

RACE CAR CLINIC

RACE CAR CLINIC INTRO...

PREPARE TO BE EXCITED!

In a very packed clinic this month we have some very big visitors, on page 26 we have the first of our Truckathlon, a Very Tough Guy. All the way from the USA, the heart land of Monster Trucks, we have the brand new Associated MGT, possibly the best in the World.

Next we have one of the MGT's smaller relatives the T4 Truck, the Terminator is based heavily on the stealth technology found on the World Championship winning B4, and proves again to be the best in the World.

Finally in our Truckathlon we have a visitor from the Far East, the HoBao Pirate MT Sport, this is a monster truck with some tried and tested components, as it is based on a very successful Rallycross car.

Staying with an Off Road theme the next car in the clinic also comes from the Far East, and is for Rallycross. The Great Vigor Rex X is extremely good value, and is ideal for a new starter to RC.

Also for Rallycross is the next Race Car in the clinic the Protech Enigma XR. This is a bargain basement Pro level car. You get all the bells and whistles of a top level Rallycross car, but at the price of a top class electric 4WD Off Road Race car.

Our next Race Car moves to a smooth surface, tarmac to be exact, in the shape of the Mugen MRX3 we reviewed earlier this year. Our intrepid tester brings us up to date with his progress, and adds a few upgrades.

Finally we move back to Off Road, and another Monster Truck, this is the final part of the Savage USA story, all the way from the American Mid West Yeeha!!!



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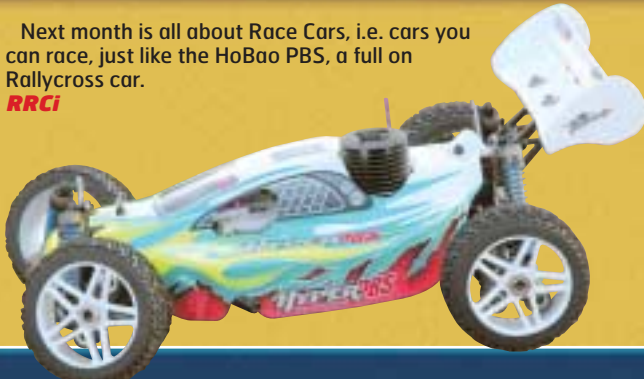


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COMING NEXT MONTH

Next month is all about Race Cars, i.e. cars you can race, just like the HoBao PBS, a full on Rallycross car.

RRCI



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INTRO

When American model car manufacturer Traxxas released the very first T Maxx to a slumbering world, they had no idea what they had begun. In a few short weeks the Monster Truck revolution had started, first a range of modified parts appeared, then, lots and lots of new models, from all round the world. It didn't take long for the collective at Associated to see that there was a market they could and should join in with. Just over twelve months ago the first prototypes of the BFT (Bigger, Faster, Tougher) truck was seen at the Chicago Model show, since then Associated have been working almost flat out to bring the renamed MGT (Monster GT) to the market place, and with thanks to CML Distribution RRCI has one of the very first trucks to leave Associated's home in California.

BIG FOOT

The very first 'real' Monster truck to be created was the legendary BIG FOOT, built by the Ford Motor Company as a demonstration and display vehicle. Seeing the BIG FOOT doing its car crushing, berm-jumping routines soon started a new form of indoor motor racing in the USA, the Monster Mash, as seen on TVs all round the world. Considering how long this type of motorsport has been around, it took quite a time before any RC interest was activated. Luckily for us it has now, and Monster Trucks and Monster Truck racing is likely to be the biggest thing ever for RC. These trucks bring out the very best in the RC hobby, FUN!! and I am sorry to say this has been missing for sometime.

OPEN THE BOX

As you would expect with a truck this large you do receive one hell of a big box, this may seem a minor point, but having shelled out your hard earned shekels it's always nice to get something big for them, and as the MGT is fully built and Ready To Run that's exactly what you get. Bathed in AE's famous blue colour the rather smart box disgorges the assembled MGT, four monster size wheels and tyres and a three-channel pistol grip radio (the MGT has a forward and reverse transmission which needs three servos). Also you get some documentation in the shape of an engine manual, a parts come assembly manual and a radio manual. To celebrate the arrival of the MGT the first 200 trucks

TEXT: Chris Deakin
PICTURES: Chris Deakin/Lynsey Piff

**A Monster of a Truck
Clothed in the Stars and
Stripes, Associated's new
Tough Guy**



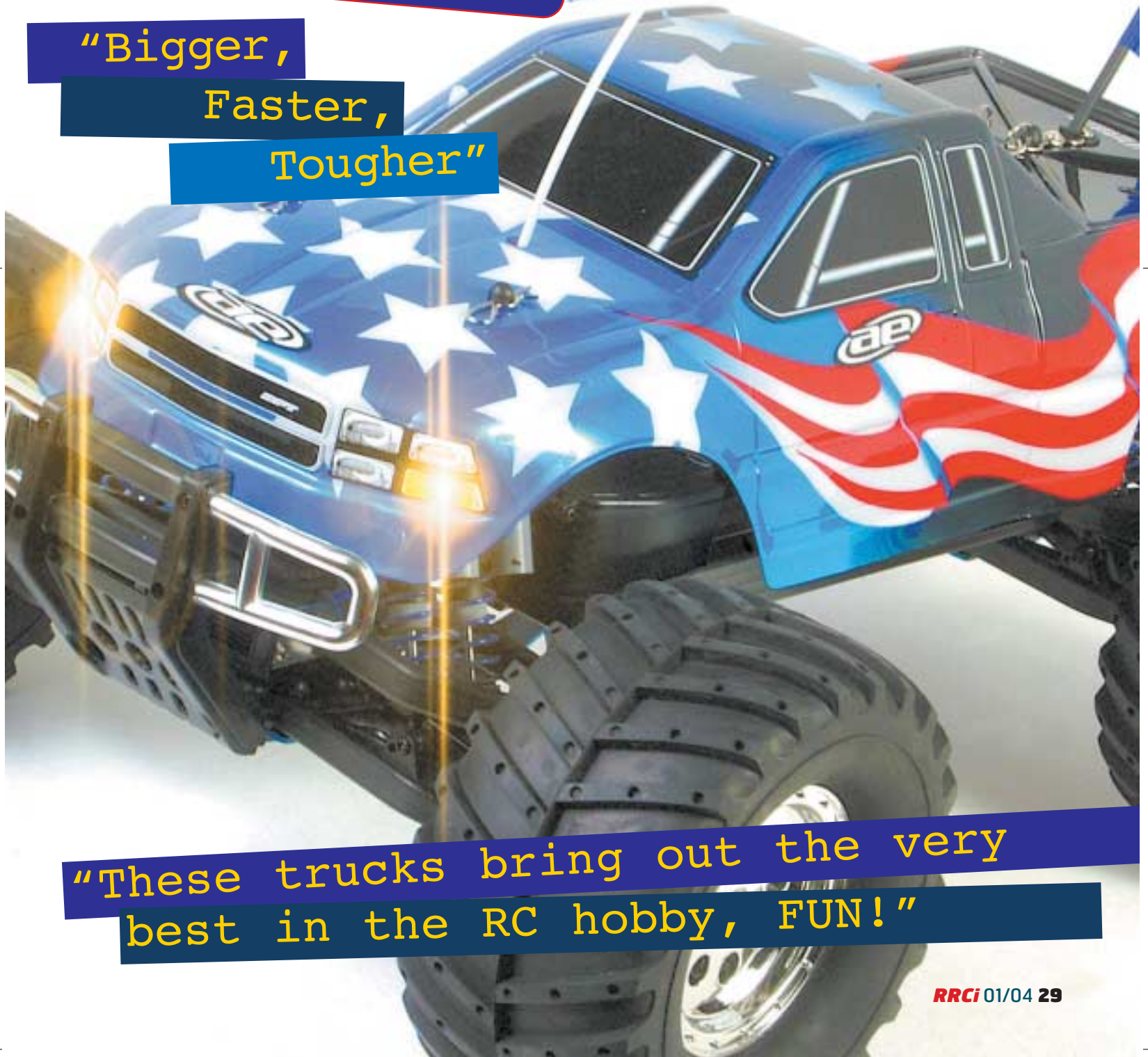
come with a Limited Edition, never to be repeated, Stars and Stripes bodyshell, which one lucky RRCI reader will receive early in 2004. So, in very basic terms with the MGT you get a Ready To Run, 4WD Monster truck, which has a 2 speed forward and reverse gearbox (so you can go as fast backwards as forwards, if your brave enough!!) and this is all powered by a high performance .21 glow plug

**MONSTER TRUCK
SPECIAL**

THE TOUGH GUY!

Associated MGT Limited
Edition Revealed

"Bigger,
Faster,
Tougher"



"These trucks bring out the very
best in the RC hobby, FUN!"

RACE CAR CLINIC



The MGT's box section chassis is fabricated from polished alloy, it is very strong, but light



Delrin is used for the pivot ball adjuster nuts, see text. Alloy wheel hexes are often an upgrade on other Monster trucks

engine, which has both a pull start and... a shaft starter system. Excellent dude!!!

CHASSIS

The heart of any monster truck is the chassis; with the kind of loads it is likely to receive it has to be very tough indeed. Until the arrival of the MGT there has been just two ways of creating a stiff platform for the mechanics, a flat plate with cantilever braces (ala T-Maxx) or a vertical plate chassis (ala Savage) both are strong but have 'issues'. So Associated have once more leant on the skills of their chief engineer Cliff Lett to come up with an answer, and as usual Cliff has delivered. The core, or backbone of the chassis is a fabricated and C.N.C. machined alloy box section, much in the vein of a Formula One car's tub. This has an incredible amount of torsional stiffness and rigidity, but is incredibly light and looks pretty good too (also you should check out the Factory Team blue version on Associated's web site, it's

stunning). All the major mechanics are bolted to this box section, so there should be zero chassis flex. To the 'backbone' side plates are bolted which some of the mechanics mount to, and help to seal the bodyshell to the chassis, as this is no carpet racer, it will get "down and dirty", also two alloy braces mount from the front and rear differential assemblies to the chassis to stiffen the truck even further (see pictures).

DRIVE TRAIN

As ever with any Nitro/ IC powered model this starts with the clutch, as you would expect AE have fitted a super tough sprung three-shoe version. This is mounted to an aluminium fly-wheel, which has ventilation slots cut in it. With the weight of the MGT this cooling air will be needed. From the clutch the horsepower is transmitted to a steel 'bell' with a 15T integral gear, this all runs on some pretty HD ball races; various other pinion gears are available from the



The high torque steering servo is inverted in the chassis, as you can see it has a built in servo saver

options list to tune both acceleration and maximum speed. The standard 15T one should give a nice balance of speed versus punch. Next in the chain is the 52T spur gear, not so much a spur gear, more like a ball differential in it's own right, as it has 6 'pegs' mounted radially which run between two drive plates, with a coil spring setting the tension. This is used as a very heavy-duty slipper clutch, something the MGT does need, just think about the stresses and shocks, which will go through the drive train as the truck bumps and bangs around the rough ground it is designed for.

Following on we come to the 'direction module', from a pair of angled bevel gears, the drive

"Associated say this is the best of the best"

This what the standard paint scheme looks like (red)



MONSTER TRUCK SPECIAL

Built and assembled by Associated, enjoyed by you!

goes through a 90° angle to the twin shaft, drive module. This encases the two alternative drive speeds, and the reverse mechanism, which is operated by a servo and the third channel on the radio. For racing purposes Associated offer a conversion, which removes reverse gear. From this module the drive is split front to back, this is done by one-piece steel Constant Velocity Driveshafts, an option on most other trucks. At each end of the MGT is a shaft driven gear differential, very similar to the NTC3, but stronger. These differentials are the same front and rear; also the composite housings they live in are also the same, the only difference are the chassis mounts they use, the front mount setting the caster angle. Both diff/suspension assemblies locate beneath the main chassis. From the diffs steel CVDs run to the 17 mm alloy wheel hexes, another upgrade part fitted as standard on the MGT. It goes without saying that the MGT is fully ball raced with a grade 6 stainless shielded set.

"All in all the MGT's suspension is simple, and very elegant, but extremely tough"

All in all a high quality extra strong transmission, which will stand the kind of treatment that RRCI is likely to dish out.

POWER PLANT

As AE at present don't produce their own engines, and as they needed a high quality, high performance engine for the MGT they went to well known Taiwanese engine manufacturer Thunder Tiger. The .21 rear exhaust pull start engine and its matching exhaust, has been in the pages of RRCI many

times, and has been used by Schumacher Racing in most of their 'big' nitro cars, including the brand new Menace seen in last month's edition of RRCI.

Which does mean that it is a well-respected engine with a very solid performance.

The engine is the powerful Pro 21R with a purple anodised cylinder head and silver crankcase. The spec for this engine is very impressive; a quoted 2.1 b.h.p is produced at 34,000 rpm, courtesy of 5 ports and an 8 mm triple needle carburettor. A short U shaped manifold connects the engine to the CNC machined aluminium tuned pipe exhaust, which dumps the gases just in front of the R/H rear wheel via a silicone connector. Fitted to the MGT are both a normal recoil starter and a 5 mm hex starter coupling mounted to the rear of the crankcase. This operates by way of a one-way bearing. This is a very good move, as the shaft will allow you to start the engine with the body on, and when the engine is new it may be quite tight to turn, and of course you have the back up of the pull

start if you don't want to buy a cordless drill, or when its batteries go flat. The hex starter shaft for the engine is supplied and you only need the aforementioned battery-operated drill to mount it in. The engine is securely mounted to the chassis with aluminium engine mounting block. This is a rock solid mounting with no movement at all; also it will act as a really good heat sink. To help keep the dirt out of the engine is a large air filter, which is secured by the usual tie wrap.

As the MGT is a big model you will need to run the engine on at least a Nitro level of 20%, 25% would be best as long as you fit a slightly colder glow plug than the standard one.

BRAKES

On the forward end of the 'direction module' you will find the location of a single large diameter fibre brake disc. The disc is driven by a blue alloy hex drive, which is also the front drive cup for the CVD drive shaft. The retardation of the MGT is taken care of by a pair of steel pads, which apply pressure to the disc via a cam in the drive module and an input from the throttle/brake servo. The amount of force applied can be adjusted with the linkages and a spring. This large diameter disc should be more than capable of stopping the truck very quickly, and for the really late brakers there is a composite ventilated disc on the options list.

SUSPENSION

With any form of monster truck you do need a large amount of suspension travel. Obvious really, so the only sensible route is to fit a pivot ball suspension, much favoured by Rallycross cars. Which is what AE have done. Also they have fitted dou-



The top wishbone wraps around the shock bodies to protect them

ble wishbones at both ends of the MGT. This will apply maximum control over the wheel and tyre for the best possible off road handling, and of course make the suspension fully adjustable. Just like the T-Maxx the top wishbone wraps round the shock absorbers protecting them from any form of accident damage, also to reduce the number of bespoke parts and of course spares, AE use the same components front and rear, neat!!

So, as the parts are common only one end needs describing!!

A simple, almost triangular moulded hub carrier locates two steel pivot balls. These are trapped by two Delrin adjuster nuts, Delrin is an interesting choice for this job as it is a very light material, and as it is a composite material it will give almost a self-lubricating surface for the balls to pivot in, which will give a very smooth action.

From the hub carrier two wide based wishbones run; making them wide adds strength and rigidity, and they will not deflect under a hard impact. These are connected to the chassis, via an alloy block for the top wishbone, and to the diff housing for the lower wishbone. All the mouldings appear to be made from a

Two shocks absorbers are fitted on all four corners, made from nylon, alloy would be better. Cans on the side are dummies, you either love...

RACE CAR CLINIC



With the MGT you get a choice of either the pull starter or a 5 mm hex, the driveshaft is included all you need is a battery operated drill. I used the hex drive as this could be used without removing the bodyshell

very tough nylon, a material I have not seen Associated use before. To mount the wishbones to the blocks 4 mm steel pivot pins are used. All very tough. At each corner are two oil filled coil over shock absorbers; they have grey composite bodies and matching blue coil springs. Damping is taken care of by two hole pistons and 40-wt shock oil. As you would expect there are upgrades available on the options list. I must admit I would have liked to have seen alloy shocks, they are a better heat sink, and in most cases are smoother. However the kit shocks do appear to work well, but still...

As the hub carriers are the same you get a turnbuckle at the



The hero of our story

rear to hold the wheel straight, four wheel steering isn't an option yet?? The front turnbuckle goes to the steering mechanism.

All in all the MGT's suspension is simple, and very elegant, but extremely tough, and it's going to need to be.

STEERING

Keeping directional control of the MGT is paramount, so a pretty HD steering system is required. From the inverted High Torque steering servo, which has an integral sprung servo saver, a moulded link runs to a pair of bellcranks. These are located between the lower chassis stiffener and the main box section, and pivot on bushings, ball races are available. Another moulded link connects them together, adding strength, and giving a mounting point for the two

steel track rods. This again is all pretty strong stuff, and more than up to the job.

RADIO GEAR

With the MGT all the radio gear is both fitted and trimmed, well it was in my case. A pistol grip, 27 Mhz three-channel transmitter is supplied by AE. This is in a 'dry battery' format but a charging socket on the base of transmitter will allow for the fitting of rechargeable batteries (recommended). On all three channels there is a servo reverse function, this shouldn't be needed, hopefully. On the front of the tranny is a rather funky blue steering wheel with a good moulded rubber grip, also steering and throttle sub trims, and a throttle/brake ATV (Adjustable Volume Travel), this adjust the throw of the throttle servo either side of neutral, this will be needed, see thrash test.

Also you have a steering dual rate, this can be used to desensitize the steering, and just above the trigger, the third channel selector switch. This operates the forward and reverse servo, and should only be operated when the truck is stationary. Behind the trigger is another selector switch, which alters the spread of the throttle trigger, you can either have a 50/50 or 70/30 spread; I would only use the 70/30 (this increases the brake strength) if running on a high grip surface. Xtal access is on the top of the transmitter and six different frequencies are available, so you will be able to race against other MGT's.

On board the truck, restrained in a dust proof box are the three-channel receiver, a 'standard' four-cell dry battery carrier (rechargeable again recommended) and an on/off switch. The final parts of the puzzle are the steering and throttle servo, as I have already mentioned the steering has a HD High Torque version fitted, the throttle just



A fibre brake disc is used to stop the MGT, nice alloy drive hub too

has a slightly lower specification.

FIXTURES ETC.

To get the MGT running AE have created a very simple fuel system, a 125 cc is pressurised from the tuned pipe exhaust. To prime the system they have fitted a neat 'pump' in the main fuel line, this removes the chances of air leaks that you sometimes



Associated supply his three channel radio with the MGT, the blue button by the 'model's' thumb, operates the direction change



A heavy-duty slipper clutch is located within the spur gear

MONSTER TRUCK SPECIAL

get from tank mounted plungers. Other nice touches are the rubber covered chrome plated carrying handle (looks like a piece of silicone fuel tube to me!!) and the rather neat quick release rear body clip. This has a kind of sprung scissor action, which clamps around the rear body post. A good idea if you decide to use the recoil starter. Finally we come to the bodyshell, as 'we' got a Stars and Stripes version it's simply very stunning, the 'standard' pre-painted shells will be blue or red, but with a few decals they can be made to look very good. Having got this far I really should say something about the wheels and tyres, but they really speak for themselves don't they!!!

BUILD

As with most true RTR's there really isn't a build, you just add batteries and glow fuel and play, but!!!

If you are a beginner to RC then you should read all the manuals and be clear on how to run your MGT safely, it won't take long and is well worth it. You should also join the BRCA, this is the UK's RC governing body, and as part of the membership you get a third party insurance cover, well worth the £12.00 a year, also it opens the gateway to RC heaven, racing, as does reading RRCI regularly.

One item I would fit is a throttle failsafe, this small device should stop the truck in case of a loss of radio signal, it fits in the lead to the throttle servo and takes only seconds to fit and adjust, doesn't cost much either, a lot less than little Johnnies leg or arm.

THRASH TEST

As with all NEW Nitro engines, you will have to run the engine in, don't let exuberance get the better of you, for the long-term health of your engine it does help. AE give you the details of what and how to do it, just DO it!!!

And another warning, the MGT is a real monster, so treat it with some respect, be aware of where you are running it, don't 'display' it in a silly way, you might possibly hurt some one, sermon over, let the fun begin.

The MGT was taken to a local disused BMX track to be run, it is a mixture of loose dirt and concrete and it has some really awesome jumps, plus a really evil banked dirt corner, following

BUILD TIPS

- 1) Go round all the fixtures with a screwdriver etc. check everything is tight, especially the grub screws in the transmission, I didn't have a problem, but you might.
- 2) Fully check the operation of all the radio functions before running the MGT. The above applies again.
- 3) Only use a good quality glow fuel with at least 20% nitro content. Also only use a 'car' fuel, not one for planes or helis, they have a different oil content and will give you a problem. There are plenty good ones available, Byron, Blue Thunder, O'Donnell just to mention a few.
- 4) Seal the top of the two radio boxes with a little silicone sealer, especially if you plan to run in a wet environment.

a 40 metre straight, idea for checking speed and handling.

I had spent sometime running in the engine at another local part, so the truck was ready to rip.

Set straight from the box, the MGT had some pretty incredible traction, there was no transmission wind up, and as soon as the engine revved it almost sprang forward, almost like an electric truck (the low first gear multiplies the torque of the engine to really give the MGT some punch!!!). A small amount of slip

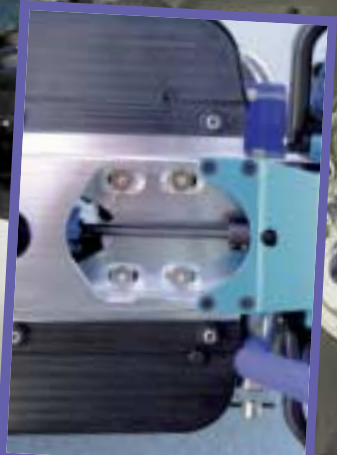
was detected from the clutch pack, but nothing unacceptable. Over the very rough surface the truck just skipped along, just as though it was a flat surface. Once into second gear it lifted its nose skyward and flashed away. When retardation was required the single disc grabbed the transmission and halted all forward motion, this to say the least was very abrupt, reducing the brake travel! ATV smoothed this out a great deal.

The suspension really worked very well, although with any MT

"The MGT had some pretty incredible traction"



The transverse tuned pipe is supplied by TT, used by Schumacher too, must be good!



Here you can see the engine mounting bolts in the recess in the chassis

RACE CAR CLINIC

MONSTER TRUCK SPECIAL

QUICK SPEC

CLASS: 4WD Gas Powered Monster Truck
TYPE: Ready To Run
MANUFACTURER: Associated Electrics Inc.
PRICE: £499.99 srp

WHAT YOU GET

Fully Built Monster Truck. 4WD. Fitted 3 Channel Radio Equipment. .21 Thunder Tiger Pull Start engine. Fully Ballraced. Polished Alloy Box Section Chassis. Two Speed Forward And Reverse Module. Slipper Clutch. Shaft Drive With CVDs. CVD Driveshafts. Single Disc Brake. Pivot Ball Suspension. 8 Oil Filled Coil Over Shock Absorbers. Fully Adjustable Suspension. Chrome Wheels. 170 mm Paddle Tyres. Pre-painted Stars And Stripes Bodyshell.

WHAT YOU NEED

- 12 AA batteries (radio)
- Glow Heater
- Glow Fuel
- Failsafe

WHAT WE USED

- GP 750 mAh NiHMi
- Fastrax
- O'Donnell 25%
- Venom Mini

LIKES

- ✓ It's here at last
- ✓ Excellent specification
- ✓ Brilliant drive
- ✓ Superb handling

DISLIKES

- ✗ Plastic shocks

CONTACT DETAILS

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you get a very high C of G, and every chance of turning turtle, the MGT seemed to resist all my efforts to roll it, even plowing into a corner on full throttle just bogged the engine down with the level of grip. Once the engine had been tuned to the optimum the top speed was incredible for an Off Road vehicle, which bodes well for the MGT being a good race car as well as an excellent fun car. After several tank fulls of fuel the MGT was undamaged except the inevitable scratches to the bodyshell (I have to come clean here, as the supplied shell was the LTD edition one, it wasn't used for the test, and will be

VERDICT
 Well was the MGT worth the wait, without question!!! Associated say this is the best of the best at present, and it's hard to disagree with them. The MGT is an excellent truck, my sample did everything I expected of it and then some, it is well made and designed, it has a very high spec and of course there is already a huge range of AE Factory Team parts to further customize the MGT. For FUN or for Racing the MGT really hits the spot, the competition really will have to pick up the pace 'cause Team Associated has. RRCI would like to thank CML for supplying us with a very early sample, and to Associated and Thunder Tiger for bringing some Monster Fun to the pages of RRCI.
RRCI CAR OF THE MONTH

kept for best). The Thunder Tiger engine worked well, started easily, and was simple to tune, had great performance too. Mega!!
RRCI



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