

# Track Test

## MARDAVE MARAUDER

BY COLIN SMITH

THE MARAUDER is *Mardave's* second venture into the rough and tumble world of  $\frac{1}{8}$  scale IC powered off road vehicles and is totally different from their first. It has a fully independent coil spring suspension system, in-line engine driving, fully enclosed bevel gears via their needle roller clutch unit.

Now as this was to be my first Track Test, and also my first IC powered vehicle, having only used the quiet, clean, variety before i.e. electric I decided that a beginner's approach would be adopted. However, after a couple of hours assembly, the car was almost finished and I had discovered that it was so simple to build a child could have done it, I had to scrap that idea and concentrate on an overall description and a few tips.

To start with *Mardave* have really gone to town on the overall packaging of the product, the glossy box has a very eye-catching picture of the finished car with its twin exhaust thrusting through the bodywork and two toned livery giving it a decidedly rakish appearance. On opening the box all the items are neatly laid out in a vacuum formed tray with the little bits bagged in polythene. The plan and instructions are quite superb, being on good quality gloss paper, they are very clearly drawn and to a large scale, thus leaving little or nothing to chance. A dural chassis, pre-formed at the sides, presumably to add strength and with the added advantage of stopping dirt flying up, houses all the interesting bits, i.e., the front and rear suspension units, plus a couple of other necessities such as engine, fuel tank etc.

### Construction

Starting on the rear end first you are confronted with two nylon mouldings split on their centre line which house the 3:1 reduction gearing and the swinging arm hinge pins. The drive is transferred from the engine to the rear wheels via a 2.5:1 gear set then the 3:1 bevel drive to a set of rubber Universal Joints. The UJs are assembled from a pair of flanged bosses with a rubber 'O' ring doing all the bending, etc., as the suspension is working. I had some reservations about the rubber 'O' rings but more of these later. The UJ fits between the crown wheel and the half-shafts, the latter having splined ends (not very deep splines) which are a tight push fit into the wheel hubs. There was no mention of flats having to be filed on the half-shafts or even thread

locking compound being used, so following the instructions to the letter neither were used. The gears were then well greased and the two halves bolted through the chassis and the dural top plate which is preformed to take the suspension springs.

Another modification was to radius the inner edge of the steering blocks, thus giving me 3-5° more lock. It's an effort to actually bolt the finished assembly on to the chassis NOT to hasten to add due to any misalignment of bolts, but merely that it loc



One deviation I made at this stage was to use my *Skyleader* SRC1 servo mount in place of the aluminium angle as supplied. The rear body mount will need a large washer to maintain the correct height.

The front suspension is of full independent coil sprung type and is made from a glass filled plastic. A small point to bear in mind when assembling is that the top and the bottom wishbones have chamfers to clear the springs. I built mine but it was easily rectified by drifting out the pins and rebuilding.

so nice that you tend to play with it, making the spring work! (Well, we're all kids at heart, eh, Ed). The unit bolts on to the chassis with an intermediate dural plate which lifts the unit and allows the chassis to act as a travel limiter for downward movement. Actually there is no upper limiter on either the front or rear, but it doesn't seem to need it. Once on the chassis, it looks and feels very stout but I wish a bumper had been provided as the wheels look a bit exposed, especially with all those trees and concrete curbs running out in front of the car (At least they always seem to when I've got an audience watching). However, no doubt one could easily fitted if desired. Steering motion transferred from servo to wheels via substantial servo saver and push rods, but why *Mardave* persist in the practice of bent rods, (non-adjustable) for linkages defies me; it is very difficult to get a linkage right first time using bent rods, so I substituted bike spokes and metal 'quick links'. Now I can adjust things to my own satisfaction especially as there is up and down movement of the suspension to cope with.

With the front and rear parts built a

mounted and having been on the floor of the lounge pushing it to see the suspension working, I had to fit the engine and radio. The chassis is pre-drilled for a *Veco 19* but I intended to fit a Super Tigre which was hastily removed from its current aeroplane and fitted with *Mardave's* standard clutch unit. This is their tried and tested unit and following Ian Peacock's advice (*Mardave* Stock Car 'Track Test') was well and truly

only hope the chemist has got some spares, although a piece of expanded polystyrene with *Solarfilm* over it is working well as a bung so far. Coupling the tank to the engine can be a bit fiddly especially if you fit an inline fuel filter but if you use *Radio Active* fuel tubing at least you'll only have to do it once because it's virtually indestructible, even pliers can be used on it and it's the devil's own job to pull off once it's on.

servos open to exhaust gasses, mud and water as soon or later these find their way through the cases on to the technical bits. (Use them like that unfortunately, but don't like it).

Having installed the gear, checked correct rotation, and threaded the throttle linkage past the roll bar and flywheel, this was tricky, but their illustration with a *Veco* looks straightforward, so no complaints.

### Body fitting

The roll case was then removed temporarily for body fitting. All lines are clearly marked on the inside so following these the shell was rapidly trimmed and fitted. The actual mouting was via a rear body post and a nipple on top of the front suspension.

The body clips are quite small so I made them captive with stout thread through a hole in the body. There's nothing as infuriating as a dropped body clip especially on a patch of rough ground. Fitting the wire mesh over the window opening is no problem, but cut paper patterns first as there is absolutely no allowance for wastage.

As you will see from the photo I did not fit the rear airfoil, partly because I thought it spoiled the looks but I'll be honest and admit that I put it somewhere safe and forgot where I'd put it. A quick blow over with a car aerosol after lining out with tape and a highly visible colour scheme was achieved. The stickers are available as an extra.

### Running the 'Marauder'

Unlike most test reports you read, my engine was an absolute pig to start (probably getting its own back after being ousted from its nice gentle slow flying biplane), the old fashioned starting method of an inverted bike wheel rapidly spun by my eldest son was used. Eventually it started and minus body for its first outing in the rear garden it was then allowed to demolish just about everything that was above 1/2 in. tall the 'Marauder' was much too fast for my backyard so strapping everything onto our bikes and a hasty call to my pal Alan Bedingham (he gets my engine running far better than I can and I knew he was dying to have a stir of the sticks) off to the local park.

This time it started easily and was soon running correctly with a nice low speed idle setting. Right, easy on the loud button, and she eased forward beautifully, proving the clutch worked well, the steering was more or less right first time and at a lowish speed it looked terrific rumbling over the grass. I was so unusual seeing the suspension working that I tended to forget about other things and the tank ran out. Refueling was quick and still without body we decided to open her up a bit. One small problem — NOISE, boy is that silencer noisy at speed. Anyway, at full speed the directional control was debatable. By debatable should explain that the dew was rising, I



tightened on to the crankshaft. A nice point is that although a 1/4 in. type is provided *Mardave* will exchange it for a metric type should you require it. Motor mounts are steel rod drilled and tapped to receive studs, so it was an easy job to bolt them on to the motor and offer up to mark the holes on the chassis. (They're pre-drilled for a *Veco 19* remember). A simple filling job with a needle file to elongate the holes and hey presto, one engine fitted. Spin the rear wheels by hand to make sure the gears are meshing correctly, if they aren't you've done something wrong.

A very nice twin piped exhaust/"silencer" of the dustbin variety is available as an extra; this is mounted by a neat, simple clamp. The twin pipe set up is part of the 'Marauder's' rakish good looks as they poke through the body but I suspected they would be noisy. No heat sink was supplied nor was an air filter but a suitable one was purchased and fitted, the air filter is essential, as of course is the heat sink. *Mardave* make both these items as extras.

A fuel tank straps on to two nylon body posts with elastic bands and has a rubber bung for a filler. Don't forget to wire it on to something — I didn't and out it popped — I

### R/C equipment fitting

The radio is housed in a plastic box amply large with a raised section for the switch which corresponds to a depression in the bodywork. The box top is held in place with two self-tapping screws which make a quick release steering linkage essential as the servo pokes out of the box top. The motor servo is stuck out in the elements on top of the gearbox.

Although the radio was simple to install a lot could be learnt from the boating fraternity regarding waterproof boxes, bellows, etc., etc. Personally I do not like

was by now 7.30pm and the grass was about 1in. long.

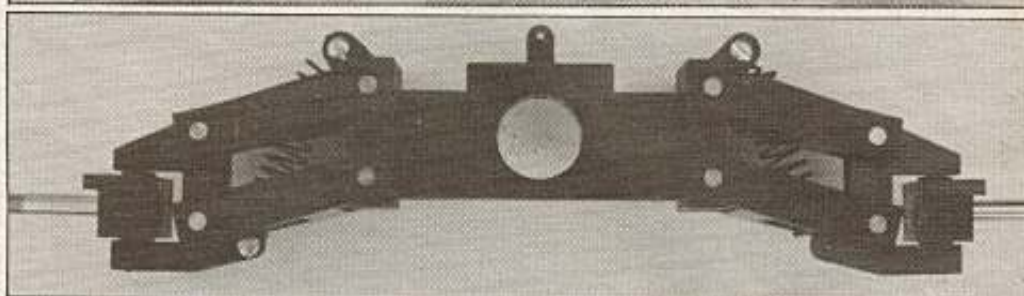
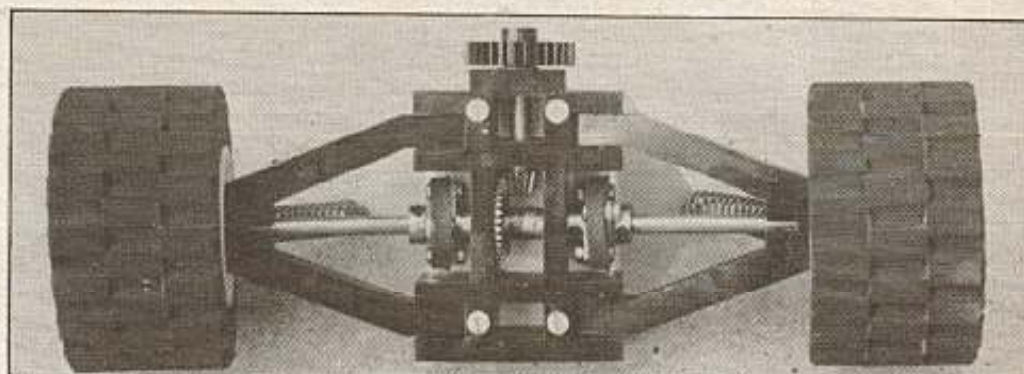
No problem for the 'Marauder,' in dry conditions but in the damp the sponge tyres do not grip well and by the time you've debated to do a right turn the car has spun right round two or three times and dashed off left, hence the debatable steering. The car has since been tested on tarmac and a bit of rough gravel and has behaved impeccably. We understand Mardave have had problems with the rubber 'O' rings on the UJs but have replaced them with a 'Polysomethingor the other' variety which have given no trouble, and the nylon bearing blocks on my early kit have been replaced with ball raced tyres. All this goes to prove that if they have a problem, it's soon sorted and rectified.

The following hints and tips are worth passing on as they came to light through the test sessions.

1. File flats on end of half shafts.
2. Grind flats on end of bevel gear shaft



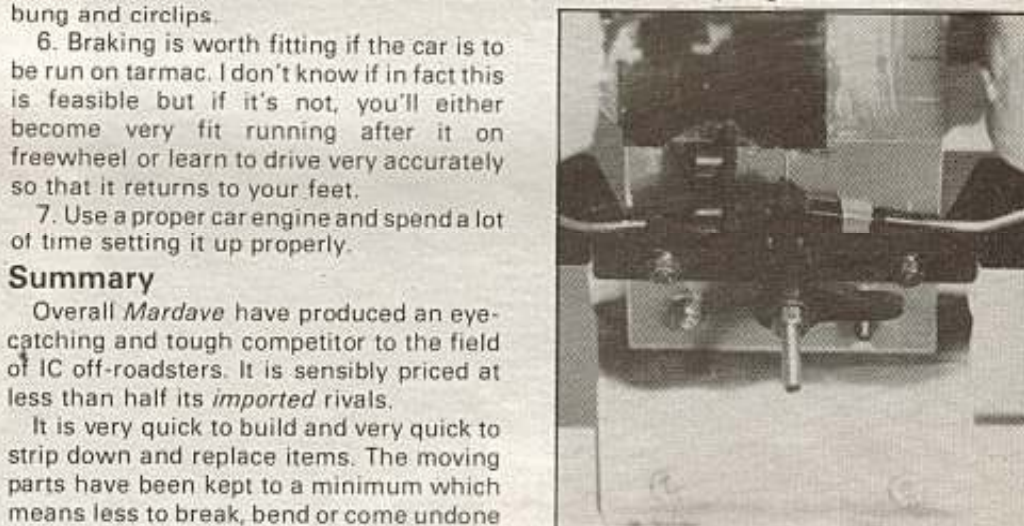
Above left: does it bite? the author's wife with the finished buggy. Here the clean, uncluttered look to the finished Marauder.



Top: the rear end assembly from underneath showing the drive gears transmission and universal joints.

Above: Marauder front end, ready to be fitted to the main chassis.

Below: close-up of gearbox.



(it's toughened steel.

3. Loctite all screws especially those on the UJs.

4. Loctite the rear wheels to half shafts.

5. Wire or tie on all loose bits i.e. Tank bung and circlips.

6. Braking is worth fitting if the car is to be run on tarmac. I don't know if in fact this is feasible but if it's not, you'll either become very fit running after it on freewheel or learn to drive very accurately so that it returns to your feet.

7. Use a proper car engine and spend a lot of time setting it up properly.

### Summary

Overall Mardave have produced an eye-catching and tough competitor to the field of IC off-roadsters. It is sensibly priced at less than half its imported rivals.

It is very quick to build and very quick to strip down and replace items. The moving parts have been kept to a minimum which means less to break, bend or come undone whilst running, resulting in a stronger car,

It is slightly on the noisy side. (No doubt Off-Roaders will learn like everybody else that unless adequately silenced, facilities will be lost due to noise — we (they) might like it but others don't). Virtually no wear was found on any of the suspension bearings but some form of damping could be used at speed as it does tend to bounce a bit on rough ground, but it behaved perfectly on a car park taking the white lines at speed with no problem. The Sponge tyres are not particularly effective on damp grass but no doubt a different type of tyre can be found.

(What about cutting up a rubber floor mat from a full-size car — you know, the one with long pimples and sticking it around the circumference). Overall verdict NICE ON MARDAVE.

Manufacturer: Mardave Racing, 3 Roelcliffe Road, Woodhouse Eaves, Loughborough, Leics. Available from most good model shops.

Price £49.50.

