

ULTIMATE *Ultima*

Lewis Eckett builds a World Champs specification Ultima 2WD

Regular readers will remember that a few issues back I had been wielding the cheque book in an attempt to improve my standard *Kyosho* 'Ultima'. Since then the bank balance has undergone a further hammering with further attempts to uprate the standard car to 'World Championship' specification. Despite the fact that the 'Ultima' kit is being advertised as 'The World Champion' you and I know that what you get in *Kyosho*'s glossy box bears little resemblance to the machine driven to victory by Joel Johnson. The reason for the differences is that at high competition levels what works as standard may not be quite good enough.

Above: New lightweight layout with saddle pack configuration aids handling and driveability.

Above: High shock brackets carry the 'Option House' damper in upright position allowing them to give their best.

Even *Kyosho* recognise this as their 'Option House' catalogue clearly shows.

The most obvious change to Joe Johnson's car was the use of a carbon/graphite chassis and shock mounts. These items are produced in the states by Jim Davis of *Composite Craft* (formerly known as *D&D Graphite*). Amongst other things *Composite Craft* make carbon/graphite necks for electrical guitars, full size racing car parts and anything else you care to mention. Their expertise in this field is well known and displayed perfectly in their

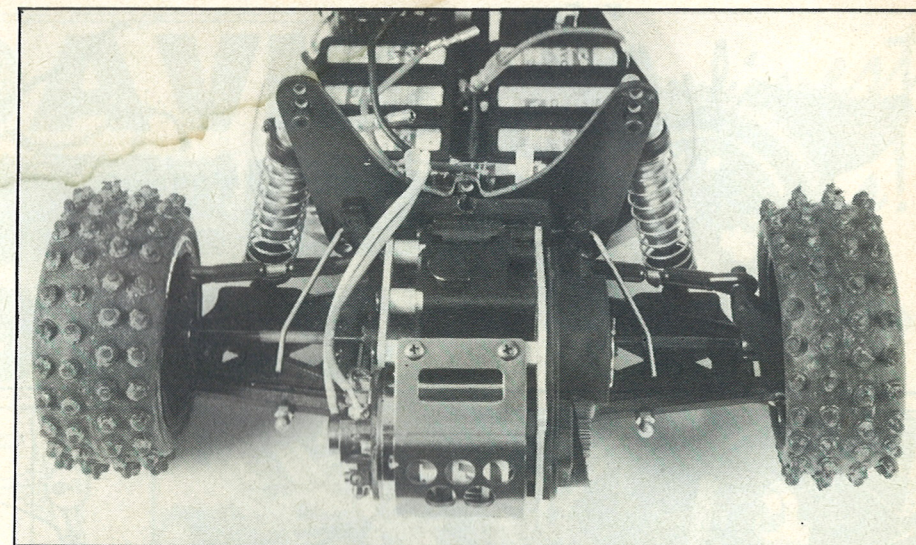
the 'Ultima' it seems only sensible to tell you what else is available.

Ultima	Standard Chassis Saddle Pack Chassis Shock Mounts
Cat	XL Chassis Saddle Pack Chassis (US type for 7 cell)
RC10	Standard Chassis Short Wheelbase chassis with wide front end shock mounts
Optima	Side plates (full length) Radio tray Shock mounts
Yokomo	Standard chassis
Optima-mid	Standard chassis

All of the above are supplied ready to be fitted straight onto the car with no modification required.

range of model racing parts.

Penn models in Wolverhampton have by far the largest range of *Composite Craft* products on show in the country and despite the fact that we are talking about



Above: 'Option House' rear motor guard protects motor from shunts - rear anti-roll bar is disconnected.

Back with the 'Ultima' and a difficult choice to make between the 'standard' and 'saddle pack' type chassis. Joel Johnson's car featured the *Ni-cad* pack positioned along the length of the chassis. The standard C/C chassis incorporates this facility as well as the natural transverse location. The saddle pack alternative intrigued me however, as in theory this layout would evenly distribute the weight of the cells and perhaps make the car more stable. Also it was by no means impossible to try the Johnson way of things if the theory didn't pan out.

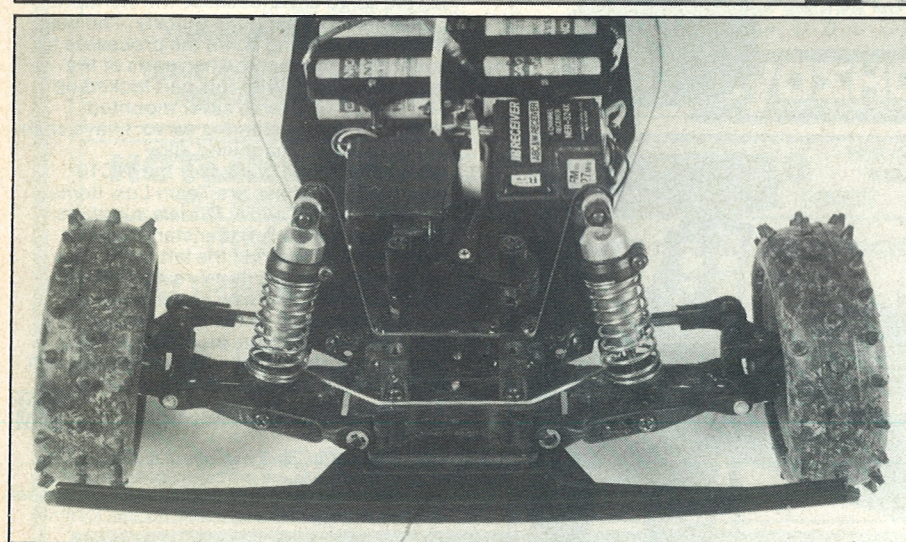
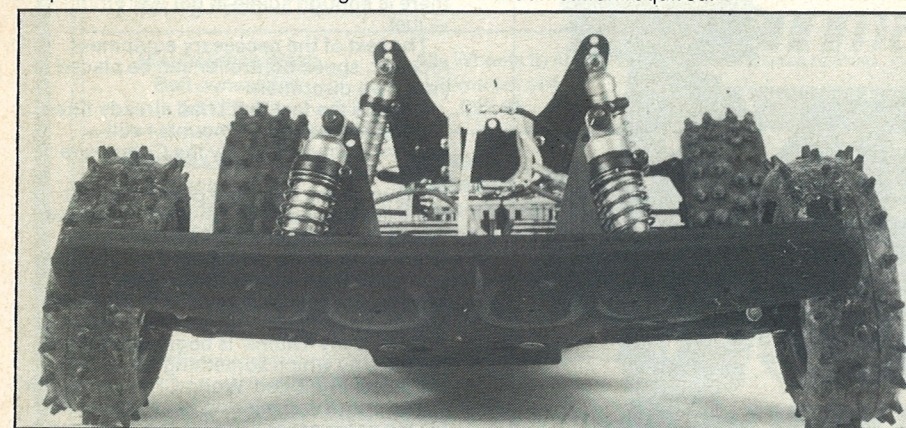
One of the principal reasons why carbon fibre is used by racers in place of less exotic materials is to decrease weight. Carbon fibre is usually thought to give greater rigidity for less ounces. In this case there is no advantage weight-wise between the 'Option House' and *Composite Craft* chassis. Both weigh in at 5 oz. whilst the standard kit chassis has the advantage at 4 oz.

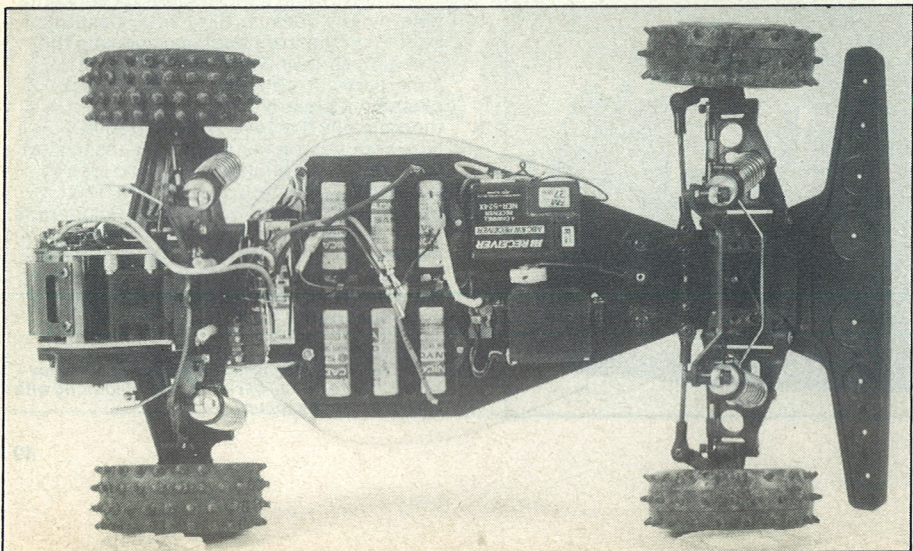
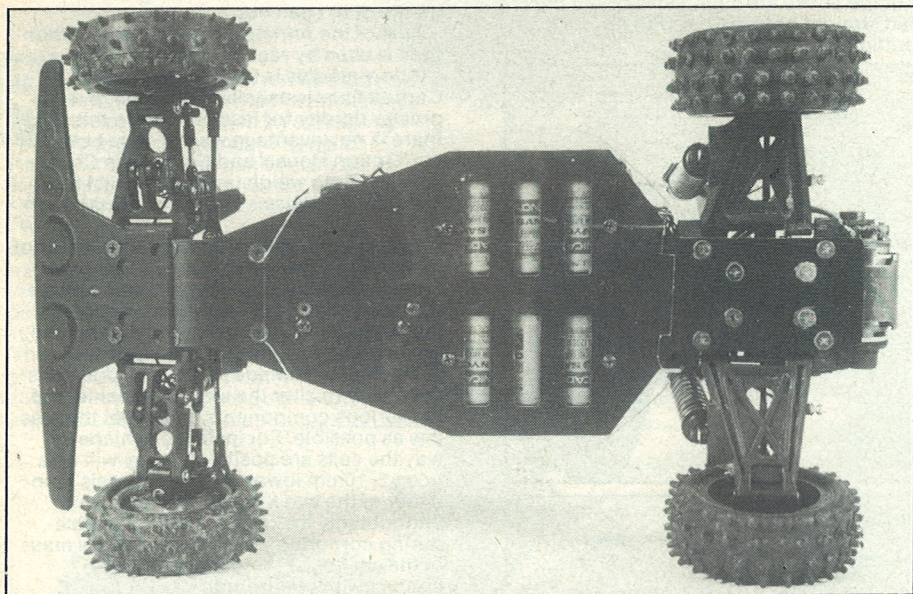
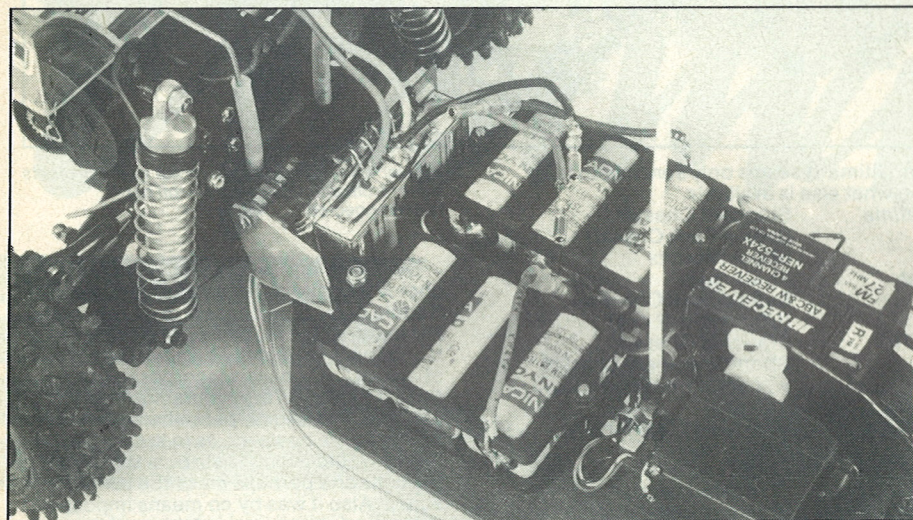
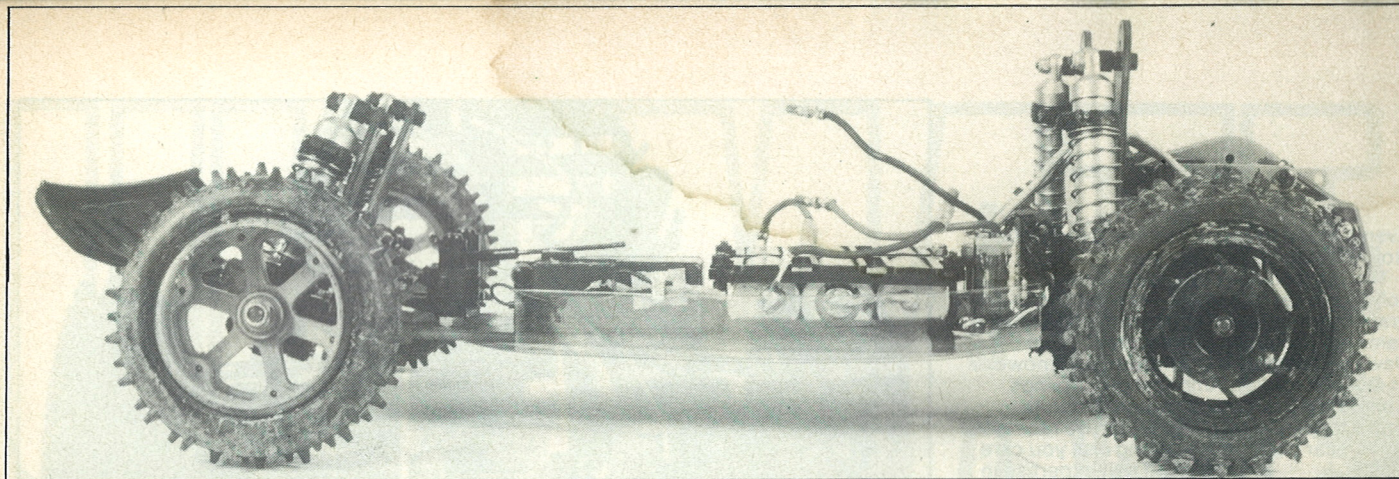
A strength test is difficult to engineer (not to mention expensive) so any findings are purely subjective. I certainly haven't broke the new chassis yet and I have to confess that with all things considered differences on the track are impossible to detect.

The real advantage to the 'c/c' chassis is the ability to alter the weight placement of the various components and to get them as low as possible. For instance, whichever way the cells are positioned they will be a good 5-10mm lower with this chassis than either of the two *Kyosho* versions. This undoubtedly makes the car more stable during cornering as the lower control mass of the car keeps the wheels in closer contact with the ground.

Actually fitting the chassis took very little time, simply because it is just a question of bolting on the front and rear-end with the standard screws. The chassis has the necessary cut-outs for the saddle-pack placement already provided so theoretically the cells should 'drop in'. However, you do need some means to stop them dropping off plus it's a good idea to protect the cells from the chassis. The reason for the latter is that carbon conducts electricity which is bad news if the cell heat/shrink splits and the pack shorts out through the chassis. This is a great way to discharge cells but not halfway through your final round heat.

Left: The front end gives good ground clearance - below: front anti-roll bar is incorporated along with large front shock mount.





The best answer I could find was to acquire some plastic saddle pack holders from Ian Spashett of *Intronics*. These mounts are used on the 'Corally' 1/12th scale car imported by Ian and are perfect for the job. It is necessary to drill four holes however, to fit the mounts to the chassis and this must be done carefully to avoid damaging the material. On my car the cells are retained by using another pair of battery mounts clamped down on top to retain the cells firmly. Despite the fact that 1/12th scale drivers are experiencing a return to saddle-pack racing at present the majority of 1/10 scale racers will find it easier to stay with their 'stick' packs. Running the cells across the chassis can be easily engineered and probably best done by using *Associated* 'RC10' battery holders. Running the cells down the chassis is a problem as there is not a lot of room between the steering servo and the rear gearbox. On Joel Johnson's car the cells were placed side by side down the chassis instead of end to end as this makes the pack shorter. In tandem with a small, high powered servo (*Futaba* '131S' or similar) there is enough space to get everything in — just.

The rest of the necessary equipment, receiver, speed controller can be placed at your own discretion.

Despite the fact that I had already fitted 'Option House' shock mounts I still convinced myself to buy the *Composite Craft* examples.

Again all the holes are pre-drilled but there is a choice of which ones to choose. The upper damper locations have three alternatives as do the inboard mounting points for the suspension top link. This allows you to mess around with different angles, camber settings and ride height.

By now my 'Ultima' is beginning to look the part, by which something resembling the aforementioned 'World Champions' car.

The only thing missing is a replacement for the servo saver because the standard item tends to wear quite quickly. The best method of slowing down the process is to superglue together the two parts of the main bell crank. With this part locked up you should fit a servo saver mounted directly onto the steering servo. I have seen some very nice machined alloy replacement bell cranks for the 'RC10' which will fit. These are *Team Losi* items available from *Central Models* suppliers. Two versions are on offer standard and ball-raced; be warned the latter are expensive. The last item I really thought necessary with the new chassis was an undertray to stop all the muck and stuff getting to the delicate electronics. I am reliably informed that a *PB Racing* one will fit with some imaginative use of the scissors.



Left: The saddle pack cell layout distributes the weight nicely around the centre section of the car. The underneath is flush although a lexan sheet is fitted to keep mud away from the cell location slots.