

traxxas

Jeff Driver builds the American challenger to the Shotgun



NORCA and ROAR may not mean an awful lot to most U.K. readers, but if you come from across the ditch as they say (the Atlantic Ocean if you have not figured U.S. speak) then the national races organised by these

organisations are the pinnacle of the US racing calendar. To perform well here is no mean achievement. You are up against the U.S.A's and probably the worlds best, so to even get into a final is something to be proud of. Any manufacture needs some competition success if he is

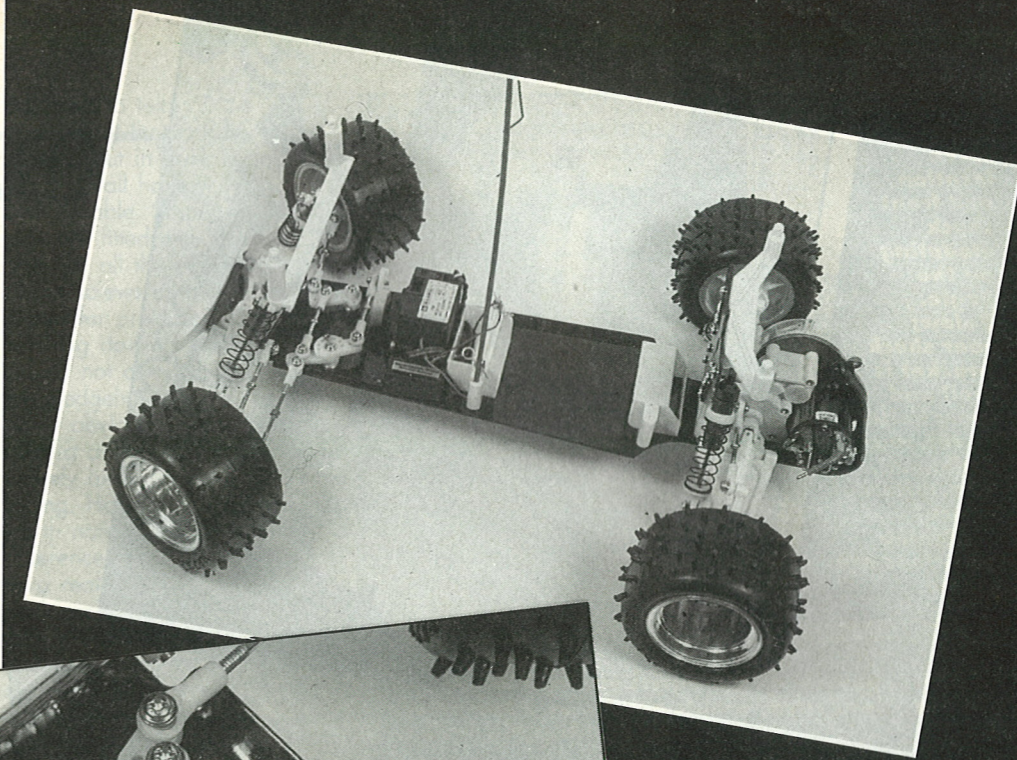
going to carve a place for his company in the fiercely fought commercial world. Of course we all know that commercial success does not just end with winning races. There is a lot more to the business. However to win races with relatively unknown drivers is even more of an achievement. So it was that during 1990 Traxxas entered

RADIO CONTROL MODEL CARS

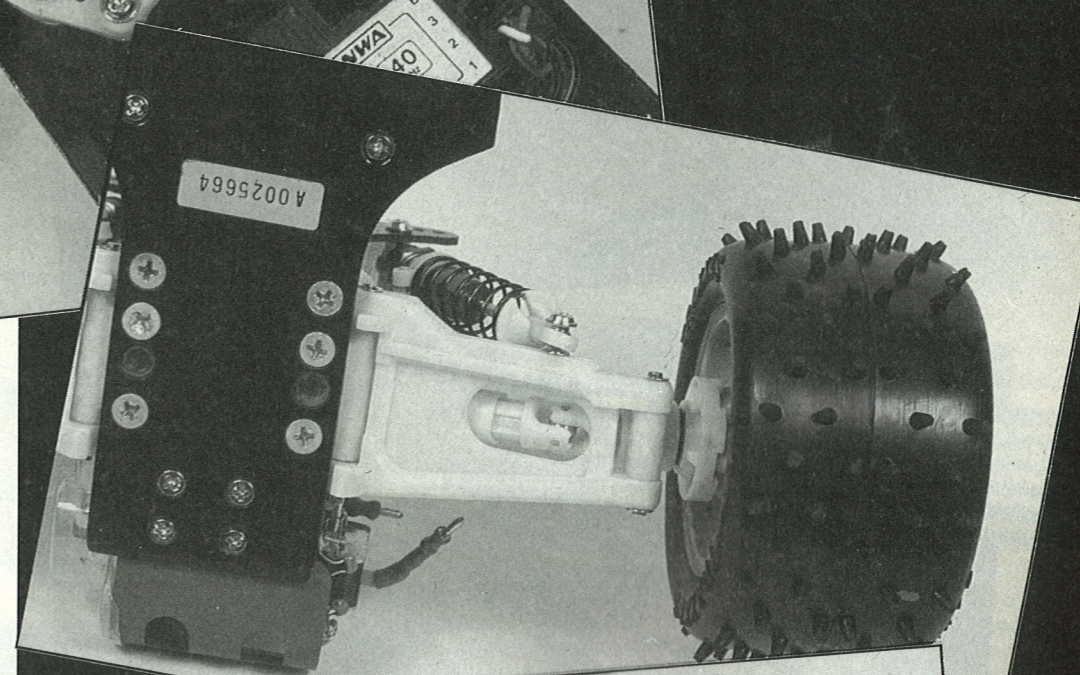
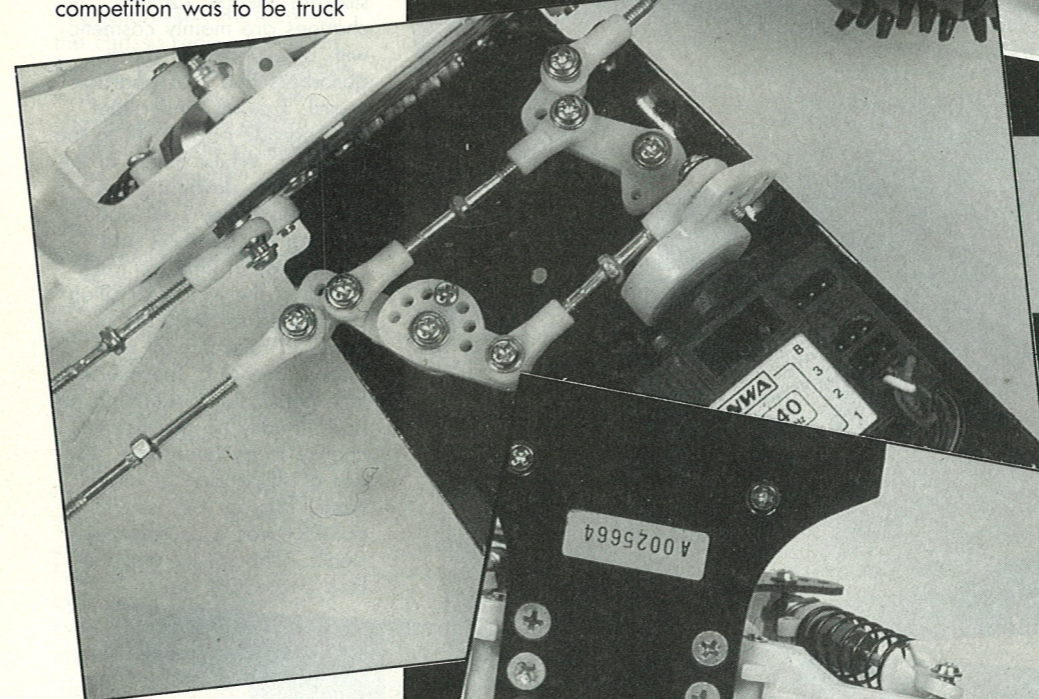
the major US events with a determination and dedication that would be envy of McLaren or Ferrari. This dedication has paid off. Now Traxxas has an ever increasing list of top race successes behind it and some very high hopes for the forthcoming 1991 season. This truly amazing success rate has had quite a number of prospective U.K. importers beating a trail to the Traxxas front door. Who will be the lucky winner, we must just wait and see.

Where to Start

The chosen area of competition was to be truck



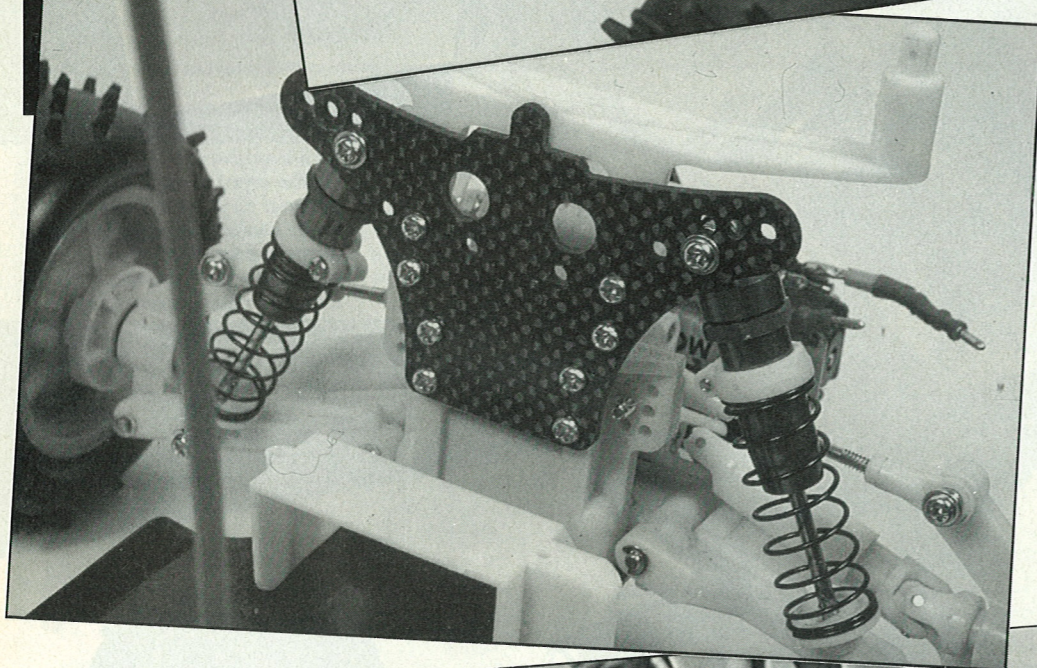
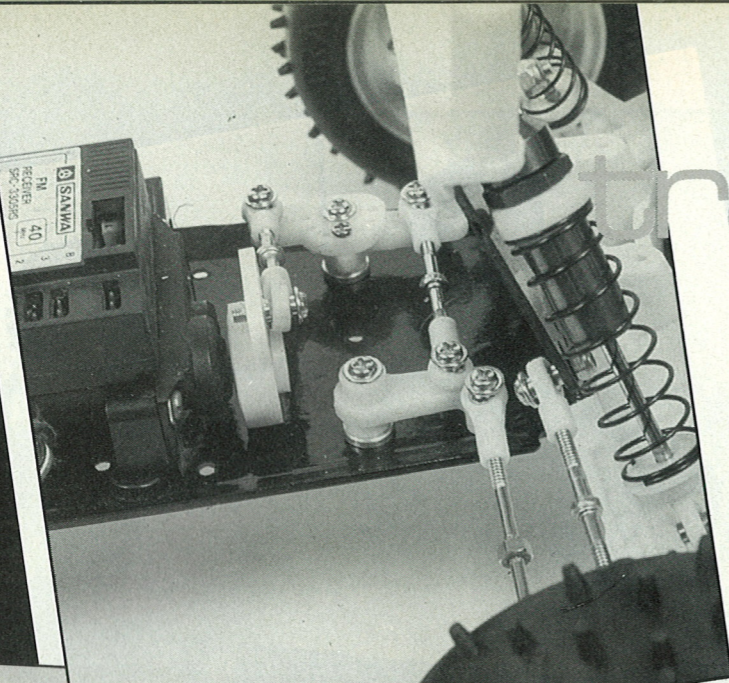
Above; chassis is slim and radio equipment is all placed towards front. Left; steering system uses simple servo savers sensible ball joints. Below; rear suspension



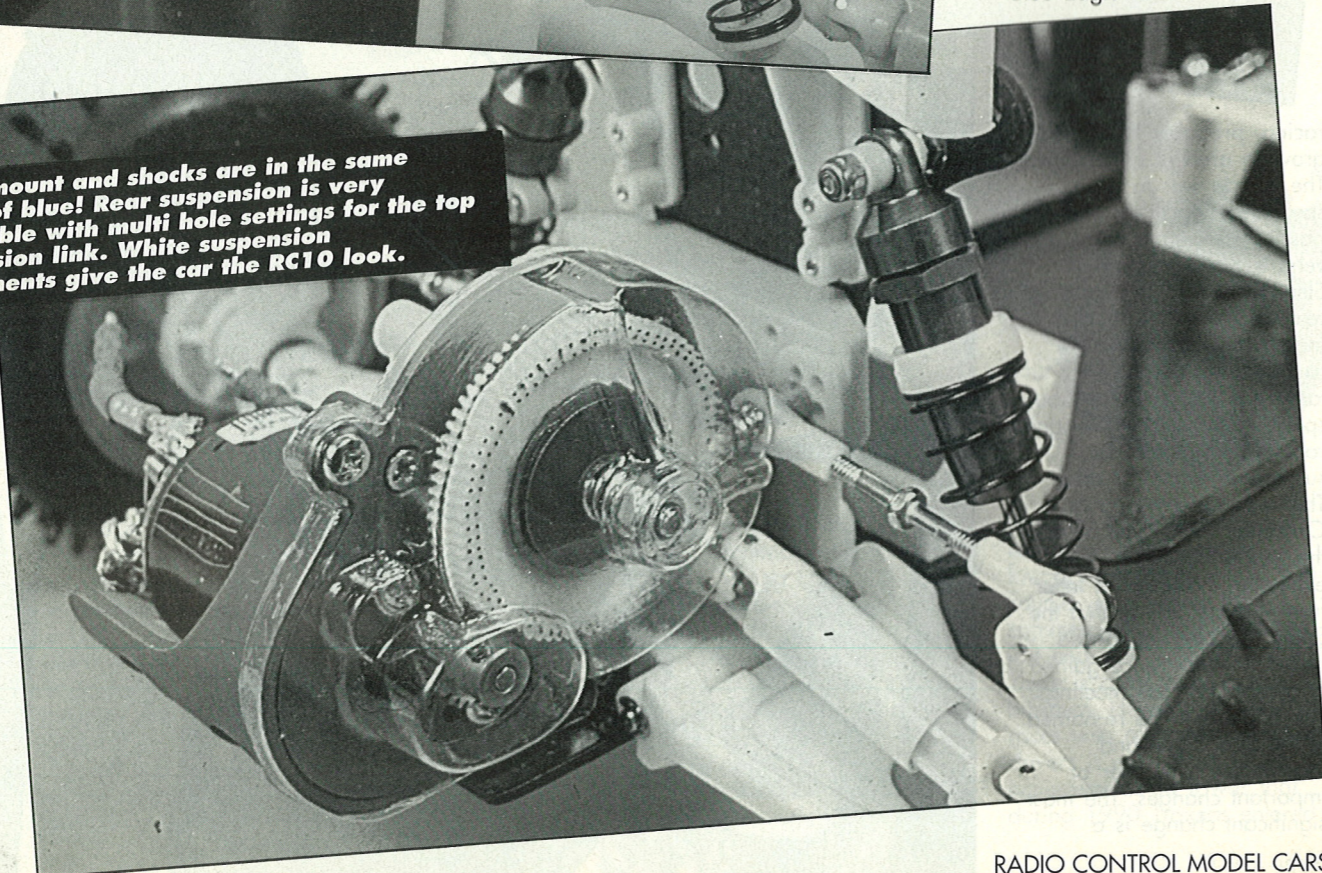
racing, probably the fastest growing area of RC hobbies. The vehicle was to be a specific racing truck. The basis (if only just) of the vehicle, the Traxxas Sledgehammer. This truck was reviewed in RCMC some months ago. However the racing Eagle is not just a tarted up Sledgehammer but specifically a custom designed racer with new chassis, suspension and final drive. That was the story up to Christmas 1990. Just before the Model Engineers exhibition I received a letter from Traxxas to say that the Eagle has been enhanced, based on experience gained at recent U.S. race meetings. The Eagle is to be re-named to the Blue Eagle and incorporate a number of important changes. The most significant change is a

APRIL 1991

Right; servo location and front shock mounting on the Eagle. Below; rear shock bracket is well and truly bolted to the rear bulkhead, five different shock mounting positions are given.



Motor mount and shocks are in the same shade of blue! Rear suspension is very adjustable with multi hole settings for the top suspension link. White suspension components give the car the RC10 look.



Traxxas Eagle

modified gearbox and a new steering linkage. Other changes are mainly cosmetic with blue anodised shock absorbers and rear gearbox guard. Traxxas kindly sent the upgrade parts to fit to the Eagle kit. Whilst others in the family were devouring the Christmas turkey I set about building the gearbox and other parts in time for truck racing at the M.E. exhibition. I managed to persuade a friend to race this all new truck at the M.E. (he needed little persuasion). Although he had virtually no practice or chance to try alternative set ups of suspension or motor types. This, as they say in politics "was a courageous step". Although he and the Blue Eagle took no

outstanding honours, both survived the day intact, despite a flat out run straight into the rostrum, which must say something about the Traxxas if not the driving.

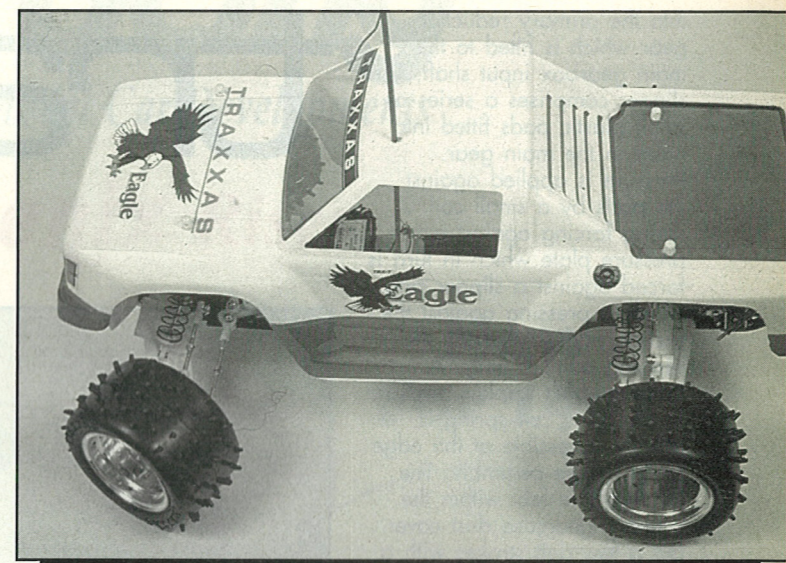
Chassis and suspension

Looking at the major features, firstly there is the chassis. Gone is the injection moulded tub chassis and in comes a carbon fibre pan. Not just a straight forward piece of graphite plate cut from a bigger sheet, but a custom formed chassis with the edges turned up to provide maximum longitudinal rigidity. I thought on initial inspection that the finish on the chassis was, well, a bit on the tatty side. In fact this was not the case as the chassis has been coated with a special abrasion resisting paint. This ensures that bits of the chassis do not drop off should the truck make unscheduled contact with immovable objects. Having myself made quite a few components from carbon fibre, both with wet resin and pre-preg I know that one of the biggest problems are the effects of abrasion. That is, when the chassis rubs on the ground it tends to get worn away, sort of a sacrificial chassis. Once this starts to happen the chassis very quickly loses strength and even more bits fall off, the material becomes "friable". Coating the carbon sheet should go a long way to cutting down this problem. Even the front kick up of the chassis is formed in the carbon fibre moulding. Small features like this all come together to save weight and increase strength. The chassis under-side is virtually completely clean, no lumps or bumps to be knocked off or get in the way of things in or on the track.

Suspension

Both front and rear suspension arms are quite long, (front approx. 70mm and rear approx. 70mm) this ensures a very wide track (approx. 260mm front and rear, at maximum travel position measured at tyre mid points) and provides a high level of stability. The wishbones are made from virgin Nylon and carefully

designed to take all the punishment that can be handed out in truck racing, which in all honesty is considerable. Suspension pivot pins are fitted with E clips and like all the pins and most of the screws in the kit are plated for protection and easy washing down. I know I should not compare this kit to the Sledgehammer as it is pretty obviously intended for quite a different activity, namely highly competitive racing. However it is perhaps worth noting that some of the differences do mark the Eagle as a real contender for the truck racing honours. One such difference is the inclusion in the kit of blue anodised metal shocks. These work extremely well and replace the good but less robust double plastic dampers of the Sledgehammer. Traxxas have decided that the metal type are so good only single ones are needed at each wheel. Incidentally the shock absorbers come with three alternative pistons, offering differing damping rates. To go with the high performance shocks are high performance shock towers produced from nicely machined carbon fibre. Front shocks have three alternative top mounting positions and three different bottom mounting options. Rear shocks have four top positions and three bottom positions to choose from. Wishbone control arms or if you prefer front suspension top links have four different inboard position available at the front and six positions for the rear links. Working from front to back along the chassis there are pre-drilled holes for mounting servo's and other radio components, followed by the bracket for hold the longitudinally mounted batteries. A new "Blue Eagle" feature is the steering linkage and servo saver. A very nice adjustable bell crank is included. I have never seen anything quite like it before and it must take top marks for good innovative thinking. It allows for a wide range of servo sizes to be fitted and minimum hassle to get everything linked together at just about any angle. This takes us to the rear of the truck with the engine room and transmission. Like most high performance RC racers



Bodyshell is nicely styled with a sloping rear cab. Eagle has a very wide stance, tyres are of the usual rubber pin spike variety.



these days the kit is supplied without motor or electronics.

Transmission

My original (unpublished) words made mention of the Sledgehammer transmission being beefed up with the introduction of a ball diff. This is now quite inappropriate. The all new "Blue" transmission is not just beefed up, it is completely redesigned and bears about as much similarity to the Sledgehammer transmission as a JCB does to a Jaguar. They can both travel along a road but not quite in the same style. The new unit includes some really good features such as ease of adjustment. This is carried out by inserting a rod through a

hole in the gear case which lines up with a hole in the differential. This prevents the differential from rotating. The adjustment can be simply carried out by turning the right hand rear wheel. Could not be simpler. In fact it must be one of the easiest ball differentials to adjust. The new gear transmission is light, free running and robust. What is particularly important is that this gearbox incorporates a most significant improvement over the original Eagle in the form of a slipper clutch. This clutch adds little weight to the original design but should be a definite asset both in terms of controllable performance and improved handling. This interesting addition is built

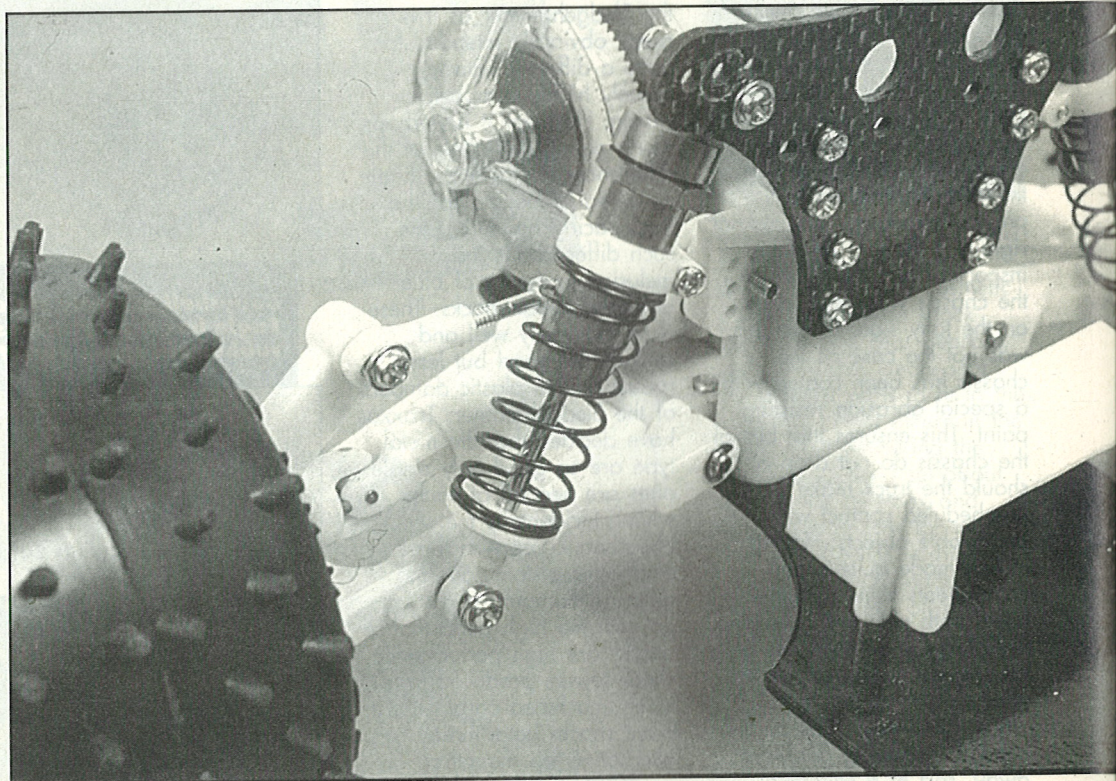
into the primary reduction gear which is fitted to the main gearbox input shaft. The slipper comprises a series of small plastic pads fitted into holes in the main gear. Pressure is applied against the pads by a small coil spring forcing against a pressure plate which in turn is forced against a slipper ring which is pressing against the friction pads. Adjusting the slipping point is easy. A locknut which applies pressure to the small coil spring is readily accessible at the edge of the whole assembly. The locknut is in fact within the primary gearcase dust cover but a few deft strokes with a modelling knife should have that exposed. The gearbox moulding is all new to house the revised transmission. The original Eagle gearbox moulding incorporated the rear suspension inboard anchor points. This new arrangement provides a separate suspension bulkhead which also acts as a front end location for the gearbox. All in all this new box is a significant engineering effort on the part of Traxxas to ensure that the Blue Eagle stays at the top of its league. Motor position has been kept as low as possible to ensure a low centre of gravity and a new blue anodised wrap around metal motor guard has been introduced. The ball races supplied with the original Eagle kit were transferred to the Blue Eagle gearbox to ensure that rolling losses are kept to an absolute minimum, and is yet another indication that this truck is destined for the race track and not the back yard. The rest of the transmission is based on a sliding nylon drive shaft with a universal joint at either end (Hooke type). Drive to the chromed plastic wheels is by hub carriers fitted to the drive shafts.

All Clear

With the front dampers fitted to the outside position on the wishbone and central position on the shock tower, the maximum under chassis ground clearance is approximately 50mm. With the wheels able to move around 60mm you can see it is possible to bottom the chassis and still have more wheel movement available. Of

traxxas

Eagle



Rear shocks are quite short and have a number of mounting positions. Main spur gear is protected by a neatly moulded lexan cover.

course it could be argued that wheel movement greater than the ground clearance is a waste of time and even a liability. Spacers fitted to the shocker shaft should overcome that problem. Using the other suspension options and adjustments the wheel movements could be different, but as rough guide it is easy to see that the Eagle has more than enough wheel travel. A similar arrangement exists at the rear. The sliding drive shafts means that no problems should be encountered with drive shafts popping out. The wheels are the same as used on the Sledgehammer but the tyres provided with this kit are quite different. Pin spikes are fitted to the 60mm diameter rims and the tyres themselves measure 55mm across the tread. These wheels and tyres are approximately the same size as fitted to Tamiya's racing trucks.

Truck Top

The body is an excellent polycarbonate moulding of some US style truck. I must admit at this point to not having the slightest idea what the body is styled on. At the risk of upsetting US truck fans, I have come to the conclusion that there is not a row of beans of difference between all US pickup trucks. In true Traxxas style they have included self adhesive window masks to keep paint clear of the "see through" bits, I think this an excellent idea. Finally comes the traditional sticker set and one to give you pretend lights, rad front and door handles. A pretty comprehensive outfit. I have yet to mention the instructions. They are excellent. Not just because they give, as may be expected, all the information on construction but they also include loads of useful tips. I wish that some of the information printed in

this book was available to me all those years ago. There is one paragraph that caught my attention. It deals with driving over jumps flat out and hence lifting the nose of the truck up. This is described as "catching the big air". Whether or not it is a US phrase I think it sums up the problem admirably. The ideal situation is to come to earth on all four wheels, pretty difficult to achieve, but not impossible.

At this point, having just completed building the kit I can see no real drawbacks or problems. It went together easily in a couple of hours, everything fitted well and as might be expected all the mouldings are of first class quality. I will report further when I have had chance to get some mud on the wheels, but if US races are anything to go by, and they should be, then Traxxas could well have a big winner on this side of the Atlantic.