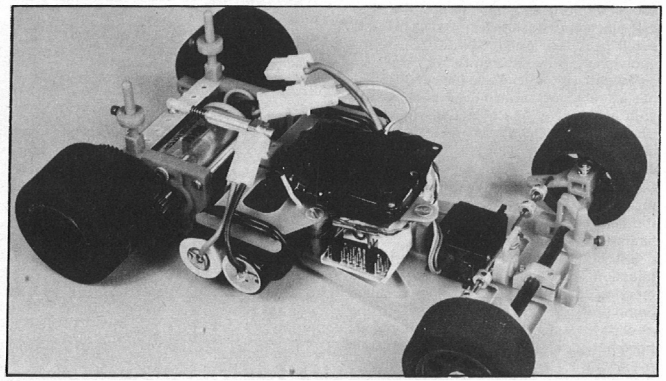
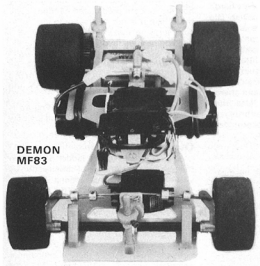
3-IN-ONE SPECIAL 1/12

ELECTRIC 1/12TH SCALE racing has undergone a welcome transformation during the past year with the almost nationwide acceptance of carpet as a racing surface. From club level right up to National BRCA meeting level, fair, competitive and enjoyable racing has re-kindled interest in this aspect of the hobby. Chassis design has also undergone substantial changes to cope with the 'high grip' nature of carpet (as opposed to non-grip nature of polished wooden floors). Various manufacturers, having witnessed the immense success of the *Associated* 'RC 12i' not only in this country but worldwide, have set to and produced their own answers to the *Associated* challenge.

On test here are three of the strongest challenge to be seen on the home front, the 'Panther' from American company, *Parma International*, 'Demon MF83' from *Demon Products* and 'C-Car' from *Schumacher Ltd.*





DEMON 'MF83'

Reviewed by LEWIS ECKETT

THE NICK ADAMS *Demon* 'MF83' car has undoubtedly been most keenly awaited by the 1/12th racing fraternity due, simply, to its long history of design, development, modification and testing. Prototypes of the car were first seen at the Ally Pally club late last year, these, designed and built by Mervyn Franklin (MF — Mervyn Franklin, see?). These first examples featured a rubber wheel rear end damping system, adjustable castor front end and lightweight GRP chassis and shaker plate construction. A great deal of further testing by the *Demon* team was carried out and subtle modifications made, leading one to suppose that at least Nick Adams has taken the pains to prove his product before launching it onto the market.

Construction

As is normal practice these days the *Demon* is supplied as a conversion kit containing just the bare chassis, motor pod and front end. A pleasant surprise was the inclusion of an accurate exploded view drawing plus written instructions on putting the car together and setting up.

The rear end goes together first and comprises of two injection moulded nylon bulkheads, two alloy rod spacers and a thin GRP plate. The alloy rod spacers are a push fit into the bulkheads and are then retained with alloy bolts screwed into each end. The instructions stress that the pod must be assembled completely square. Further advice from the *Demon* team is to cyanoacrylate parts together to form a super rigid assembly. The GRP plate fits across the top of the two bulkheads and provides the mounting for the shock absorber ball-joint as well as the rear body posts.

The main chassis is bolted to the motor pod next with alloy countersunk screws. The moulded bulkheads are already tapped to accept these and caution must be taken not to overtighten and strip the plastic thread. Not wishing to take any chances I cyanoed these in as well. The chassis itself is manufactured from 2mm thick GRP, deeply waisted at the rear end broadening outwards at the front. I must confess that at first sight it looked decidedly frail compared with other types available — still time would tell.

The front end follows on and employs the adjustable castor/axle beam system pioneered by *AYK* of Japan. The axle beam is machined from carbon fibre with aluminium end caps and centre section. Two injection moulded uprights clip onto the beam either side with an aluminium clamp in the centre to retain the beam firmly. The two end caps are pre-drilled to accept the kingpins for the *Associated* style stub axle blocks. To give front-end suspension two springs are fitted above the blocks and retained with circlips. To allow the axle blocks to move up and down freely it is necessary to either polish the kingpins or smear them with silicon grease. Grub-screws located in either end of the beam retain the kingpins and it is a good idea to file a flat on the pin and Loctite the grubscrew in to avoid any embarrassment at a later stage.

As mentioned earlier the stub axle blocks are very *Associated*-ish, however, there are subtle differences, for instance the stub axle placement has been moved back to offset it from the kingpin by 0.050in. thus allowing the wheel to centre more easily in a straight line. The outside face of the block has a small thrust area moulded around the stub axle exit to space the bearing away from the block. Finally the steering arm has an increased rake angle incorporated to allow it to clear all types of wheel hub.

To adjust the castor angle or kingpin inclination is simply a case of loosening off the centre clamp screws and rotating the beam to the required angle.

Still on the subject of the front end, the injection moulded uprights also act as steering overthrow stops, the problem being that, with this type of layout — using new style *Associated* blocks — the wheels have a tendency to push the steering arms over centre if shunted hard. This locks up the steering as the servo cannot push it back due to the acute track rod angle.

Moving on from the front end, the shaker plate screws onto three injection moulded nylon pillars, once again these have been pre-drilled and tapped. Apart from adding the front body post the only item left to prepare is the rear, motor-pod damper.

The *Demon* kit contains one of the new *PB Racing Products* shock-absorbers of the type used on the 'Alpha GP' 1/8th scale I.C. car. These shocks are of the 'constant volume' type, the damper piston moves through both ends of the barrel and is sealed with O-rings. As no air is contained in the barrel a smooth, symmetrical action is achieved. The shock-absorber in the *Demon* kit features a ball-joint and spring fitted to the damper piston. Filling the shock with oil (the instructions recommend 3-in-1) is quite critical to ensure that no air bubbles are contained. I left mine standing upright for an hour and experienced no problems.

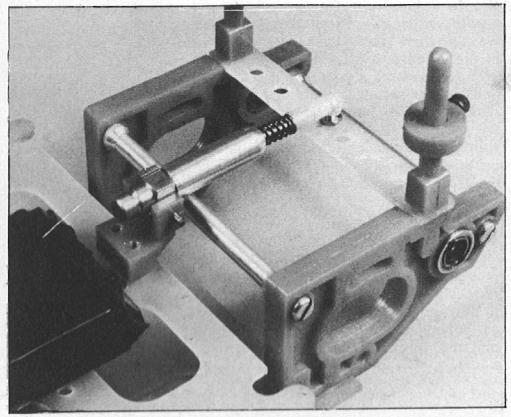
A small nylon moulded saddle mount retains the shock-absorber onto the shaker plate. The instructions contain information on how to set up the damper-spring arrangement to give the correct amount of rear end flex and ride height.

Bits and pieces

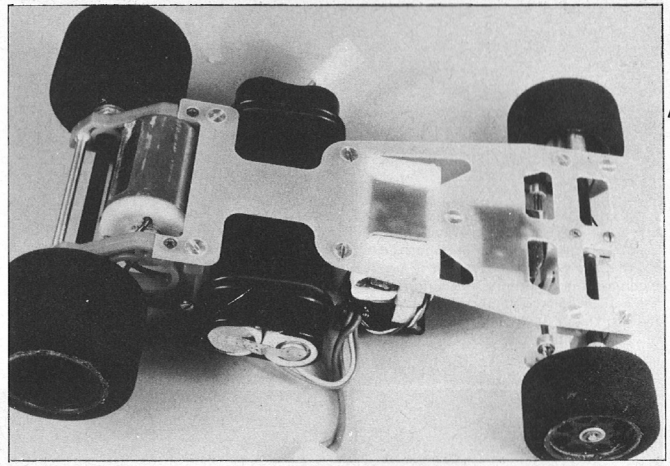
All my radio gear was transferred to the new car without problems, the shaker plate is designed to accept 'stick' type Ni-Cad packs retained with large rubber O-rings. These mount underneath the shaker plate giving the car a very low centre of gravity. The *Demon Products* '2C' electronic speed controller was fitted as a matter of course.

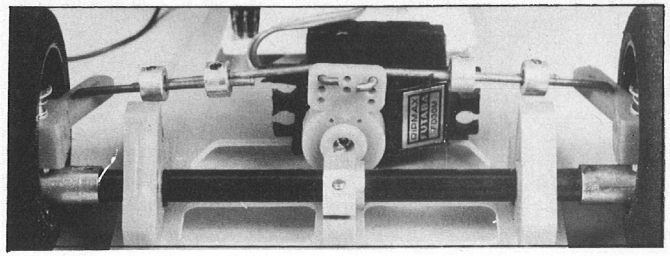
On the track

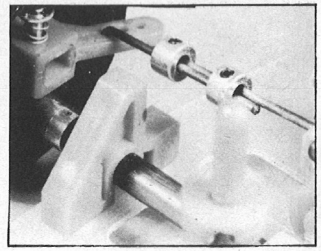
It's difficult to be positive about a car's performance around a circuit as so much of



Right; completed rear end pod including constant volume damper. Various racing sources recommend leaving the alloy rod screws out, thus allowing the bulkheads to twist and then return to their original position. Below; underside of the original kit chassis, the cutouts behind the front screws have now been reduced to give extra strength. Bottom left; complete front end, the alloy clamp screws should also be treated with a thread locking compound. Bottom right; steering blocks, steering overthrow/axle clamps and suspension spring.







End notes

The car is definitely well thought out and proven in its design by Nick and the rest of the *Demon* team drivers. £40.00 is still a lot to pay for what is ostensibly half a model car but considering the quality of the parts and the way in which everything fitted together first time it is well worth it. It feels good to race a British product anyway.

Finally, I did manage to break a chassis, albeit by running it at full speed into a wall pillar. The GRP snapped right across the cut-outs behind the front axle beam mountings. Still, a new chassis was obtained in double quick time and proved to be modified to make it much stronger in this area.

The *Demon* 'MF83' is available from selected model shops, price £39.95.