Model Cars builds Kyosho's bid for success in the 90's

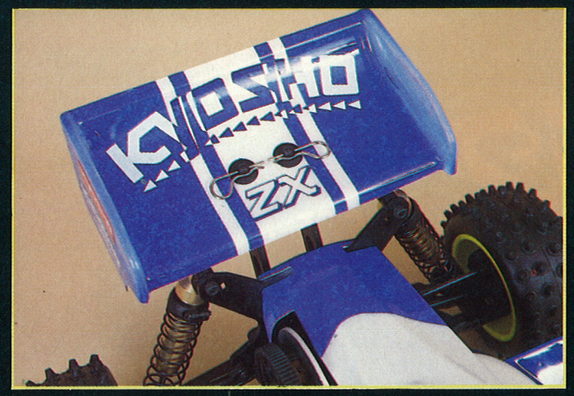
KYOSHO Lazer ZX

For all of us 1/10 maniacs there is no doubt that the winning car in the world championships plays a significant part in our choice of car for the following year's racing. Manufacturers know this and of course make supreme efforts to take rostrum places. We must not lose sight of the fact that world championship success is influenced by a few other factors. The most important of course is the driver. Most drivers in world championship racing would turn in outstanding results even if they drove motorised shoe boxes. Therefore, it is not fair, at this high level of competition, to judge a car's performance just on the one that wins the race.

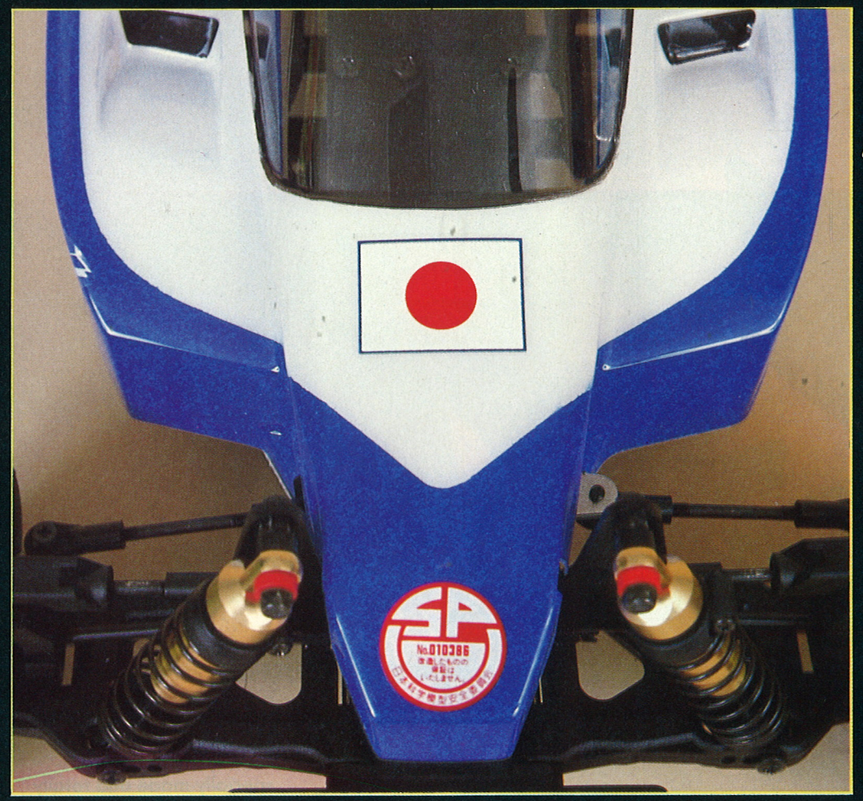
Secondly the cars themselves are rarely exactly the same as out of the box varieties you and I might try to buy. Indeed it is quite proper that they should be tweaked to perfection with minor adjustments and set up to suit both driver and track. The step beyond this, of course, is that the car is specially made and totally different to those available from the shops, so comparisons between the winning and production cars are quite pointless.

The amount of effort put into the recent world championships by Kyosho has become legendary. How much is fact and how much is fiction is really academic. At the end of the day they did not win the world champs, but the cars raced were, for all practical purposes production cars and they did not, in any way disgrace themselves.

Kyosho have had over the



KYOSHO
Lazer ZX



The Lazer ZX comes with a neat double wing set-up. The all new chassis is finished off with another excellent body undertray combination. Right: simple chassis layout for saddle cells.

last few years phenomenal success with sales of the Optima, Mid Optima and countless variations of the marque. Kyosho's latest offering has (thank goodness) at least taken a name change and as such should be much easier to identify. As it happens the car is not another upgrade on the 'Mids' and hence uses few parts from the Mid. This means from the dealer's point of view he has to keep yet another range of spares.

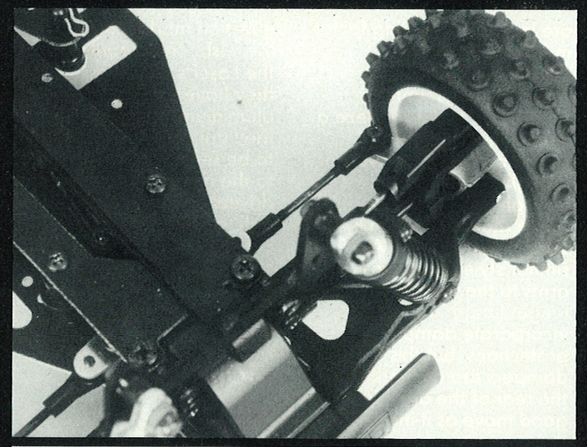
Although not confirmed, it has been rumoured that this car is being used by Kyosho as an attempt to stem the flow of grey imports around the world. Of course, this may be one of 'those leaks' that from time to time appear around the track and trade. The idea is that the car carries a premium or inflated price in Japan to make it less attractive for selling on to US and European grey importers. The 'official' importer receives the kit at special export rates. This in theory should help us, the buying public by providing a greater choice of outlets where we can buy our kits at the best price and, of course, the all important spares backup.

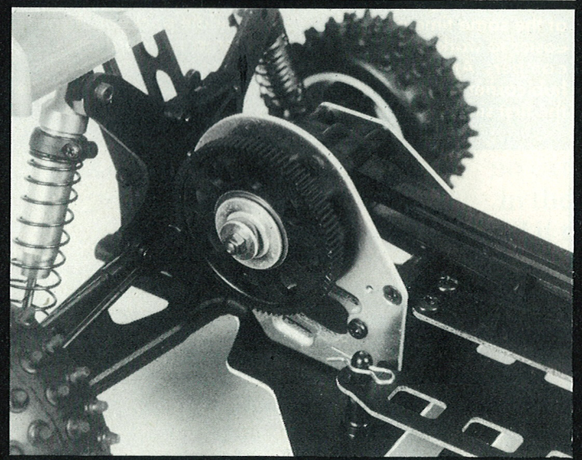
Enough of the background, what about the car. I have already stated that this is not a tweaked or reworked Mid. The car has new transmission, suspension, chassis and of course body.

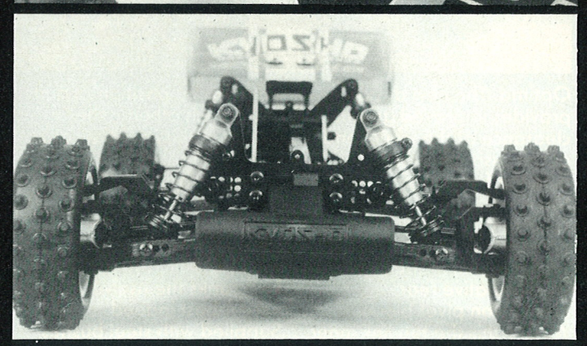
Transmission

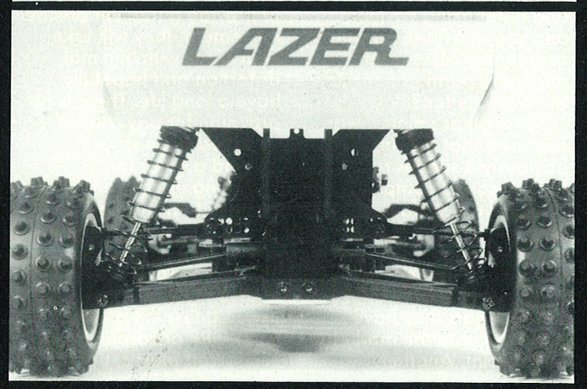
The most significant feature of the transmission is that it comprises two separate toothed belts, one to the front wheels and one to the rear wheels.

However, there is more to the transmission than that! The motor (not supplied) is mounted transversely in front of the rear wheels and sits along the front to rear centre line of the chassis. The motor drives a main reduction gear which is connected to the gearbox input shaft. This gear incorporates the centre ball differential. A toothed belt driven from the centre diff via a one way clutch transmits the power to the front wheels. The clutch will allow the front wheels to freewheel under braking and improve steering control in these conditions. On the kit this seemed to be somewhat on the stiff side but no doubt it will be sorted out as soon as the car is put to work. The centre differential has another one way clutch operating between front and rear drives. This will allow the front wheels to turn faster than the rear but not vice versa.









Perhaps one item that has been 'borrowed' from the Mids are the axle differentials. These are gear type and as with the Mids, a ball differential could be fitted if required. The belts themselves are the same tooth form as the Mid's single belt, but the front drive belt cover is much improved. The front belt runs in a fully enclosed moulding which has a very neat snap on cover. It is, therefore, protected against all the bits and pieces thrown up from the track. The rear belt is completely enclosed within the gearbox.

The front and rear differential housings are also new. The front unit comprises two sections, a front and a rear, unlike the Mid which was left and right. The rear gearbox moulding is a much more complex affair made from four pieces. It may be that the intention is to improve the accessibility for servicing. Within the gearbox there are a number of small steel idlers used to keep the belt in position.

Down to the drive shafts now. Although dogbone type are used at the rear, Hooke joints are employed at the front to cope with the extra angular movement required for steering. Whilst on this subject, I have noticed an increasing number of drivers looking dejectedly at some very bent drive shafts recently. Presumably this has been brought about by the enormous instantaneous loads applied to the shafts.

Similarly, the fixing of the roadwheels seems to be suffering from the vast quantities of torque applied to them. The wheel fixing method is simple enough. A taper on the end of the drive shaft is mated to the wheel driver. The two tapered parts are held together by keeping the single wheel nut tight. However, motor power these days coupled with tremendous loads when landing from jumps makes it all too easy to have the wheels loosen themselves. With the tapers no longer securely mated, drive to that wheel is lost. It may be time for Kyosho to take a fresh look at this type of wheel fixing.

Suspension

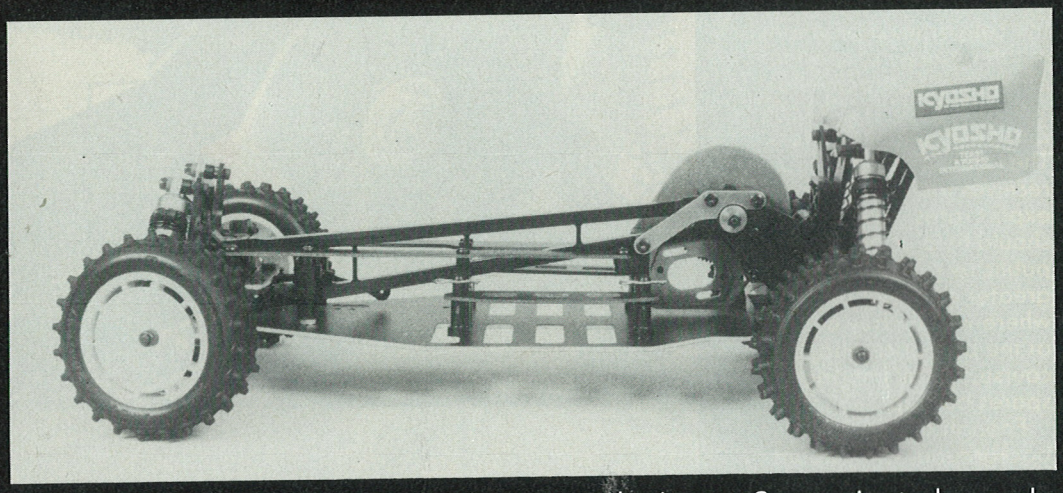
Virtually all new, in fact the only parts I could find that has been inherited from the Mid are the die cast front hub carriers. New longer wishbone arms reduce track changes as the suspension moves up and down. To allow a reasonable amount of suspension travel and to clear the other suspension components there are some very strange shaped top ball joints. A nice feature is the way the shock absorbers have a three position, well protected mounting point on the bottom arms, essential should you strike something immovable. It seems that Kyosho have decided that this car is going to have as many suspension set up options as it is possible to engineer. To start with the front lower wishbones have two possible attack angles. This is achieved with two positions for the front wishbone securing plate. The front suspension upper link is attached to the black anodised aluminium shocker mounting plate and has no less than twelve possible fixing positions. Forgetting for the moment that the damper positions can also be varied, just the front suspension geometry choices offer twenty four possibilities.

The damper units are Option House Gold and are in fact the limiting factor in front suspension movement. With more damper movement the suspension could squeeze a few more millimetres of travel, but perhaps Kyosho thought that enough was enough.

The rear suspension is once again all new. A similar style of suspension arms to the front but of a longer length again incorporate damper protections, but this time the dampers are anchored at the rear of the arm. This is a good move as it increases the access to spur gear and at the same time makes it easier to work on the dampers. An all new rear hub carrier is introduced, the first since the original Optima. The new design provides improved ground clearance at the wheel end of the suspension arm. As with the front suspension there is no shortage of adjustments. There are two possible values of rear wheel toe in, made possible by alternative rear suspension pivot blocks. Add to this the top link inner and outer fixing positions and you can finish up with a staggering 240 suspension geometry permutations. Is this over the top?

Some other points. I was surprised that this kit, obviously a serious racing kit as it comes complete with ball races, does not have any anti-roll bars included. It may be that the designers consider them unnecessary, but in all previous cars they have been put onto the market at some point. Another question mark hangs over the wishbone mounts. On the Laser's predecessors they have always been aluminium whereas now they are plastic. It remains to be seen if they stand up to the rigours of us English drivers. Finally it is worth noting that the dampers come ready built, seals and all. All that is needed is the oil. I am not too sure why this is so, perhaps the ever busy Japanese find that building shocks takes just too long.

Next up we have the chassis. The bottom plate is machined GRP with cut outs for saddle packs or, if you prefer, a standard cross chassis stick battery pack. The arrangement for saddle packs will allow the two packs to be positioned quite close each other in the centre of the car. A six or seven cell set up is accommodated for.



The top deck and main chassis sandwich the gearbox mounts and steering bellcranks. The bellcranks themselves are very robust indeed. Supplied with steel bushes to provide a free yet precise movement, they will take high loads with minimal distortion and hopefully have a long life. There is no provision for any chassis mounted servo saver. Instead a saver for mounting directly onto the servo output shaft is provided with the kit. The use of a top deck will, of course, improve overall chassis rigidity. I would not like to guess if it is made from GRP or carbon fibre reinforced plastic, but it does look different to the main chassis material. The result of introducing this top member is to provide, as may be expected, a very rigid frame in longitudinal bending, but there is still some torsional flexing. Having said that, it is probably one of the most rigid chassis on a standard car at the moment.

Finally, there is a new design of body. Always a very personal thing, I happen to like the style of this body, although I must admit it is not a million miles away from previous Kyosho designs. The kit comes with a vac-formed undertray fitted with Velcro. The rear wing is a two tier affair, mounted on a standard Mid "wing tower".

Construction took around three to four hours and provided no problems. Instructions were as with other Kyosho kits, clear, easy to follow and well illustrated.

During this build session I could find nothing of consequence to cricitise. The kit is well made, includes some excellent and interesting design features and makes the best use of suitable materials.

This review is not intended to cover car performance on the track, that must wait until a full test has been carried out. However, I must say that at this early stage, I have every confidence this car will live up to the standards set by its predecessors, the Optimas, with their enviable reputation and long history of success.