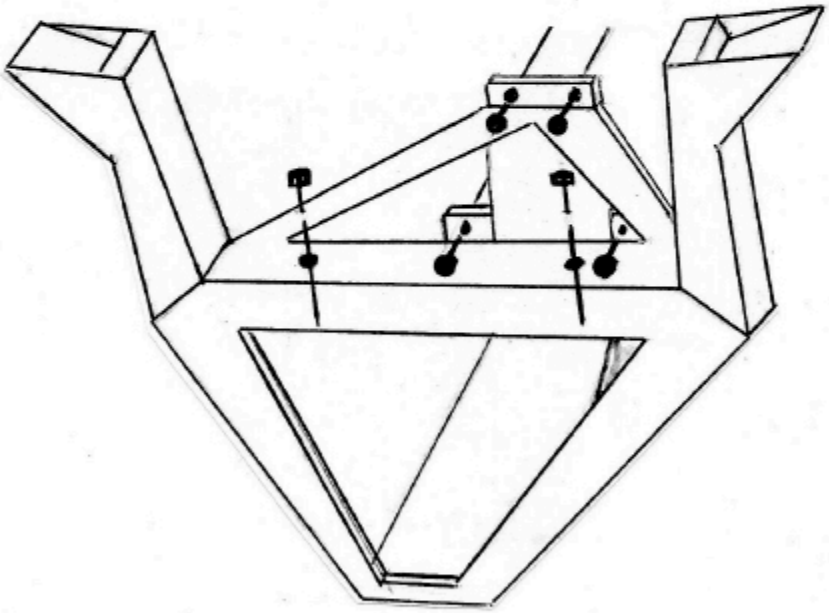
If Lotus had become involved as an outside contractor, (there was no suggestion in the Minutes that they would), what would this A40 have been like? On paper, it looks as if it could have been very successful. The A40 is lighter than the Cortina, structurally stronger, more compact and had better aerodynamics. In the next few issues of Classic Updates we will look at different aspects of this potential competition car. Starting next month we will look at the chassis and how it could have been modified to make its handling and road holding legendary, in the Lotus tradition.

In the last newsletter we introduced the idea of a Lotus Farina. Over the next few issues we will look in detail at the car's mechanical layout, but before we go into detail about the modifications to turn an A40 into a Lotus Farina, we first have to decide where it should be modified and assembled. This would be fundamental to the reputation and success of the car as a halo model of the BMC range.

The BMC competition department would be the ideal place to carry out the work because of its iconic status in the world of motorsport. Importing motorsport brands into the BMC family was not unusual, for example Healey and Cooper integrated well into the range and were a great success. Lotus would have been the icing on the cake.

Part of the rear section of the Elan back bone chassis is utilised with the addition of strengthening to the diff area to form a subframe which houses the Elan suspension and also locates it in the rear of the Farina monocoque. It is fixed in place by 6 bolts which secures the sub frame to the car.

One further modification has to be made to the shell in order to accommodate the suspension struts. Towers have to be added to the wheel wells and the associated pressing modified to house the struts and diff cross member. This pressing could be added at the body assembly stage.

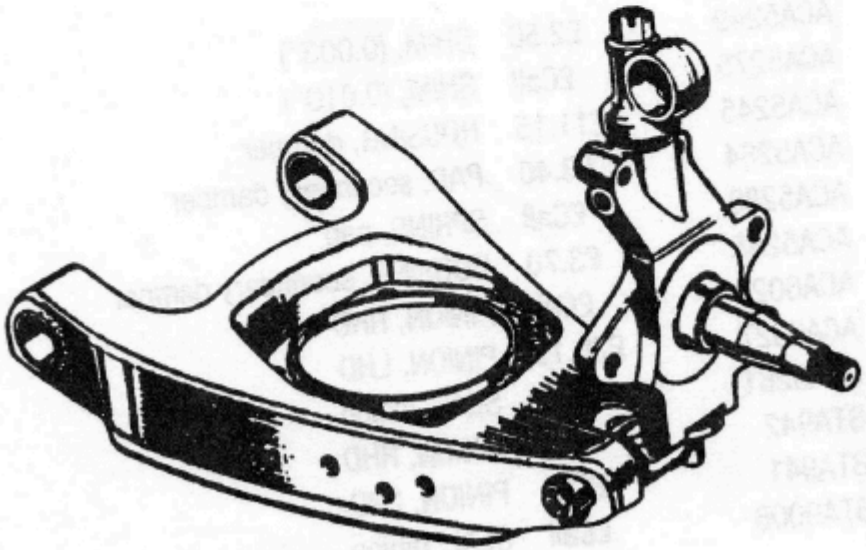


The Lotus Farina with its all independent suspension and four wheel disc brakes is now ready for its new powerplant. There are a couple of options in the engine department which we will look at in detail in the next edition of the newsletter.

In the last newsletter we looked at where the Lotus Farina could be assembled and how it could be built in the most efficient way. This month we will look at the front suspension.

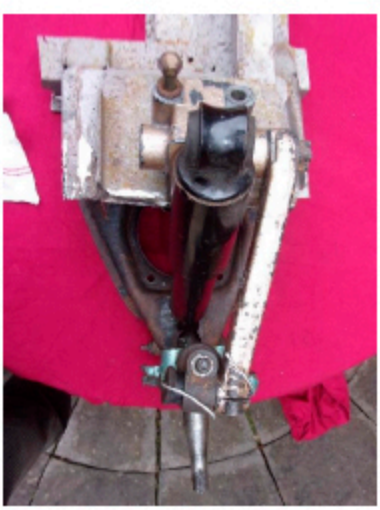
The road holding and handling of a Lotus Farina has to be of the highest standard. It must have a chassis capable of managing the power of a high performance engine as well as giving its driver confidence when driving it at high speed. This demanding brief has to be achieved in the most cost effective way, retaining as many as possible of the existing components and using the original pick up points.

To achieve these requirements I have come up with a new double wishbone set up with coilovers. This will provide a suspension system which can be fine tuned for the best handling balance. The lever arm shock absorbers and coils have been replaced but the existing upright and lower wishbone is retained.

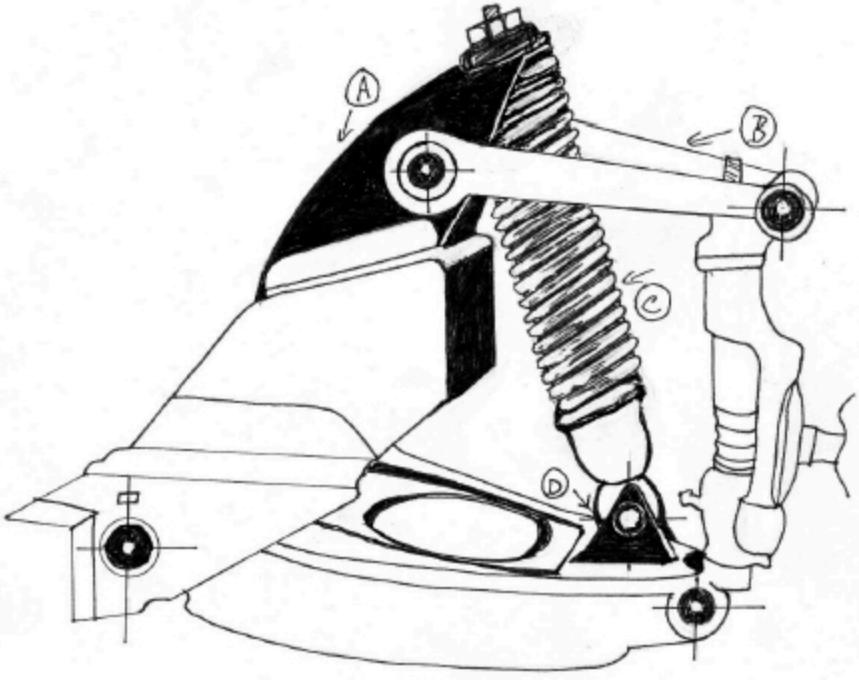


Because of the shape of the existing turret it is almost impossible to fit the new suspension arrangement due to a lack of space between the end of turret and the upright. (Jonathan Heap has designed a system with double wishbones and coilovers but they use all new components which makes it very expensive.) My solution modifies the existing turret in order to create more space.

To see if this new set up would work, I mocked up a complete front suspension system from components which I had in the garage – a lower wishbone, an upright, a trunnion, a lever arm shock absorber (modified) and a telescopic shock absorber about the same size as the proposed coilover. The idea being to fit these components onto part of the front crossmember from a Midget as the turret is the same as the one used on the Austin A40. I cut off part of the front turret and roughly assembled the components onto the cross member. I was very pleased to see that there was now plenty of room for the new system.



The part of the turret which has been cut off is replaced with a plate welded in place to create a strong box structure. The new turret (A) is designed to sit on top of the existing turret. It bolts directly to where the original lever arm was situated. It also locates the two piece wishbone (B) and supports the top of the coilover. (C) A bracket is located at the base of the upright in the existing bottom wishbone to take the end of the coilover. (D)



This set up improves the location of the suspension components which will produce a much better handling car. This system also has the potential to adjust the geometry of the suspension for the best handling compromise, be it a rally car or a circuit racer. Next month we will look at the rear suspension.

I would be interested to hear your comments. dglanderson1@yahoo.co.uk

Lotus Farina

To recap, we have looked at the modifications to the A40 body and the mechanical upgrades to the running gear. Last time we considered the option of installing BMC's own twin-cam engine from the MGA. There is, however, another twin-cam engine which would give our Lotus Farina outstanding performance and would have seen off the Lotus Cortina by a long way. It was not unprecedented for BMC to use an engine from another manufacturer having previously used a Rolls Royce engine in their executive saloon, the Princess R, in the 1960's.

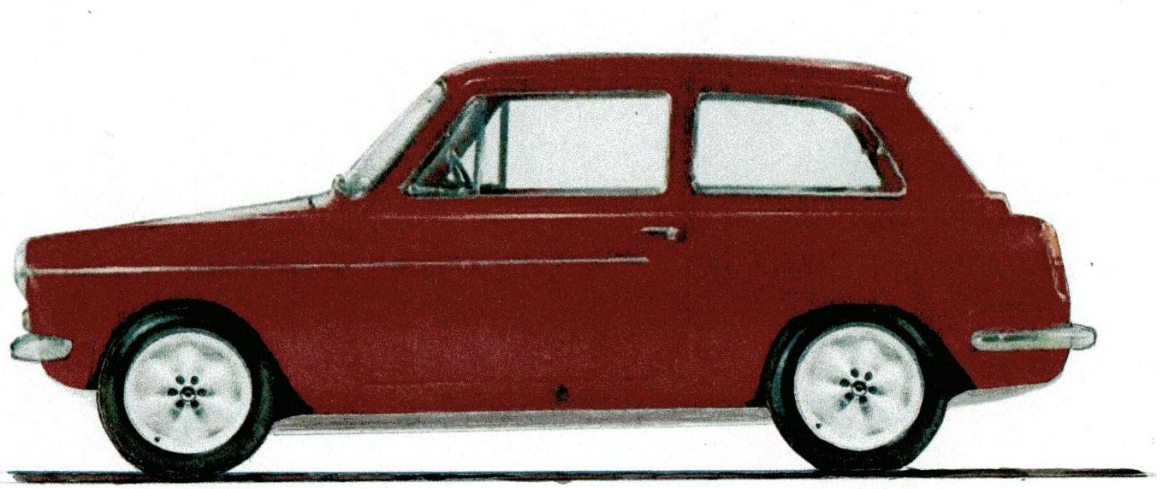
farina

In keeping with the competition theme of the Lotus Farina the interior has a strong sporting look. Although the Mk11 body shell has been used, the Mk1 dashboard has been chosen. As well as being lighter, it is less cluttered and it lends itself to the addition of circular dials for the speedo and rev counter. The Mk1 speedo has been replaced with a new binnacle to house Smiths instruments. A slightly smaller steering wheel is also used – a 14in red leather Lotus steering wheel as used in Lotus sports racing cars of the era. The seats are buckets in Mini Cooper trim.

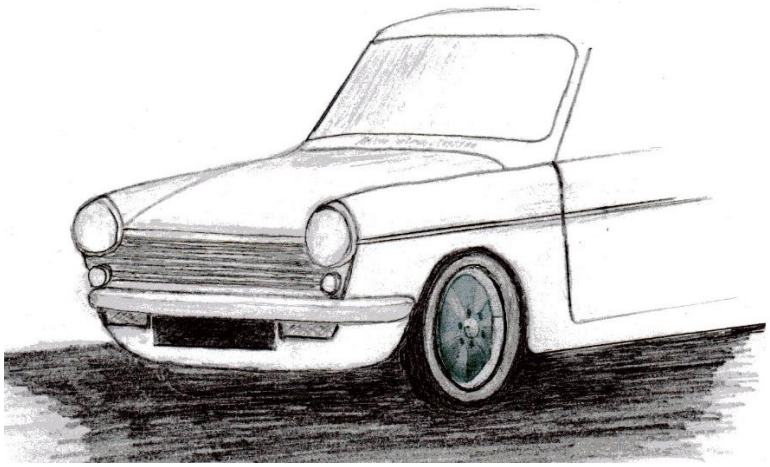
Next time we will look at some subtle changes to the bodywork and the best choice of wheels for a Lotus Farina.

The Lotus Farina could then in principle have used an engine from Coventry Climax. The engine we would use would be the companies FPF 1500 cc version of their twin-cam . This engine brought them great success both in sports car racing and in Formula 1. It was a championship winning engine which was compact and very light. Made of aluminium with an advanced twin-cam cylinder head it produced excellent bhp from its 1500 cc engine capacity and was a winner out of the box. In the A40 it could be mated to a ZF gearbox or a modified version of the MGB gearbox.

Lotus Farina



To complete this series on the Lotus Farina, we turn our attention to the car's image as a distinctive model in the BMC range – a halo model, if you like. We have given the car an appropriate sporting up market look. The changes are subtle, but they make a definite statement in relation to the nature and character of the car.



The front and rear bumpers have been raised and slimmed down. The original overriders have been removed. The front bumper now sits below the side indicator lights. The rear bumper becomes a quarter wrap round arrangement so that it does not foul

the opening of the rear boot. The front grill is painted matt black and there are air vents below the new front bumper.

But the most significant change is to the wheels. The standard wheels have been replaced with what are known as 'Wobbly-Webs.' These wheels were standard equipment in the late 1950's and 60's on serious competition cars such as Lotus and Cooper, among others. These wheels give our Farina a distinctive sporty appearance. Although these changes are simple, they set the car apart as a Lotus.

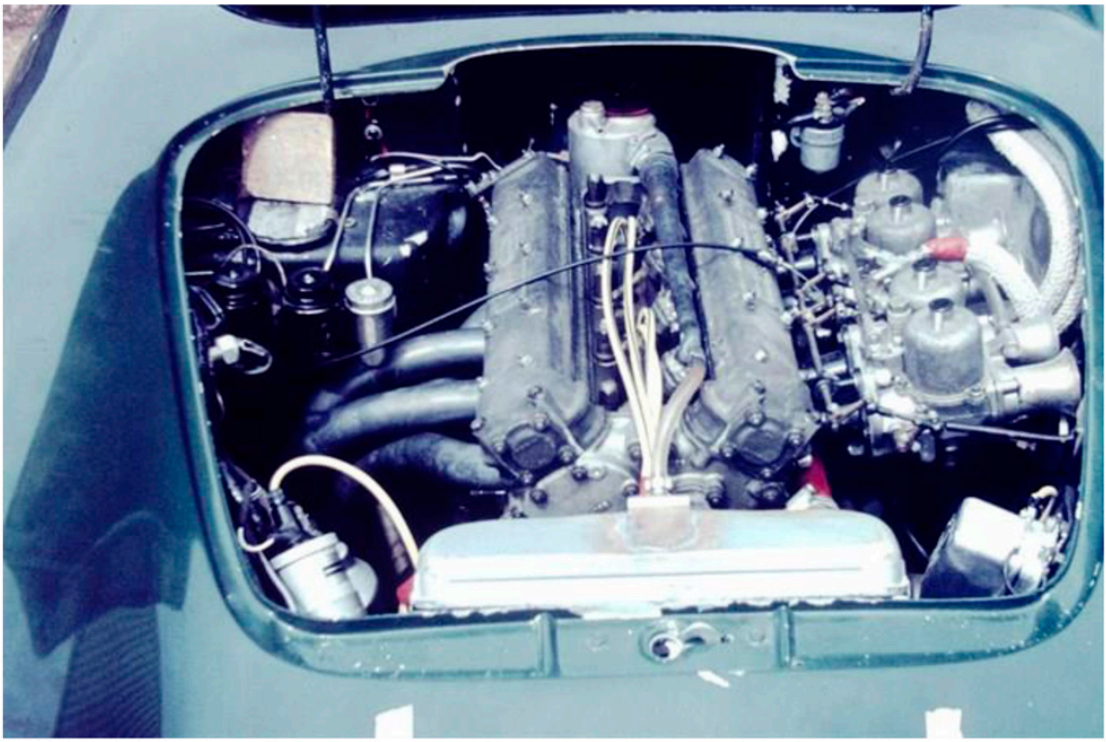
There are three standard colours – Old English White, Red (as above) and British Racing Green. The white cars have silver wheels, the red one has white wheels, and the green car can either have yellow or silver wheels.

This brings our series on the Lotus Farina to an end, and I leave you with the questions 'Could this car be built with what is available today?'

1963 Lotus Farina

Engine 1499cc Coventry Climax FPF four-cylinder, DOHC, two twin-choke Weber 45DCOE9 carburettors **Power** 120bhp (de-tuned race unit) **Transmission** five-speed manual MGB [BMC Comp gearbox] **Steering** Standard A40 steering box **Suspension** Front: double wishbones, coil spring/damper units, anti-roll bar Rear: IRS, lower wishbones with MacPherson struts **Brakes** Discs all round **Weight** 650kg **Performance** top speed 120mph, 0-60 7.5secs

It would not be the first time this engine was used in a production car. It was used in a very special Lotus Elite in 1960. The Elite LX was built to compete at Le Mans but due to its lack of development it was withdrawn. It used a version of the FPF engine and had a top speed of 157 mph down the Mulsanne Straight.



In our production version of the Lotus Farina the FPF engine would be detuned with fast road cams instead of racing cams in order to make it driveable in everyday use. However, a full race version would be used in the Works Rally Cars and for Saloon Car Racing. The suspension and brakes would be uprated in these cars. The Lotus Farina would have been phenomenal both as circuit racer and a rally car.