

MANTA 4 on the track.

Having had the kit presented to me ready built the first thing I did was to almost completely make a kit again. This was not any criticism of the previous builder but merely a familiarisation with the car and find out what went where and how. The see through tank looked OK and was left alone this was a mistake as will be explained later. Before putting it all back together a phone call was made to Martin Williams who has been running a Manta to get any inside information, apart from obvious care in assembly two critical points were made, firstly, correct positioning and fit of the ring gear/disc, this has an offset centre boss and needed some of the disc fibre removing by rubbing on a piece of flat wet and dry to get a fit of the ring gear/disc, this has an offset centre boss and needed some of the disc fibre removing by rubbing on a piece of flat wet and dry to get a fit that does not bind when fitted. Secondly, correct setting of the down stops, particularly critical on the rear which should be limited to approximately 1/4" to prevent the half shafts popping out in the event of a heavy shunt. It was also advised that PTFE or Teflon clutch shoes are used and not the metal ones provided with the kit.

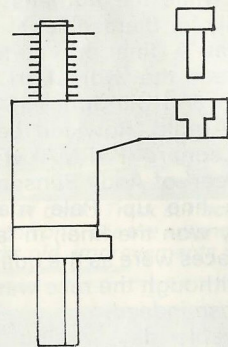


Steve Taylor trackside with the F1 Manta.

In putting the kit back together again constant reference was made to the glossy thirty page instruction manual, this is an excellent picture book but for the complete newcomer the absence of any instructional notes makes the kit more of a 3D jigsaw. During the re-build only one problem arose, the servo-saver is prevented from operating properly by the radio tray which, due to the heads of the screws holding the track rods, will not allow the servo-saver to rise up without contacting and binding with the tray. After playing with a few possibilities a decision had to be made, so, after taking a deep breath, the servo-saver was counter bored to recess the heads. If you attempt this be VERY careful, it is only plastic and the drill can be through in a blink of an eye. All attempts to destruct this mod and the other potential weak point, the out board self-tappers has so far failed.

ted with modification but need to be slimmed down some to fit between the lower wishbones. At this point a decision regarding gear ratio has to be made, with only a 60T ring gear available to couple with a 12 or 13T clutch bell choice is limited. A 13 came with my kit but I would have liked an 11, so I settled for a 12. Maybe Manta will be producing an 11 before too long as the 5 to 1 ratio doesn't give the punch out of corners that I would like, particularly with big tyres.

The plastic inserts for the servos were trimmed to fit 17ms and fitted in place. The push rods were fitted and the receiver and battery pack held in place with the almost mandatory balloon and rubber bands. The normal Futaba battery pack look decidedly wrong as a 'Long' pack was made and fitted.



Top arm of servo saver is counterbored on top carefully using ordinary drill the same diameter as screw head to depth of the head.

With the rolling chassis complete once again the clutch was assembled onto the Picco engine fitted with an extended shaft. This makes life very much easier, requiring only two spacer washers behind the taper collet to get everything lined up. Other flywheel/clutch combinations could be fit-

Arrange and connect batteries as shown. Tape to glass fibre stiffener drilled to fit radio tray secure with bolts and rubber grommets.

The moment had now arrived when everything was ready to go but a look at the clock confirmed it would not be very sociable to actually fire up and try it up and down the road. Rushing home from work the following night, quick Hello to the wife and kids and out to the garage, fill tank with fuel, connect glow plug, apply starter and away it went—well almost! Something cold and wet dribbling all over my hand told me something was wrong, remember the fuel tank that looked OK well it wasn't.

A few choice words and the car was hung out to dry while I went and had tea. Resuming the action the fuel tank was removed and inspected for faults, nothing visible so off to the kitchen for a bowl of hot water. With the inlet and outlet linked with fuel tube the whole tank was submerged, amidst a frenzy of bubbles. To cut a long story short, when putting the tank together use Silicone rubber liberally to seal around all joints and self-tappers including the inlet and outlet tubes. At last it was ready to go and at last it did and so it was put on charge ready for the weekend trip to Lilford.

After the usual problems in setting up the engine a couple of tank fulls were run through progressively leaning out the mixture taking care not to go too far. First impressions were favourable as the car was very smooth and precise but, as more power became available as the mixture was leaned out, understeer became a real problem. Flattening the wing and moving it forward had little effect and so the front tyres which were supplied with the kit were changed. Fortunately PB wheels will fit with a wrap of tape around the axle which is 6mm as opposed to 6.4mm. A set of 202s were fitted which helped the situation but were not a complete solution. During the following week a few spares were bought just in case, plus a set of hubs to allow further experimenting with tyres. A full check was made of the car and a thorough clean. While in this unusual state it was put on the kitchen scales and weighed in at 5 pounds 4 ounces.

The following Sunday was a Club race day and therefore a chance to compare performance in real terms. At a previous club meeting I had run my old flattie and a modified rapier both achieving 15 laps in 5 minutes plus, my best with the Alpha stands at 17 laps. I was therefore very pleased to achieve 16 laps in 5 minutes minus first time out against the clock with the Manta. Several more runs failed to beat this due to various (driver?) problems only one directly attributable to the Manta this being the moving of the rear suspension pins. During the 15 minute final, in which the Manta completed 46 laps, one of the pins holding the wishbones was actually lost but wasn't noticed until back in the pits. The pins are retained by a 'Cotter-Pin' type method, after the problem of them moving they were carefully marked and a hollow ground to provide positive location.

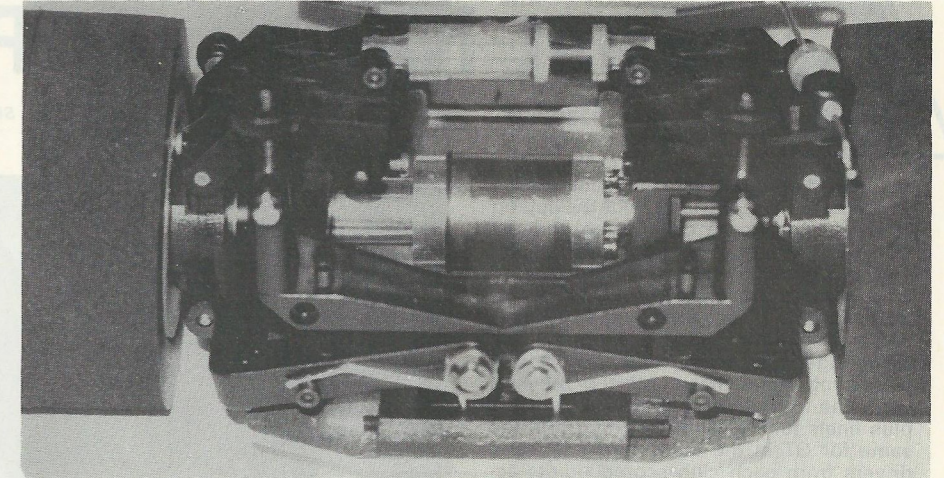


Hold pin on outside of respective hinge point and carefully mark position of retaining screw. Grind a shallow hollow as shown.

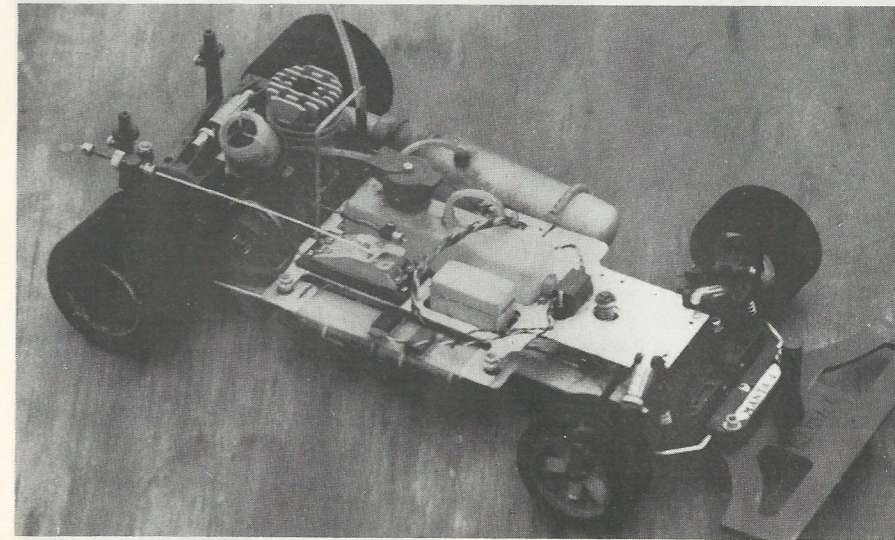
Since doing this the car (the mantuabit anyway) has been 100% reliable even the ring gear which gave concern at first sight has not shown any signs of wear or damage.

During all the running and experimenting a growing frustration has evolved

namely understeer (i.e. won't turn as tight as the lock applied should give). This is certainly an advantage for the novice and preferable to oversteer but I feel the car could go faster with a bit more front end. Having tried various tyre combinations, but not all, no total solution has been found. The worst being the kit tyres and the best to date 202s. Rear tyres have been no problem all have worked including the kit tyres and 2402s! However, what effect more the front end will have on the rear remains to be seen. First thoughts were that the rear ward C of G was the cause of the understeer but even 4 ounces of lead on the front bumper didn't help. Time to 'Play' before the nationals ran out as did my luck at the nationals when the crank pin on my almost brand new Picco parted from the crank putting an end to any hopes I may have had. Only one consolation was that during the 12 laps I did manage to complete only one car passed me and stayed in front, small consolation for a blown engine.



Rear springing, mono shock and suspension detail.

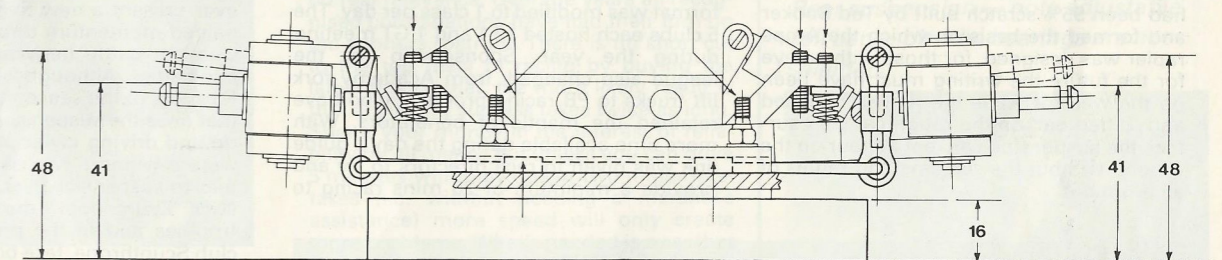


Manta with body off and radio in — note RX battery pack.

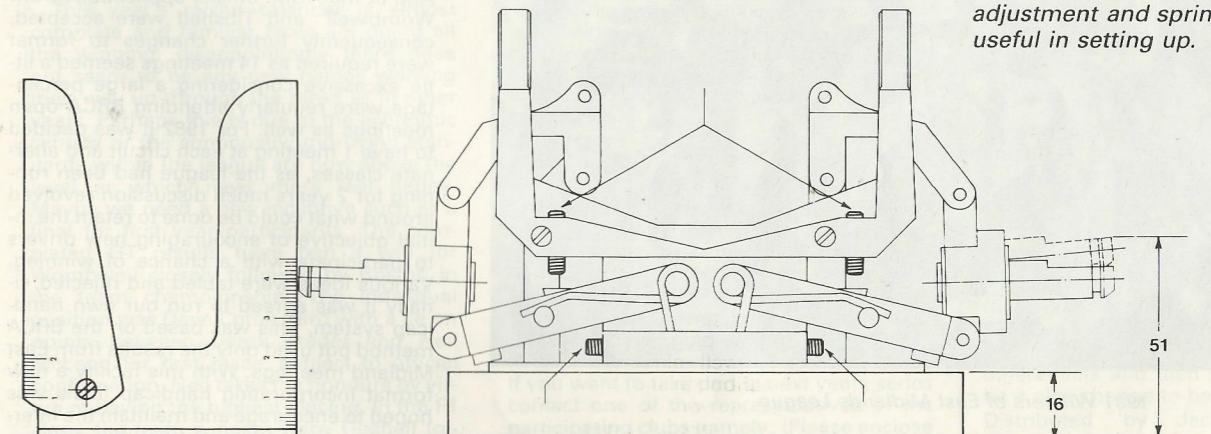
The next step which the weather has prevented testing so far, is to try reduced castor angle which, if my old school protractor can be believed, is 12 degrees as standard. It is hoped that this, combined with further tyre experimenting and different wing angles, will give more steering. The answer can not be far away but does need to be found. I should point out at this stage that the problem may not arise at circuits other than Lilford as at West Burton the problem was far less acute.

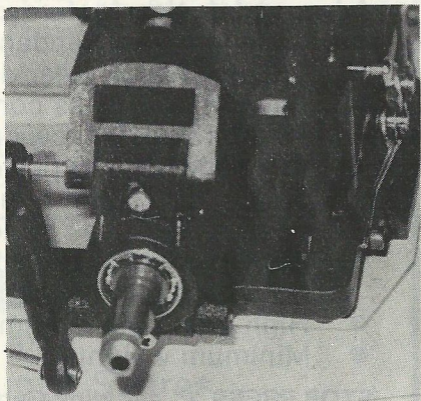
In conclusion the car certainly has price and simplicity very much in its favour and a performance to please. There are a few criticisms mentioned but they are superficial and may be dismissed by a driver with a different style. The biggest problem Manta have is in wooing a couple of the top drivers to drive a Manta 4 and thus make the car publicly acceptable. Unfortunately, unless someone with the track record to make people take notice is forthcoming,

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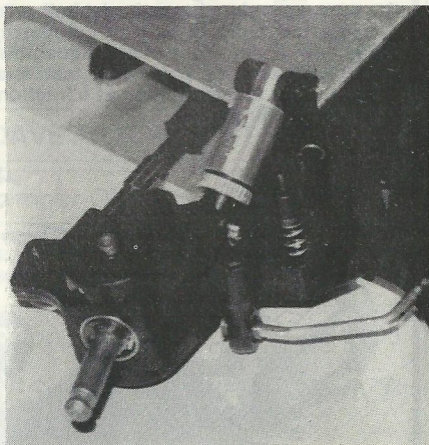


Front and rear suspension showing adjustment and springing detail. Very useful in setting up.





Rear suspension — note adjustable roll bar — pity the bearings are not shielded.



Front suspension detail showing anti-roll bar and nicely made "dumpy" shockers.

the buying public at large is unlikely to take the plunge and deviate from the trodden path. However, as a driver who in the past has been a season behind the fashion, first differentials and then suspension it might be a nice change to be in front.

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