

Yokomo YR4-M2

Hopefully you will have read Jason Varley's Post Card from Hong Kong report in January's RRC, if not get the back issue. Jason was on holiday, sorry working hard for C.M.L., whilst attending an International Scale Saloon meeting. Organised by the Hong Kong government and Yokomo. At that meeting one Masami Hirotsuka used a prototype of the car we now have for review, to totally dominate and win the meeting. When the meeting was run Yokomo made no indication that this very special car would ever go into production. Well obviously Yokomo are concerned about the pace of development (I seem to have used that word a lot recently) in Scale Saloons, and wishing to keep their competitive edge they have released the YR4-M2.

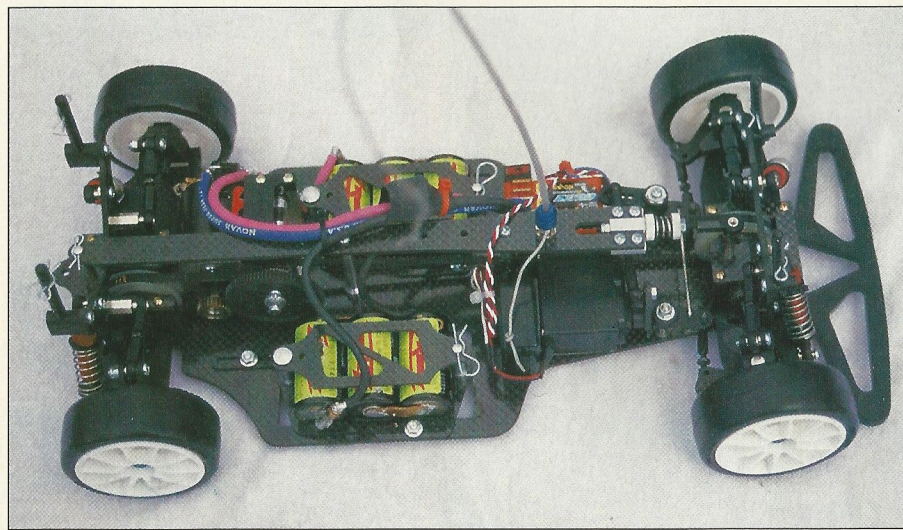
But it's just another YR4 isn't it?

At first glance you could be forgiven for thinking that, but in fact this is 90% new, although carrying the styling of the YR4 family.

Starting with the transmission, both diff assemblies have been replaced by the YZ10 units, this achieves two things, the overall gearing has gone up and is now a ratio of 2.25:1, rather than the 2.6:1 of the YR4. This means the car will be quicker in a straight line on the same pinion/spur ratio. As the diff drive plates have flats cast into the diff halves giving a positive location, so you should be able to run the diffs a little looser and still get full drive, but smoother power applications.

Following along the line we come to what I feel is the best part of the car, a new dual drive layshaft. Having found that in a lot of cases drivers need to be able to have the choice of either running full time four wheel

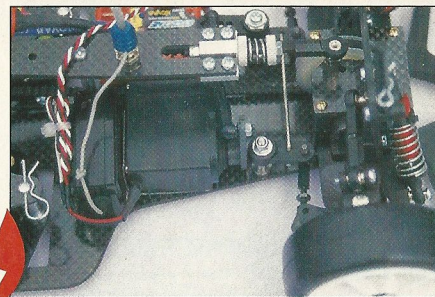
Race ready. You can clearly see the new layout with the open top diff housings and top brace.



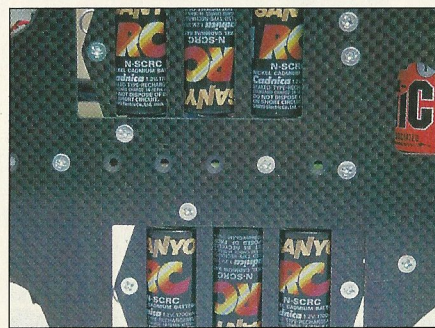
drive, or a one-way drive. Yokomo have come up with a truly inspired method of having both options, using the same parts. No more layshaft changes, on the layshaft the alloy front drive pulley has a one way bearing built in, as per the YR4-MC, now the clever bit, in the end of the pulley a groove for a pin has been machined in. In the drive pulley, you have permanent 4WD. Remove the pin and you have one way drive, brilliant, quick, simple. So if the grips low, or you want good brakes, it's pin in. Too much understeer or a higher top speed it's pin out. It's actually taken more time to explain than to do the job, 11/10 Yokomo.

Following on from the transmission, we have a totally new chassis. Still the best carbon fibre, but much thicker, now 2.5mm and 5mm

Scoop review



The shorter wheel base does give less space for the radio gear. Fastrack aerial mount.

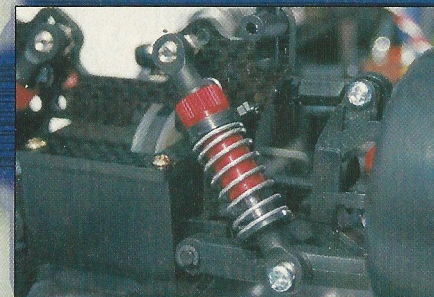


The row of holes between the cells, allow you to add or move alloy pillars, making the chassis softer or stiffer.

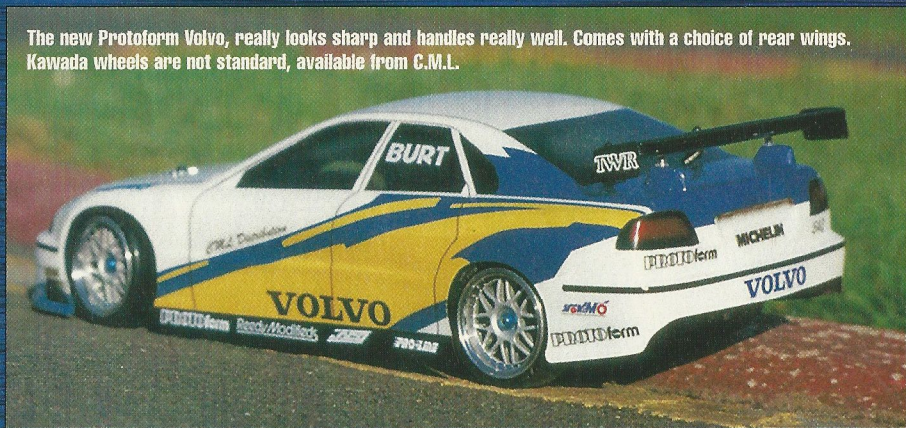
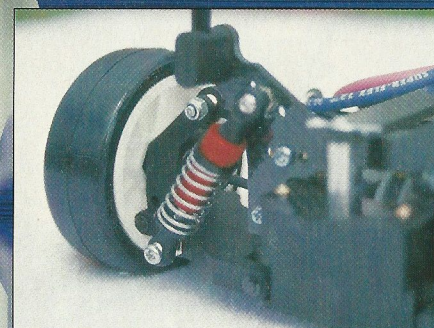
from Hong Kong to winners circle

shorter wheelbase. So you are getting a lot more chassis stiffness, the weight is in the right place (the YR4 has always been underweight) and the shorter wheelbase will help to reduce some of the YR4's basic understeer characteristics. Also along the chassis centre line is a series of holes, mounting posts can be mounted between the chassis and the top brace, by altering their position and number the stiffness of the chassis can be tuned, this is another major tool in the track side adjustments.

Along with the new top brace, carbon plates now mount to the composite front and rear diff mounts/bulkheads, this has allowed Yokomo to make some



Both front and rear shock towers have alternative positions for both shocks and camber links.



The new Protoform Volvo, really looks sharp and handles really well. Comes with a choice of rear wings. Kawada wheels are not standard, available from C.M.L.

different shock towers, again they are made from carbon fibre, but now they carry alternative pick-up points, for both the top link and the shock absorbers. In fact the geometry of the suspension has changed totally, both front and rear roll centres have been raised. This will encourage the car to roll more which should increase grip and make the car more forgiving to drive.

One thing I should point out though, Yokomo have built this car to run on moulded rubber tyres, as this is the way the world appears to be going. So all my running has been done on

rubbers, but there is no reason why the M2 should run any worse on foam tyres as the MC or Team car, but you may have to play with set ups. Lastly as the J.T.T.C. has changed their touring car rules Yokomo have some new 24mm wheels and tyres. I must say, the new wheels are the best I've seen, also at last Yokomo have gone to hex drive wheel adapters.

So in essence the M2 is very much a "new" car, only the sliding cell system and the basic suspension components come from the MC and Team car.

Yippee! There's grease in this one

What can I say about the build, very little really, it's so simple it almost screws itself together. Such is the quality and the fit of the parts it really did just fall together. The instructions although in Yokomo's rather broken English are pictorially very clear, and at last the message has finally got through, the

Move over, I'm coming through.



Set Up Sheet Bedworth Radio Race Car Rd 6

Front Suspension

Springs	kit
Oil	kit - no spacers in spring
Shock length	59mm
Camber	2°N
Camber link	Standard
Caster	kit
Tyres	Kawada Yellow (22mm wide)
Wheels	Fastrack (standard offset)
Track width	kit spacer outboard - 1mm Kawada hex spacer, total width 185mm

Rear Suspension

Springs	kit
Oil	Yokomo 400 wt
Shock position	inner
Shock length	61mm -2mm spring packer
Camber	2°N
Camber link	outer hole
Tyres	Kawada Yellow (27mm wide)
Wheels	Fastrack (standard offset)
Track width	Thin (2) spacers outboard (kit) + 2mm Kawada hex, total width 189mm

Other

4wd drive (Pin in)	
Protoform Volvo bodyshell	
Buds Bite tyre additive	
Nicad position	standard
Motor	Reedy Trisonic 12 x 5
Gearing	29-76 (48dp)
Cells	Reedy/Orion 1700 SPRC

greases that Yokomo recommended but didn't supply, are now in the M2 kit, nice one.

Having read the work "our Craig" did on the fit of both diffs in the respective housings, I did the same, and I was surprised how much freer the transmission was. You didn't read that article, well you'll have to get last month's RRC!

One point I think has been missed by me and the other reviewers, in all the other reviews, is that the "M" shocks all come with their seals fitted at the factory. It's only a small point, but it's one job that can be fiddly and time consuming. Thanks Yok. The only other thing I can think to mention is the front belt tensions. I found the measurements Yok give for

Set Up Sheet Ashby British GP

Front suspension

Springs	Yokomo Copper
Oil	Yokomo 500wt
Shock position	kit - 4mm spring packers
Shock length	60mm
Camber	2°N
Camber link	Standard
Caster	3° Suzuki alloy blocks
Tyres	Ride GS (22mm wide)
Wheels	Fastrack (wide offset)
Track width	kit spacer outboard - total width 190mm

Rear Suspension

Springs	Yokomo Black
Oil	Yokomo 400 wt
Shock position	inner
Shock length	60mm -4mm spring packer
Camber	2°N
Camber link	outer hole
Tyres	Ride GS (27mm wide)
Wheels	Fastrack (wide offset)
Track width	Kit spacers outboard total width 190mm

Other

One way drive	
Protoform Audi A4 (30mm wing)	
Nicads	L/H full forward R/H 2/3 forward
Motor	Reedy Trisonic 13 x 3
Gearing	28-75 (48dp)
Cells	Reedy Zapper 2000 (EFRA class)

the chassis damper left the belt quite loose, in fact it slipped very easily. So I increased the length of the damper by 6mm, just until the belt stopped slipping.

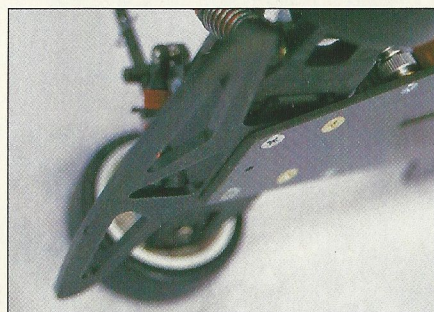
Lack of Space

When coming to fit the radio gear, the shortening of the main chassis plate had restricted the space available for the radio gear. If you want to use the full length of the adjustment afforded by the sliding chassis trays, then you will need a small speedo and receiver. The Novak Cyclone which I had for test just fitted in, and if I had a small receiver, either a Tekin or Novak, I would have put the receiver on top of the steering servo.

Talking of the servo I have one which has the lugs cut off some while ago, which fits a treat, but if you have to use your servo in other cars I would recommend you get a spare servo top, as you really do need to cut the lugs off to mount it.



Duel drive is now available with the new layshaft, slide the collet to the right, either add or remove the drive pin.



I filed the leading edge of the chassis so it would clear the kerb's better, well it's a touring car after all isn't it.

As I really don't like the way Yokomo mount the aerial tube I used one of the CML's blue collet mounts, matched the blue wheel nuts I had too.

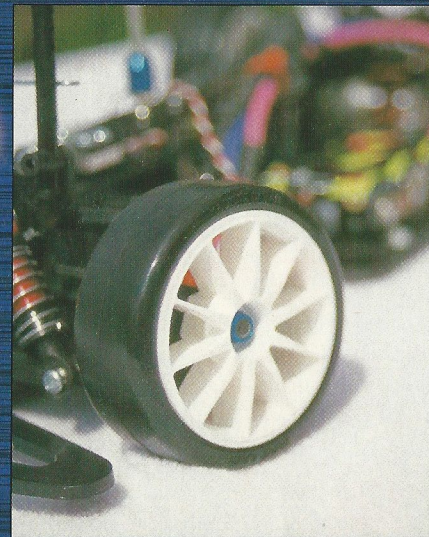
Ready to Run

Yokomo are not quite so detailed on the setup of the M2, so I transferred most of the basic settings from the Review MC. The only thing they do show is how to "stagger" the cells in the chassis, this is something I had seen on the other Ed's car (Neil Mead). This is just to balance up the weight distribution with the motor and the electric's. The last part of the puzzle was the bodyshell, this being the latest Protoform Volvo S40, complete with new "highline" rear wing, this really is a racers shell, and done in T.W.R. latest colours it really does look the part (paint by Craig "Pactra Lungs" Hughes).

Bedworth Again

By the time I completed the review car, the RRC On Road meeting at Bedworth was due, also I had raced there during the Winter with the MC, so I could form a good opinion of the car.

With the new type kit tyres fitted the car felt quite nice, more "steering" was available in all the slower corners, in fact the car had more steering period. One problem I did have was down the main straight, as the tyres were unbelted, they "ballooned" very badly at speed, making the car very sensitive to steering inputs, not really giving much confidence. As at present CML have no other tyres to fit the 24mm wheels I had to change to the more normal 22/27 range of wheels. In the Winter I had run very soft rubbers (Yokomo Beltec) but at the time of the test none



The M2 come with a new wheel and tyre combination. I think the ten spoke is the best I've seen.

were available, so I tried some Kawada Orange Dot.

These gave much better grip, but still gave the same overall balance, ie: lots of steering, so now I could "play with" the chassis.

Run One (change from one-way to 4WD)

All this entailed was fitting the locking pin back in the layshaft. Immediately the car was much better. Under braking the M2 was much more stable, much later harder braking could now be applied (brakes working on all four wheels). Some of the turn in had been lost, the car understeering. Also mid corner understeer had now set in. But at the end of the straight full throttle could now be held through the fast right hander.

So what was needed was a little more grip turning in and through the corners. As the car appeared to be rolling a lot (higher roll centres remember), I decided to increase the rear roll stiffness. This was done by just moving the top shock position inboard, an adjustment that couldn't be made on the old cars. Also a 1mm spring packer was added, this raised the rear ride height slightly.

Run Two (Shock position in one at the rear + 1mm spring packer)

Most of the slow corner problems had gone, the car turned in well, had good traction, but wasn't quite so good on the brakes. Also the car was now a little "twitchy" through the corner at the end of the straight. After the run it was quite obvious I hadn't been using the full width of the rear tyres. Reducing the roll had reduced the amount of camber change, as the suspension loaded up in the high speed corners. Also by stiffening the suspension it had stopped the car "squatting" under braking.

As the car was so good in the slow corners I didn't want to change them back, so to give more camber change I moved the top link posi-

tion to the rear outboard, this gave a shorter link length, which would increase the camber for the same wheel movement. To give more grip under braking I softened the damper oil by 50, changing the Yokomo 450 for 400wt. Normally I wouldn't make two major changes on one run, but the chassis gave me so much confidence I risked it.

Run Three (Upper link position - softer rear shock oil)

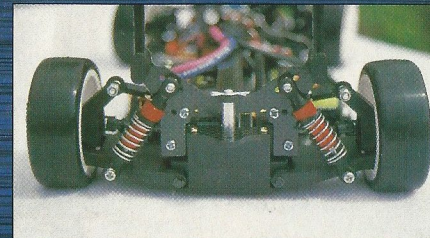
J.D., the car was great, the theory had worked. Under braking the car was great, turn in was sharp with just a trace of understeer. In the middle of the corner traction was excellent, with just the right amount of power on steering, and in the fast right hander the balance had returned. But one thing had been forgotten, although I was running the same motor and gearing, I now had a much higher overall gearing, but the acceleration was just as good, the top speed was ballistic (ask Jason Varley as I passed him on the straight!) and I didn't dump. This I am at a loss to explain, the only thing I can think of is that the handling is so much better you are scrubbing off less speed in the slower corners.

Radio Race Day

Sunday the 8th of July appeared, and so did some very odd weather conditions. These changed from hot, to windy, to wet throughout the day, making the right tyre and set-up choices very difficult. After a problem with a sick motor in the first round, I was the only driver to improve in every round including the damp last round. The M2's adjustability coming to the fore. In the Rubber class the top twenty were all covered by one lap, I qualified 16th and was more than happy, especially as I was only 9 seconds behind Jason Varley's TQ time with his M2. In fact it was an M2 front row with Andrew



The M2 now has the YZ10 diffs, for a much higher drive ratio, more top speed. With the new "quick release" rear brace the car is much simpler to work on.



Low and lean.

Rock and Roll.

Robson being second on the grid with his M2, and that's how they finished.

In my final I had moved up to second after the first lap, but driver error dropped me down to third. I had completed four 17 lap runs, some two laps quicker than in the Winter, on a dry but cold day.

Also two weeks before the Bedworth meeting Andrew Robson won the EFRA British Grand Prix. At Ashby Woulds, on the M2's maiden outing.

A YR4 - No way

The M2 is a totally different member of the YR4 family, in fact I feel the YR4 should be dropped and it should be called just M2, it's light years faster, the range of chassis adjustments making it much easier to get a perfect set up. With its quality and strength I feel Yokomo have once more moved the goal posts. You have a total package for the same value price, you get the lot, carbon, ballraces, dual drive system, turnbuckles. The only fly in the soup are Yokomo's elastic driveshaft, but this is only a small price to pay, and I believe CML are doing a special deal on harder driveshafts.

Available from all Yokomo stockists now, R.R.P. £235.00. **RRC!**

Testers Kit

Radio	JR X756
Receiver	Futaba 40meg mini
Servo	KO1004
Speedo	Novak Cyclone (Programme Noz)
Nicads	Reedy/Orion
Motor	Reedy Trisonic 12 x 5
Bodyshell	Protoform Volvo 540
Tyres	Kawada Yellow (22/27mm)

Quick Spec

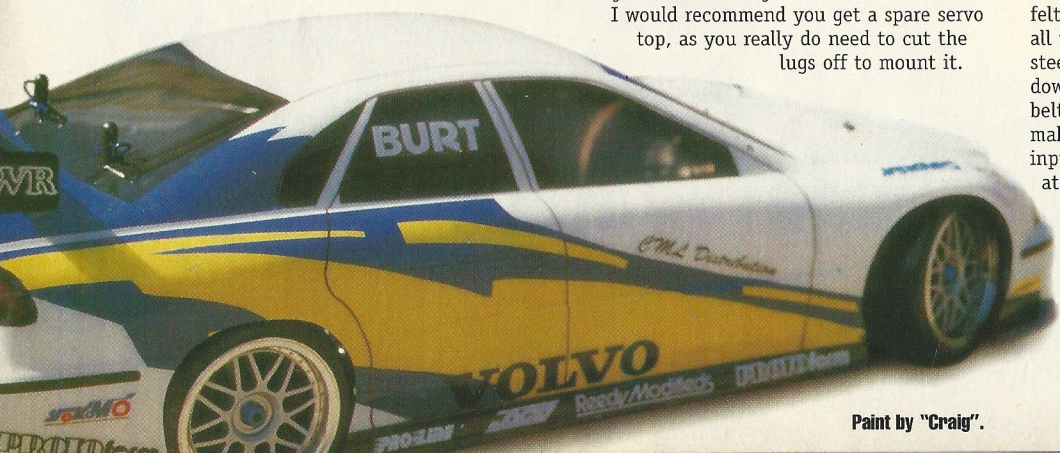
4WD fully ballraced. Dual drive system. Ball diffs. U/J drive shafts. Carbon chassis with sliding cell trays. Carbon chassis stiffener. Carbon shock towers. Fully adjustable four wheel independent suspension. Top link bottom wishbone all round. Alloy mini coil over. Oil filled shock absorbers. 10 spoke wheels. 24mm tyres.

Likes

With a car of this spec just about everything, the way it builds etc. and you now get diff grease, at last.

Dislikes

Bendy driveshafts.



Paint by "Craig".