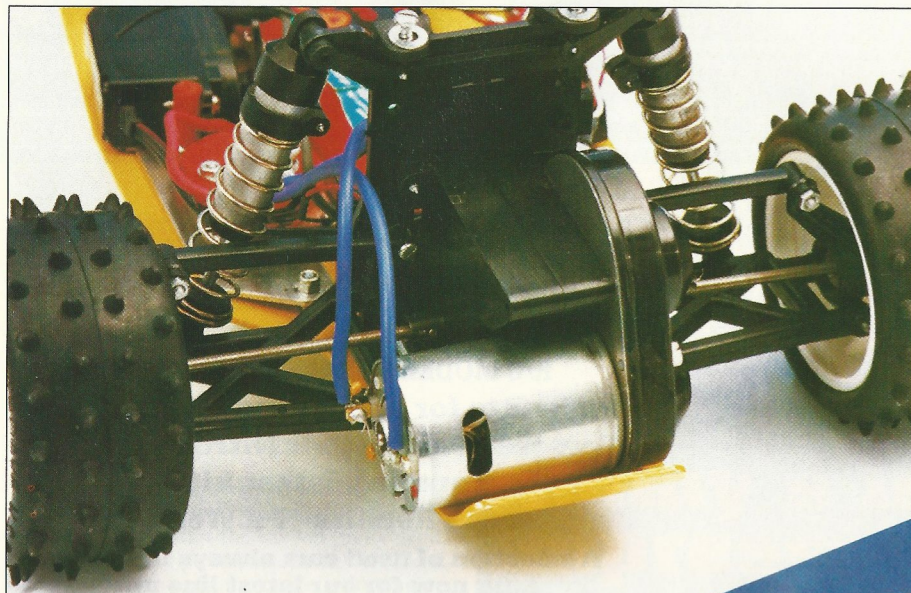


KIT REVIEW

MARDAVE COBRA SPORT



The fixed length top links prevent novices getting the camber angles wrong, and are more economical to produce than turnbuckles. The Mabuchi 540 motor supplied is quite fast enough for the real beginner...

Like thousands before me, my first faltering laps in electric Off-Road were completed driving a Mardave's Meteor. Due to its simplicity and rugged reliability, the venerable old Meteor was, for many years, a firm favourite with

beginners. Its main failing however, was limited upgradeability. Novices quickly outgrew the car in its basic form, and were forced to change vehicles altogether when the car became the limiting factor.

In 1993 Mardave introduced an all-new car, specifically aimed at the cost-conscious racer. Named the Cobra, this was a serious option for competitors on limited budgets (see the review in RRC May 1993). The specification for the new Cobra was much higher than that of the old Meteor, but unfortunately for Meteor owners, parts weren't readily interchangeable between the two stablemates.

Therefore, the Meteor remained limited in its ultimate capabilities, and beginners continued to face a complete swap of car on their way up the learning curve.

The answer to this incompatibility was obvious: Mardave could put the ageing Meteor out to pasture, and replace it with a de-tuned 'Sport' version of the Cobra! That way learners could cut their teeth on a basic car purchased at a budget price, and then, as their skills improved, could simply upgrade the rolling chassis to full Cobra spec at minimum cost. Simple, eh? Thus was born a new entry level car, the Cobra Sport, and this is the model up for scrutiny here.....

Enticing the Cobra out of its box (basket?)

First impressions are always important. Beginners can be put-off by kits which appear overcomplicated and difficult to build. Top marks here for the Cobra Sport, as it's well presented in a smart box, with neatly packed components that look invitingly easy to assemble. The backbone of the car is a brightly painted one-piece alloy chassis plate, onto which the various plastic components for the suspension assemblies, transmission housing, and control mechanisms, are screwed and bolted.

The build up sequence is explained by three different sheets. First the comprehensive written instructions, which are neatly laid-out and



sprinkled with well-defined photos. Second, a superb exploded diagram, which clearly numbers every component and third, a fully descriptive list of spare parts, complete with prices. Each aspect of the assembly can be easily understood by referring to one or more of these helpful documents.

Adding Flesh To The Bones

The assembly starts with the front suspension and steering mechanism. This is a very straight forward operation, and sets a positive tone for the



Reviewed by
Mike Rimmer



A SURE-FIRE SUCCESS FOR THE NOVICE!

rest of the construction. The overall design of the chassis and the mechanics are blissfully simple and functional, and all of the parts slot neatly together without any need for modification.

The outer pivot points of the suspension are formed by gently hammering a thin steel pin through pre-moulded holes in the plastic components. This greatly aids rapid assembly, but do keep a stout pair of pliers handy in case you pin the wrong parts together. I'm speaking from experience here! The shock absorbers are metal bodied and show a distinct improvement in quality over the Meteor's old plastic units. They go together easily, and on the most recent kits MARDAVE even supply a bottle of damper oil, which is a nice touch.



A SURE-FIRE SUCCESS FOR THE NOVICE!

The transmission unit is of the gear-driven variety, and the differential mechanism is supplied ready assembled. The main bearings are caged ball races, with plain nylon and bronze bearings supplied for the intermediate gear and lay shaft. All of the components fit neatly inside the two halves of the transmission housing, onto which bolts the metal motor mounting plate. Consistent with the construction so far, the assembly of the transmission was quick and simple, also being easy to dismantle and re-assemble for routine maintenance.

The rear suspension was rapidly built onto the transmission housing, and after just a couple of evening's work, the rolling chassis was almost complete. Just the motive power, guidance system, and finishing touches to go.....

Under The Hood

As do the majority of entry level cars, the Cobra Sport is supplied with a mechanical 'wiper board' speed controller and standard motor. The speed controller looks familiar as a development of the reliable old Meteor unit, and the motor is the ubiquitous Mabuchi 540. These are the accepted starting point for beginners, but both are easily replaced with an electronic speed controller and a more powerful motor once the basics of driving technique have been grasped.

Even the rawest beginner should have little trouble installing the radio equipment. The written instructions are clear and very much 'back to basics'. The servos for both steering and throttle are held in place with the double-sided

adhesive tape provided; not my favourite method admittedly, but neat and clean. The completed installation is very tidy indeed, and allows easy access to radio equipment and batteries. The body shell is vacuum-formed from clear Lexan. With the all-important photo session in mind, I passed the painting job over to club mate Keith Hiron. If, like me, design is not your strong point, then note that there are now a number of professional designers/painters who can do the job for little more than it would cost you to purchase the specialist paint. Fitting the bodyshell is a slow "snip-it-and-see" job, but patience is rewarded when the completed vehicle emerges looking very attractive and business-like.

Tying Up Loose Ends

Building the car was a very quick process, and relatively uneventful throughout to boot, and I hope I've conveyed that impression to you by not interrupting the foregoing text with tales of minor problems. I decided instead to voice all my minor moans under the one heading; but they are few, so don't blink or you might miss them!

1) Throughout the instructions you're told to 'open the front suspension pack', and so on; but the various bags of components aren't actually labelled Beginners, who may not easily recognise

Not many cars have bright yellow chassis plates! Even using a rotary speed controller and servo, the radio area is relatively uncluttered. The Cobra Sport is an excellent base upon which to build experience. The Cobra TQ has made BRCA National A Finals. Nuff said?

the kit's parts, could appreciate the bags being identified clearly, possibly by numbering or lettering as many other manufacturers do.

2) I found that the plastic 'servo saver' bell crank in the steering mechanism was rubbing on the chassis plate, causing stiffness of movement. This was easily cured by placing a thin metal washer under the metal centre post.

3) The throttle servo is mounted on the speed controller's heat sink. If you fit a motor that is more powerful than the standard one supplied, the heat sink becomes warm which reduces the grip of the double-sided mounting tape. As a precaution I fitted some plastic mounting posts to give extra security for the servo (see photo).

4) The locking nuts on the suspension top links are awkward to tighten correctly, so I recommend you invest in a box spanner and an open-ended spanner to suit.

That's it! She's Ready To Roll!

When the car was ready for testing, the weather conditions at the time decreed that the initial race tests had to be performed indoors. This meant the heavily spiked outdoor tyres needed changing. No problem here as the Cobra's wheels

The Cobra Sport differs from its older brother, the Cobra TQ, in that it has fixed length upper links at the front and rear.

are the standard 2.2" diameter, so you can choose from a wide range of competition tyres. In fact the fronts proved OK, but Schumacher 'Micro Spikes' on the rear were just the ticket on our carpet covered track. A few practice laps proved the car handled well straight from the box, with responsive steering. The suspension felt a bit stiff, but I thought I'd let all of the moving parts loosen up first before making any alterations.

As the 'Cobra Sport' is intended for total beginners, I handed the transmitter over to 9

year old Andrew Hart, and he certainly gave the car a thorough work out; but it came bouncing back for more! During the meeting we fitted a 27 turn stock motor for a moderate speed increase, but the car retained its docile handling, so at the end of the meeting we both gave the Cobra the thumbs-up for all-round performance and reliability. Subsequent sessions were equally successful and uneventful.

When the weather cleared up, it was time for some outdoor racing. Our Club is fortunate in having its own purpose-built multi-surface track; the next venue for testing. By now I was very comfortable with the car, and decided to take it another stage forward. I replaced the mechanical speed controller with an electronic unit, and fitted a 15 triple modified motor and 1700 cells. The rest of the rolling chassis remained unchanged.

Those spiky tyres were again the first component to come under scrutiny. On soft ground, like grass and astro turf, the rear wheels gripped well; but on hard ground, like clay and cobbled stone, the rear end grip was poor. As a result, Schumacher 'Mini Spikes' were again fitted on the rear, while the Mardave kit front tyres continued to work well on all surfaces.

The rough terrain and increased speed highlighted the handling, which now felt a bit 'wooden', confirming my suspicions that the suspension was over-damped. The shockers were refilled with 10 weight oil, in place of the heavier oil which Mardave had provided, and stronger springs were fitted on the rear units. This livened up the suspension considerably, and allowed the car to start soaking up the bumps, with a significant improvement in handling.

Once a beginner has arrived at the point where the Cobra Sport is proving to be the limiting factor, it's time to think about improving the efficiency of the overall chassis by uprating it to the full 'Cobra TQ' spec. This involves: replacing all of the plain bearings with ball races; fitting a slipper clutch to reduce wear and tear on the transmission; opting for stronger GRP or Carbon shock towers, and then adjustable top links to help fine tune the suspension. All of these parts



The steering's servo saver benefits from a small nylon or alloy washer placed on the shaft beneath the assembly to reduce friction. This makes the movement smoother.

are readily available as spares from Mardave

It's also worth bearing in mind that there are several independent manufacturers who produce chassis upgrades specifically for the Cobra cars, and that components from other cars can be grafted on as well. In fact, the range of upgrades on offer is extensive enough to fill another review feature in this magazine, and that's exactly what I'm working on right now - so watch this space for further details.....

My Opinion

This is always the hardest part of any kit review; trying to crystallise the overall impression into a few short paragraphs. 1/10 electric Off-Road racing, even at Club level, is a World of spiralling technology. Cars are becoming more and more complex as manufacturers compete to introduce the latest state of the art feature, but it's a fact of life that not all racers are in a position to afford, or even appreciate, all of this finesse.

Therefore, in this increasingly expensive environment, the Cobra Sport (and the Cobra TQ for that matter!) is a refreshing dose of down-to-earth, affordable fun. It's not the most mechanically sophisticated car around, nor is it intended to be. Mardave's niche in the current

market is producing solidly designed, well-engineered and reliable cars at a sensible price - and this they do well.

I like this car very much. It is quick to build, fun to run, easy to maintain, and is an excellent introduction to electric Off Road racing. Beginners will rapidly gain confidence thanks to its predictable handling and reliable performance, whilst the competition success of its elder brother, the Cobra TQ, proves that it has the upgrade potential to grow in its capabilities along with your developing skill and experience. At around £80, it has to be regarded as very good value for money.

Manufactured and distributed by: Mardave R/C Racing, 7 Heanor St., Leicester, England. LE1 4DB, and available from all good model shops.

