

**Radio Control Parts
ABC HOBBY**

Super Hero Proto X-2

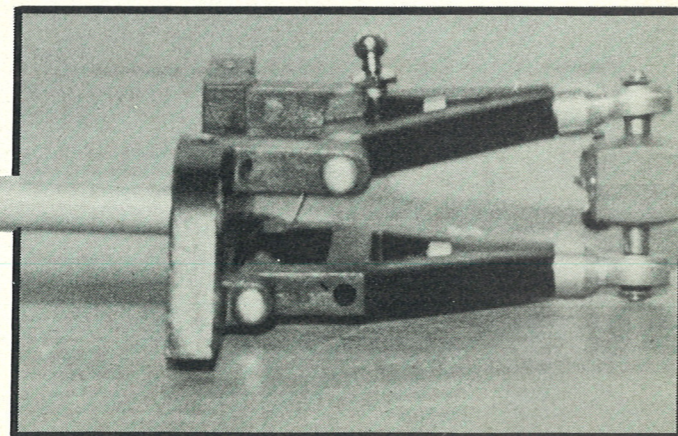
*Pete Winton examines the
Japanese approach to 1/12th
scale chassis design*

THE JAPANESE are major suppliers to every aspect of modelling. From 1/8th scale engines, through Radio Control gear to plastic moulded static kits. They have always been a major influence on the way the world enjoys its model activities. Yet all this is without a major result in R/C car racing due to their love of the complicated. Four wheel drive 1/8th cars and fully independent suspension 1/12th cars are commonplace in Japan, but fail to make any impression on the simpler European and American products. It is interesting to get an opportunity to try their products, this one being very similar to the machine shown in 'Model Cars' recently.

Rear suspension

The 'X2' is long in the wheelbase in order to allow a mid-engined layout. This in turn permits a lay-shaft to drive the centre mounted differential featuring plastic moulded bevel gears for the diff action. Drive is carried to the rear wheels by 'ball and pin' drive shafts via a large plastic hub carrier. The wheel hub is ballraced in the carrier, as are the layshaft and diff output shafts. The wheels are held onto the hub by a large central nut. Suspension is by double unequal

Right: one side of the front suspension system showing unequal length wishbones. Castor angle can be changed by placing spacers at the leading or trailing edge of the top wishbone. The stub axle block is supported on rose-joints.



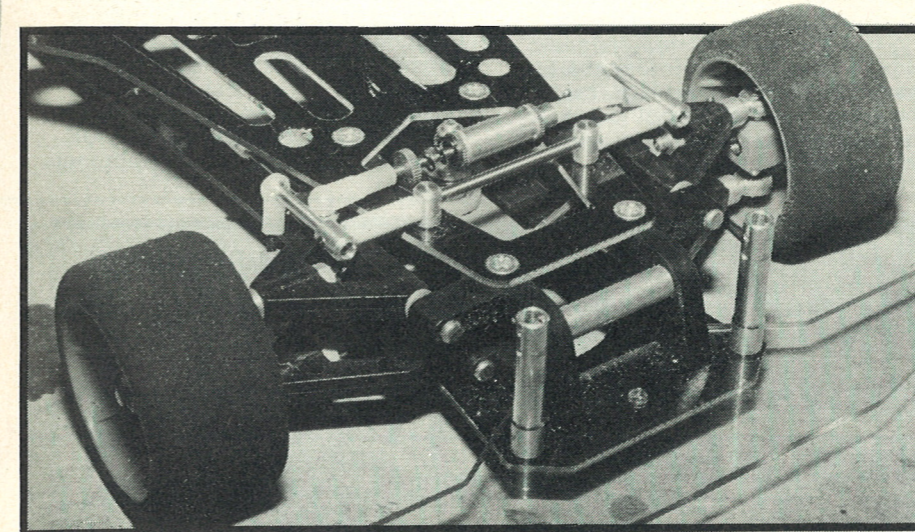
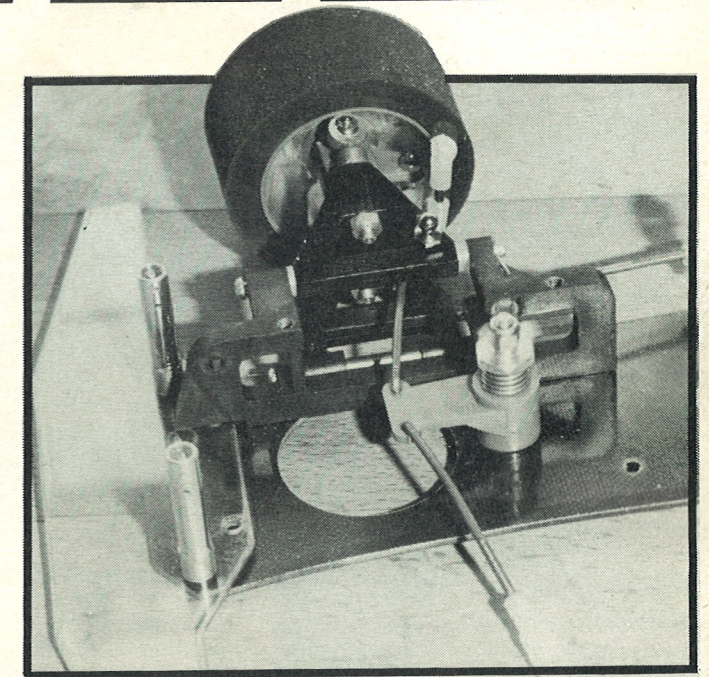
MODEL CARS

length wishbones, springing taken care of with a coil over monoshock which has adjustable spring tension for setting ride height. All the bulkheads, layshaft carriers, motor mounts and wishbones are all high quality injection mouldings.

Front suspension

The chassis looks like fibreglass dyed black, with a top plate that connects the front and rear wishbone mounts forming a rigid box which flexes hardly at all. Mounted off the front bulkheads are (again) unequal length wishbones. The top wishbones have spacers at each end and by removing the pivot pin and redistributing the spacers, castor angle can be adjusted. The front hubs are supported by rose joints which screw into the moulded plastic wishbones. By screwing the top or bottom wishbones in or out it is possible to adjust front wheel camber. There is a similar adjustment available for rear

Left: front suspension sub-assembly fixed to the GRP chassis. Note the rose joints which can be adjusted inwards and outwards to give camber adjustment. The servo-saver is adjustable and ball-joint steering linkages are supplied in the kit.



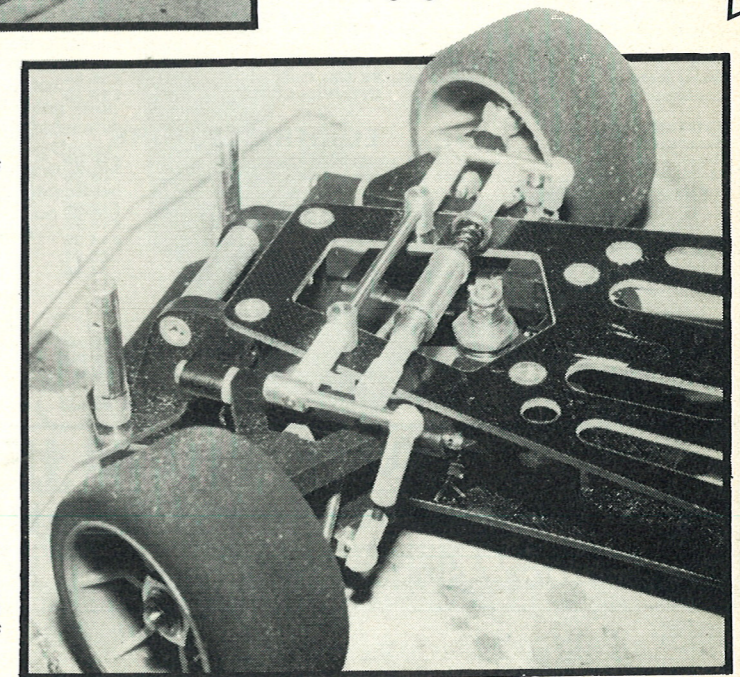
wheel camber, but it is more complicated, involving the adjustment of two screws equally. Without care, unwanted toe-in or toe-out could occur.

At the front a monoshock arrangement is used for springing and damping, as well as a stout anti-roll bar. The wheels use the same centre nut attachment as the rears.

The chassis came ready assembled, but a quick dismantling and re-assembly of certain parts shows it to be straightforward for the competent modeller. A rear anti-roll bar was shown in the exploded diagram, but not supplied. As the rear suspension tended to flop around a bit, I made up a bar of my own. A breakage during testing caused a handling upset which proved the necessity of the anti-roll bar.

The body supplied was a lightweight by our standards, which contributed to a surprisingly (to me!)

Above: completed front assembly complete with coil-over mono-shock damper and anti-roll bar. The GRP chassis and shaker plate sandwiches the front assembly to give a very rigid structure.



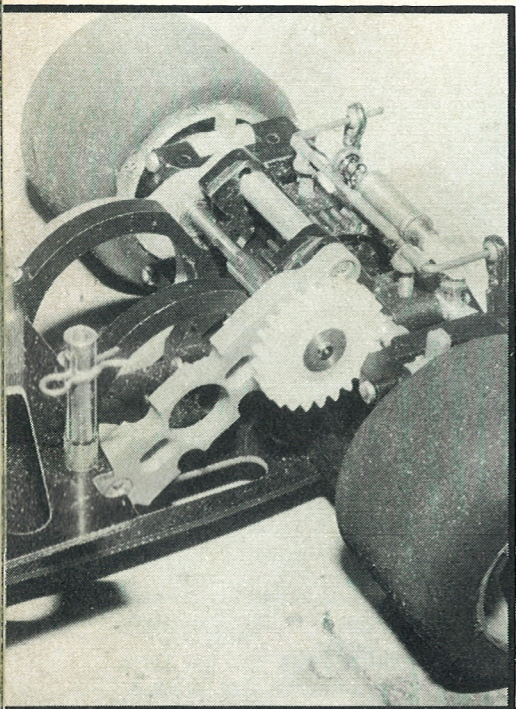
Right: the front anti-roll bar connects the lower wishbones via adjustable ball-joints and tie-rods to give variable chassis roll.

low weight of 2lb. 3oz. (on the same scales my Schumacher Car is 2lb.) when fitted with an electronic speed control and Futaba 'FD30M' servo. The (only) drive gear supplied was 48 teeth, and the layshaft (geared 1:1 from the motor) is 1/8th diameter. The tyres supplied were of unknown origin and refused to be moved by 'Tractite', so Wintergreen was the order of the day.

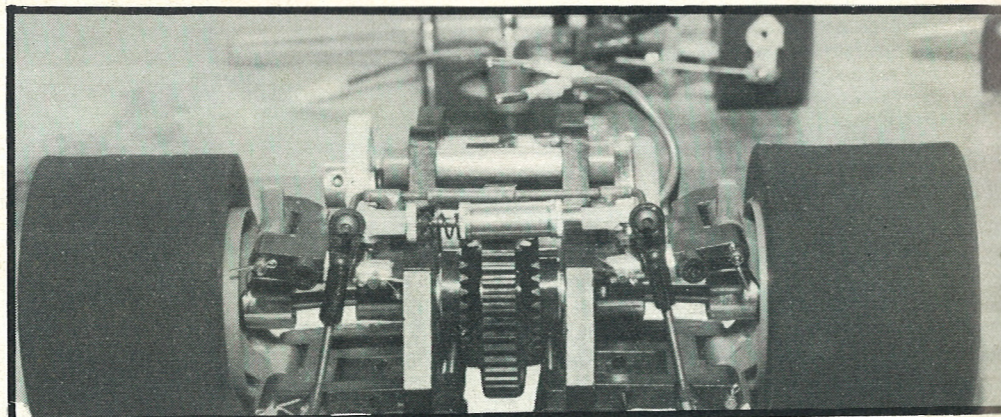
Track times

First runs using a Reedy '05' on 12:48 produced excellent turn in to corners, but oversteer as the power was applied on the exit. Reducing treatment on the front brought a great improvement. The 05 was slow, so changing to the more torquey

Track Test



Above: the rear drive system with shaped motor mount, layshaft and central differential. Note the home made anti-roll bar, adjustments are made by adjusting the height of the two screws.



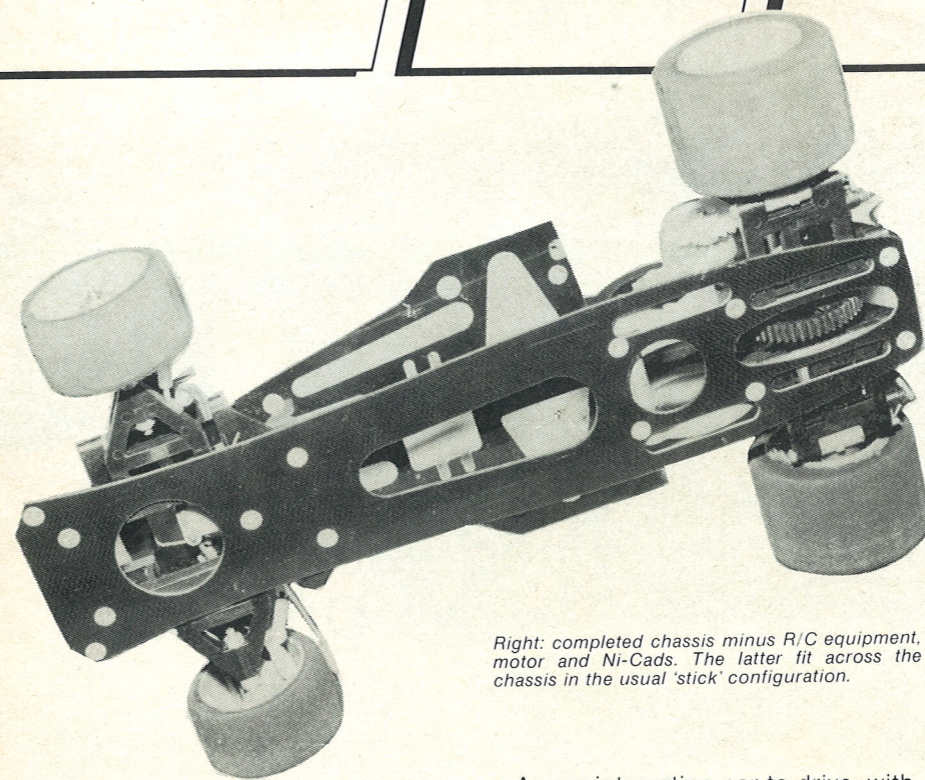
Above: the layshaft transmission from the motor drives a hefty plastic gear differential which sits along the centre line of the chassis.

Yokomo on 14:48 brought the expected improvement in speed and acceleration. By the end of the evening's run the car was set such that it could be flung around at will. Turn in was excellent and the car was responsive but rock steady in long fast bends. Tight corners and hairpins were less rewarding due to insufficient lock and, perhaps the long wheel base; but it got round much better than a badly set up Euro/American chassis. Quick

changes of direction failed to catch it out, the chassis roll well controlled.

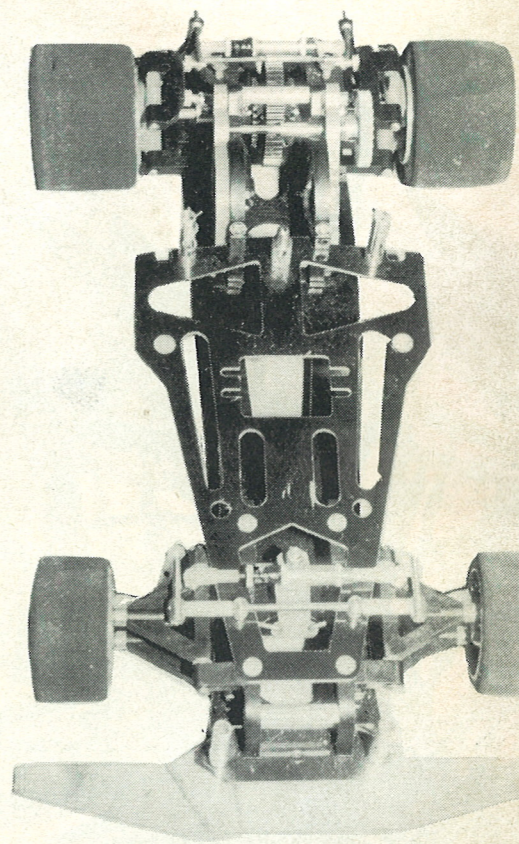
I can quite see how the Japanese take to these cars with their short (5/6 minutes) races and wide outdoor tracks. With a short wheelbase, and more positive better rear wishbone location (slackness in this area caused some rear end bounce under throttle out of corners) who knows how well this could go.

ABC Hobby are looking for a UK Importer and I feel, rich entrepreneur



Above: the underside of the 'Super Hero' chassis showing full-length GRP plate with weight-saving cut-outs.

to boot! But with a quick diet and a shorter wheelbase chassis, there could be some reward.



Right: completed chassis minus R/C equipment, motor and Ni-Cads. The latter fit across the chassis in the usual 'stick' configuration.

A very interesting car to drive, with potential. One day, all cars will be made this way.

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