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THE RADIO C[illegible]OL CAR MAGAZINE

DECEMBER 2003

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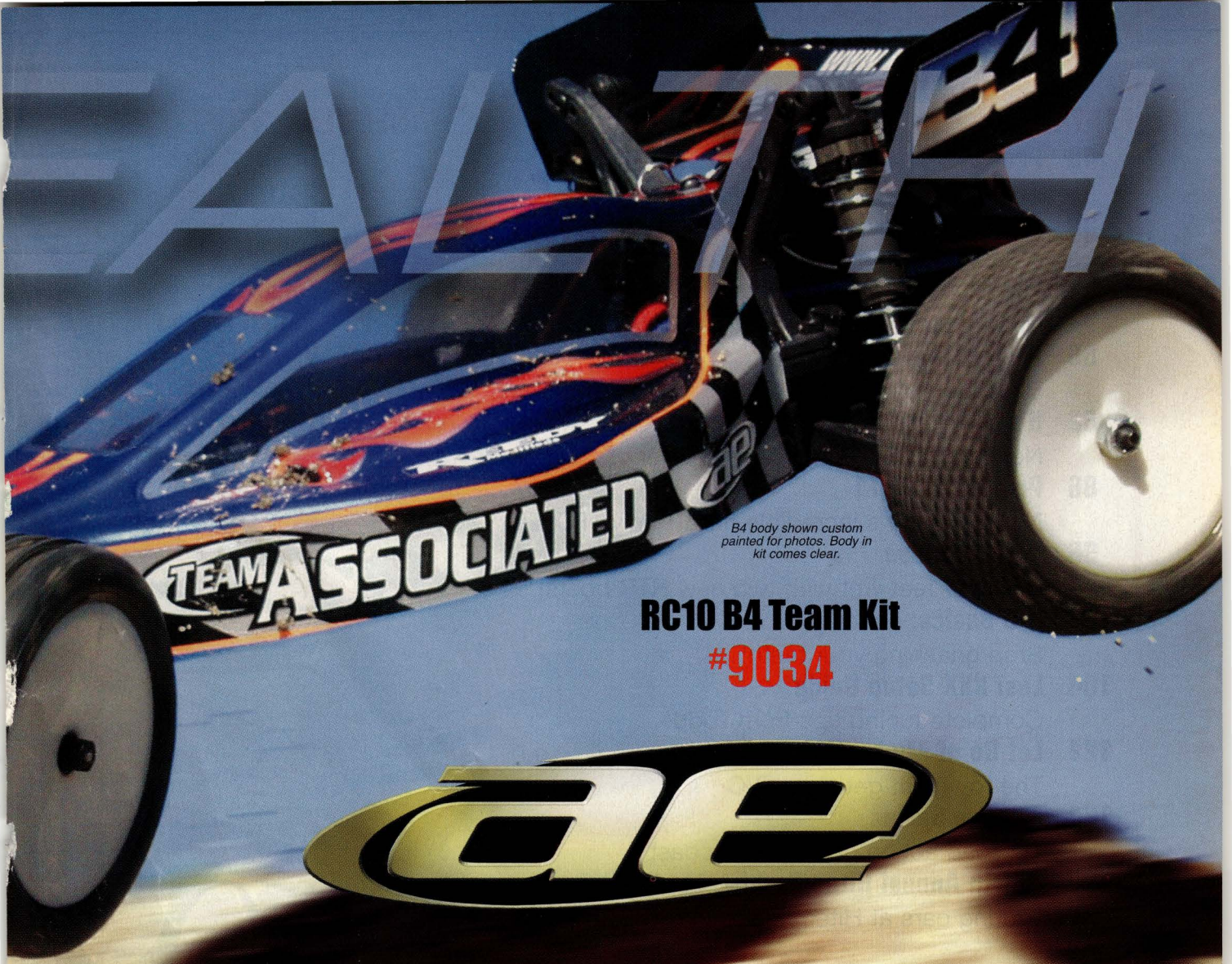
RC10 B4 STE

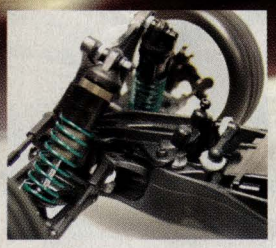
As far back as 1989, there were grainy spy photos and a few sporadic sightings of a radical new buggy under development by Team Associated. Then at the '91 IFMAR World Offroad Championships in Detroit, the team unveiled their hand-built prototype "Stealth" cars, noted for their distinctive front suspensions and unusual shock mounting locations. Masami Hirosaka piloted the RC10 "Stealth" buggy to the World Championship win, and the prototypes were whisked back to Team Associated's California R&D department (Area 51) where they would not re-emerge for over a decade.

Now, Team Associated brings years of development and new technologies together by introducing the RC10B4 "Stealth" buggy... the most adjustable, tunable RC10 buggy ever produced.

Team Associated's B4 is the latest generation of the 5-time IFMAR World Championship winning heritage of RC10 buggies. After 12 years, the Stealth car is finally perfected.







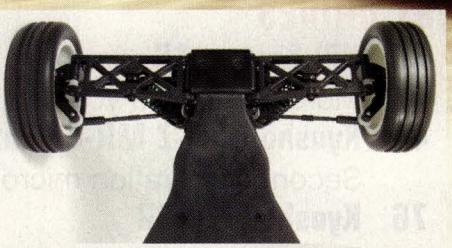
Angled bellcrank steering minimizes bump steer to maintain constant steering angles throughout the full range of suspension travel.



Wide-body front tires on new offset, stiffer front wheels. Trailing front axle or optional inline steering blocks can be used to tune steering response.



Front shocks are mounted behind the shock towers. All four suspension arms are the same length, and the "captured" hinge pin design uses no e-clips.



The "forward-swept" front end design provides maximum front end ground clearance. Chassis underside is contoured for maximum clearance when cornering, and minimal ground contact area on hard landings.



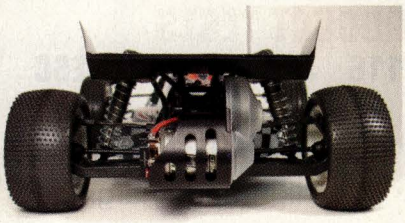
New 2.6:1 laydown Stealth transmission now uses the higher torque capacity differential from the RC10GT. Ultra-compact, efficient, low-CG design.



Longer CVD dog bones and axles have been designed into the rear suspension to push the B4 out to maximum legal width for more traction.



High torque capacity, double-sided slipper provides finer adjustment, easier assembly, and lower rotating mass than comparable double-sided slippers.



Impact-resistant rear motor guard and wing mounts. Lower motor, battery, body and wing mounting positions give the B4 a lower CG for higher cornering speeds and greater stability.

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FEATURES

40 Preview: Team Losi Mini-T
The next big small thing in off-road!

50 ROAR Fuel On-Road Sedan Nationals
A Japanese wins the American title!

62 The Myths of Graphite
Shattering the misconceptions

66 Project DynaMaxx
Big-block Dynamite T-Maxx

82 Holiday Wish List
New stuff we'd like under our tree!

86 Project Nitro F1
Nolan Farmer's incredible nitro Tamiya FSF201

96 Two If By Sea
Get your feet wet with two new RTR boats!

100 R/C Basics: Gearing
Stop gnashing your teeth!

104 Losi XXX Setup Guide
Complete tuning tips from Todd!

122 Let Go of My Lego!
The toy giant gets into R/C

104 R/C Pro Series
Off-road action on the west coast

132 Fourth Annual Hitec Parking Lot Challenge
Touring cars at Hitec headquarters

TEST DRIVES

30 HPI Savage SS
More motor and you build it!

44 Kyosho Mini-Z MR-02 Enzo Ferrari
Second generation micro machine

76 Kyosho FW-05R
The latest shaft-drive nitro killer

110 XTM X-Cellerator
RTR nitro race truck

PRODUCT TESTS

116 JR Racing SC-1 ESC
Super-small reversing speedo

118 LRP Pulsar Sport
High-end charging for a low-end price

REGULAR STUFF

8 Drivers' Stand

11 UpFront
News, Skinny & your rides

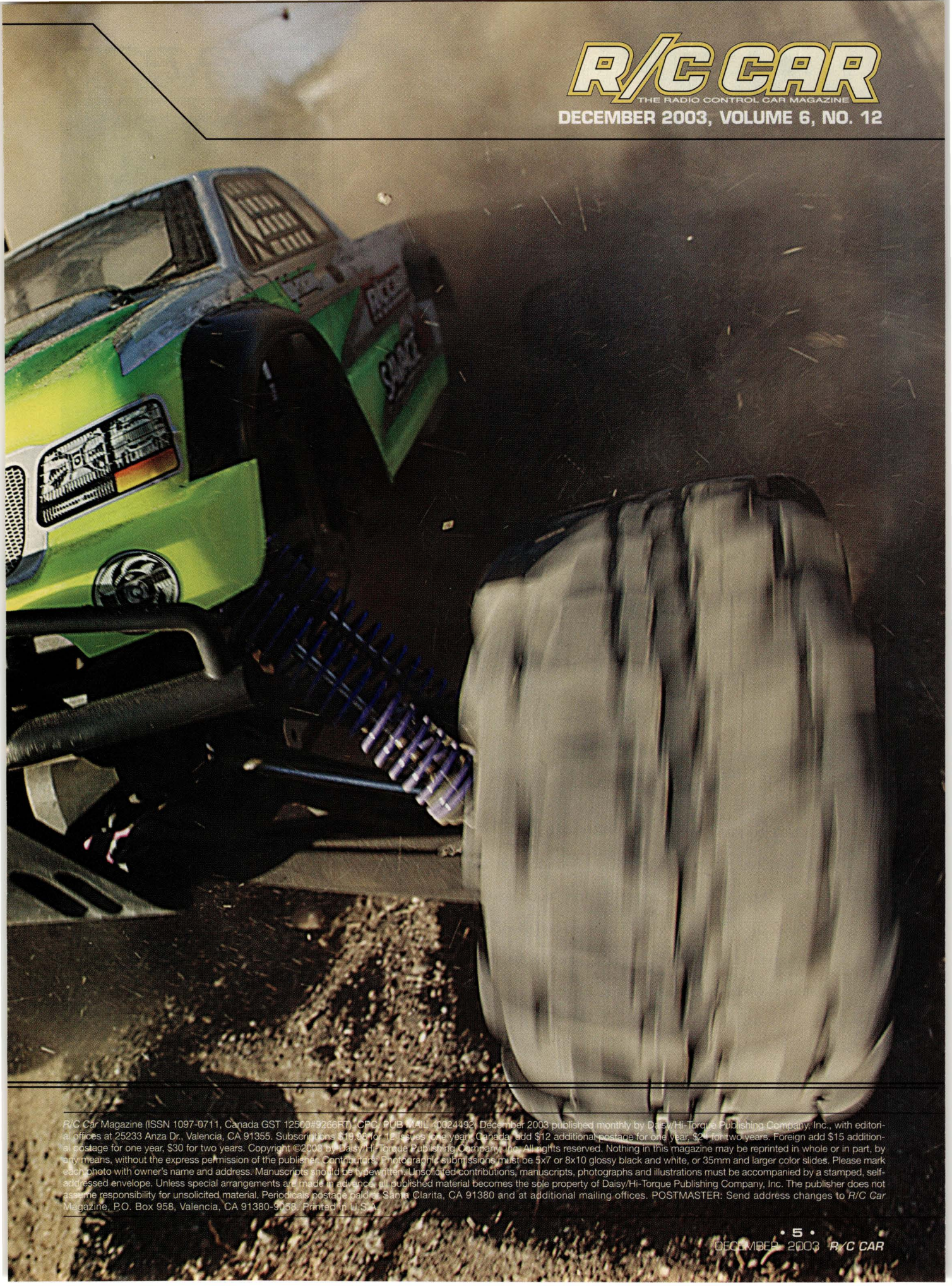
26 Feedback

28 Toolin' Around

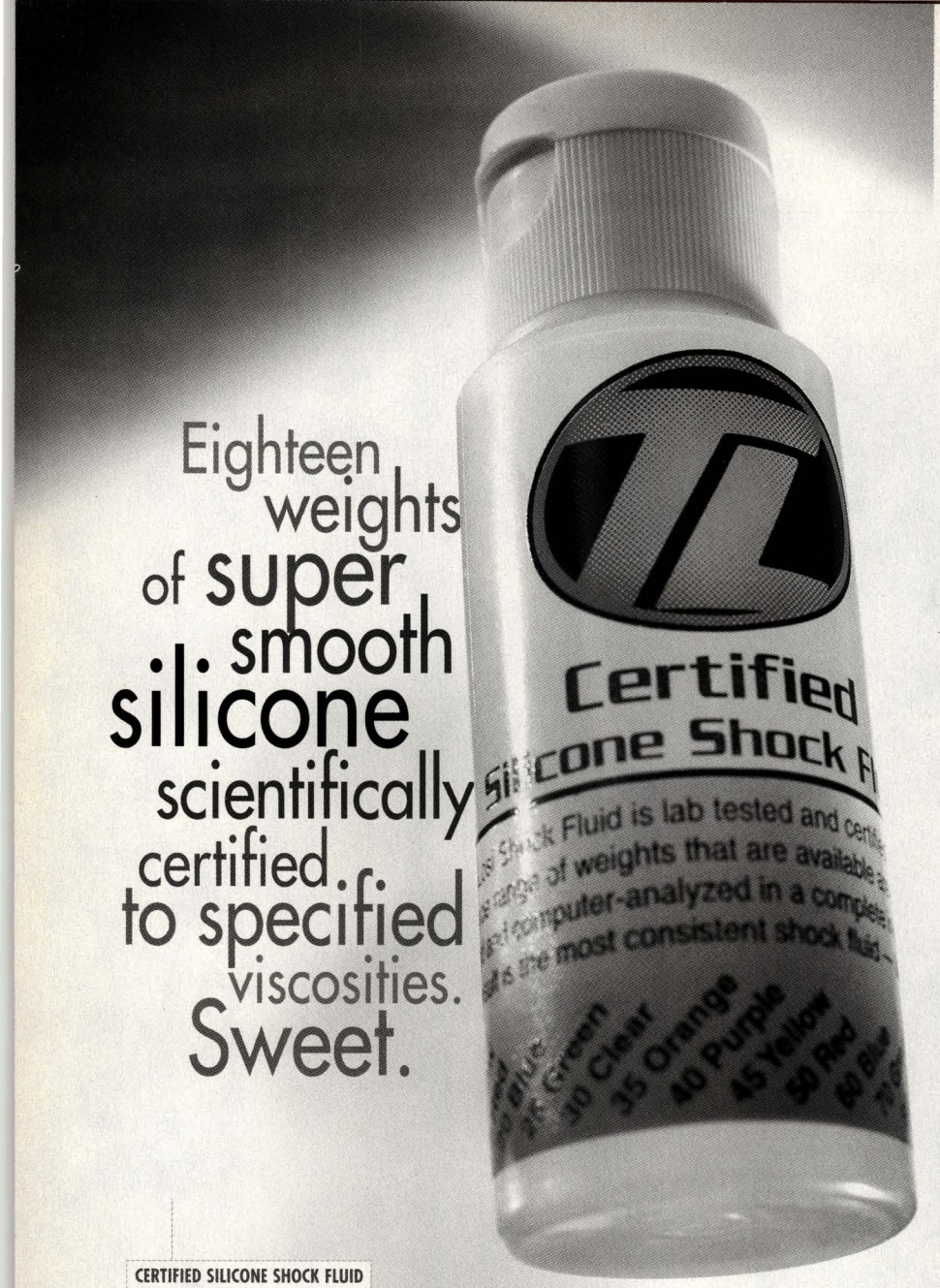
144 Vintage R/C



R/C CAR
THE RADIO CONTROL CAR MAGAZINE
DECEMBER 2003, VOLUME 6, NO. 12



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EDITOR
FRANK MASI
ASSOCIATE EDITOR
BRIAN SKINNER
CONTRIBUTING WRITERS
SCOTT MADRIGAL, TODD HODGE, RICK HOHWART, DARRYN JOHNSON
ONLINE EDITIORS
BRAD ROE
BradR@hi-torque.com
TOM HINZ
TomH@hi-torque.com
DESIGNER
TIM La PAGLIA
PHOTO ARTIST
PAT CARRIGAN
COPY EDITOR
JIM ALGAR
PRODUCTION COORDINATOR
KAY DEICKEN

ADVERTISING
EXECUTIVE ADVERTISING DIRECTOR
MARK THOMAS
ACCOUNT EXECUTIVE
DERRECK BERNARD
AD PRODUCTION MANAGER
PEGGY REID
ACCOUNT ADMINISTRATOR
ZAHAVA SEGAL
EXECUTIVE WEB ADVERTISING DIRECTOR
SEAN McCOY
smccoy@hi-torque.com

HI-TORQUE PUBLICATIONS
PRESIDENT & PUBLISHER
ROLAND HINZ
ASSOCIATE PUBLISHER
LILA HINZ
ASSISTANT TO PRESIDENT
CASSANDRA MITTELBERG
ASSISTANT TO PRESIDENT
KATHARINE McCOY
CIRCULATION DIRECTOR
CUYLER GIBBONS

SUBSCRIPTION AND PROMOTION MANAGER
TIM La PAGLIA

ADVERTISING & GENERAL OFFICES
25233 ANZA DR.
VALENCIA, CALIFORNIA 91355
(661) 295-1910
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[Drivers' Stand]



The obsessive-compulsive racer

BY FRANK MASI

There are two types of racers: those who work on their stuff only if it needs attention, and those of us who obsess about our machines. Unfortunately, I fall into the latter category. For me, racing is as much about how my equipment looks than about how well I do (although, as you will find out, the two are somehow intertwined in a bizarre symbiosis). Here are some disclosures from an admitted obsessive-compulsive racer!

Below left: Cave troll and hobbit? It's just Skinny and Frank hangin' out trackside.



If I do well in a race, I'll remove the battery after the main, discharge it and put it back in its box. I'll dust off the car (using a borrowed air compressor; I own a compressor, but it's too much work to haul it to the track), wipe down the body, and, if it's an off-roader, I'll remove and wash the tires. You have to be ready for the next race, right? If I don't do well or if I break, my car or truck stays dirty, the battery remains soldered in place and I chuck my carrying bag into the darkest corner of the garage.

I have this "thing" with wires. I can't stand excess wiring. If I have time, I will sometimes shorten my servo and ESC leads by opening the case, un-soldering the leads from the PC board (using a huge 700 watt iron, no less), shortening the wires and re-soldering them to the board without frying anything. (You should know that this type of modification will usually void your warranty, so unless you can get the manufacturers to send you free stuff, find another way to shorten the leads). If you want to see an example of this obsession, check out the wiring job on the Tamiya TRF414M2 back in our September '02 issue. You'll notice that the ESC and servo leads are just long enough to reach the receiver—no more, no less! Even the switch wire was shortened. I must have had some time on my hands back then. If I can't shorten the leads, I will usually spend hours trying to coil and tie the excess leads so that they look as clean as possible. I will also never reuse ESC wires; I always install new wiring each time I swap an ESC from one chassis to another.

If I'm at a race and actually doing well, I will change my shock oil each time I run. It's purely a psychological thing; today's off-road tracks are so hard-packed that there's no way the oil can become contaminated. I am also obsessive about equal rebound; if one shock extends just one millimeter more than its counterpart, I'll re-bleed the shocks. Can you guess who snatched up the Team Losi Shock Matching Tool from last month's issue? I've also discovered the RiDE Air Remover (which bears an uncanny resemblance to a certain Swedish gadget from the first "Austin Powers" movie). This thing was made for people like me. You put your shocks inside it and use a small pump to create a vacuum that draws air out of the shock oil. I'm fascinated by this process, and will often add air bubbles to my shocks on purpose just so I can remove them with this clever device!

Normal cleaning for nitro vehicles doesn't cut it for me. I have many friends who simply brush off as much crud as they can, then leave their vehicles in this condition until the next run. I know my nitro truck or buggy is just going to get all filthy again as soon as it hits the dirt, but it has to be sparkling clean before I'll bring it out to the track. Here's how I usually clean my nitro buggy: I remove the radio tray and engine, then I'll actually spray the chassis with a hose (a very gentle spray, mind you; I don't want to get water in the bearings) and use a mild degreaser such as Hondabrite (available at most cycle shops) and a paintbrush to remove any remaining crud from the nooks and crannies. I'll then blow the chassis off with an air compressor, spray it with WD-40 (which is more of a water displacer than a lubricant) and spray it off again with the air. The result is a machine that looks better than new. And it only took an hour!

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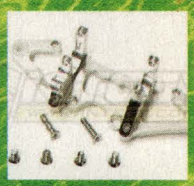
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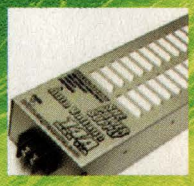






































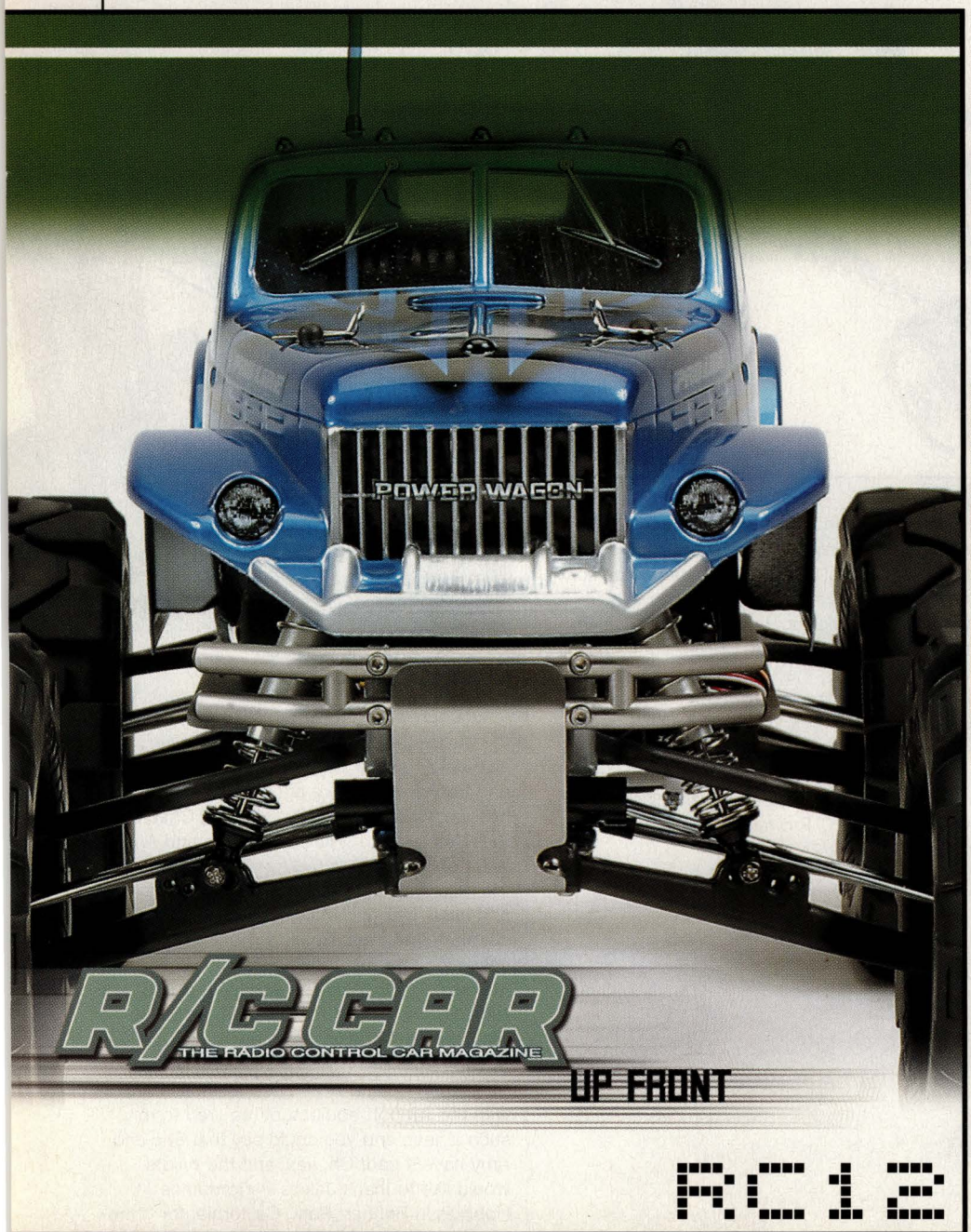


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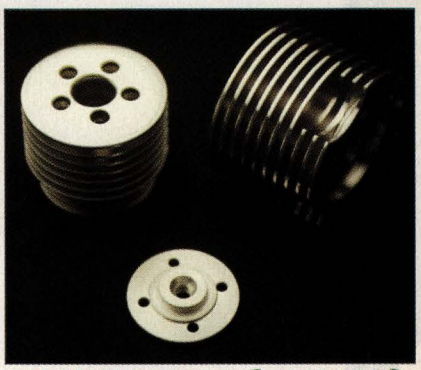




READERS' RIGS (PAGE 12)



NEWS (PAGE 14)



BENCH RACING (PAGE 20)

[Readers' Projects]

Welcome to *R/C Car's* Readers' Projects. We receive many impressive "home-built" reader projects each month, so we decided to showcase some of them in each issue. How about you? Got a lot of pride in your ride? Snap some pics and send 'em to us here at *R/C Car* Readers' Projects, 25233 Anza Drive, Valencia, CA 91355. Hi-res digital images can also be emailed to brians@hi-torque.com. Who knows, maybe you'll see your car or truck in an upcoming issue! And if we use yours, you'll receive a free one-year subscription!



ROUND TRACKIN' TRUCK

Steven Knepp of Wallaceton, Pennsylvania, has been into R/C racing for five years, and it has become his favorite pastime by far. Steven's truck began life as a mild-mannered Team Lost XXX-T Spec, but through careful modification has been transformed into an intimidating racer. In fact, Steven tells us that he is in contention for a championship at his local asphalt oval track! To make the transition from sportster to all-out competition, Steven outfitted his truck with all of Losi's graphite-composite parts, then lightened the chassis further by using a Dremel tool. He then added titanium turnbuckles and hingepins, Losi's threaded shocks and titanium-nitride shock shafts, full ball bearings, aluminum top shaft and a front swaybar kit. The truck rides on RPM wheels with Pro-Line tires, which were white-lettered by Steven. Power for Steven's oval machine comes from a Trinity Chameleon 2 Pro modified motor, which is controlled by a DuraTrax Intellispeed 8T Pro racing ESC. Good luck in your racing, Steven!

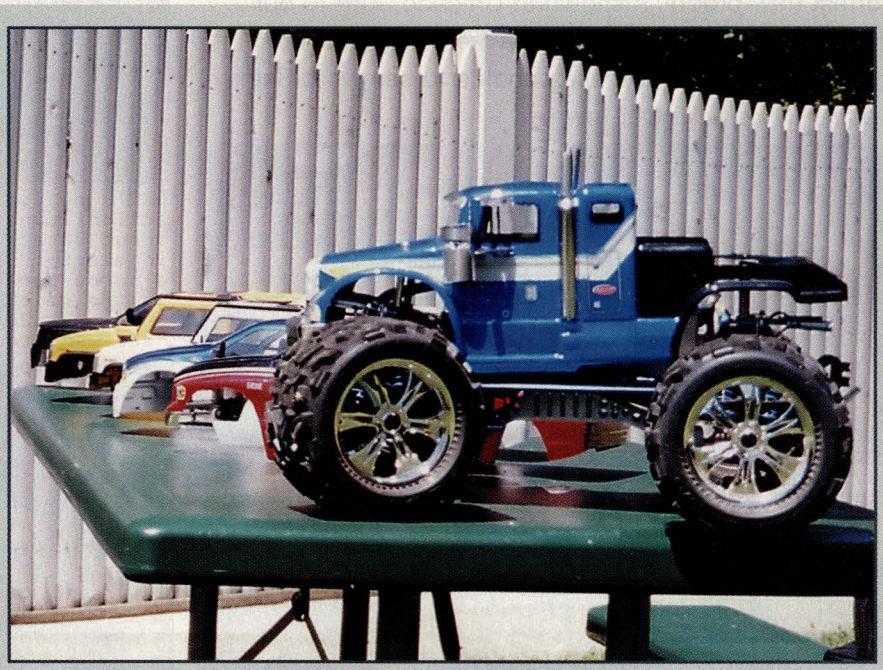


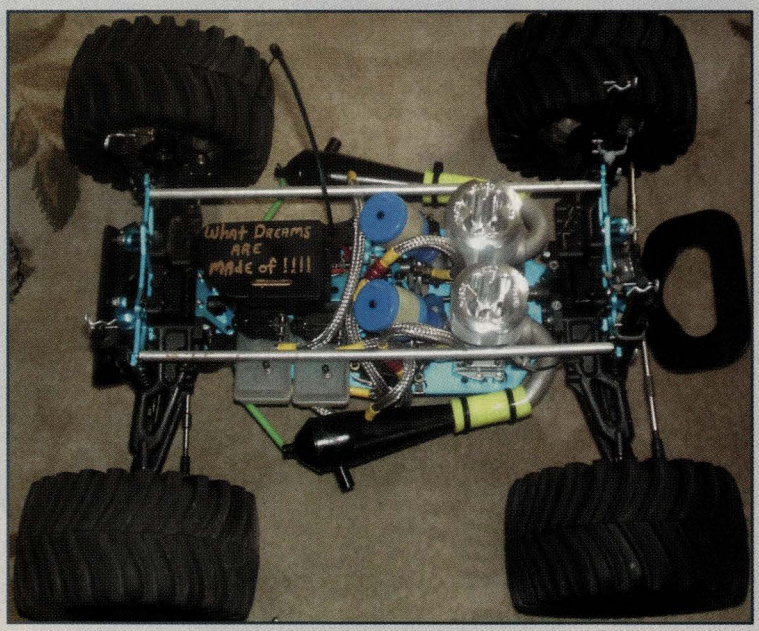
THE COUPLE THAT PLAYS TOGETHER...

Of course we know that R/C isn't just for the guys—there are plenty of women who also enjoy building and racing their own cars and trucks—and there are also quite a few husband and wife race teams, too! Check out these pictures sent to us from Eric and Amy Wildt of Sebastopol, California. According to the Wildts, what began one year ago as a "his and hers" pair of T-Maxxes has grown substantially into the collection shown here. Their collection now includes a total of two T-Maxxes, one E-Maxx, an Associated TC3 and Nitro TC3, a Tamiya F201 Ferrari, an L4-based Maverick oval chassis from Swift, a Losi XXX-S, two HPI Micro RS4s and several smaller "just for fun" toys. Adding up all those cars with the support equipment required to run such a fleet, and you could say that Eric and Amy have it bad! Oh, yes, and the Wildts would like to thank Jake's Performance Hobbies in Rohnert Park, California, for "introducing us to the best hobby ever!"

THE MANY FACES OF MAXX

Ralph Remy of Milford, Connecticut, sends us this snapshot of his awesome Traxxas T-Maxx 2.5. Among the many mods, the highlights of Ralph's Maxx include aluminum shock towers from Hardcore Racing and Pro-Line Velocity 6 chrome wheels and Big Joe 40 Series tires. The chassis and drivetrain have been beefed up by the addition of New Era's skid plates, chassis braces, slipper spur gear and rollover bar. Topping off Ralph's masterpiece is a Pro-Line Peterbilt Big Rig body that has been custom fitted with front, rear and brake lights from Maxx Lites. Of course, it's easy to see that when Ralph wants to go running, he has plenty of other bodies from which to choose!





MIKE'S DUAL-ENGINE EARTHQUAKE!

Mike Vaughn or Pittburgh, Pennsylvania, sends us his wicked dual-engine DuraTrax Thunder Quake. "My wife got me a Thunder Quake, I immediately stripped it." Mike's awesome monster is powered by not one but TWO XTM 24.7 engines. For easy firing, each engine is equipped with an HPI Roto Start electric starting system. Mike also swapped the stock 'Quake's tires in favor of a set of Tamiya Terra Crusher wheels and tire. He also wasn't too fond of the stock body, so he instead painted a Pro-Line Hummer H2, which was then detailed using SIC graphics. In additon, Mike's beast is equipped with a Dynamite Failsafe device, a pair of MIP's On-Board Temp Gauges (one for each engine) and a Futaba 3PK FM radio set (Mike evidently went all-out for this project). Mike is currently in the process of building a full cage for his 'Quake so that he'll be able to have total of eight shocks. According to Mike, his truck has been clocked at 78.4mph by a friend who happens to be on the local police department (did he then give you a ticket, Mike?).

2003 was Skinny's first time at the Chicago Model and Hobby Show as an official member of our staff. Our intrepid "Shrekzilla" stalked the isles of the Rosemont Convention Center in search of new products, fresh faces and, well, someone that would at least point him in the direction of the ice cream stand. For news of the hottest new products shown at Chicago, turn to our "Holiday Wish List" feature elsewhere in this issue. In the meantime, check out these candids to see what Skinny was really up to in Chi-town.



LRP's new waterproof Quantum ESC in action. Can you believe this? Talk about water-cooling! Ideal for use in electric boats, the Quantum will also be perfect for running your car in the rain (provided, of course, that you waterproof your servo and receiver, too).



Now we know why Skinny's expense report was so high! And we thought he hated these things. Skinny, it's only a block from the hotel to the show - was this necessary?



If you want a truly killer body for your monster truck, Parma has you covered with this mountain of unique and licensed shells for most popular trucks.

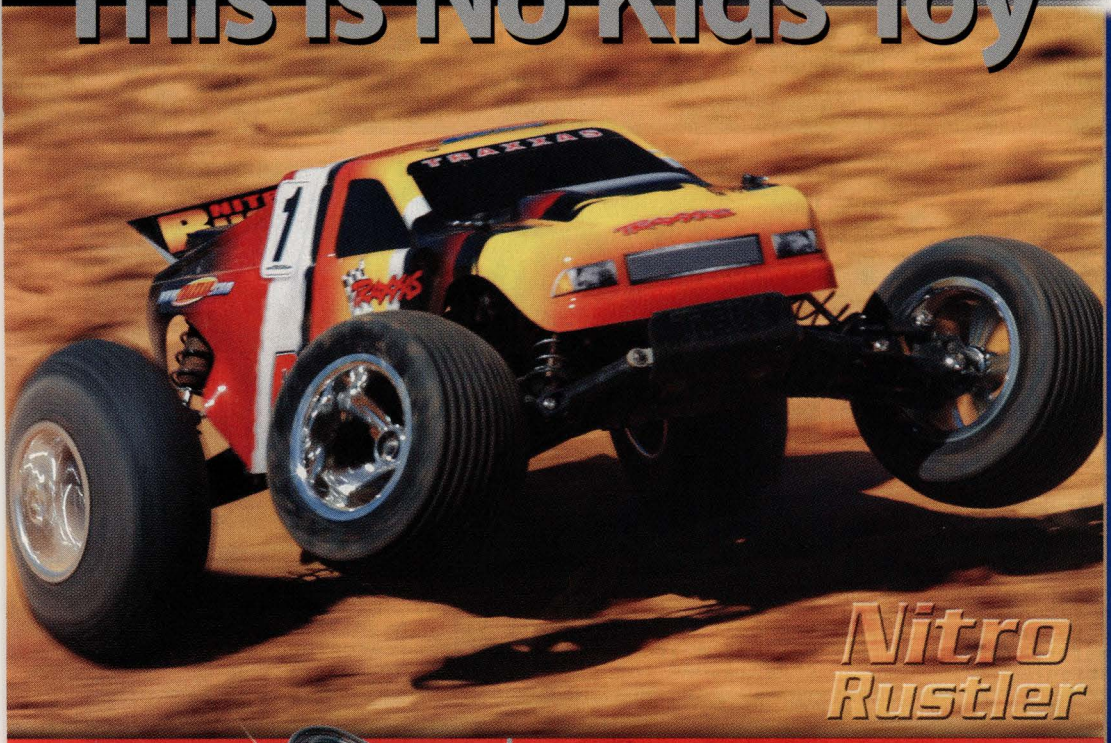


We will sell no wine before it's time. We promise, positively, absolutely, it will be out this year! Associated's rep as a monster-truckin' company rides heavily on whether or not the Monster GT can live up to its hype.



"Minnesota Mark" Pavidis schools Scott and Tim at the art of billiards. We could almost hear that Clapton song. All that was missing was Newman and Cruise.

This is No Kids Toy

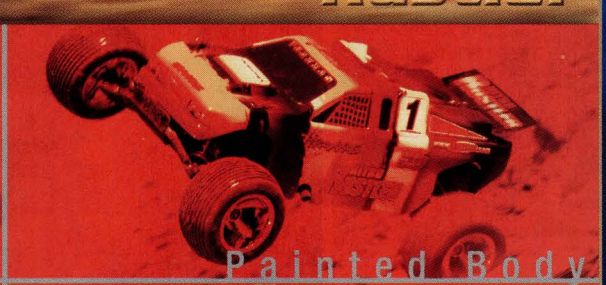


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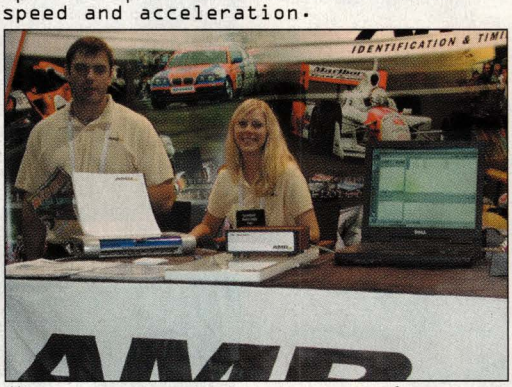
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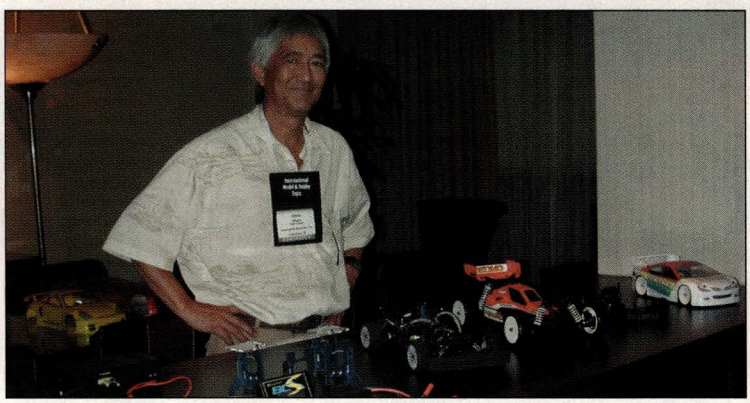
Tamiya is getting back to its roots with the releases of such vehicles as the Twin Detonator (shown) and the new Blackfoot. The Detonator is based on a modified Wild Dagger chassis and sports a pair of motors for added speed and acceleration.



Traxxas' new twin-motor Villain EX ruled the boat pond. When the Villain entered the water, lesser machines became scarce and a crowd lined the pond to get a look-see.



When your products are so unique and widely accepted that you have virtually no competition, do you still need to promote them? Apparently, yes! AMB's lap-timing transponders and software are used not only for R/C racing, but for just about every other type of sport where accurate scoring is essential.



Yokomo didn't have a booth at this year's show; instead, they rented a suite. Dealers and invited guests could see all the new Yokomo goodies by appointment. Chris Chan has just started with Yokomo, but he and the R/C industry go way back. Chris was responsible for, among other things, all of those early Associated ads for the original RC10.



Our new friends from Power Racing brought their new nitro monster truck to Chicago. No kidding - they're thinking of calling it the "Ravage." We don't make up this stuff; we just report the facts.



Skinny poses with Thunder Tiger/Ace owner Aling Lai, who is holding the company's new FM-1e Ducati bike. Rumor has it that they will soon be offering a nitro version as well.



Hitec's Glen Merrit accepts the "best booth" trophy.



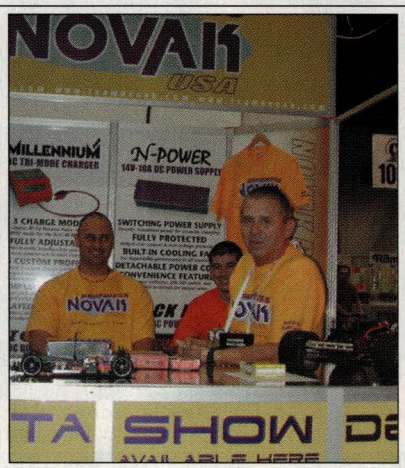
Dreams do come true: Skinny finally met his hero, Mr. S. Tamiya, the big boss of Tamiya. Here they are holding the company's new, evolved version of the Terra Crusher called the TNX!



Now we've seen it all! Hey buddy, a little walking won't kill ya! Can you imagine being pulled over for speeding by a guy riding one of these things? Where's T.J. Hooker when we need him (probably atop the hood of a speeding get-away car)!



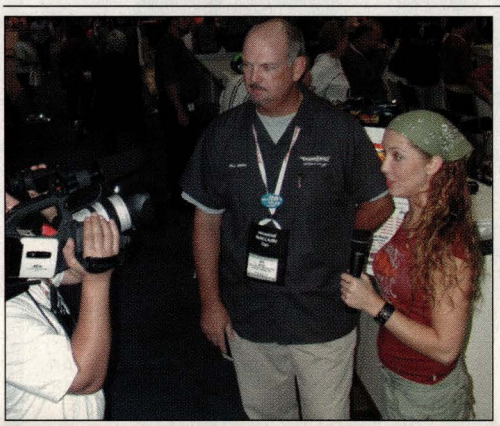
Skinny with the beautiful and mysterious Akiko from MRC just prior to forcing her to abandon her booth for an essential ice cream run!



Bob and Tom are brave. Charlie, on the other hand, lays low in case any brushed-motor "hit men" are roaming the isles of the Chicago show.



"King" Richard holds court in the Thunder Tiger/Ace booth. Saxton's fast in everything he does - 1/8-scale buggies, 1/10-scale trucks - even motocross (where he was a minicycle champ!).



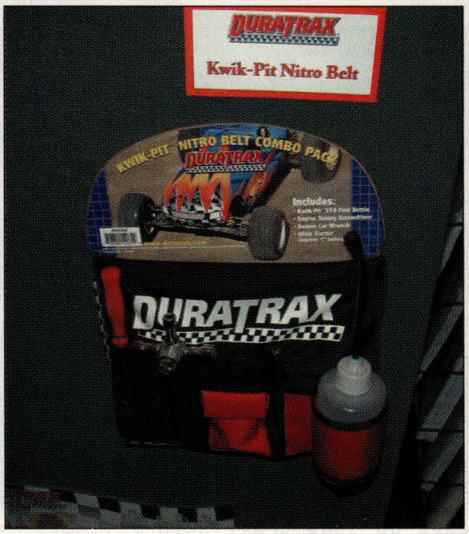
Horizon's Bill Jeric has gone from corporate to cool. Word has it that this crew was actually interviewing Bill for an upcoming episode of MTV's "Cribs."



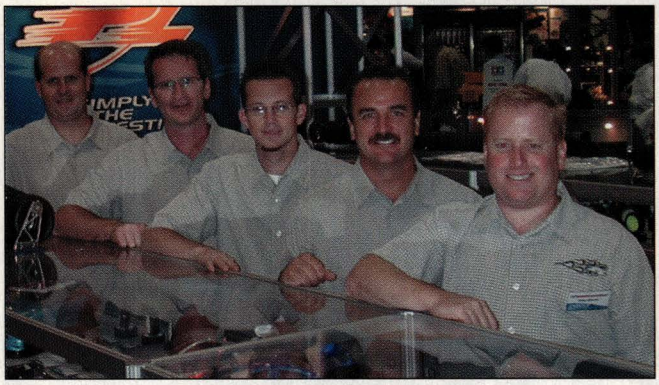
Robin Schumacher and Arian Martinez pose with the company's new 70mph nitro truck. We scoffed, but they showed us a video in which the truck was clocked at over 67mph using a radar gun. We're sorry we doubted you!



Two of these Team Losi personnel have world championship titles under their belts. Can you name them? Hint: you're probably wrong!



"That's all fine and dandy," muttered Skinny, "but where do I fit my "eleven-sies"?



No, it's not the latest boy band; it's Mark, Todd, Scott, Reb and Tim from Pro-Line. We have heard that they're working on a demo...



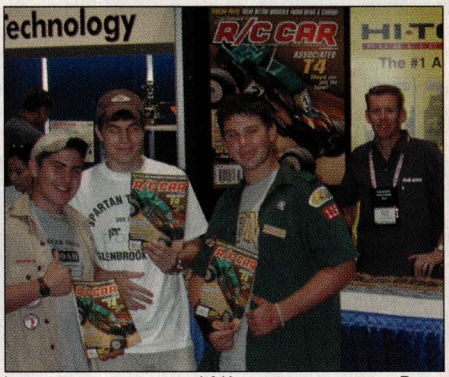
The Hardcore Racing "lounge." We love those guys!



Skinny has finally found a vehicle that might even be bigger than the Pumpkin. Parma brought in the Spider-Man monster truck to go with its replica body for R/C monsters.



Tamiya is serious about nitro. They're even coming out with their own line of nitro fuel.



Loyal readers (OK, they were Boy Scouts who got into the show for free and who took any free merchandise they could lay their grubby little hands on) in front of the R/C Car booth. D-Rock thinks there's more to life than being really, really, ridiculously good-looking.

FEEL THE ELECTRICITY

Buying holiday gifts? Hey, get something for yourself too!

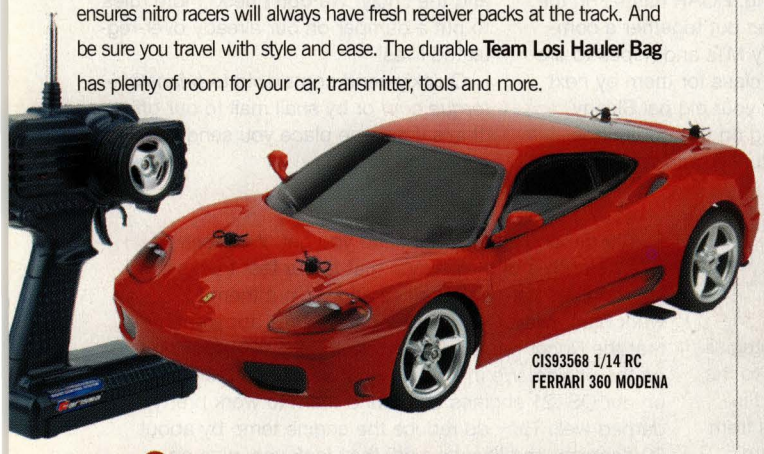


LOSA0015
XXX-4 GRAPHITE PLUS
4WD OFF-ROAD BUGGY

Ready to be a serious 4WD competitor? Look to Team Losi's latest engineering achievement. With the amazing new **XXX-4 Graphite Plus** buggy, Losi engineers have pushed the performance envelope even further by adding super-lightweight graphite chassis components, a Kevlar spur gear, titanium nitride-coated hinge pins and a whole lot more to the race-proven XXX-4 platform. No question—this buggy owns.

If you're into sports cars, check out Carisma's new line of officially licensed **semi-RTR Ferraris**. Each comes with everything you need, including motor, radio system, ESC, 7.2V battery charger and pack and more. It assembles in less than two hours. And it runs like a dream—on a carpet or pavement, it can really pick up some speed and do all sorts of donuts, snap turns and tight circles.

With hot cars like these, you gotta have tools to match. And these fit nicely in your stocking, so start spreading hints now! Like Team Losi® **Nut Drivers**, which feature precision-ground titanium-nitrided chromium steel tips that can withstand just about any punishment your workbench can dish out. Dynamite® offers an exciting pair of peak chargers that won't drain your wallet—the peak-detection **Vision Peak™ 2**, which charges Ni-Cd and Ni-MH 4- to 7-cell packs at three different rates, and the **Pit Peak™**, which ensures nitro racers will always have fresh receiver packs at the track. And be sure you travel with style and ease. The durable **Team Losi Hauler Bag** has plenty of room for your car, transmitter, tools and more.



CIS93568 1/14 RC
FERRARI 360 MODENA



LOSA99150
Losi Nut Drivers:
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LOSA99001
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DYN4044
Vision Peak 2
AC/DC Peak Charger



DYN4007 Pit Peak
RX Peak Charger



JRP2342 XR2i | JRP3342 XR3i | JRP3172 XS3 | JRP3340 R-1 Pro

JR See your local hobby shop or our Web site for JR's full line of top-quality radios, prices and availability.

		List Price	Our Price
LOSA0015	XXX-4 Graphite Plus 4WD Off-Road Buggy	499.99	329.99
CIS93368	1/14 RC Ferrari Enzo	149.99	99.99
CIS93568	1/14 RC Ferrari 360 Modena	149.99	99.99
CIS93668	1/14 RC Ferrari F40	149.99	99.99
CIS93768	1/14 RC Ferrari F2002 F-1	149.99	99.99
LOSA99150	Losi Nut Drivers: U.S. 4-Piece Set	54.99	49.99
DYN4044	Vision Peak 2 AC/DC Peak Charger	59.99	39.99
DYN4007	Pit Peak RX Peak Charger	24.99	19.99
LOSA99001	Team Losi Hauler Bag	59.99	49.99



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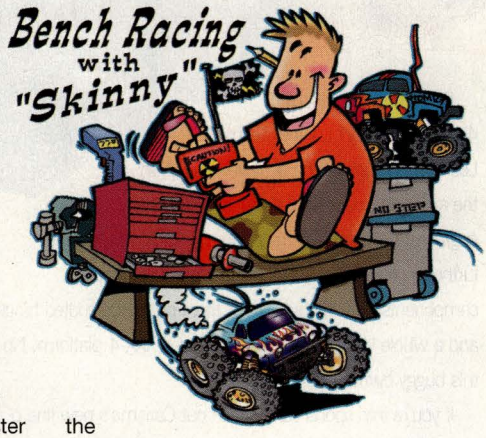
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ZENOAH | CARBON NHP TECHNOLOGY

[Bench Racing]

Well, it's getting close to the end of the year. The holidays are coming up, racing is winding down, and Mother Nature is getting ready to end our playtime with snow and rain—that is, unless you live in Southern California. Then you just get to R/C longer because it is cooler and you don't have to suffer heat stroke playing with your R/C! It's hard living in the R/C Mecca, but someone has to do it! Besides, I can continue to bring you the latest tests on new trucks and parts.



Speaking of new goodies, we just received the new Savage SS—this is the answer that all you "hobbyists" have been looking for in your quest to build your own monster truck. Yes, that is correct; you complained and HPI listened. They heard that some of you out there actually like to build your own MTs and are now offering a complete build kit of the Savage. It comes with a .26 engine and other updates, but I don't want to spill all the beans yet, because we are testing it elsewhere in this issue.

By the way, I should thank you; since you wanted a "build kit," guess who gets to build it—me! Like I don't have enough to do as it is! The whole RTR craze has really made my job easier, but now I have to build the SS and test it—darn you all!

There are other requests that have been listened to as well. Not only did manufactures hear the call of a build kit for MTs, but also there is a trend towards larger displacement engines. Most of the major players in the nitro engine market are now offering larger than .21 engines to power your monster truck. This is a good thing, as our trucks require low-end grunt. With these larger-sized engines you can build your truck with the cool aftermarket parts and not have to worry so much about weight. Also, with the larger piston, your engine works less and has less heat buildup. With engines such as the XTM 24.7, OFNA .26, Dynamite .26, Orion .26 and Thunder Tiger's .90 (!), we all should have a good selection to choose from this holiday season.

Another trend (and I have been warning you) is the sanctioning bodies that now want to corral us into an organized classes for racing. ROAR has taken the first step and has put together a committee to classify MTs and hopes to create an "official" class for them by next year. Of course, your old pal Skinny insisted on being on this committee (they asked, actually), and I'm calling on the "tribe" to help me out. I need your input to back up my vigilance to keep the MT class fun and creative. I feel MTs are special in the fact that the people who drive them are the most innovative and creative people in the R/C world. After all, we did save the industry from its slump. Besides, the monster truck class is the most fun I have when I go out racing—so let's keep it that way.

Send in your comments and ideas quickly so that I can give them to ROAR. Remember, we are the few, the proud and the crazy! We don't need more rules to put a damper on our already over-regulated lives!

Quickly send comments to *brians@hi-torque.com* or by snail mail to our office (that's the same place you send your subscriptions to!).

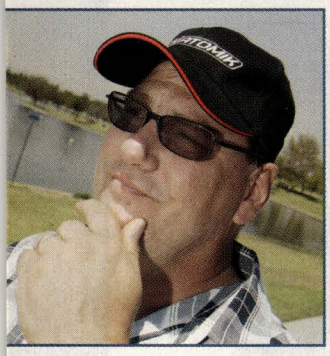


BENCH TEST: KEEP IT COOLER

Nocer Racing Strategies is a new company to the R/C world. Located in Kentucky, the guys from Nocer are totally into nitro engines and wanted a head that did some awesome cooling and had that "R/C jewelry" look. After some quick thinking and many tests, Nocer has achieved just that.

Nocer offers heads for just about every type of engine on the market, and the price range is from $59 to $79 depending on what head you get. We received a few samples of their heads that fit our test trucks and buggies here at the office and we put them to work right away. Once on our cars, it was apparent that the Nocer head is indeed downright sexy-looking on the engine. We tried them on our Traxxas 2.5 and on our OS .21 engines and found them to work pretty darned well. They do reduce the engine temp by about 20 degrees, and like we said, they look very nice on our vehicles. The design of the head lends itself to abuse and will take a roll-over rather well. To prevent bending, the top cooling-fin has a tapered thickness to it, and the high polish finish is a snap to maintain.

If you're in the market for a head, then this might be for you. Check Nocer out at *www.nocer.com* or call (270) 782-7750. Tell them Skinny sent you!









BY BRIAN SKINNER

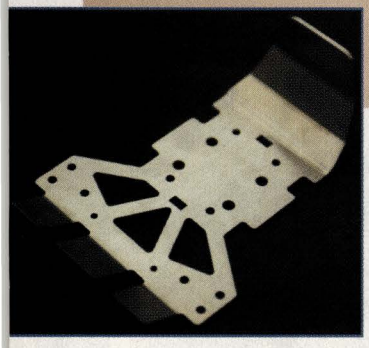
NEW STUFF: HATS OFF TO ATOMIK

Our good buddies over at Atomik RC are finally moving forward. They have been around for a year or so and are in the midst of a product explosion; they will be releasing a bunch of new goodies in the coming months. To help you from losing your head over all the new products, Atomik has come out with a really cool-looking hat to keep your head on straight. You can get these caps—with one of several variations of Atomik's logo—in any color you want, as long as it is black! The price will be between $7 and $10 and it's a great deal for looking cool in the pits. Call Atomik RC at (805) 499-7003 (ext. 16) or go to *www.atomikrc.com*

MINI-PUMPKIN RAISES SPIRITS

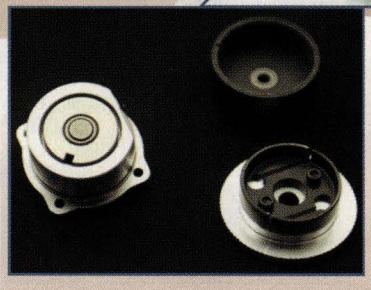
The great pumpkin brings joy to Frank "I shouldn't punch my YZ450F so much" Masi. America, Frank (that editor boss of mine) had a little high-speed accident the other day while (not) winning the junior class out at the local MX track. Since he hurt his foot (broke it in three places, to be exact) and was down in the dumps after the surgery (he did get some cool titanium turnbuckles), I wanted to cheer him up a little. I was at the local hobby shop to get some parts for one of our tests (yes, we actually buy parts for our cars!), when I saw the spitting image of our Orange *R/C Car* van. I picked it up to give to Frank to cheer him up. You should have seen the joy in his eyes as I put the mighty *R/C Car* stickers on the mini van. It makes me so happy that the Orange Pumpkin can bring joy like that—even if it was in 1/100 scale!





SKID ROW

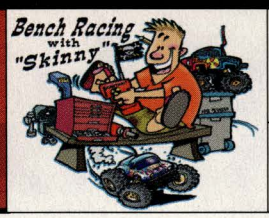
Hardcore Racing is at it again! Not happy with having what many believe to be the world's best T-Maxx skid plate, HCR decided that the big beefy OFNA Monster Pirate needed the best skid plate too! The new skid plate replaces to the flimsy stock plastic skid plate, and is made from NASA's finest space age 6/4 titanium. This is the best titanium the world has to offer. HCR is known for the best Ti skids on the market, and the new OFNA replacement skid is no exception. Demand the best for your Pirate and order your new skids today. The HCR skid sells for $59.95, and you can contact Hardcore at www.racinghardcore.com or 1-888-928-RACE for more info.



THE SCARY BEAST LIVES

Thunder Tiger has put fear into my heart with their big brute, the EK-4. Now they have helped to tame the beast by coming out with a heavy-duty clutch system to curb the EK-4's immense appetite for clutch shoes. Based off a helicopter clutch, TTR has made a neat clutch system to hook up the awesome power of their .70 engine—without digesting clutch shoes. The bottom line is that it delivers more power to the huge tires.

The clutch shoes are a simple, one-piece design that is larger in diameter to handle more load. To top it off, TTR installed a fibrous liner in the clutch bell to further boost performance. Also new is a .70 starter/backing plate combo for the EK-4. The starter has been beefed-up with a bigger bearing and the starter shaft is now secured by an E-clip. Tighter tolerances keep air leaks to a minimum. Now if that were not enough, if you have an EK-4 with the old system (and have your sales receipt) you can call TTR and get this hot new setup for FREE! Other wise you can buy one at your local hobby shop for a nominal price. Contact www.acehobby.com or call customer service at 949-833-7498 for more information.







MINI RACE REPORT

The second annual U.S. Gas Chaps went off earlier this summer, and was one of the best events this year. Unfortunately, because of the ROAR nats coverage we did last month, we didn't have space for this event. I did, however, want to let everyone in on the race, because this event is great! Steve Dunn had pulled out the stops for the Gas Champs.

First off, Steve Dunn, Marty Korn, and Chad Bradley built THE best track I think anyone had seen. Everyone walked away from this track saying it was spectacular. The boys from KZ Speedway got the "track of the year award" for the huge supercross track.

There's a tradition Steve Dunn has started at this event, and it is called "Swag Fest." Mr. Dunn rounded up a couple of thousand dollars worth of prizes that he raffled off to the Sportsman guys. If you finished well, you walked away with some great products. Just to give you an idea, here are the top three prizes the first place winners received: a $300 gift certificate to Best Buy (a local electronics/goodies chain), an M8 radio from Airtronics and a sweet OFNA Monster Pirate RTR! Panther tires also gave away a ton of tires, and nearly everyone walked away with some sort of swag.

WHAT ABOUT THE RACING?

The U.S. Gas Champs was geared for the regular guy, but most of the pros came to pull trigger too! Since this year's event was just two weeks before the ROAR nats, every big name racer you could think of was there. It was a great opportunity for them to practice up and get their rides ready for the nationals.

RC MINIMIZED RACING CAR

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Length: 6.6 in (167mm) • **Width:** 2.8 in (71mm)
Wheelbase: 3.5 in (90mm) • **Includes:** F-130 motor, Perfex™ 2-channel pistol radio, electronic speed control w/brake, servo saver • **Required:** 4 "AAA" batteries for the car, 8 "AA" batteries for the radio

The technology of Mini-Z...the soul of Ferrari.

Whether you're a Ferrari fanatic, or just a casual admirer of exotic cars, you're going to want to own this scale replica of an Italian legend. Kyosho has added the Enzo Ferrari — named for the company founder himself — to its exciting lineup of Mini-Z Racers. It looks fast just standing still, so you can imagine how quick it is when you take it around the track — especially with a chassis that's been re-designed for even greater performance!

The upgrades start with a more center-mounted motor, distributing weight more evenly for better rotation. A lay-down battery lowers the car's CG, which further improves steering and handling. The electronic speed control features realistic braking action. And to help protect gears from impact damage, this Mini-Z is equipped with a servo saver.

Everything else that makes Mini-Z Racers so popular is still here: complete preassembly, stunning scale detail and a pre-installed 2-channel radio and 130-size motor. It's display-worthy, race-ready, and a "must-have" for the serious racing enthusiast — as well as the sport R/Cer. Find out more by logging onto www.kyosho.com, or receive information by calling 1-800-682-8948 and mentioning code number 2954M.



The new MR-02 chassis makes this Mini-Z even MORE fun to race!

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I liked the fact that there were two classes—Expert and Sportsman—for both 1/10-scale trucks and nitro buggies. Plus, they had my favorite class (monster truck). It was great to be able to race your class, then go out to see the fast guys do their thing.

I had a blast racing my Terra Crusher. Unfortunately, my suspension was way off the mark and I had to slow way down for the corners. I vow to return next year and put some spank down on that Hickerson guy!

The best race of the day had to be the 1/8-scale pro main. Marty Korn battled with Ryan Cavalieri for the first half of the A-main, and then Chad "I got the new MBX5" Bradley picked up when Ryan had mechanicals. Marty and Chad went at it until Chad's MBX5 started having plug issues. Poor Marty was totally attacked for the first 45 minutes of the main by these two, and had to drive the entire time as if it was the first lap. Finally, after both the attackers dropped out, Marty was able to put it on cruise control for the rest of the race and take the win.

Monster truck A-main:
1. Gene Hickerson
2. Jay Smoker
3. Aaron Deguzman

1/10 scale Sportsman A-main:
1. Bailey
2. Guff Germany
3. Peter Anselmo

1/10 scale Pro A-main:
1. Ryan Cavalieri
2. Adam Drake
3. Jared Tebo

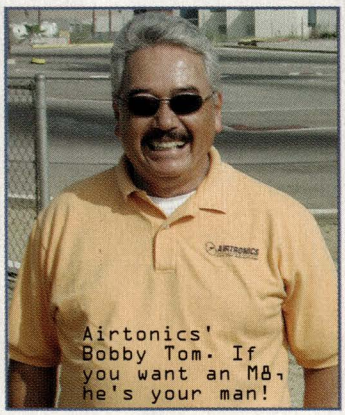
1/8 scale Sportsman A-main:
1. Tom Smitty
2. Bailey
3. Scott Lang

1/8 scale Pro A-main:
1. Marty Korn
2. Greg Waller
3. Jeremy Kortz

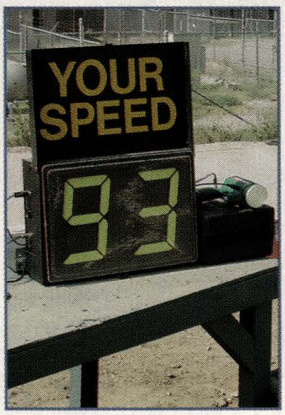
This was a great event and I highly recommend you all come out next year. I promise to bring you complete coverage next year, and I'm sorry we could not give you more. I suggest someone follow me around next year and make sure I don't break my camera again!



Chad Bradley is a cheery fellow.



Airtonics' Bobby Tom. If you want an MB, he's your man!



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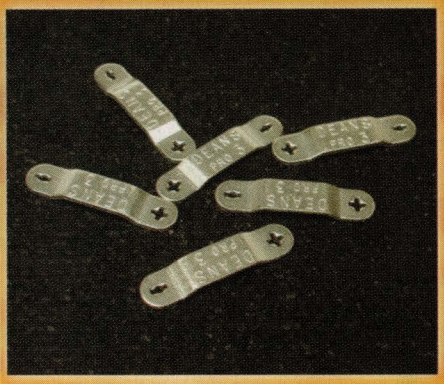
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#1601 .....25pcs
#1602 .....100pcs

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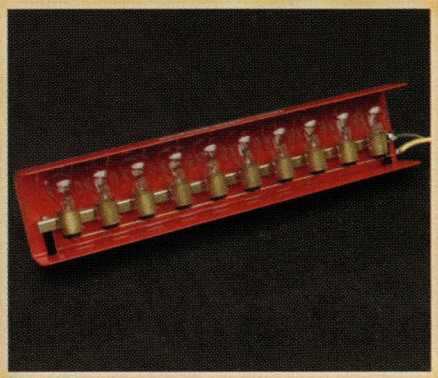
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"Rating: A+" -Xtreme R/C Cars
"The best building jig on the market" - R/C Car

#2040

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#2030 .....kit
#2031 .....assembled

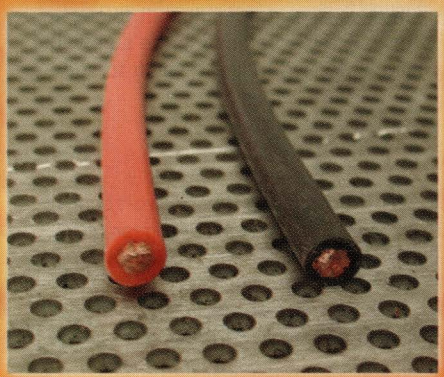
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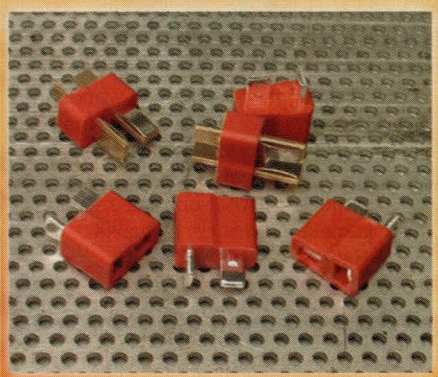
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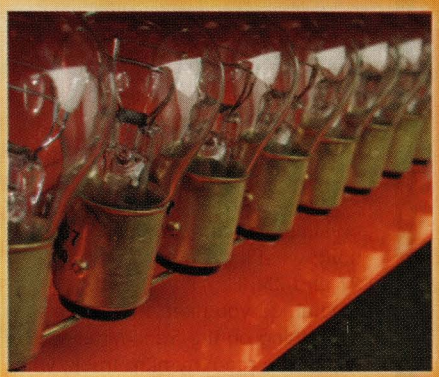
#1410 .....2ft ea. red/blk
#1430 .....25ft Red
#1431 .....25ft Blk
#1432 .....25ft Blue

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LOVES THAT TIGER!

I am new to the R/C world, and I was flipping through the pages of the October 2003 issue of *R/C Car* and I fell in love with the Thunder Tiger FM-1e bike. Can you tell me where I can get this bike and how much it'll cost? Can I have one custom-made just like the one in the mag? If so, who can do it? I would do it myself, but I don't have those talents of being able to put stuff together without causing a catastrophe. Any help you can give me will be greatly appreciated.

Juan Borbon
Via *rc-car.com*

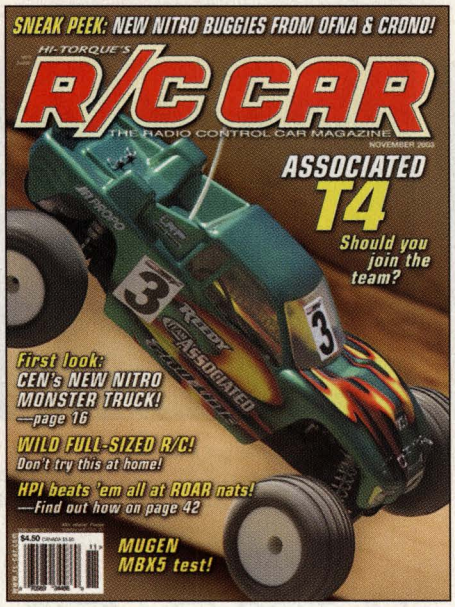
Juan, you can get the FM-1e through just about any hobby shop that carries or can order Thunder Tiger products for you. The "street" price for the FM-1e, i.e. what you can expect to pay after discounts, is around $250. Of course, you'll also need a radio system with a servo and electronic speed control, a motor, a six-cell rechargeable battery pack and a suitable charger. The company that makes the hop-ups we used in the October issue's article is called Crazy Nut Racing, and you can reach them by phoning (410) 282-5085. As for building the thing, our best advice is to see if someone at your local shop can either build it for you or can recommend a reliable person.

IS IT CRYSTAL CLEAR YET?

I've got a question about receiver crystals. I'm confused about all the stuff: what's the difference between 27 and 75MHz? If you change your crystal, do you need to change something on the transmitter too? If I wanted to race my nitro truck, what would be a good radio system to use that is affordable and reliable? Thanks for the help.

Alex
Via *rc-car.com*

Alex, crystals work in pairs—one for the transmitter (marked Tx) and one for the receiver (marked Rx). The rules of crystals are that if your radio is on 27, then your crystals must also be on 27 (same for 75MHz). Also, if your radio is AM, then the crystals must also be AM (the same is true for FM radios). There are many affordable radio systems out there, but for nitro, choose one that's in your price range that has EPA (end-point adjustment) for the steering and throttle channels.



CAN THE LIGHTNING HANG?

I have a 1/8-scale buggy—the Hot Bodies Lighting. I was just wondering if you guys had tested one of these, and what your opinion was of this car. Also, are parts from Kyosho interchangeable? What upgrades would you make on this car? Thanks.

Rich
Via *rc-car.com*

Rich, we haven't done a full-blown test of the Lightning; however, it was featured in our March 2003 issue, where it finished second overall in our RTR buggy shootout. We don't believe that any Kyosho 7.5 parts will fit the Lightning; however, we've never investigated this possibility. The first thing we'd do is upgrade the servos to higher torque ones; this would make the biggest difference in handling. Also, we would fill the diffs with a base silicone fluid setup such as 3000wt front and rear and about 5000wt in the center.

FILTER MAINTENANCE

Is it the same for every nitro car that every three to four tanks of fuel that you need to clean and re-oil the air filter?

Dante
Via *rc-car.com*

Although that's a good rule of thumb to follow, you should clean and re-oil your air filter as soon as it becomes noticeably dirty. If you run in clean conditions such as on hard-packed dirt or on pavement, you'll need to clean your filter less frequently. Dusty conditions will make your filter dirty more quickly, and will require you to clean it more often. Another way to look at it is that you can never have an air filter that's too clean! Even if it's not that dirty, a clean filter will allow your engine to breathe better and make more power.

STUCK IN GEAR

Hi. I have a 1/10-scale GS Vision Pro nitro sedan and a .12 STS RS5 Turbo engine. My problem is that the two-speed doesn't shift to second. I've tried adjusting the screw, but it still doesn't make the shift to second. Help!

Kazz
Via *rc-car.com*

It's possible that your two-speed could be stuck in second gear (this has happened to us, too!). If by loosening the adjustment screw your two-speed still doesn't shift, try tightening it and see if you can notice a change in ratio (i.e. it's using first gear). Otherwise, take it apart and check for damaged parts. Rebuild it as per the instructions and try it again.

LAYING DOWN THE GAUNTLET

First and foremost; GREAT magazine! It's well done on many levels. I read the "Pro-Files" in the October 2003 issue and while reading Drake's I was reminded of comments made by

E-mail your letters direct to the editors! You can get ahold of Frank Masi at *frankm@hi-torque.com.* If you're going the old-fashioned route, send along your letters to *R/C Car* at 25233 Anza Dr., Valencia, CA 91355. Check us out on the Web at www.rc-car.com

another pro driver (not any of the ones you interviewed). This August, a CRCRC club member was racing in the Kyosho Challenge in St. Louis, Missouri, and while pitting with many pros, he asked, "Are any of you coming to Columbus in January for our big race?" One replied, "Why would I want to get my rear-end handed to me by a club racer?" They need to remember how they got to where they are and that it is because of good club racers to compete against. He happens to be right; several of our club racers can compete at their level. Mr. Drake risks it every year and attends; maybe that's why he is considered to be so good, because he pushes himself and his skills at all times. Don't misunderstand me—Drake is not the only pro who shows up each year, but this is one of Adam's home tracks, and he spent many years with us prior to getting any sponsorship. He is a heck of a racer (and person). We here in Columbus Ohio welcome any and all takers.

Thanx Steve
Via rc-car.com

BAN THE FUNNIES

I have just finished reading Skinny's account of this year's ROAR Off-Road Fuel Nationals (October '03 issue). Again I hear of poor sportsmanship at a national event. In this case it is something that is a federal crime: the FCC might find the article very interesting. The frequencies left for us to use in this excellent hobby are there for a reason. If people are using special frequencies, they could be interfering with other hobbies or worse yet, communication equipment, blasting equipment or god forbid, medical equipment to name a few. This is a callous and uncaring act and ROAR, IFMAR and NORRCA need to stop this practice immediately. The "pros" in our sport need to act like they are the best and be role models, not criminals.

Rick Bachman
Arizona

One solution to this problem is for all large events to adopt the T-time method to organize their practice schedules. Not only does this provide a more level playing field as far as track time is concerned, but also it will make it easier for officials to monitor frequencies (and will make it unnecessary for drivers to seek out these illegal "funny" crystals).

magnetics
IT'S TIME TO LAY
SOME RUBBER BABY!

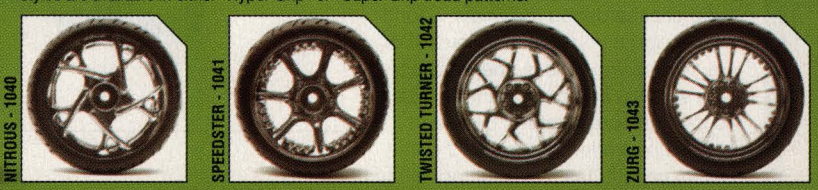


SUPER/HYPER GRIP TIRES
Magnetics Hyper Grip and Super Grip 26mm Radials are built using an interior honeycomb design, which means NO FOAM INSERTS required! The tires offer good grip and are made of a long-wearing medium compound rubber.





PRE-MOUNTED TIRES
You want Race Time, not Glue Time. Magnetics come on four serious 26mm street wheels with pre-mounted and glued radials. Finished in chip resistant high gloss chrome, Magnetics use the industry standard hex fitting for compatibility on the most popular electric and nitro touring cars. All styles are available in either "Hyper Grip" or "Super Grip tread patterns.



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TOOLIN' around



You've no doubt heard the cliché "the right tool for the job." Nowhere does this apply more aptly than in the R/C hobby, where we often spend as much time wrenching as we do driving! "Toolin' Around" brings you the latest tools not only from within the R/C industry, but also from the bins at home improvement and hardware stores. We also want your input: if you know of a tool or gadget that makes R/C wrenching a bit easier, write to us at "Toolin' Around," c/o *R/C Car* Magazine, 25233 Anza Drive, Valencia, CA 91355. You may also email your submissions to *brians@hi-torque.com*.



RC SCREWS

You might be thinking, Skinny, have you lost your mind? Screws are not tools! *Au contraire, mon ami.* True, screws are not tools, but how about a sweet box with hundreds of screws that fit any buggy, monster truck, sedan, or whatever you drive? Who wouldn't dig that? RC Screws has a sweet screw set that comes in a nice compartmented box that will fit into your toolbox. The selection includes hundreds of screws that fit just about anything you will ever bend or break on your R/C vehicle. The screws come in stainless steel and casehardened materials. I don't know about you, but fifty percent of my wrenching time is spent replacing screws, and having an abundant supply of screws at my beck and call while working on my R/C definitely constitutes a helpful tool in my book!

Contact RC Screws: www.rcscrewz.com or (734) 260-6151
Price: $78.00

ATOMIK TEMP GUN

Atomik is known for its impeccable pre-painted truck bodies. Now Atomik is moving out and doing more by introducing more products for us R/C people (yippy!). Atomik has introduced an inexpensive temp gun for under forty dollars, and it works about as well as the higher priced units we normally see. The temp gun is small (it's the size of two quarters), and because of its diminutive stature, it is easy to carry with you at all times. All you need to do is stick it in your pocket and it's right there when you need it—much better than the big bulky ones we are used to carrying around. We tested Atomik's temp gun against the top-dollar models and found this little beauty to be within three to four degrees of the bigger models (and who's to say which is right or wrong?). The Atomik Temp Gun is set up for both Fahrenheit and Celsius scales and has different modes for the way in which it reads.



Contact: *www.atomikrc.com* or 805-499-7003
Price: $40.00 (varies with dealer)



AUGER IN

Well, actually, it's called a body reamer, but auger sounds cool! XTM is a fine importer of quality cars, parts, and tools. Which brings us to the tool in question. This reamer is one of the nicest tools you can find and works well for reaming bodies, opening up holes in plastic so screws fit better, and just about anything else that needs reaming! I have used my XTM reamer for about three months now and it is still as sharp as when I first got it. I have even used it on aluminum once or twice and it is still in good shape (although this isn't recommended). The blade is good quality tool steel and the handle is annealed aluminum for good grip. One nice thing about the XTM reamer is the handle—it is hollow so you can store the reamer bit in there when you are not using it. All you need to do is loosen the setscrew for the bit, slide it out, put it in the handle and put the cap on and it is ready to put in your toolbox until the next time you need it. XTM even gives you an Allen key for the setscrew! You can get the body reamer at any Hobby People shops or any good hobby shop that carries XTM.

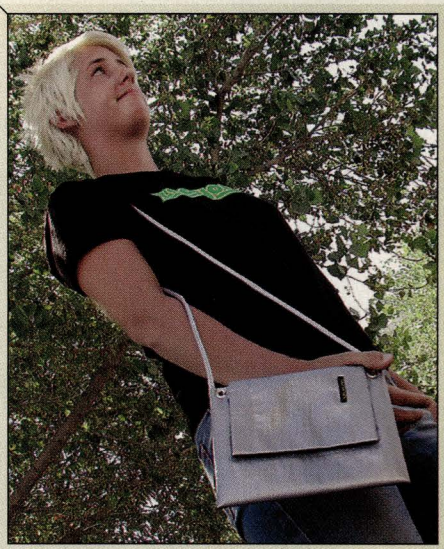
Contact: *www.globalhobby.com* or a Hobby People near you

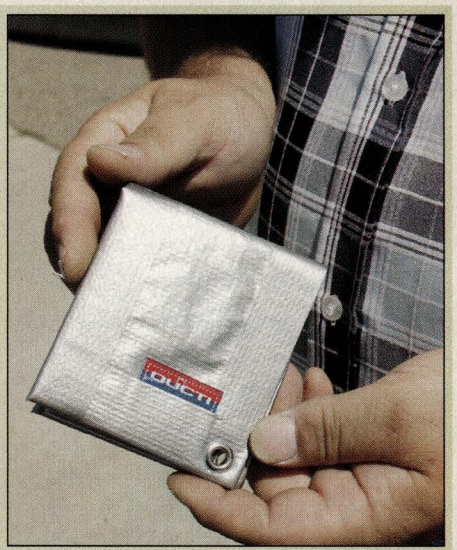
Price: 9.89

STYLE FILE

And we thought all the duct-tape had been used up! The new word in fashion in the pits is Ducti! Fashion? What's this all about? For starters, looking cool in the pits, out in the streets playing with your R/C, or impressing your babe is an important part of life. Nothing says "cool" more than a unique wallet, especially when you whip it out to pay for dinner, or when you're going to the mall with that oh-so-stylish purse. Ducti is a new company that is making some very cool looking purses and wallets out—of all things—duct tape! Yep, you read that right. These fashion items are so trick looking and unique that every time you show it, you are sure to get some interest. I have been using mine for a few months now and it works great and looks cool. I have received so many comments about the wallet that I thought I would let you all in on it.

Contact: Ducti: *www.ducti.com* or phone (719) 481-9345









HPI SAVAGE SS

By Skinny

America, you have begged and pleaded, and someone has finally listened. HPI has heard your pleas for a monster truck "build-it-yourself" kit, and they have answered with the Savage SS. Yes, fellow monster truckers, HPI has released its Savage in kit form, and it is officially the first MT kit to hit the mass market. Now you can have the satisfaction of building your truck from the ground up—and you can build it anyway you like, including the addition of any of the hundreds of aftermarket hop-ups already available for the Savage. As HPI has realized, the majority of the people who would prefer a kit to an RTR are likely to be more advanced hobbyists. For this reason, they chose not only to leave the selection of radio and electronics to the builder, but also they have included a host of new hop-ups right in the Savage SS's box—including an all-new, more powerful engine (more on this later)! The SS is truly the king of the Savage Empire.

World's first high-performance



monster truck kit



STILL WANT AN RTR?

You wouldn't think that HPI would introduce a hot new engine and only offer it in the SS kit, would you? Of course not! RTR fans can also enjoy the increased power and reliability of the S-25 engine with the new Savage 25 RTR. Although it lacks several of the SS kit's hopped-up features, e.g. the aluminum pipe and adjustable upper suspension arms, the Savage 25 comes with something the SS kit does not. HPI includes the Roto Start as standard in the Savage 25! The new RTR replaces the Savage 21, and also features the improved fuel tank from the SS kit, a pre-painted GT-1 body with new color schemes, a three shoe clutch (instead of two) and new, firmer black shock springs. The list price is $775.00.

OUTSTANDING FEATURES

As we are all familiar with the essential elements of the Savage, I'll refrain from going into too much detail about the truck's basic layout. Instead, I'll concentrate on the new goodies and how they combine to make the SS one of the most formidable monster trucks on the market.

NEW, LARGER S-25 ENGINE

It has become popular to have a bigger than .21 engine in monster trucks. If you run a fully decked-out truck, the larger engine is a good thing. Why? Because the larger piston has to work less to move the truck, and as a result, the engine will run cooler.

HPI's take on the "bigger-block" craze is the new S-25 engine. Beyond its larger displacement, the

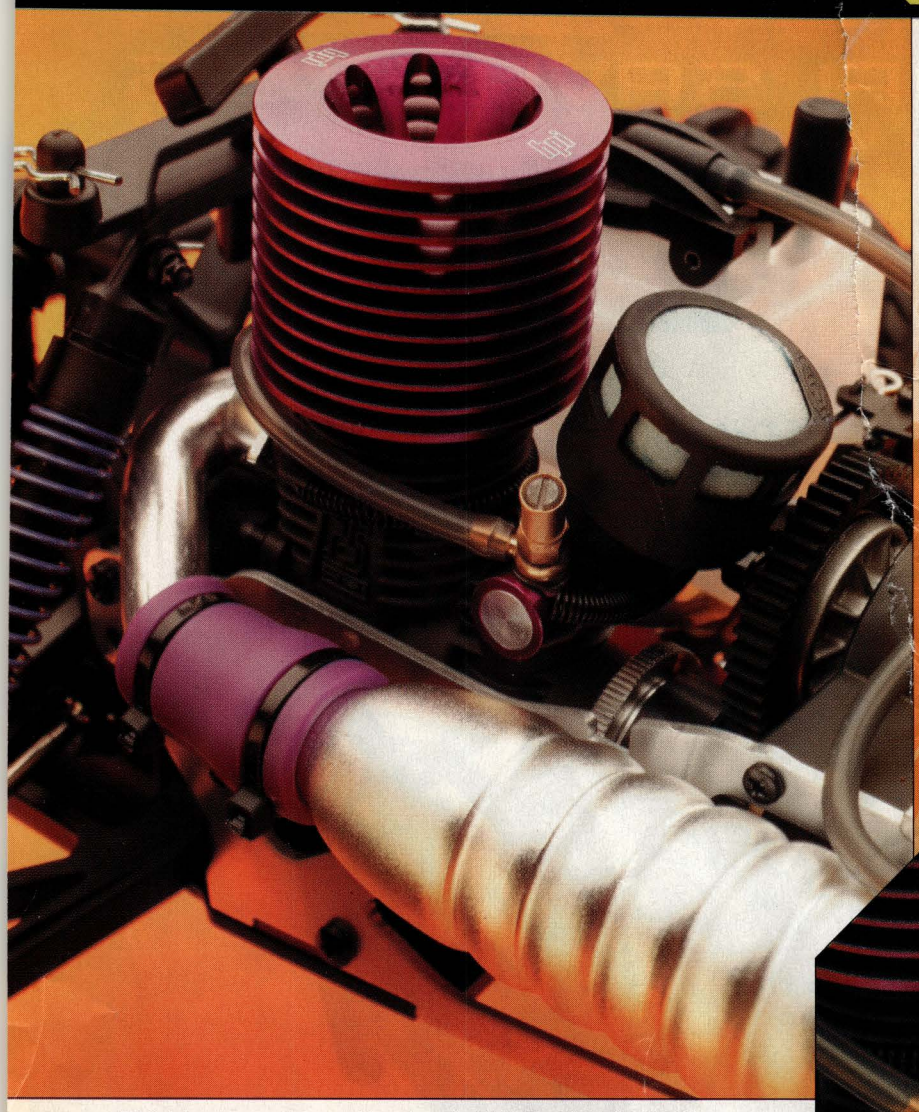
HPI SAVAGE SS

WHAT WE USED

- A pair of Hitec HS-5625MG digital high-speed servos
- JR Racing XS3 synthesized FM radio and receiver
- SideWinder 30-percent racing fuel
- Custom paint by Korn Designs



S-25 is a vast improvement on the Nitro Star 21BB engine that came in the original Savage 21. First, the S-25 features a billet-aluminum heatsink head. This not only cools the engine better than the old engine's cast-metal head, it's also more durable; we've seen quite a few old engines with broken fins. Next, the S-25 gets a new, composite two-needle slide carb. Compared with the old engine's aluminum carb, the new carb is easier to tune (there are but two needles instead of three), and the composite material of the new carb's body is more stable when heated, giving you more consistent control over the air/fuel mixture. A large 7mm bore also ensures that the engine receives plenty of airflow for increased horsepower. Inside the engine is a dual-bushing connecting rod (the old engine had one bushing) and



The biggest change: The new S-25 engine is bigger and more powerful than the old Nitro Star 21BB. It is a better match for the big Savage and makes the truck feel smaller and more responsive.



The new carburetor feature a more stable composite body and has only two needles to worry about (the old carb had a low, mid and high speed needle adjustment).

ABC (aluminum piston with a long-lasting chrome-plated brass sleeve) construction. Other features of the S-25 include a black case (which HPI and several other manufacturers claim increases cooling, although some experts—such as the late Ron Paris—disagree on this) and the ability to accept HPI's Roto Start electric starting system

• **Test notes**—Our Savage SS never missed a beat with the new engine; it performed flawlessly for the entire three days we ran it. It's a good engine and works well with the SS; it has excellent pull and the added grunt made it possible for us to clear jumps and to power through tough sections that had previously given us fits while using the .21 engine in our old test truck. This engine will work perfectly on the track or out in the hills—it's both reliable and potent!

A RING OF TRUTH: EXHAUSTIVE RESEARCH

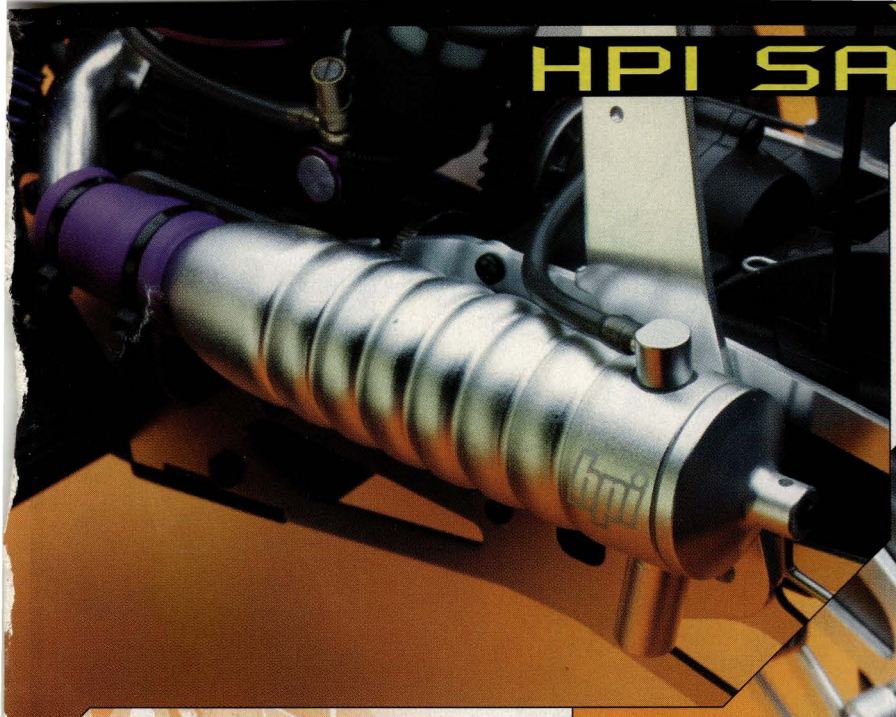
There's a reason why racers use aluminum pipes and not composite plastic ones. Part of the reason is the surface tension of the material. As the pipe must resonate with the engine's pulse, its ability to reflect is key to the engine's overall performance. HPI includes a brand new aluminum "ripple" pipe with the SS kit. The design of the pipe improves the low-to-mid throttle response and still provides a good top end. Along with the pipe is a tubular exhaust manifold—also made from aluminum. This combination allows the S-25 to breathe freely and make maximum power.

NEW GEAR RATIOS FOR THE NEW ENGINE

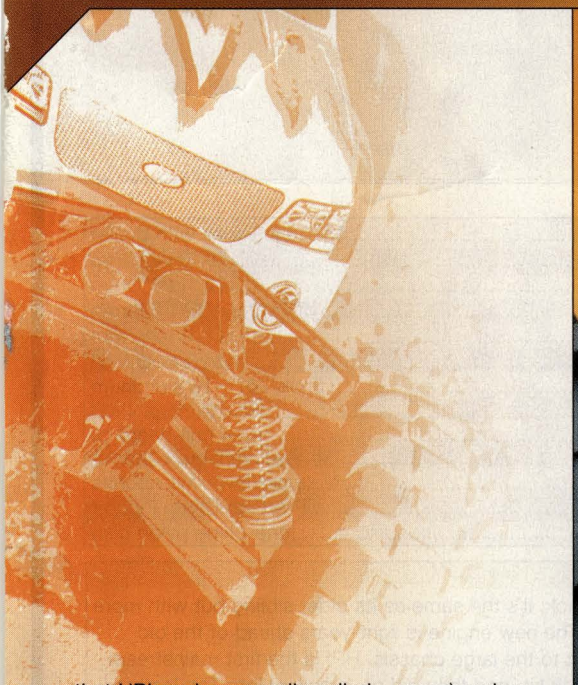
Bigger engines have more torque and can pull taller gear ratios. The V6 Toyota Tacoma pickup has different gearing than the four-cylinder version, and, following this logic, the larger, more powerful S-25 engine merited a gearing change from what was used for the old 21BB mill. The original Savage 21 came with a 14/52 primary gear ratio (which provided a 3.7:1 ratio). The SS comes with a choice of two ratios: 15/49 (3.27:1) or 18/49 (2.7:1). That's how much additional torque the new engine produces! The 15-tooth clutch bell is intended for most applications, however HPI includes the 18-tooth bell for those times when top speed is your sole concern.

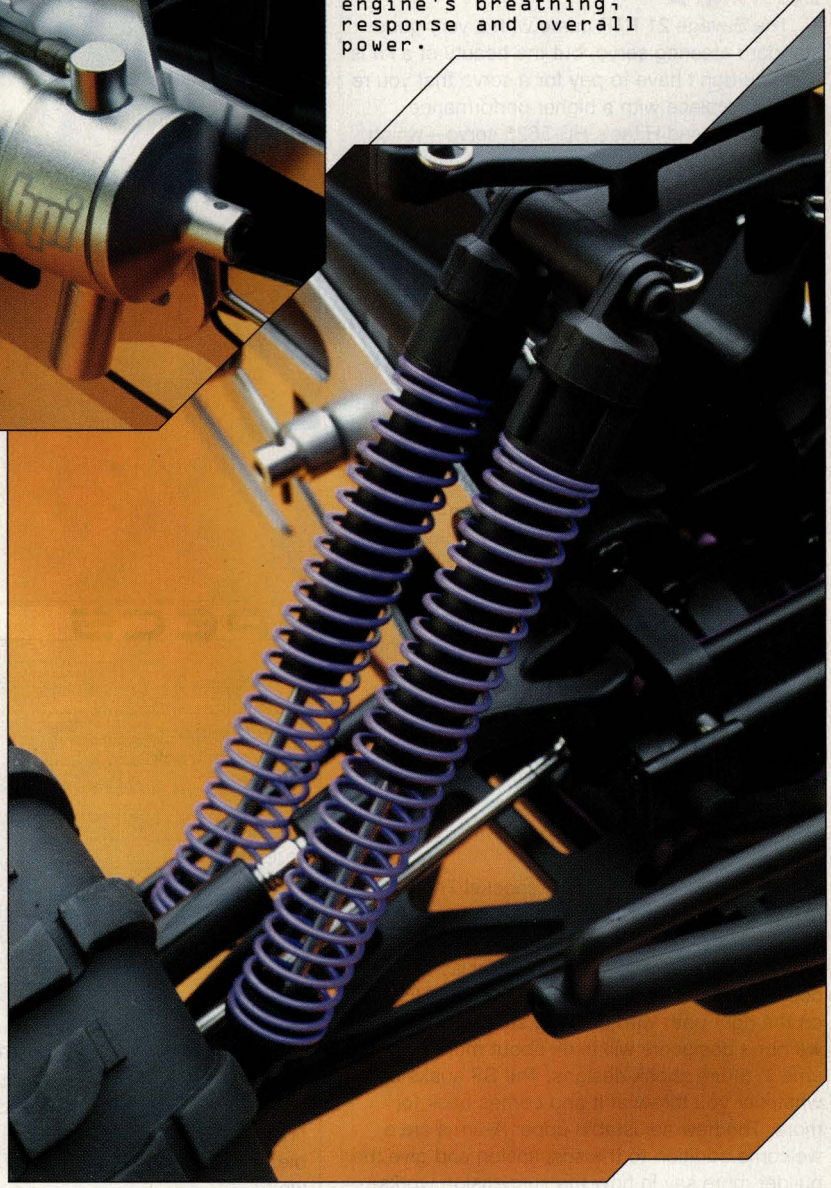
SUPER SUSPENSION

If you've been reading this magazine with regularity, you know that we are huge fans of the Savage's long-travel suspension. In particular, we feel



The ripple effect: With the new engine comes a new aluminum ripple-style pipe and tubular manifold. Both combine to improve the engine's breathing, response and overall power.





Minor changes equal big gains: The SS kit comes with HPI's optional adjustable upper suspension arms and new, firmer purple springs.

that HPI engineers really nailed the right shock mounting positions and shock length for this type of truck. So we were relieved to learn that HPI didn't mess with success when producing the SS kit—they simply improved upon it. First, HPI has included its optional adjustable upper suspension arms, which allow you to adjust each wheel's camber angle with ease. Each upper arm has its own steel turnbuckle so you can tailor the truck's steering and traction (via the camber angle) to suit a wider variety of surfaces. We have always felt that the original Savage's red (medium stiffness) springs were too soft for anything but lower speeds, climbing and crawling. The SS comes with new, stiffer purple springs on all eight of its oil-filled shocks. The springs provide better control at higher speeds (a must with the new S-25 engine!) and, by reducing body roll, vastly improve the truck's cornering ability.

MISCELLANEOUS MODS

The SS kit also features a new fuel tank. HPI has moved the fuel pickup from the front of the tank to the rear. This ensures that all of the fuel will be used up—the original truck had a tendency to seem as if it were running out of fuel even though it wasn't. HPI also removed the primer plunger—a potential source of air leakage—from the tank. It's really not needed; just cover the pipe's stinger with your finger and tug the pull-starter two or three times to prime the carb. The drivetrain has also been beefed up (although, in our opinion, it didn't need it) through the addition of chrome-plated, heavy-duty steel dogbones. Finally, the SS kit comes with an unpainted version of the original Savage 21's Nitro GT-1 pickup body. If you're going to build you own kit, you might as well go all-out and paint your own body!

HPI SAVAGE SS

REPORT CARD

Test location: Hot Rod Hobbies and the local hills

Conditions: Dry summer weather, loose and hard-packed dirt

Steering: A

The Savage 21 RTR came with a very good standard steering servo, but the beauty of a kit is that you don't have to pay for a servo that you're going to replace with a higher performance model. We used Hitec's HS-5625 servo—which is a moderately priced "super" servo—and the SS steered like a champ. Its nimbleness belied its size. The SS is a massive machine, but it never felt as if it needed much room to turn. It handled tight turns with no problems. The new springs (and camber adjustment) contribute to the more precise feel of the SS.

Engine: A

The S-25 is a great engine; it fired right to life and worked like a charm for the entire duration of the test. We've logged countless hours on the old .21-powered Savage, and we can safely say that the new engine smokes the old one in every aspect save fuel economy. Where the old Savage required a bit of a run to clear big jumps, the new truck cuts the distance by half. The truck lurches when you grab a handful of throttle, and the overall feeling is that of a smaller, lighter vehicle (although it's still the same size and weight of the old truck). It's all about power-to-weight, and the SS simply has better numbers. The new rippled pipe works well and has an interesting sound—it is definitely throaty sounding.

Suspension: A

We love HPI's long-stroke shocks! There is plenty of oil in them and the damping is the best you can get. The stiffer springs make a marked difference in performance, and as far as we could tell, we never really bottomed out. HPI is on the right path with the long stroke shock and we hope designers will think about more oil volume in future shock designs. The SS soaks up whatever you throw at it and comes back for more. The new adjustable upper A-arms are a welcome addition to the suspension and give the builder more say in how the suspension works.

Durability: A+

The Savage SS is a build kit, so you have only yourself to blame if it falls apart! We built the SS and it showed. We had no problems during our test. With most RTR monster trucks we test, something usually comes loose for falls off during testing—not so with the SS! Don't get us wrong: we love RTRs because they are so easy to get running, but if you're really, really want to be sure, building it yourself is the way to go. We have always found the Savage to be a well-made truck. Early Savages had a few hiccups, but they all have been worked out and the SS benefits from several running changes. It is a strong MT and you will be happy with the quality.



SPECS

Price:	$579.99 (varies with dealer
Length:	19.0in/480mm
Width:	12.1in/308mm
Wheelbase:	12.7-12.9in/324-329mm
Front/rear track:	11.1in/282mm
Weight:	7.5lbs (w/o fuel)
Chassis:	3mm 7075-T6 aluminum
Drivetrain:	shaft-driven 4WD
Bearings:	steel ball-bearings
Damping:	oil-filled aluminum shocks
Suspension:	upper/lower wishbones
Tires:	Pro-Line Crime Fighter
Wheels:	one-piece nylon dish

Final Score

Highs: The SS is a great truck; it's the same as its older sibling but with more power and better suspension. The new engine is light-years ahead of the old 21BB, and it is a much better fit to the large chassis. HPI is the first mainstream company to offer a monster truck kit, and they did an excellent job. The instructions are easy to follow and HPI has good tech support should you run into trouble. We like this idea and applaud HPI for introducing a kit in an RTR-dominated world.

Lows: It will take you about eight hours to build the SS before you can go play! Otherwise, there are no lows; the Savage is a good truck, and the SS is even better.

The verdict: Most manufacturers (at least the smart ones) listen to their customers. Sometimes they take action. HPI is to be commended for giving its customers what they want. The SS is like a reversal of the typical RTR theme, in which the kit precedes the RTR. The SS is definitely the truck that will bring more "serious" hobbyists into the world of monster trucking. Who knows, we could be seeing the beginning of a new trend!

SOURCES

Hitec, 12115 Paine St., Poway, CA 92064 • phone (858) 748-6948; fax (858) 748-1767

HPI Racing, 70 Icon Street, Foothill Ranch, CA 92610 • phone (949) 753-1099; fax (949) 753-1098

Sidewinder Performance Racing Fuel, produced by Morgan Fuels, P.O. Box 311201, Enterprise, AL 36331 • phone (334) 347-3525

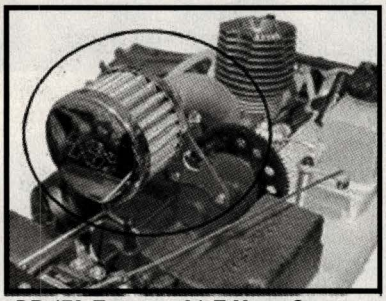
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THE SMOKIN NEWS

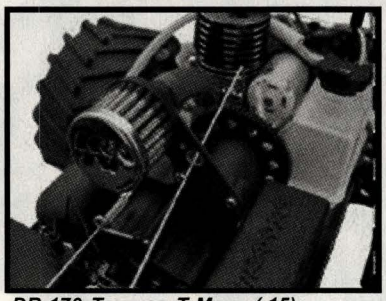
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(303)343-0151- Fax (303) 343-7966
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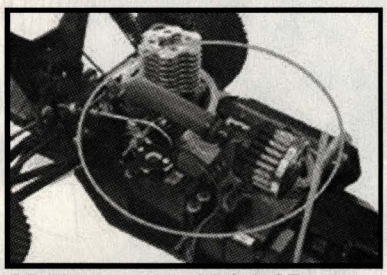
50% MORE AIRFLOW, MORE HORSEPOWER



DR-172 Traxxas .21 T-Maxx Conv.



DR-170 Traxxas T-Maxx (.15)

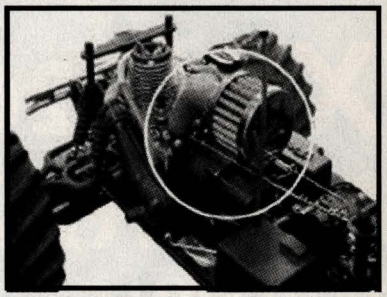


DR-370 Associated RC-10GT

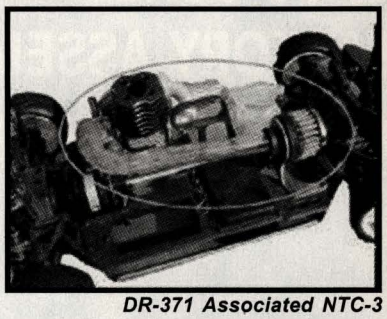
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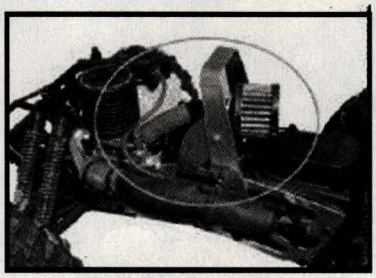
Cooler Air = More Power



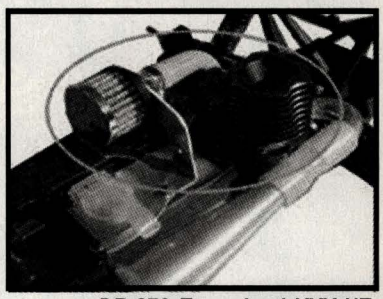
DR-173 Traxxas 2.5 T-Maxx



DR-371 Associated NTC-3



DR-472 HPI Savage



DR-270 Team Losi XXX-NT



DR-171 K&N Air Filter Cleaning Kit

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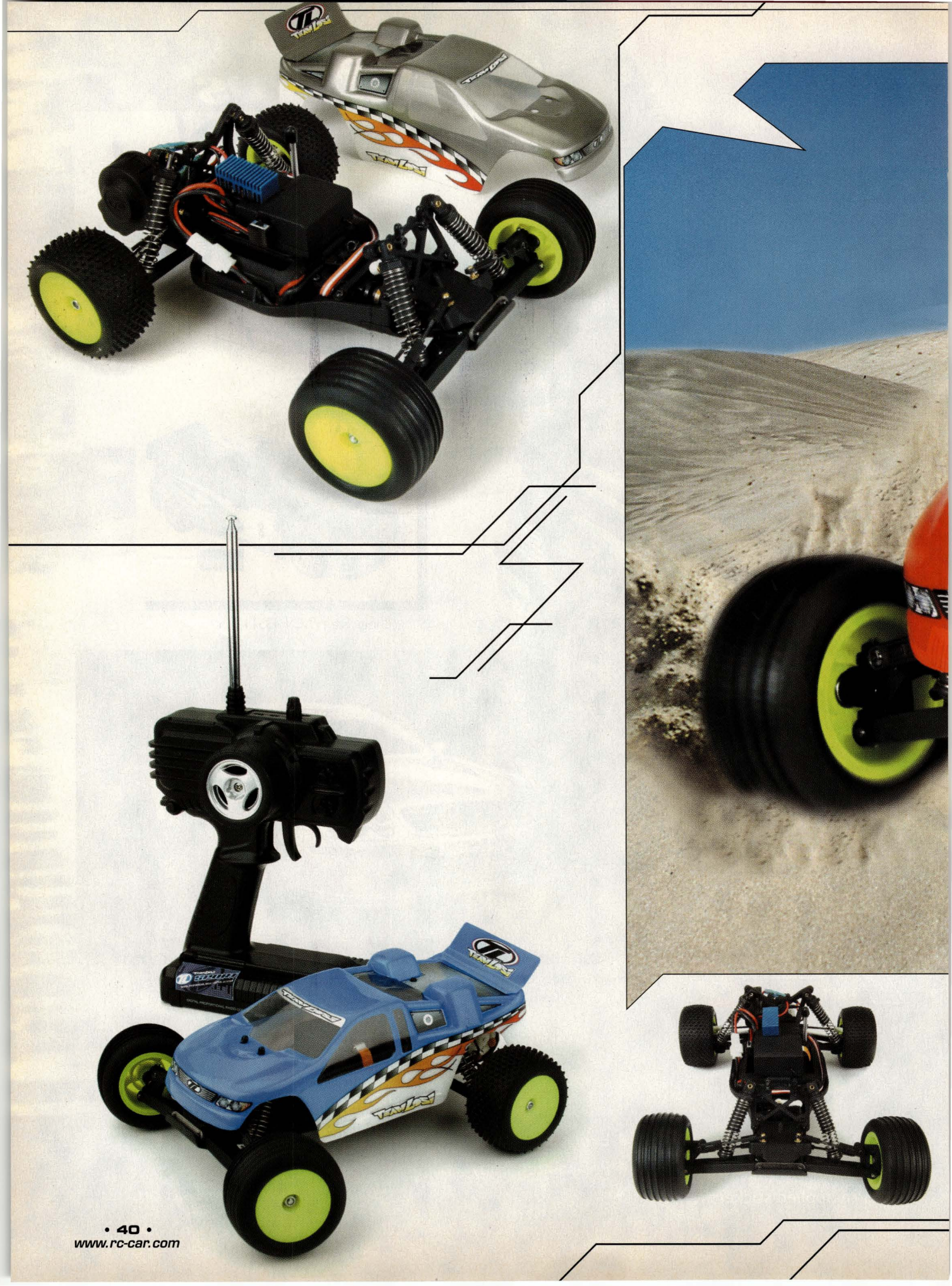
XB EXPERT BUILT

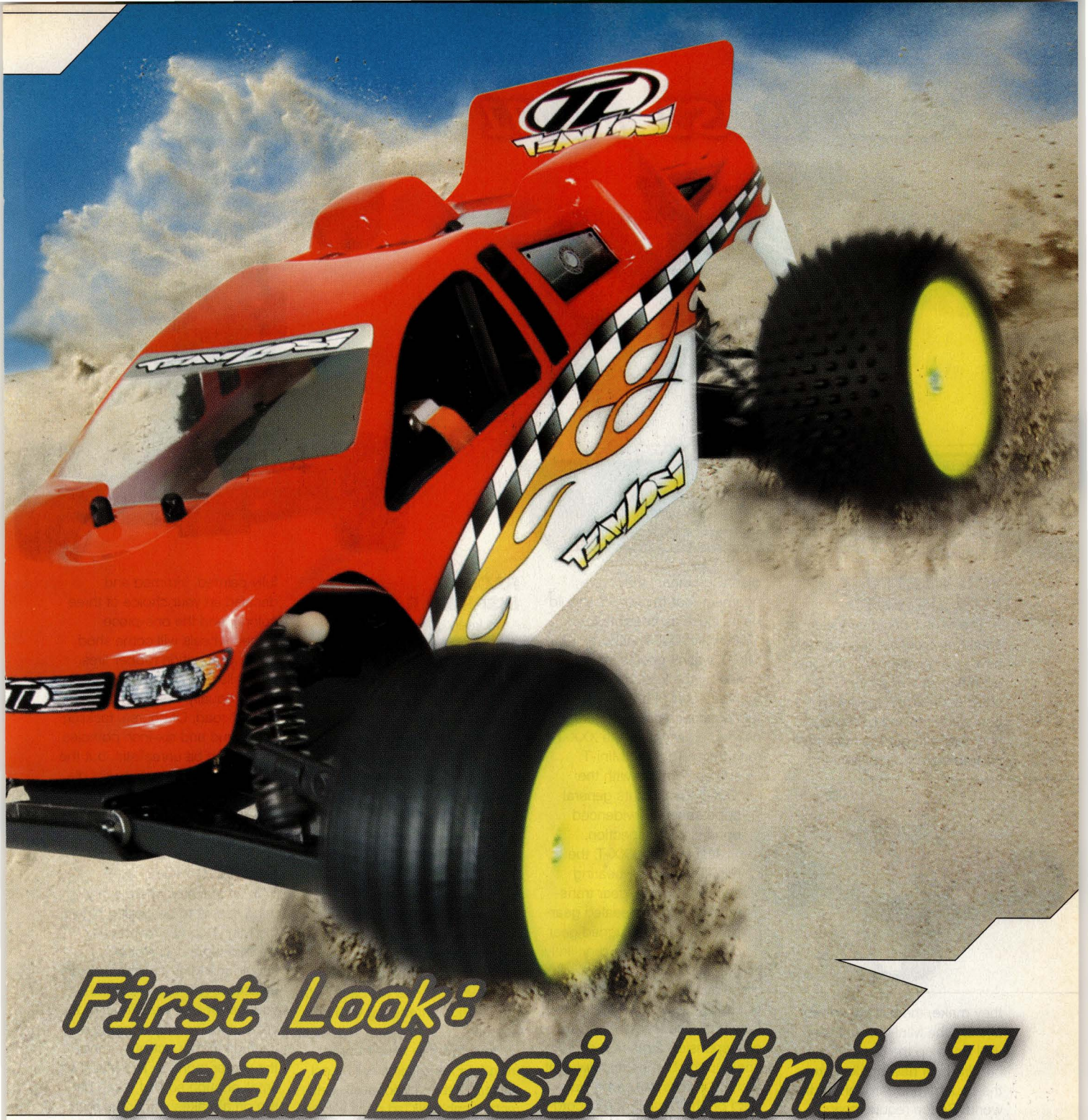
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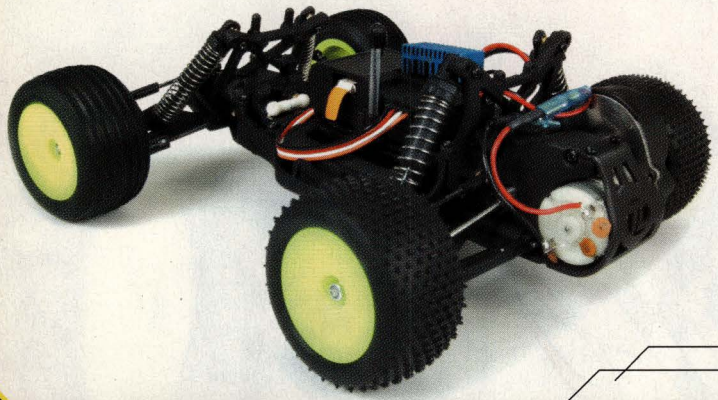


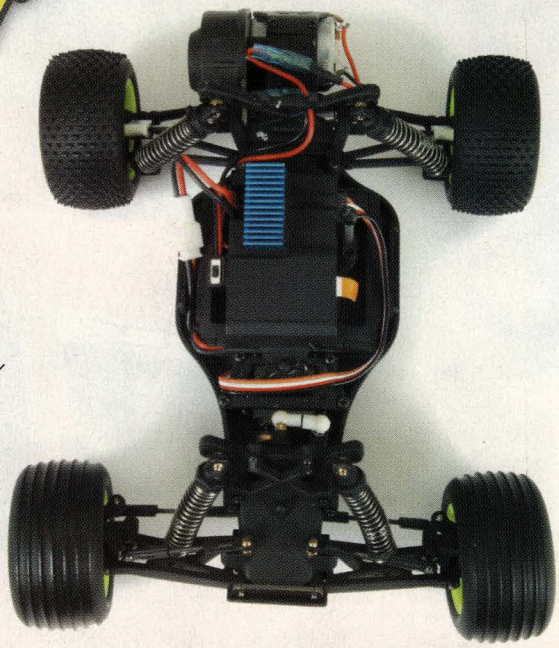
First Look: Team Losi Mini-T

The next big thing may be small

Micro R/C is a hot category; however, virtually all of today's most popular micro-mobiles are for on-road enthusiasts. One thing micro R/Cer's have been crying for is an off-road vehicle that could really go off-road—we're talking about jumps, ruts and berms! Team Losi must have been lurking in the various on-line micro forums, because their forthcoming Mini-T is a prayer answered for dirt lovers. The Mini-T is a 1/18-scale replica of the company's championship-winning XXX-T Matt Francis Edition race truck. Looking at the Mini-T, it appears as if someone at Losi has left Matt's winning truck in the dryer for a bit too long!

First Look: Team Losi Mini-T





TEAM LOSI SPORT

Team Losi has officially been "split" into two divisions. According the Losi sources, all of the company's racing kits, parts and tires will fall under the Team Losi division, while all of the RTR vehicles (such as the Mini-T) will be under the Team Losi Sport banner.

YOU WANTED IT, LOSI LISTENED

The Mini-T could very well spark the creation of an entirely new racing category. If it works even half as well as its 1/10-scale counterpart (and with Losi's engineering background and desire to get the maximum performance from everything they make, there is little doubt of this), the Mini-T could very well open up the possibility of hundreds of new tracks across the country and throughout the world. Space requirements would be slashed, and those lacking the indoor or outdoor square footage necessary to accommodate a 1/10-scale off-road track will be able to create challenging layouts within a very limited space.



TOY OR TREASURE?

According the Gil Losi Jr., the Mini-T isn't a toy version of the XXX-T—it's a real high-performance machine. In fact, Losi emphasized that during the planning stages, they were adamant that the Mini-T should be as close as possible to the 1/10-scale XXX-T. Although the Mini-T wasn't engineered in-house by the Losi staff, the manufacturer of the Mini-T was furnished with complete engineering drawings of the XXX-T race truck. That the Mini-T shares far more with the XXX-T than just its general appearance is evidenced upon closer inspection.

Just like the XXX-T, the Mini-T has a ball-bearing supported three-gear transmission inside a sealed gearbox. Although a rugged gear diff is standard, it's very likely that an optional ball diff will be available shortly. The two trucks are also similar in that they both use a set of long-travel suspension arms that can soak up the bumps. Lightweight friction shocks will come standard on the Mini-T, and according to the Losi staff, the suspension works very well. We were told that several testers were quite fond of repeatedly jumping their Mini-Ts off their desks!

Unlike toy-store R/C vehicles, the Mini-T has been designed for long-term use; not to be thrown away when it breaks. To this end, Losi plans to support the Mini-T with full replacement parts. If you break your Mini-T, you'll be able to pick up parts at your hobby shop and fix it yourself.

RACING-INSPIRED RADIO

To keep up with the performance of the Mini-T, Losi will include an all-new 27Mhz radio system that will provide fully proportional steering and throttle control. In addition, the radio offers reversing switches for both channels as well as a steering-rate adjustment. You can dial-down the steering response for younger or less experienced drivers or turn it up for more nimble handling for experts. A forward and reverse FET electronic speed control is also included in the package. You'll also be able to change crystals to any of the available channels on 27 band, so both you and five of your friends will be able to race without interfering with one another.

Power for the Mini-T comes from four AA alkaline cells. Losi tells us that an optional six-cell rechargeable NiCad pack will be available for even more speed and run time. Although we haven't been able to test one yet (production trucks weren't available at the time of this writing), we've been told that the Mini-T's speed and acceleration are very impressive.

READY TO RUMBLE

The Mini-Ts will come completely ready-to-run straight from the box. The XXX-T style body will arrive fully painted, trimmed and decaled (in your choice of three colors), and the one-piece dished wheels will come shod with high-traction rubber tires. Losi tells us that the Mini-T works equally well both on-road and off-road. Of course, tackling deep mud and six-inch potholes might be a bit unrealistic, but the Mini-T should be able to handle most backyard obstacles, jumps and cracked pavement with ease.

CONCLUSION

In an industry where everything seems to be getting bigger, the Mini-T comes as an unexpected curve ball. Not only should the Mini-T function as an awesome R/C trainer for the younger or less experienced driver, but it also may become a very fun indoor activity during the winter months. The Mini-T is small enough so that it can be run on a makeshift garage road course, yet powerful and capable enough to handle technical off-road courses with all the doubles, triples and whoop sections you can imagine! According to press release information, the Mini-T will be available before the Thanksgiving holiday and will carry an estimated street price of $150.

SOURCES

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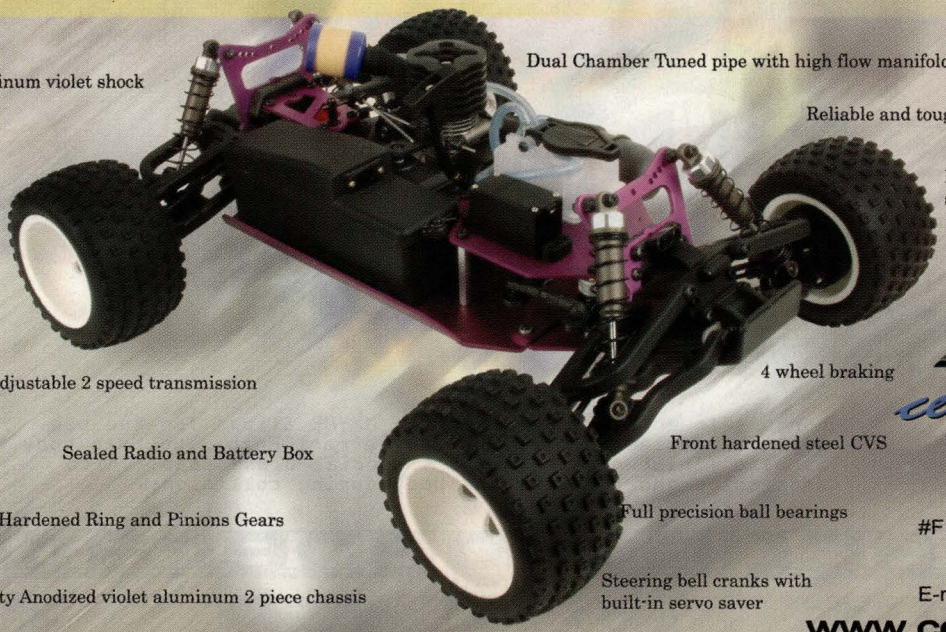
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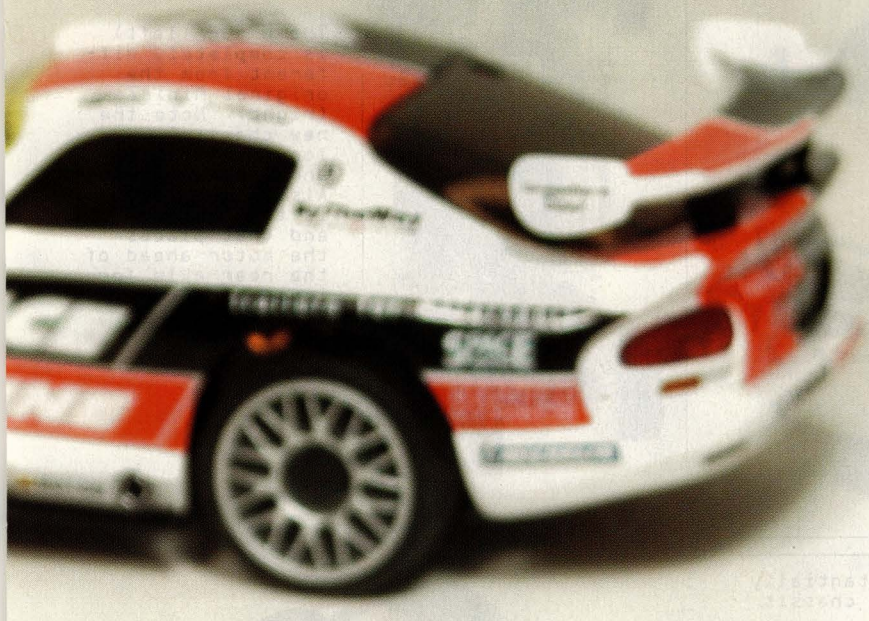
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KYOSHO MINI-Z MR-02



Longer, lower and wider, the new MR-02 allows for the use of lower bodies such as the new Ferrari Enzo. The Enzo body is also finished with Kyosho's special Gloss Coat, which adds shine and protects the body during collisions.

Second-generation



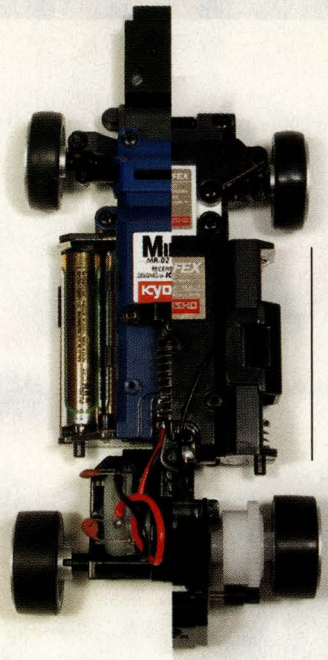




Each MR-02 set comes with a KO-Propo-designed two-channel radio system (with replaceable 27-band crystals, dual-rate steering and throttle/steering trims), a detailed instruction manual, extra pinion gears and motor-mount plates, replacement bushings and wheel wrenches.

If there's one car that can be credited as the catalyst for the micro-sized R/C craze, it's Kyosho's Mini-Z Racer. These tiny terrors combined the performance of larger R/C models with a size that's perfect for running indoors on those rainy days. It's been four years since the release of the original Mini-Z, and there have been several variations of the basic platform (Mini-Z F1 and Overlander off-road) and hundreds of body styles from which to choose; however, the basic platform of the original Mini-Z has remained essentially unchanged—until now! With the release of the second-generation MR-02 chassis, Kyosho has re-invented high-performance in this tiny format.





The MR-02 (left) is completely different from the original Mini-Z (right). Note the new chassis' longer wheelbase and wider stance. Also significant is the new rear end that places the motor ahead of the rear axle for improved weight distribution.

The MR-02 Enzo (left) sits substantially lower than the original Mini-Z chassis (right).



OUTSTANDING FEATURES

LOWER TO THE GROUND

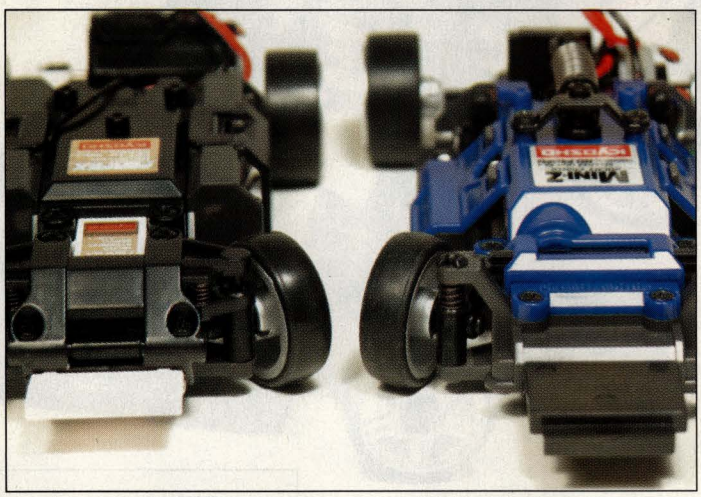
The first change we noticed about the MR-02 is that its chassis has been lowered. This was done not only to improve handling (a lower CG is always better), but to accommodate low-slung bodies such as the new Ferrari Enzo. Kyosho has alluded to the possibilities of a much wider variety of body types to be offered in the near future—bodies that could not have been possible using the original chassis. The chassis also comes with a longer 98mm wheelbase, again to create a greater sense of realism with lower and wider bodies such as the Enzo. The new chassis also offers the option of running flat-pack batteries to further lower the mass of the car.

IMPROVED MOTOR POSITIONING

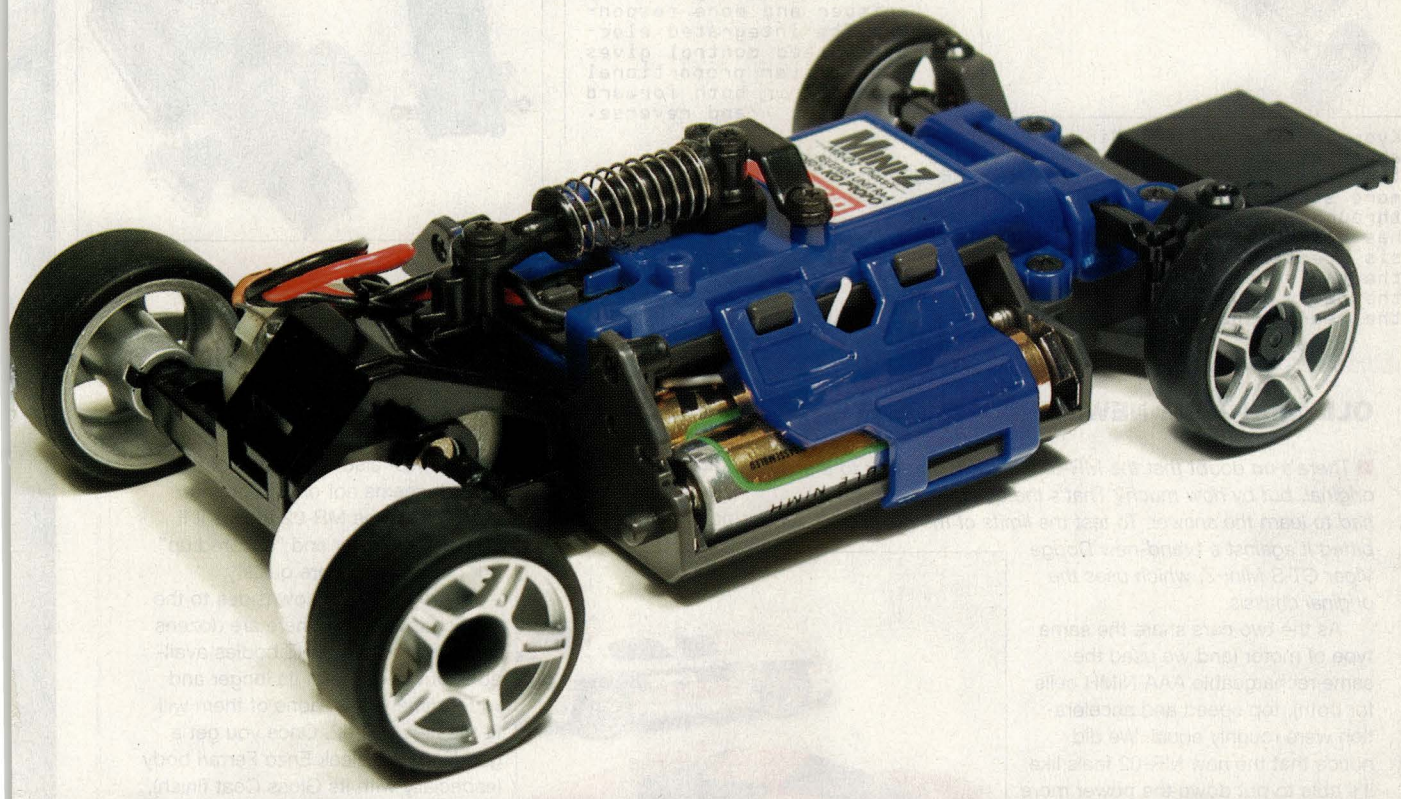
Attached to the new swing-type rear T-bar suspension is a motor that's been placed along the car's centerline for better left-right handling bias. In addition, the motor is moved inward to further centralize the weight of the motor for improved handling. A new gear ratio provides faster acceleration with the stock motor, while a new gear guard protects against infiltration by small debris that could otherwise cause damage to the sensitive gears.

BETTER SUSPENSION EQUALS BETTER HANDLING

The majority of the MR-02's changes have taken place in the suspension department. First, there are many more sus-



The new suspension system on the MR-02 (right) improves upon the design of the original Mini-Z's setup (left). The coil spring is now placed over the steering kingpin, giving the spring greater control over damping. It's also easier to change the spring on the new car, as the entire assembly is held together with just a single plastic C-clip (per side).



pension adjustments built in. You can now adjust the front wheels' toe-in angle without the need for aftermarket parts. The front suspension's kingpins and coil-springs can also be easily removed with just a C-clip, so you can quickly make changes to front-end damping. There is also a new damper for the rear end, which effectively does away with the "bouncy" rear end of the original Mini-Z.

ON-BOARD ELECTRONICS BOOST

Aside from the mechanical improvement, the electronics also get a makeover. First up is a high-resolution steering servo that delivers crisper handling and can match your control inputs more precisely than ever before. Also new is a one-piece high-frequency FET speed control that delivers improved response and greater efficiency in forward and reverse. The speed control also offers powerful brakes that halt the MR-02 with ease.

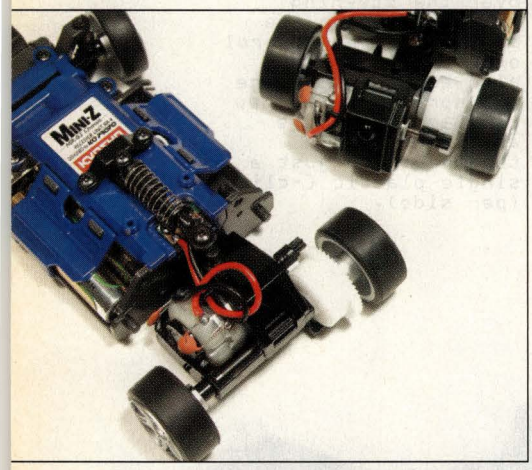
HIGH GLOSS FOR HIGH PERFORMANCE

The MR-02 we received has Kyosho's new Gloss Coat process on its Ferrari body. All Mini-Z bodies are stunning replicas of full-sized cars and trucks; however, the new Gloss Coat finish raises the look of the Mini-Z to an entirely new level. In essence, the body is sprayed with a final coating of high-gloss clear-coat that seals the original paint and protects the decals. Actually, the gloss coat smoothes the edges of the decals so that they appear to be painted on. You'll definitely have a difficult time running this body—it's almost too pretty to take down from the display shelf!

KYOSHO MINI-Z MR-02

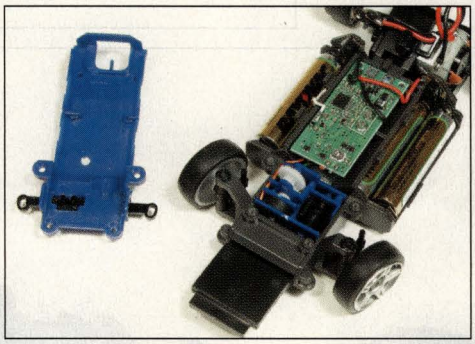
One of the most significant changes seen on the MR-02 is its battery placement. The MR-02 (foreground) still uses four AAA cells for power, but they are placed flat in the chassis, while the original Mini-Z's cells are stacked (background). This gives the new MR-02 a much lower CG and better handling.





Kyosho has moved the Mini-Z's motor ahead of the axle, which centralizes the car's weight. This gives the MR-02 more steering and makes it faster through transitions. The MR-02's motor has also been centered along the chassis' centerline, which also improves the car's left/right balance. Also note the newly added coil-spring damper for the rear suspension's flex plate.

The MR-02 receives a new, faster steering servo that provides handling that is crisper and more responsive. The integrated electronic speed control gives the driver proportional control in both forward and reverse.



OLD MINI-Z VS. NEW: WHICH IS BETTER?

There's no doubt that the MR-02 Mini-Z is superior to the original, but by how much? That's the question to which we had to learn the answer. To test the limits of the new MR-2, we pitted it against a brand-new Dodge Viper GT-S Mini-Z, which uses the original chassis.

As the two cars share the same type of motor (and we used the same rechargeable AAA NiMH cells for both), top speed and acceleration were roughly equal. We did notice that the new MR-02 feels like it's able to put down the power more effectively—especially from a dead start. Where the Viper's rear end tended to hop, the Ferrari's rear wheels remained in better contact with the carpet.



Steering is where the new MR-02 chassis really shines. It is significantly lower than the original Mini-Z, and its weight is also placed much closer to the ground. The MR-02 also has a wider and longer stance, which further helps to spread the car's weight out over a larger area. So it comes as no surprise that the Ferrari outhandled the Viper at every turn. Not only did the new car corner with less wheel chatter (particularly noticeable at the inside rear wheel of the Viper), but also it had a more precise feel to its steering. This must also be a result of the new steering mechanism, which seems not only to provide more nimble steering, but also made the MR-02 feel as if it tracked straighter and "squared up" out of the turns more quickly.

Are there any downsides to the new chassis? One: there are dozens upon dozens of Mini-Z bodies available, but because of its longer and wider dimensions, none of them will fit the new MR-02. Once you get a gander at the sleek Enzo Ferrari body (especially with its Gloss Coat finish), we can't imagine that you'd be pining for a Subaru Impreza! We're also certain that Kyosho will continue to support the MR-02 chassis with a host of new, never-before-seen bodies. We doubt Kyosho will ever phase out the old chassis completely (there are too many out there and too many cool bodies), but the MR-02 is definitely the future of Mini-Z racing.

SOURCES

Kyosho, distributed by Great Planes Model Distributors, 2904 Research Rd., Champaign, IL 61826-9021 • (217) 398-6300; fax (217) 398-0008

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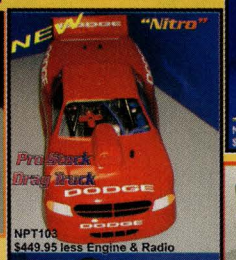
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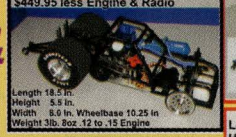
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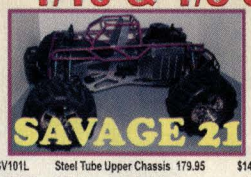


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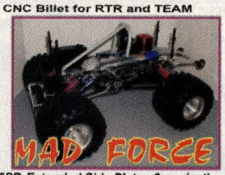
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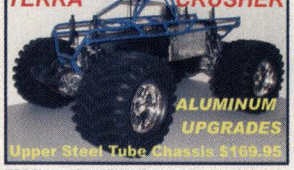


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AGT102	Front Brace Tubes	$7.95
AGT910	3 Point Roll Bar	$39.50
AGT250	125cc Fuel Tank	$10.95
AGT302	High Volume Header	$24.95
AGT333	Frt Arms Aluminum	$34.50
AGT334	Rr Arms Aluminum	$34.50
AGT430	Frt Shock Tower Alum	$19.50
AGT431	Rr Shock Tower Alum	$19.50
AGT345SD	Servo Receiver Guard	
	CNC Billet for RTR and TEAM	$16.95





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TEC110	.21 Conversion	$125.90
TEC241	Big Tube Header	$23.95
TEC330-31	Super Duty Bulkhead (pr)	$85.00
TEC332-33	Aluminum A-Arms (8)	$99.50
TEC339	Alum Turnbuckles	$24.95
TEC340	Bulkhead Brace Fr or Rr	$16.95
TEC348	Forward Only Conversion	$29.95
TEC360	Rear Gearbox Support	$18.95
TEC601	Big Bore Carb (2 needle)	$28.95
TEC616,17,18,20	Pinion Gears	$15.90
TEC910	Roll Bar 3 point	$39.50
ACC600-18	14 Fin Engine Head	$39.90

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KMF210XL	Extended Titanium Dog Bone	$24.50
KMF300V2	Steering Servo up Front w/ Bumper	$68.95
KMF301V2	Front or Rear Bumper	$39.95
KMF334	Super Duty Center Skid	$19.95
KMF343	Wheelie Bars w/ Rubber Tires	$39.90
KMF910SD	Super Duty 3 Point Roll Bar	$44.95

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TRS331	Rear Bulkhead (Blue)	$24.00
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TRS402	Rear Arm Mounts	pr. $23.50
TRS403	Front C Shaped Hubs	pr. $24.00
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TRM110XL	.21 CONVERSION KIT	$115.90
TRM115XL	.26FS CONVERSION KIT	$132.00
TRM116XL	.40FS CONVERSION KIT	$132.00
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TRM123	ENGINE MOUNT FOR .15 OR .21	$35.00
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TRM305	FRT SWAY BAR FOR TRM324	$35.95
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AGT301W	TUNE PIPE MOUNTING WIRE	$5.00
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TRM321	REAR SKID PLATE (MED)	$15.95
TRM320XL	FRONT SKID PLATE (EXTENDED WITH BUMPER GUARD) 3.2mm	$19.95
TRM320SD	FRONT SKID PLATE (SD) 3.2mm	$19.95
TRM321SD	REAR SKID PLATE (SD)3.2mm	$19.95
TRM322	FRONT BUMPER (2 PIECE)	$18.95
TRM323	REAR BUMPER (2PIECE)	$18.95
TRM324	FRONT BUMPER SUPPORTS	$22.95
TRM325	REAR BUMPER SUPPORTS	$22.95
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TRM326R	LOWER BRACES (PR) RACING	$36.50
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TRM331V3	REAR BULKHEADS	$49.50
T25332	UPPER CONTROL ARMS for 2.5	$36.50
T25333	LOWER CONTROL ARMS for 2.5	$39.50
TRM332R	UPPER CONT ARMS RACING	$29.50
TRM333R	LOWER CONT ARMS RACING	$32.50
TRM334	CENTER SKID PLATE TRANS.	$14.00
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TRM341	REAR BULKHEAD BRACE	$10.95
ACC600-T25	14 FIN TRAXXAS 2.5 ENGINE HEAD	$39.90
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TRE280	E-MAXX *AIRCOOL* Motor Mount	$19.95
TRE281	E-MAXX Battery Hold Down (2)	$26.95
TRE103	E-MAXX 3.2mm Alum. Chassis	$49.95
TRE107	E-MAXX Extended Main Chassis	$59.95







.18, .21, .25 UPGRADE ENGINES CALL





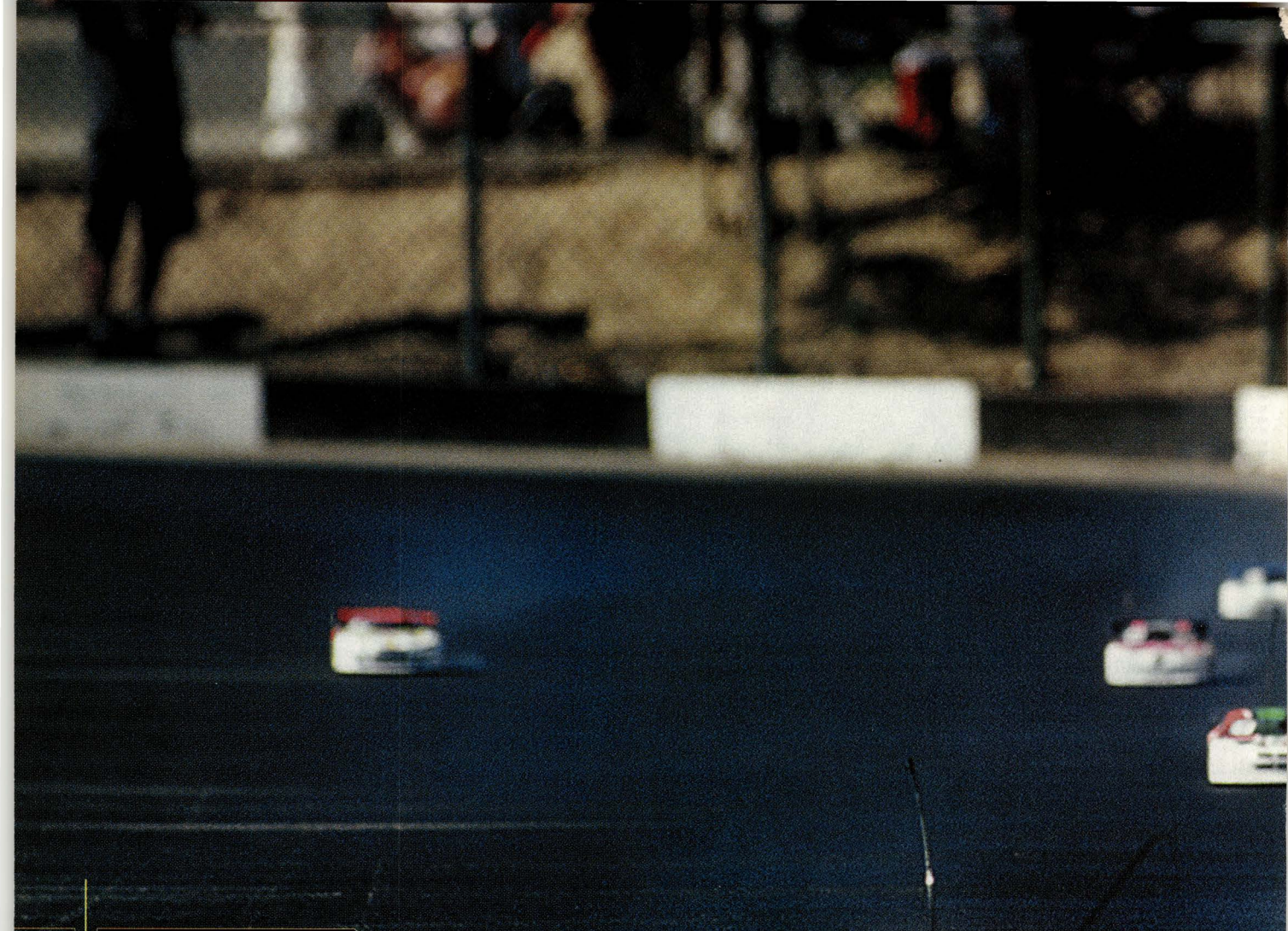


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ROAR FUEL SEDAN ON

Roasting and roosting in the SoCal sun!

By Brian Skinner

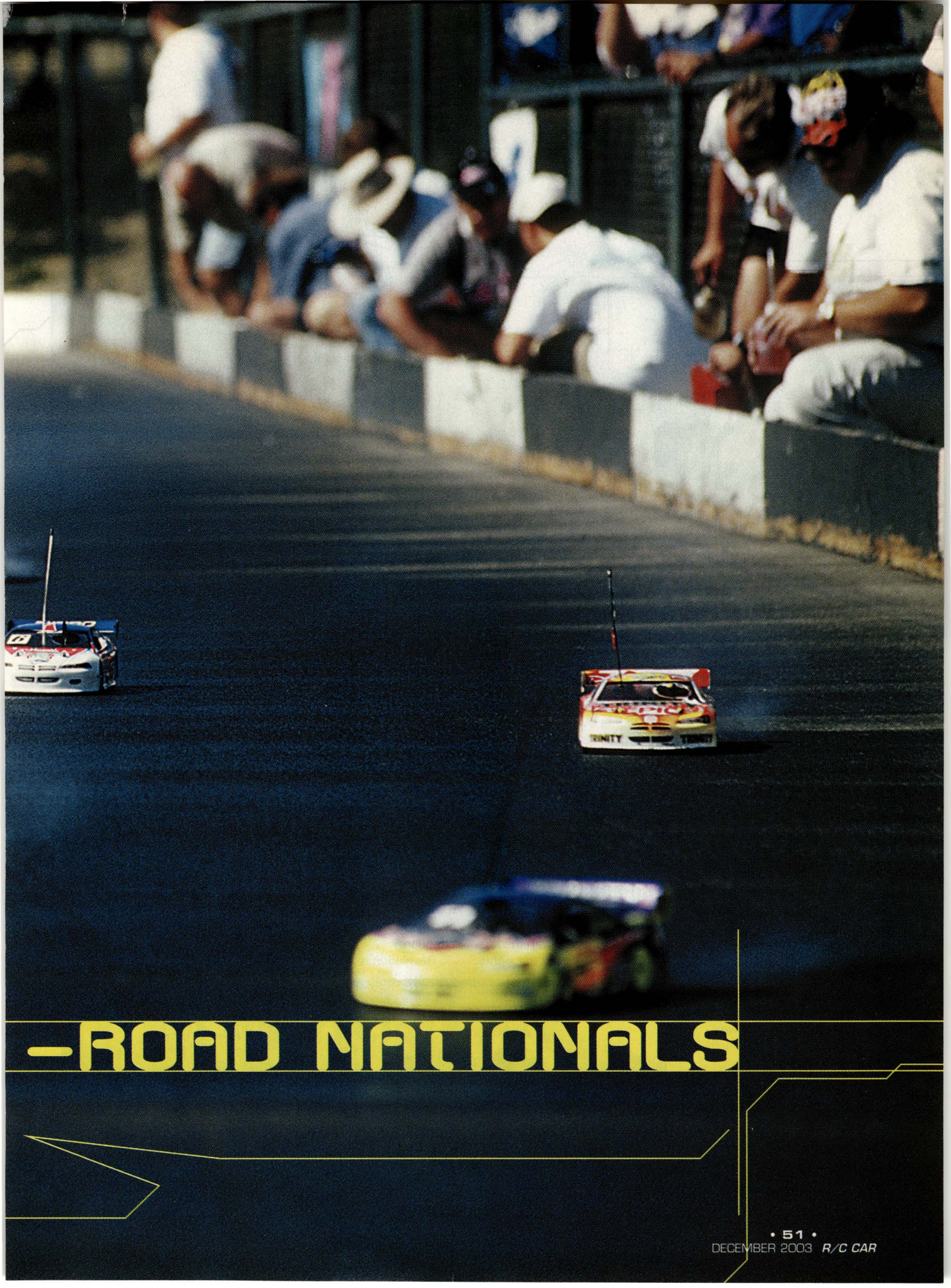
As Frank (that editor boss of mine) hobbled into the office on Friday, he was looking at me kind of strange.

"Skinny," he said, "guess what?"

"Yes Frank," I replied, "what is it?"

"Well, I'm still out of commission with my leg, and the ROAR Sedan Nationals are this weekend. I know you do most of the off-road race coverage and I do the on-road, but it's time you expanded your horizons. It's time to check out the world of tarmac. I need you to go cover the sedan nats."

"Sure," I said, "I'll do that—no problem!" Little did he know that the thought of hanging out at the on-road races sounded good to me. No dirt to mess with, nice clean racing, it even sounded refreshing.



-ROAD NATIONALS

ROAR FUEL SEDAN ON -ROAD NATIONALS



Some of the "shade people" peer out from beneath the trees. Triple-digit temperatures forced spectators to seek any available refuge.



Brain trust: despite having a powerhouse pit crew consisting of Cliff Lett, Steve O'Donnell and Scott Hughes, last year's champion Mark Pavidis was plagued with mechanicals in the A-main.

THE ROAD TRIP BEGINS

I never suspected that, when I arrived at Revelation Raceway, I would be met with triple-digit temperatures. The ground was so hot you could cook an egg on it! In fact, it was so hot that most of the spectators were hiding in whatever shade they could find; no one was standing around in the sun. Basher (our staff photographer) and I began calling them the "shade people." They were shouting and cheering for their favorite drivers while huddled beneath the small trees surrounding the racetrack. It was a funny sight, but we ended up doing precisely the same thing!

While watching the lower mains, I became curious and grabbed a nearby temp gun to check out the track's surface. I did this because I noticed that the cars really started to get loose as the mains progressed. I had figured the ground was so hot it was causing the tires to become overheated and loose grip. According to the temp gun, the track was 150 degrees! Was that a shock; that was way hotter than I expected. Certainly, tire selection would become even more critical during the 45-minute-long A-main.

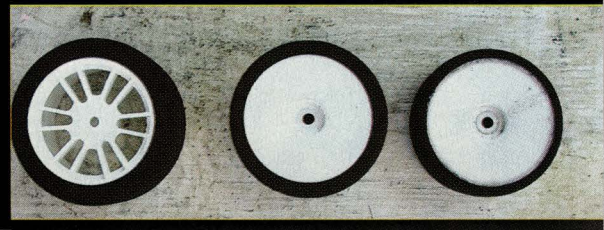
TRIPPIN' IN THE PITS

While I waited for the higher mains to come up, I strolled around and talked with the racers and checked out the sights. Revelation Raceway is a sweet facility; they have a wickedly cool roadcourse that has some of the nicest pavement I have seen. There is an on-site hobby shop that is pretty well stocked, and they also have a large off-road track that looks fun and challenging. Best of all: they have permanent bathrooms (a big plus that my wife Leslie loved). You know girls; they love that type of stuff, and she made sure to bring it to my attention.

Revelation is a nice place to spend a day of racing or playing, and I highly recommend it if you if you're in the SoCal area. After checking out the surroundings, I went into the shaded pit area to see what was new and exciting. First I saw Andy Smolnik from CEN. Andy was there racing the new CEN nitro sedan, and it looked right at home in the nationals pits. Close by Andy was Steve Nguyen from OFNA. He was out racing OFNA's newly released LD3 sedan. By the looks of the both cars' perfor-



The art of on-road: tire diameter plays a major role in nitro on-road. To be fast, you have to find the smallest diameter tire that would last the entire 45-minute main event.



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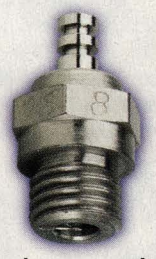
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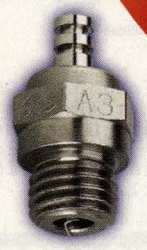
R5



A5



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A3

COLD

COLD

HOT

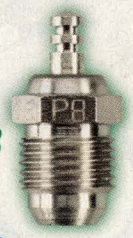
HOT

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P8



P7



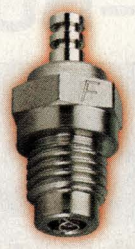
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mances on the track, we consumers will have some good choices come next year, as the heated sedan wars continue. Of course, just about everyone was there: after all, there were 184 drivers entered for just one class. This was one of the healthiest ROAR sedan nats to date. Some of the notable pro drivers were Associated's Mark Pavidis (last year's winner) and Billy Easton, HPI's Atsushi Hara (a former electric sedan world champ), Trinity's Josh Cyrul (who was racing the new Trinity/Team Magic G4), Chris Tossolini and Darin Ishitani. Off-road guru Chad Bradley was in attendance to show the "roadies" how it's done. Even Greg Degani, the current 1/8-scale off-road world champion, was there to see the fastest sedan guys go at it for the national title.

I finished my tour of the pits and started back to the track to see the last of the mains. On the way, I saw one of the coolest training tips: there was this guy off by himself in the back of the pits. He was sitting in front of a laptop computer with a steering wheel in front of him, playing what looked like to be Sony's *Gran Turismo*—a videogame that is really fun and very popular for Sony's PlayStation system. I

ROAR FUEL SEDAN ON -ROAD NATIONALS



Trinity's new Team Magic G4 made a good showing at the Nationals. Both team drivers Mike Dumas (top) and Josh Cyrul (below) made the A-main, with Cyrul finishing in third overall.

WE'RE GONNA SCORE

Word in the pits was that ROAR had some new points scoring system, and that for lack of a better word, the racers felt handicapped by it. As I was told, the points system used for on-road racing—which was instated for the last part of the season—rewarded the TQ position. This meant that if you TQed you wouldn't need to run your other heats; you went straight to the A-main. This happened for six people, and a few of them took a vacation while the rest had to slug it out in the heats.

Many felt this new system didn't reward consistency, and a lot of people were complaining. Again, I reiterate that the major players in the industry need to take a close look at our hobby and make changes before it's too late. It did seem to me that the people in the A-main belonged there, but I do wonder about Atsushi Hara; he has only lived in the U.S. for six months and was able to win a national title. The ROAR rules do state that this is qualification enough to compete in a national, but I wonder about this rule. Don't get me wrong, I like Hara and I'm a big fan, and I feel he deserved the win. Winning the event is one thing, but getting the ROAR title is another.

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Most other systems require at least two buttons and/or switches to access and program; the 2PL features just one button to scroll down the menu and one trim switch to select the desired setting.



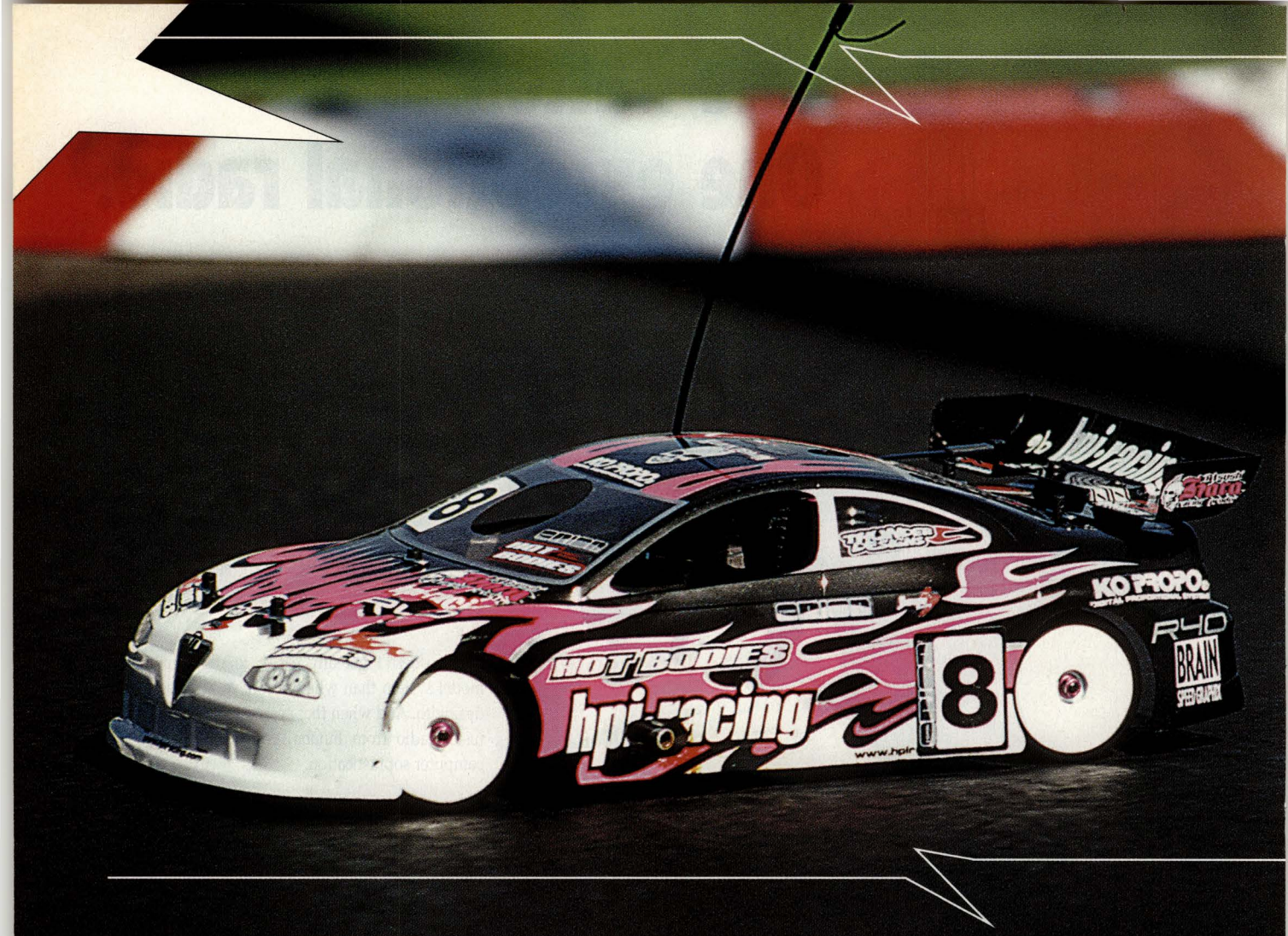
The Steering Dual Rate lever is strategically located on the grip close to the trigger, for quick and easy adjustment of steering sensitivity while driving.

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would have never thought of using a videogame to warm up for R/C racing. Another interesting thing I saw on the way back was all the A-main guys putting their tires on mini lathes and turning them down for better speed and handling. I watched Hara turn down his tires to almost nothing. Being a newbie to the whole on-road scene, I thought this was really fascinating—so much to learn. Frank was right; I do need to hit road.

DOWN TO THE WIRE

It was C-main time back at the track, and time for all the fun to begin. Gas racing is all about bumping up, and it was all about Gil Losi Jr. and Chad Bradley. As the C-main went off, it was close racing, but Losi Jr. and Bradley were soon in a race by themselves. Tim Long was also going for the bump-up spots; he was running out in front when he had some pit problems. As the main wound down it was apparent that Losi Jr. and Bradley would bump-up to the B-main. It was only the C-main, but things were already getting exciting. In fact, the C and B mains had the best racing of the day!

"B" IS FOR "BUMP UP"

Once again, it was all about bumping-up to the A-main. As the B-main headed into the first turn, it was Joel Johnson who grabbed an early lead with the rest of the pack dicing to get position. Back in the pack, Billy Easton was methodically chipping away at the leaders. Billy was in "stealth mode," and again, Losi Jr. and Bradley were duking it out for the coveted bump-up spots. From seemingly out of nowhere, Easton slipped by everyone and moved into the lead. Bradley was driving well (especially for an off-roader) and really gave Losi Jr. a good run for his money. Losi Jr. had some problems that dropped him back, which allowed Bradley to move up to the final bump-up spot behind Easton. I have to say that all three of these drivers looked awesome out there, and really put on a good show.

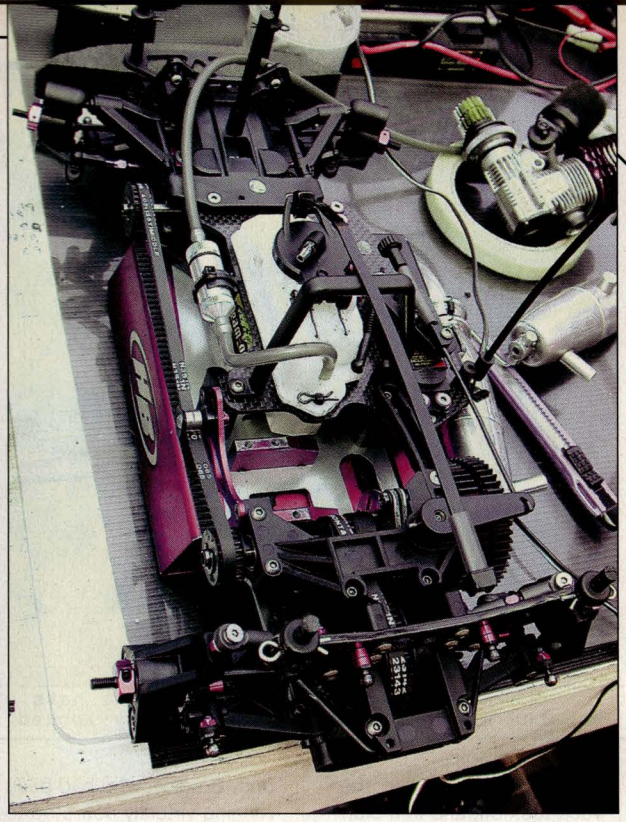
A-MAIN: ALL THE MARBLES

This was it, the A-main, and everything was on the line. This was the reason that everyone suffered through the roasting heat! As the A-main guys warmed up, the crowd buzzed with predictions. I get a better view and to eavesdrop on the race enthusiasts, I had moved up onto the embankments with the shade people. As the cars lined up for the start, however, all chatter seemed to stop.

ROAR FUEL SEDAN ON



Hara's R40 was topped with Team Losi's new 200mm Alfa body. The Losi Alfa was also the choice of many other top pros at the nats.



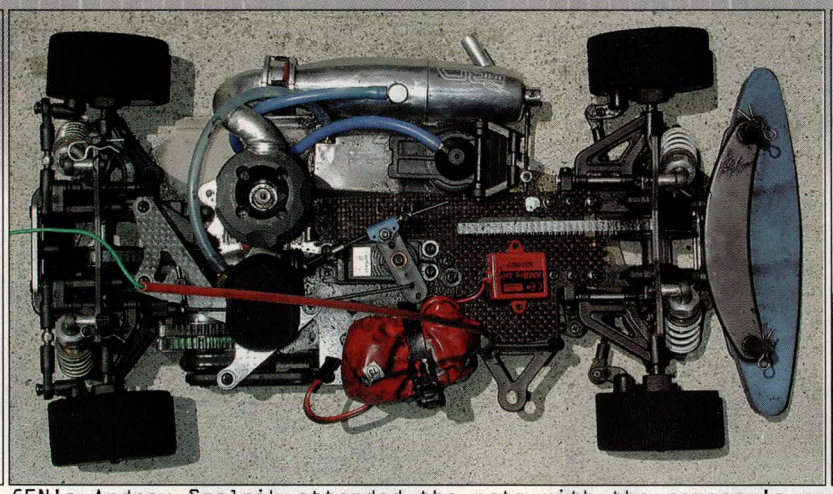
Hara debuted the R40 at the ROAR nats—and won the title. Rumor has it that Hara built the car just before the race, and purchased his Novarossi NS3 engine at the local hobby shop.



Top three: Atsushi Hara (first), Billy Easton (second) and Josh Cyrul (third.

-ROAD NATIONALS

ROAR FUEL SEDAN ON -ROAD NATIONALS



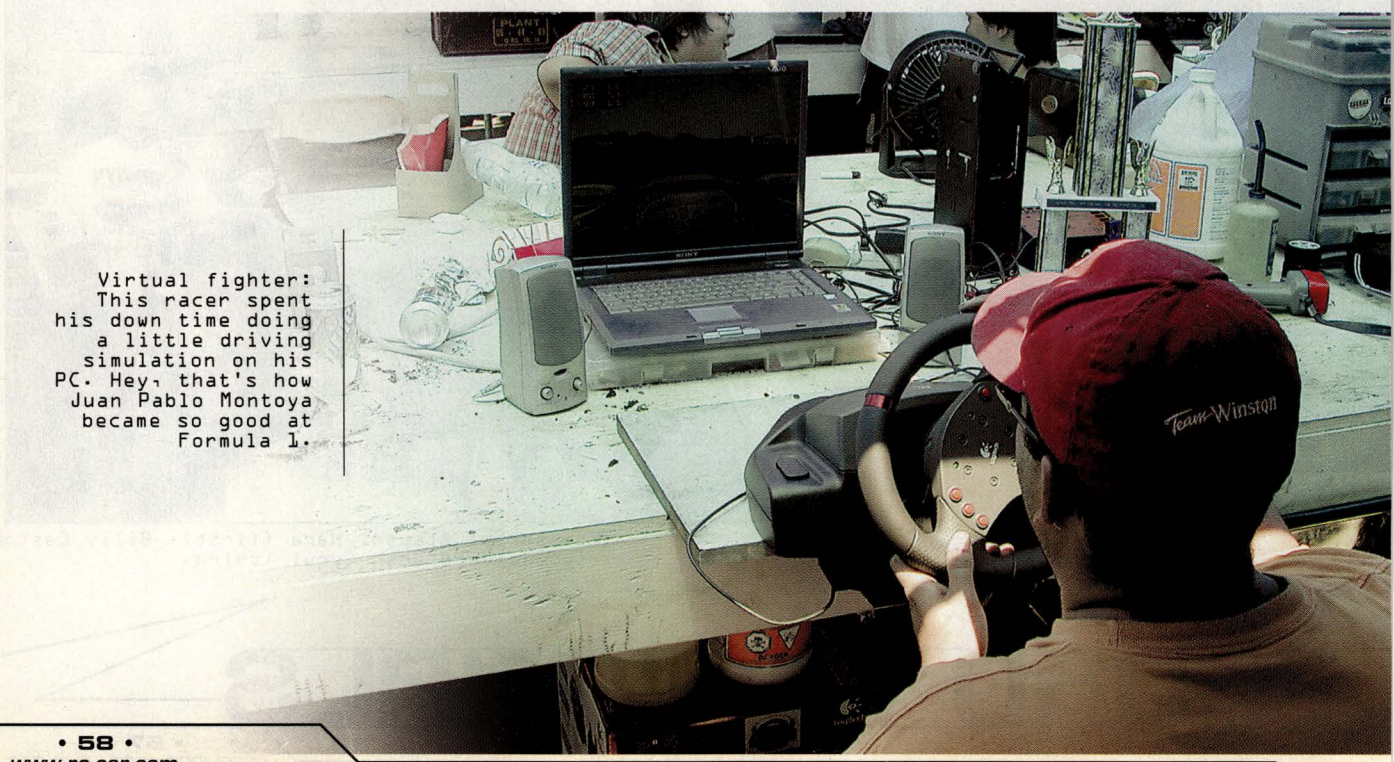


CEN's Andrew Smolnik attended the nats with the company's newest nitro sedan, the CT-4 Pro. The car definitely looked to have race-winning potential.

As the flag dropped, the pack took off, and in a blur they were gone. There was a huge freight train for the first few laps with Josh Cyrul's G4 leading the pack. After the first few laps, things settled a bit and I was able to "get my bearings" as to what was taking place out on the track—the action was that close and intense! A few laps into the race and Mark Pavidis was having some trouble; he has flamed out twice. Hara and his HPI R40 had moved into second. Bradley, who had been running virtually non-stop to get to the A-main, was running in fourth. As Bradley came in for his first pit stop I saw none other than Greg Degani, Scott Hughes from Pro-Line and factory Crono driver Bill Hagen as his pit crew. Getting the world champ for a pit guy—Chad must be special!

Yokomo's Chris Tossolini had by this time moved into third behind Cyrul and Hara. As the second pit stops came up (about 15 minutes into the 45 minute main), Cyrul either ran out of fuel or flamed out, basically handing the lead to Hara on a silver platter. Billy Easton had moved up to third (personal note: the A-main drivers were going so fast on this track I could barely see who it was that just went by). Pavidis looked like he was again having issues and was way back in the pack; it seemed as if his car wouldn't run. At one point he had crashed in a corner and was sitting on his lid while a turn marshal casually walked over to flip it back onto its tires. Of course this caused Mark to flame out, and from that point on I did not see much of him. Too bad: he has been on such a roll this year I really wanted to see him win do well.

It did appear that Hara had the upper hand over everyone and was heading for a big win. Easton, however, had other ideas. At around the halfway point he was within striking distance of Hara. By the 40-minute mark, Easton was turn-



Virtual fighter: This racer spent his down time doing a little driving simulation on his PC. Hey, that's how Juan Pablo Montoya became so good at Formula 1.



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ROAR FUEL SEDAN ON-ROAD NATIONALS

1/10-Scale Nitro Sedan A-main Results

Pos.	Car	Laps	Time	Name
1	8	149	45:03.27	Atsushi Hara (HPI)
2	9	149	45:05.87	Billy Easton (Associated)
3	1	142	44:01.94	Josh Cyrul (Trinity)
4	5	141	45:14.70	Ralph Burch Jr. (Serpent)
5	3	137	45:03.28	Ron Rossetti (Associated)
6	0	80	24:48.71	Chad Bradley (Mugen Seiki)
7	7	65	24:45.83	Darin Ishitani
8	2	25	9:17.23	Mike Dumas (Trinity)
9	4	2	42:51.75	Chris Tossolini (Yokomo)
10	6	1	20:02.96	Mark Pavidis (Associated)

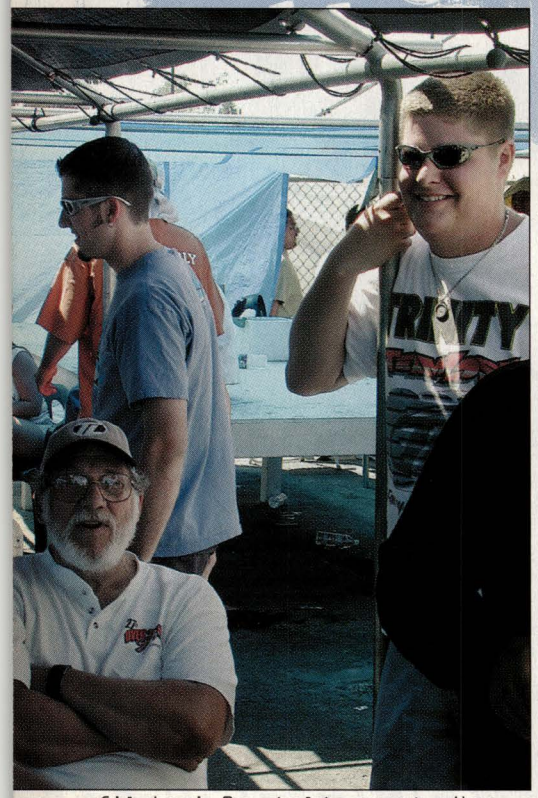


Chad Bradley made it all the way from the C-main to the A-main with a little help from his pit crew Scott Hughes and Greg Degani.





Ralph Burch Jr. found out the hard way that denatured alcohol, a spark from a glow-plug igniter and his Serpent 705 don't mix!



Gil Losi Sr. holds court. Hey Pops, when is your nitro sedan coming out? (See? We still remember you!)

ing up the heat and he and Hara had a nice little battle going. Easton would catch and pass Hara, then lead for a lap and Hara would re-pass him. This went on for a while until finally Hara was finally able to put just about two seconds distance between himself and Easton. Cyrul was in the hunt, trailing by just 50 feet behind the two leaders, and if one of them had made a mistake, he was right there to capitalize. That's how it finished: Hara won the main with Easton in second and Cyrul in third.

CONCLUSION

The '03 ROAR Fuel Sedan Nationals was one heck of a race, and a lot happened during and after the A-main. For me, trying to recap the A-main was difficult; the action happened so fast it was hard to keep track, but Ralph Burch did an excellent job and finished fourth with his Serpent car, and Tossolini was also a front runner but got disqualified for a technical issue (something about his wing being too high). Ron Rossetti ran well also, but flamed out in the pits (and also chunked his rear tire very badly). Bradley was doing well, and was up in fourth at one point, but suffered a stripped first gear—after running over 200 laps trying to get to the A-main! Darin Ishitani was also doing well but had his clutch go out on him around the halfway mark. Overall, the track took a great toll on the cars, and in the end, Hara and his new HPI R40 both kept it together to win the title. Great driving by all, and Hara, you were the man! You drove an excellent race!

boom.



Nitro engines are pricey. You want a fuel you can trust. Dynamite's Blue Thunder Sport Formula is the only nitro formula that offers the overlean protection of ZX-7. This advanced fuel additive reduces engine wear by preventing excessive operating temps. Performance plus protection—a winning combination no matter what kind of nitro driving you do.

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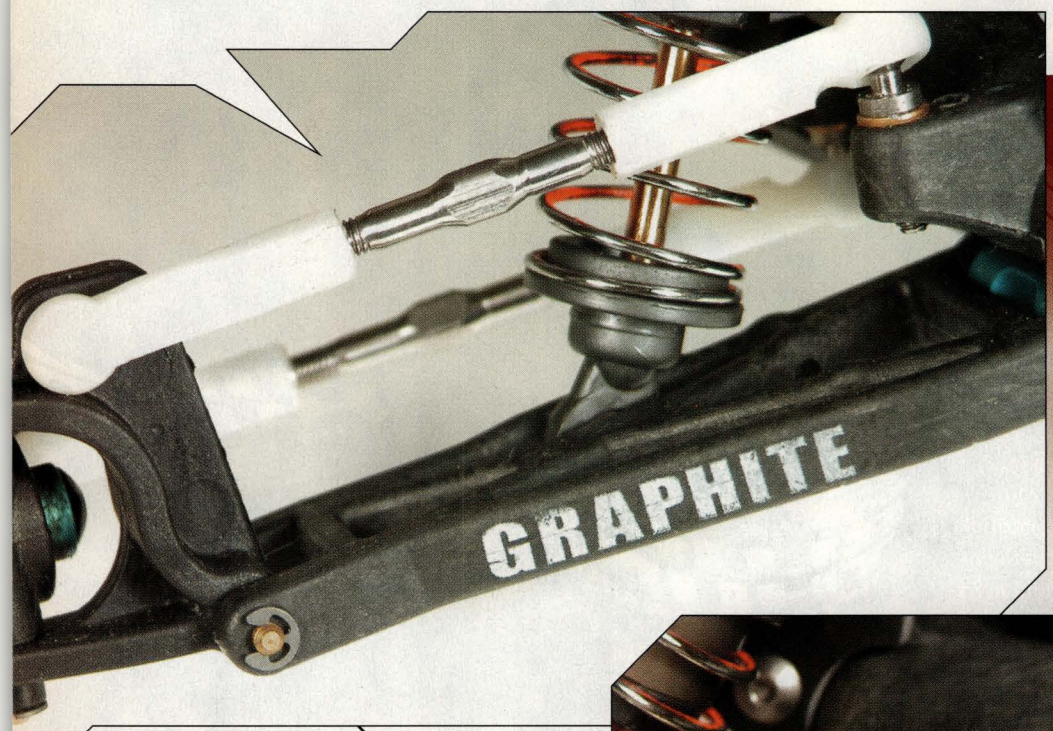
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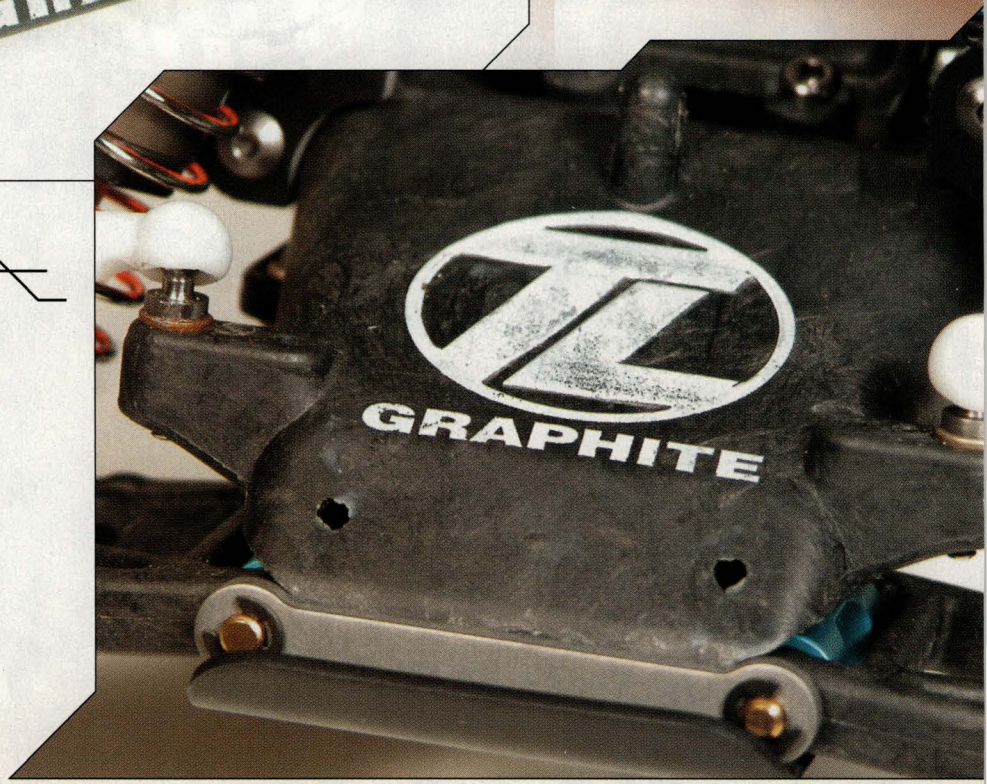
THE MYTHS

Should you go graphite or remain stock?

By Steven Husting

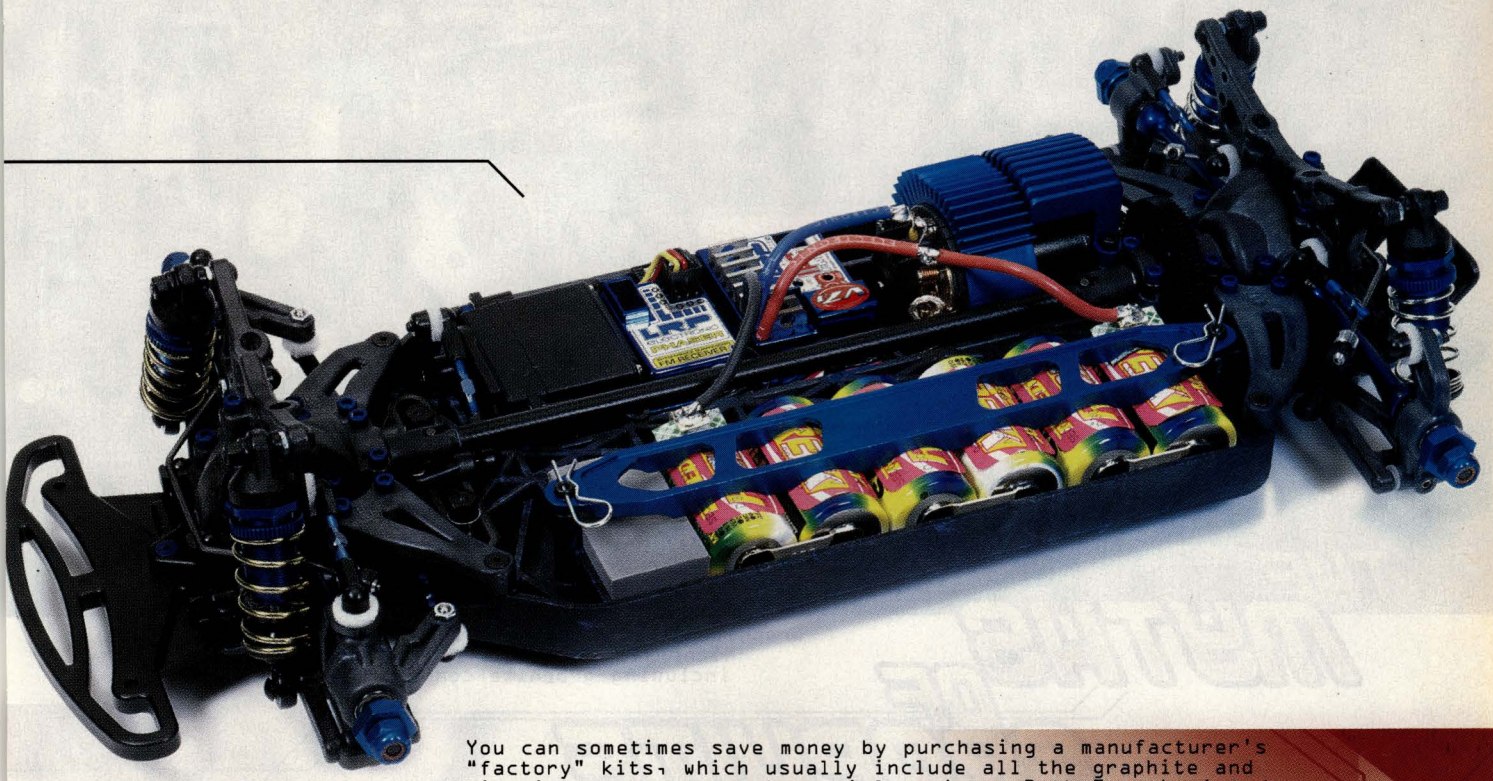
One of the first things an ambitious novice does is upgrade his car to match those of the pros. He swaps the stock plastic parts for carbon ones—and wonders why his car readily breaks the first time he suffers a bad crash. He then switches from carbon to aluminum, but is subsequently stunned when top speed takes a nosedive. He substitutes aluminum and steel parts for titanium, then cries foul when his hingepins and turnbuckles become bent during a crash.





The same but different: Graphite composite parts are not the same as the woven graphite plate that is often used for touring sedan chassis and other parts. Graphite composite parts are usually injection molded pieces such as these Team Losi's uspension upgrades.

OF GRAPHITE



You can sometimes save money by purchasing a manufacturer's "factory" kits, which usually include all the graphite and titanium parts at a substantial savings. Both Team Losi and Team Associated offer these full-option versions of their most popular racing machines. Shown here is Associated's Factory Team TC3 touring car.

For experienced racers, an upgrade drives their racing career to new levels of competition. For other drivers, the same upgrade path becomes instead a perplexing downgrade. In many cases, problems can be traced to unrealistic expectations of what the upgraded parts will do. The pimply guy who buys a movie star's brand of toothpaste in order to attract the opposite sex has probably missed the underlying reasons for the star's attraction. Similarly, the novice who purchases the graphite parts in order to become the next Billy Easton or Brian Kinwald often has the wrong idea of what makes an upgrade profitable.

The following are two common myths that surround graphite upgrades. This article will clear up some confusion surrounding graphite parts and will help you choose your upgrade path wisely. These general tips won't make you a movie star, but you just might become a winner!

MYTH: GRAPHITE IS STRONGER AND MORE IMPACT-RESISTANT THAN PLASTIC.

A beginning racer frequently breaks parts left and right as the boards jump out in front of his car. He observes the pros successfully navigating the track countless times without breaking anything. He makes earnest inquiries and discovers the "Holy Grail" of carbon fiber. Rushing to the store, he buys every carbon-fiber part his budget allows.
they all break.
Aren't carbon parts supposed to be stronger? Isn't this why the better racers never seem to break anything?

Actually, the stock plastic parts are more impact resistant. Plastic parts are more flexible than their carbon counterparts, allowing more "give" in a crash. Experienced racers prize carbon parts not for their strength during a crash, but for their "responsiveness." This term refers to carbon's rigidity; without the minute delay of flexing, rigid interconnected parts will respond to the driver's control inputs with less hesitation.

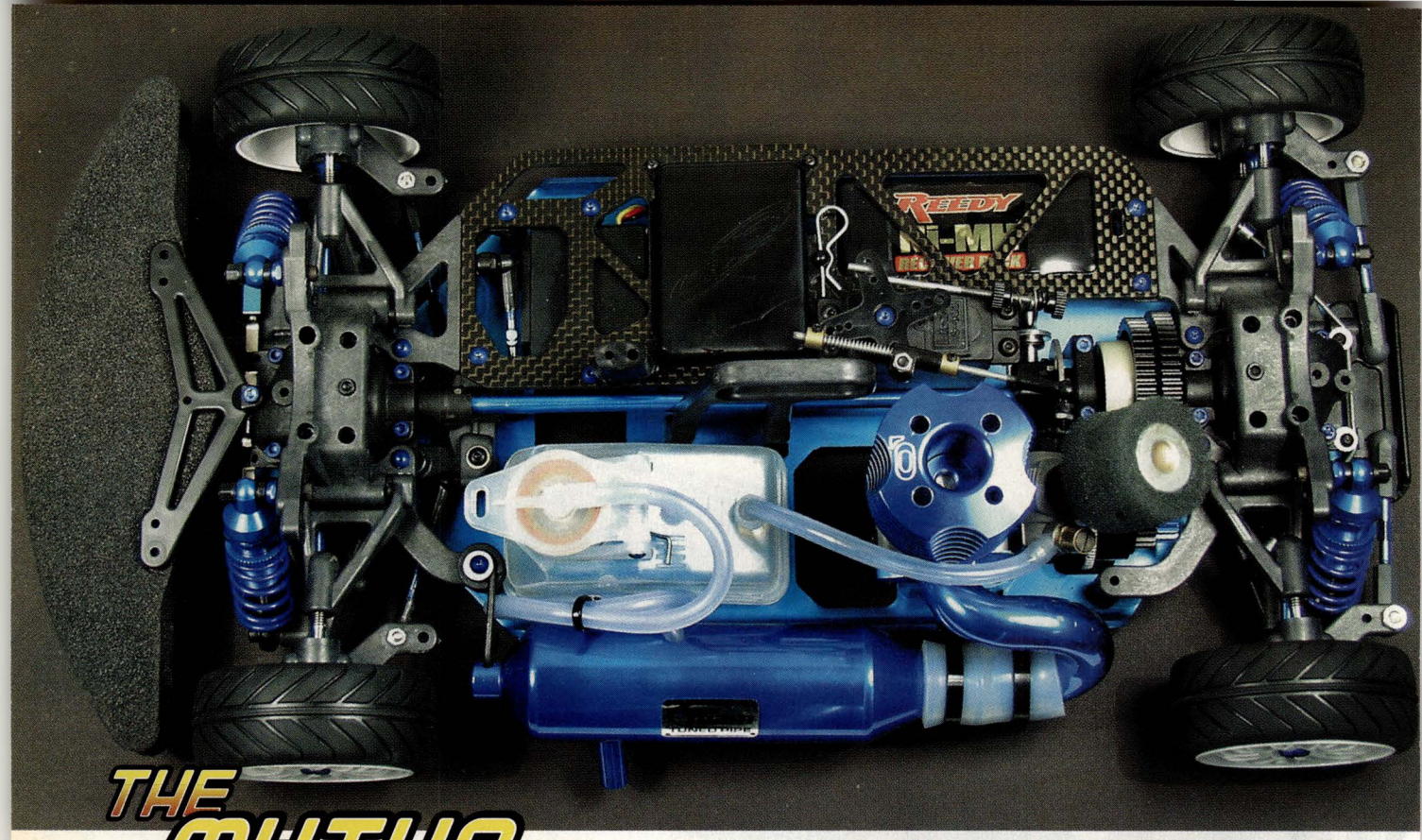
As an example: a balloon is more flexible, but an egg is rigid. What happens when both while the other bounces"—give yourself a ribbon.

Pro: Graphite parts are more rigid and responsive than stock parts

Con: Graphite parts are less impact-resistant than stock plastic parts

RECOMMENDATION

If you are starting out in R/C and find yourself breaking parts often, it's better to stick with the more flexible plastic parts until the boards and your car lose their mutual attraction. When you gain better control over your car and desire finer tuning changes, you'll be able to appreciate the rigidity of the graphite parts.



THE MYTHS OF GRAPHITE

Graphite is also used in nitro cars. This Associated Nitro TC3 is chock-full of Factory Team options including graphite-composite suspension pieces.

MYTH: GRAPHITE PLUS ALUMINUM EQUALS BETTER.

Experienced racers get carbon parts to lighten their electric and nitro cars and trucks. Lighter is always better. Less weight on the car means less stress on the motor and less draw on the batteries, resulting in more fun time and less wear and tear on the electronics. Good drivers who switch to lighter versions of the stock parts, i.e. carbon and graphite, can gain a competitive advantage of speed and run time over those who have stock parts.

Converting to all carbon and graphite parts may save only about a gram. Therefore, switching only suspension arms, for example, will not result in any appreciative weight savings. For maximum effect, you'll have to buy the whole enchilada.

Unfortunately, when new racers switch to carbon parts, they find themselves breaking parts repeatedly. So they exchange other stock parts for aluminum ones, and as a result, wipe out any weight savings they may have enjoyed. Aluminum parts are stronger, but are also significantly heavier than the stock or carbon parts they replace. They are a no-no when weight savings is the goal.

If lighter weight is your goal, don't mix carbon and aluminum.

When driving skills are lacking, new carbon parts will not translate into faster speed. You'll save money and time by more practice than by more carbon parts. Getting carbon is far from a quick fix when purchased as a substitute for poor driving.

A lighter vehicle will not come cheaply. From time to time you'll find racers slack-jawed before the shop's spare parts wall. Sidestep these people sympathetically, as they are no doubt suffering from sticker shock!

Fortunately, you can upgrade piece by piece as your original parts wear or break, and as your driving proficiency rises. Luckily, some companies offer "deluxe" versions of their kits that already include all of the carbon and graphite parts, at prices that frequently save you tons of money compared with purchasing the upgrades separately. Upgrade sets containing complete replacement graphite and carbon parts are also available.

Pro: The easiest route to lightening your car is to simply substitute graphite parts for the stock plastic ones.

Con: Carbon is more expensive, in order to realize a true advantage you'll need to replace all the parts, and carbon is less forgiving during a crash.

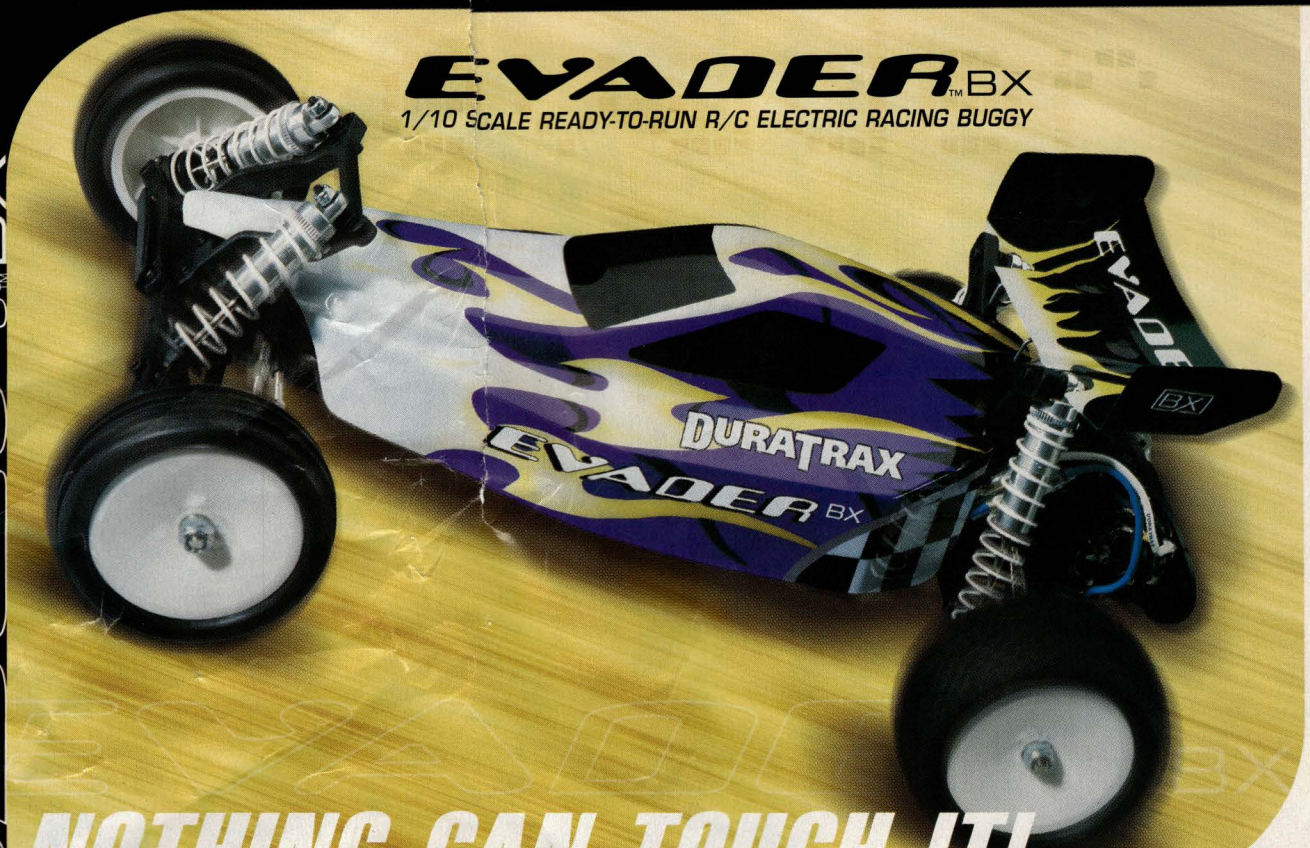
RECOMMENDATION

If you want more speed and run time, lighter is better—and carbon parts are lighter than stock plastic versions. If you are a novice driver, upgrade as your skill improves, as carbon is a poor substitute for good driving practice. Resist the cool look of heavy aluminum parts if light weight is your goal.

EVADER BX

EVADER™ BX

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Does the name "Futaba®" ring a bell? That's right — the world's premier maker of R/C systems is the brains behind the Evader BX RTR's included pistol-grip radio. Everything else about this buggy meets similar high standards...like Stress-Tech™ parts that are so reliable, DuraTrax confidently backs them with a ONE YEAR guarantee!

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Battery shown not included.

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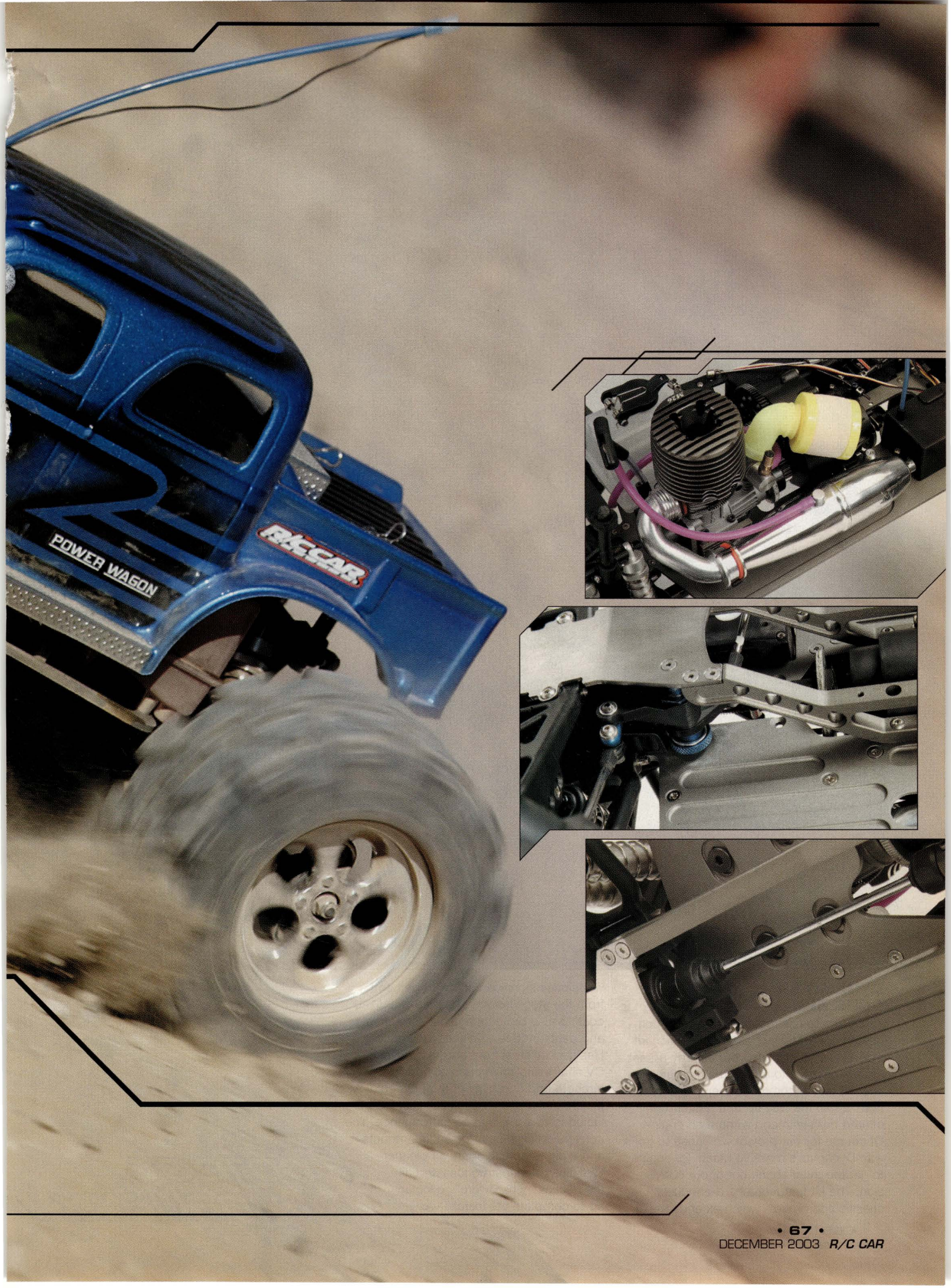
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Project DynaMaxx

There's no substitute for cubic inches!

Just when you thought you've seen every T-Maxx upgrade and hop-up imaginable, we've found one more to add to the list. Since the arrival of the HPI Savage monster truck and the flood of aftermarket products that followed, the T-Maxx market seemed to have fallen by the wayside—until now.


POWER WAGON
R/C CAR



DYNAMITE GOES BIG!

Dynamite has recently released a comprehensive T-Maxx chassis conversion kit that allows you to turn your already potent monster truck into a fire-breathing beast. The .kit can accommodate engine sizes from .21 all the way up to a .26, and is offered both with and without an engine. Of course for our project we chose to go with Dynamite's massive Mach .26 engine to get the most spank out of our conversion. The kit features a hard-anodized chassis and braces, which extends the wheelbase significantly (by 13 percent) from the stock length. The hard-anodized coating also protects against scratches and dents (and few finishes look as trick!). Heavy-duty steel front and rear driveshafts, CV shafts and drive cups all add to the strength and durability of the drivetrain. A polished aluminum in-line exhaust pipe is included to aid in engine performance. The conversion also includes engine mounts and a high-capacity foam air cleaner. Well illustrated instructions and all the necessary hardware are included to complete the installation.

Project DynaMaxx

STORM PRO









FEATURES

- 7075 T6 MAIN CHASSIS
- 7075 T6 FRONT/REAR SHOCK TOWER
- 7075 T6 FRONT UPPER SUSPENSION HINGE PIN HOLDER
- 7075 T6 3° LOWER SUSPENTION HINGE PIN HOLDER SETS
- ADJUSTABLE SERVO SAVER PIPE SET
- 7075 T6 FRONT/REAR CHASSIS BRACE
- UNIVERSIAL FRONT/REAR AND CENTER DRIVE SHAFTS
- HARD ANODIZED WHEEL HUB SET (4)
- ALUMINUM RADIO TRAY POST
- ALUMINUM WING JOINT
- HEAT-SINK ENGINE MOUNTS
- HIGH PERFORMANCE FRONT/REAR SHOCKS
- GRAPHITE RADIO TRAY, FRONT SUPPORT PLATE AND BRAKE PLATE
- FUEL TANK SPLASH GUARD
- BRAKE SPLASH GUARD
- DUAL DISK BRAKES

GS Racing



Radio, engine, exhaust, wheels and tires not included.



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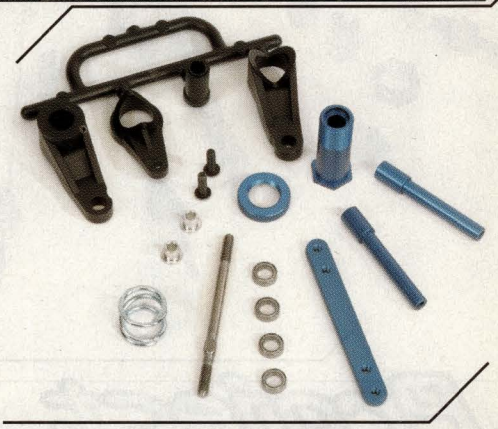
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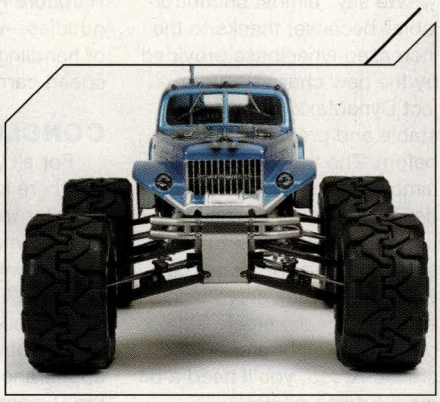
Project DynaMaxx













PUTTING IT TO THE MAXX

While embarking on our T-Maxx project, we decided to make a few more upgrades. We figured that because the entire truck has to be practically reduced to kit form anyway, why not make some additional modifications.

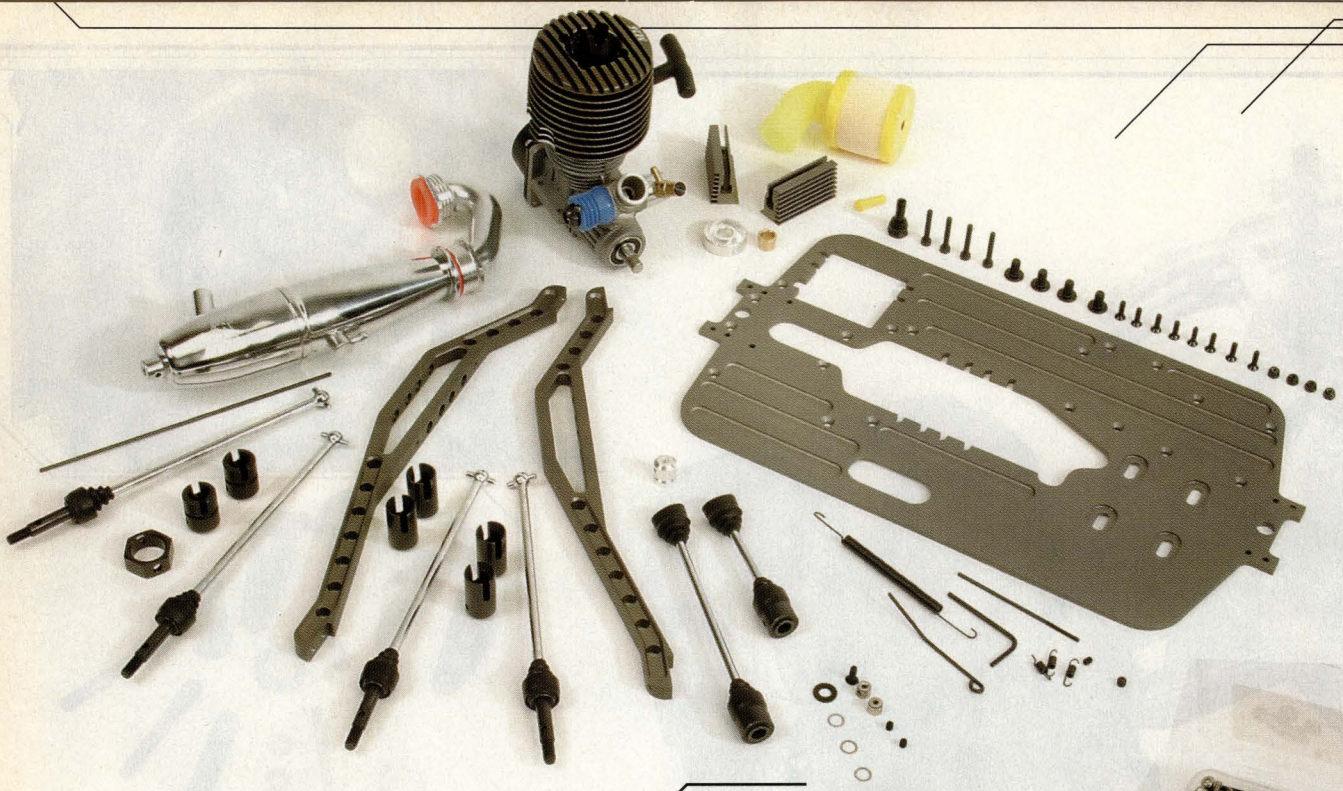
We began our project with the nuts and bolts. Every stock Phillips-head screw that came off our stock T-Maxx 2.5 was replaced with heavy-duty stainless steel Allen-head screws from RC Screwz. This hardware serves not only to enhance the truck's appearance (the machine polished finish of the screws matched that of many of the Dynamite kit's parts), but also the screw kit added strength and saved weight—a winning combination in our book. To continue our theme, we replaced the stock molded-plastic bumpers and skid plates with silver titanium skids, bumpers and mounting braces from Hardcore Racing. These parts are highly desirable not only for their bling, but they also add stiffness from end to end of the truck, while further reducing undercarriage flexing.

New shocks, provided by Power Racing (distributed by Happy Time R/C), were also installed. These aluminum shocks came pre-assembled and filled with oil right out of the box! You can't ask for an easier bolt-on hop-up for your Maxx. These were a perfect addition to our truck and matched the overall look we were aiming for.

When it came to traction, we chose to install a set of Devastator wheels and Padlock tires from Hot Bodies. For the ultimate in laziness, this set comes pre-glued and ready to roll.

To finish off our mods we installed a performance steering kit from Pro-Line. This mod replaces the stock T-Maxx steering bellcranks and the stock, servo-mounted servo-saver device. The Pro-Line bellcranks incorporate a heavy-duty, 1/8-scale buggy style servo-saver that's much more up to the task of keeping the big front tires pointed in the right direction—without risking excessive strain on the servo's gears.

Of course, no hop-up project would be complete without a trick, custom painted body. We had our local pro 1/8-scale racer, Marty Korn, whip up something special for our Pro-Line vintage Dodge Power



Project DynaMaxx





Wagon. By itself, this body is one of the coolest available, but with a custom paint job such as this, it really stands out from the crowd. If you like Marty's work, check out next month's issue in which he'll show you step-by-step how it's done.

The next step was to mount the engine in place. After getting it set on the chassis using the mounting braces, we noticed that the carb was backwards (compared to it's recommended installation). There's a small screw on the side of the engine just below the carburetor: loosen this screw allows the carb to be rotated into the proper position. The remainder of the installation was a breeze; securing the exhaust manifold and pipe with the included springs was easy. The final step is to instal l the new high-performance air cleaner. Now we were ready to rumble!

PERFORMANCE

At this point we were ready to start to breaking-in the engine. The Mach .26 was very easy to start, and its carb settings were very close to being perfect for a very rich break-in process. We ran the first three tankfuls of fuel at these settings, being careful to keep the revs low and to vary the throttle position frequently. Throughout this process, the engine remained incredibly cool—our temp gun revealed that the head temp was only 149 degrees.

Following this initial period, we began to slowly lean the engine. The resulting increase in power was simply astounding. As potent as the stock TRX 2.5 engine is (it is one of the best small-block mills you can get—and that includes all the high-end racing .12s as well), the immense Mach .26 is an entirely different animal. Where the stock engine is like the high revving four-cylinder in the Honda S2000, the Mach .26 is like a big V8—it has major grunt and low-end torque. Both of these traits are desirable whenever weight is added to a truck's chassis (the Dynamite conversion kit does make the T-Maxx heavier). In a nutshell, the Mach .26 transforms the already potent T-Maxx into an almost uncontrollable monster!

We say "almost uncontrollable" because, thanks to the increased wheelbase provided by the new chassis, our project DynaMaxx was just as stable and predictable as before. The truck felt no less nimble, although we would definitely recommend an upgrade of the stock truck's steering servo. Don't get us wrong; the stock servo works excellent for the stock T-Maxx, but when weight and power are increased, you'll need a bit more turning power.

The rest of the package performed as flawlessly during our test. The beefy driveshafts handled the massive torque with ease, and the overall structure—bolstered by the Dynamite braces and Hardcore Racing titanium goodies—was up to the task of handling big air and high-speed carnage.

CONCLUSION

For all you T-Maxx owners out there looking to turn your monster truck into a big-block brute, Dynamite's conversion kit is definitely something to consider. The kit transforms the T-Maxx from a screamer to a body-builder. And the overall appearance, quality and fit of the Dynamite parts were first-rate!

SOURCES

Dynamite, distributed by Horizon Hobby Distributors, Inc., 4105 Fieldstone Rd., Champaign, IL 61821 • phone (217) 355-9511
Hardcore Racing, 24895 Ave. Rockefeller, Valencia, CA 91355• phone (888) 928-7223 fax (661) 294-0770
Hot Bodies, 27469 Colt Court, Temecula, CA 92590 • phone (909) 296-9340; fax (909) 296-9343
Pro-Line, P.O, Box 456, Beamount, CA 92223 • Phone (909) 849-9781 fax (909) 849-2968
RC Screwz, 42774 Redfern Canton, MI 48187 • phone (734) 260-6151

Medial Pro

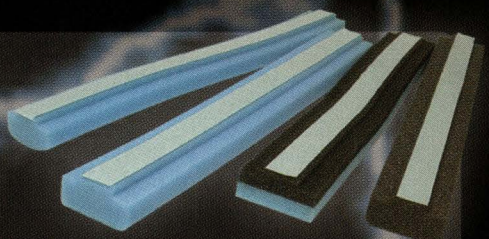
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41340 .....Medium Profile Double Density
41330 .....Medium Profile "Blue"
41320 .....Round Profile "Pink"





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- 8 mm carburetor
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- JP Black anodized crankcase
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- Separated glow plug insert

Novarossi Glow Plugs

High performance 10% increase in power.

Special Ultra.....N68776
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Novarossi Tuned Exhaust

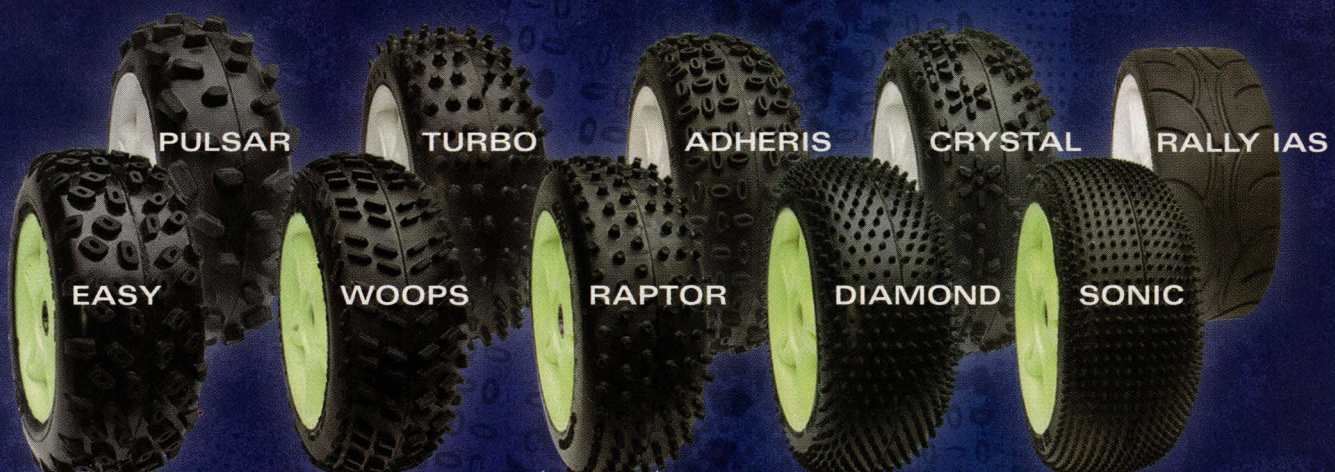
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SAVAGE 25

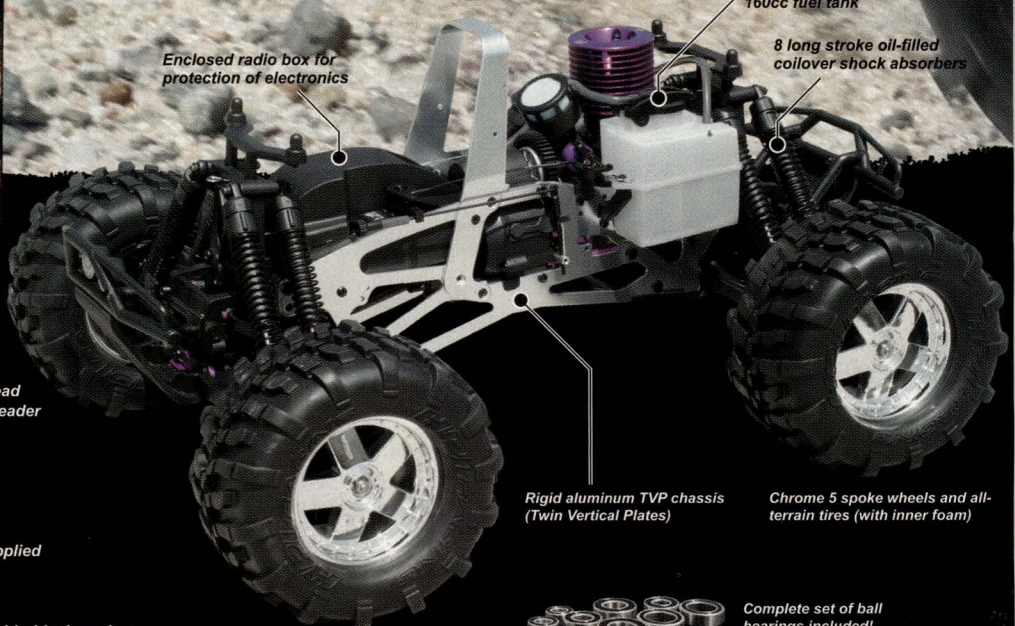








#832 RTR Savage 25 Truck with Nitro GT-1 Truck Body



Complete set of ball bearings included!

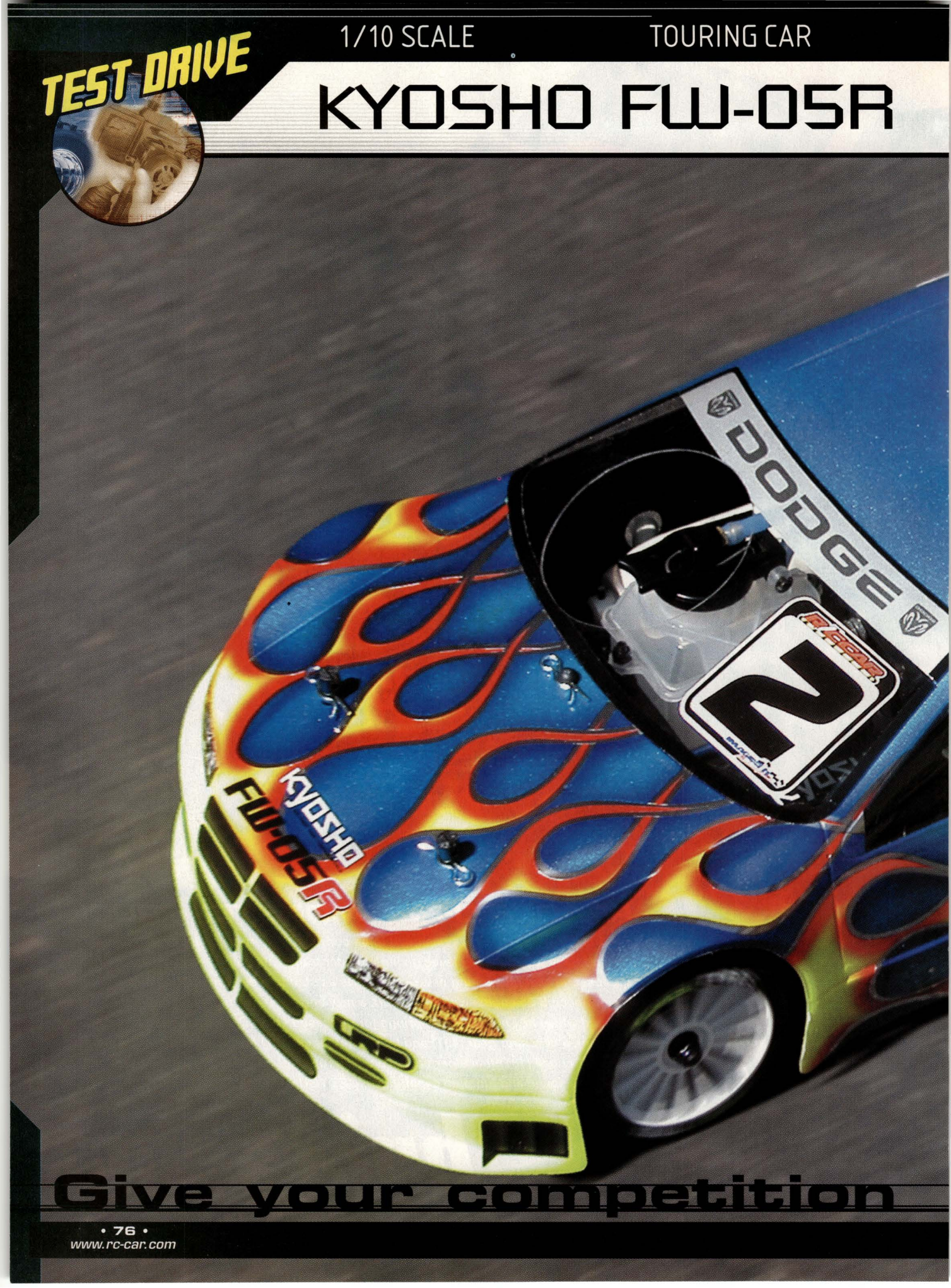
FEATURES:

Nitro Star S-25 engine (ABC) with slide carburetor
Purple anodized, billet aluminum heatsink engine head
Composite tuned pipe and aluminum rear exhaust header
Roto Start System installed!
Stiff black shock springs
New rear pick-up 160cc fuel tank with no primer
Three-shoe clutch for quick acceleration
Revised wheel hex hubs
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Pre-painted, trimmed GT-1 truck body with decals applied
Giant 1/8th scale (16.8" x 21")
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High Performance .25 (4.1cc) Size Engine
The powerful S-25 rear exhaust big block engine features ABC chrome sleeve construction, a dual needle 7mm slide composite carburetor, a billet aluminum heatsink head, and our Roto Start system for easy starting.
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1/10 SCALE TOURING CAR

KYOSHO FW-05R

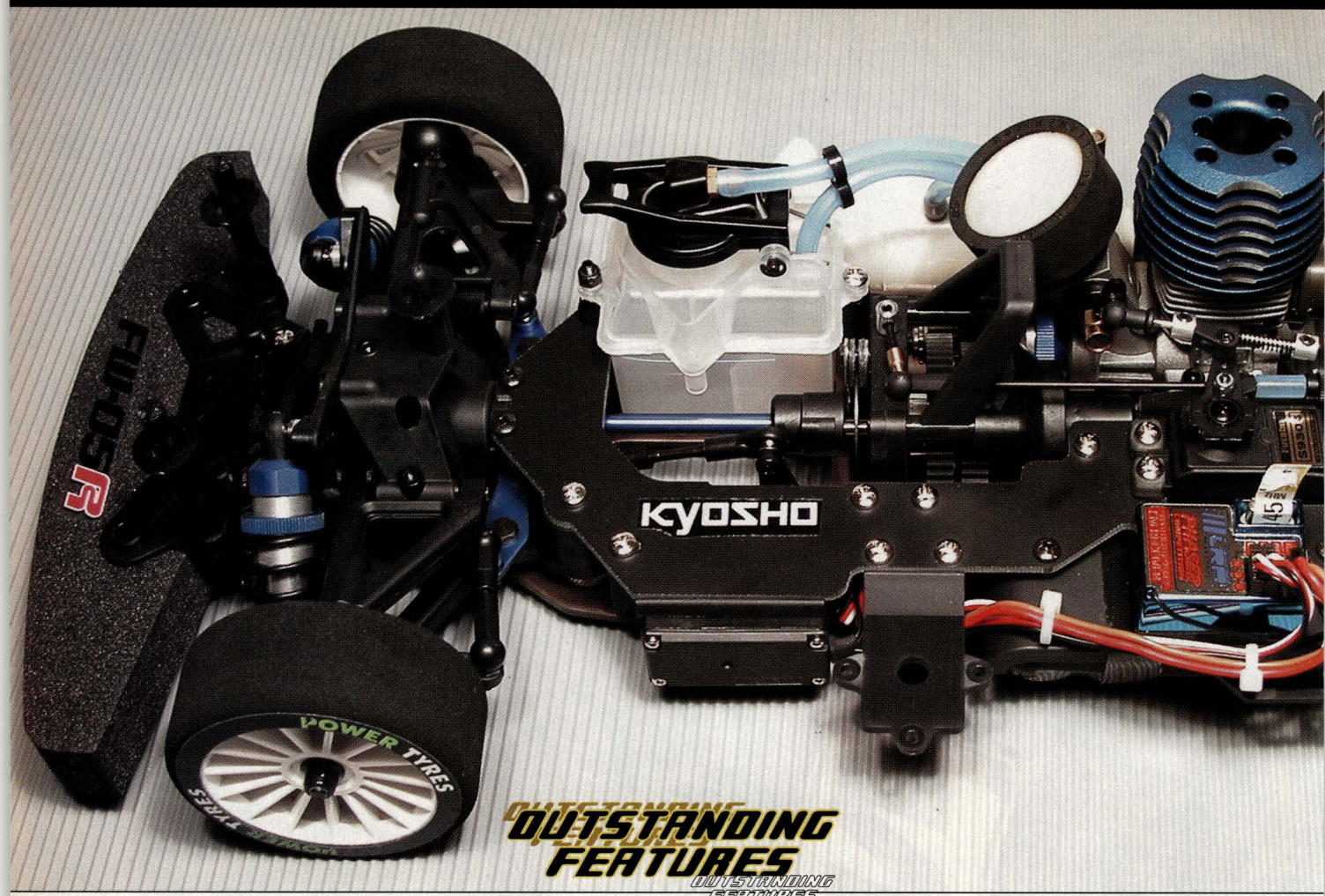


Give your competition



We had to face the fact that any effort to keep up with trends in the nitro sedan category is an exercise in frustration. Belt drive, shaft drive; everyone is headed in different directions, and each company seems convinced that their drivetrain choice is the best. Kyosho has always used belts to drive its 200mm-class PureTen nitro sedans, yet has also helped to pioneer shaft-driven 4WD in its larger SuperTen nitro sedans. When word leaked out from Kyosho Japan's website about the existence of a new chassis called the FW-05, most of us believed it to be a new SuperTen chassis. After all, the SuperTens have all used shaft-driven 4WD (as does the FW-5), and the SuperTens' chassis have had the "FW" moniker. We were very shocked to learn that the FW-05 is actually intended for the 200mm nitro sedan class. Kyosho still offers the belt-driven V-One chassis, so the only question we had upon the arrival of the FW-05R at our office was if it was supposed to a full-blooded racer or a parking-lot basher. The answer? It's a racer to the core. Kyosho now gives racers the choice of belt (V-One) or shaft (FW-05).

the shaft!



OUTSTANDING FEATURES

The FW-05R is an all-new chassis, so there's a lot of cool new stuff to take in. Let's get started!

IT'S ALL ABOUT THE DRIVETRAIN

The FW-05R's drivetrain begins with a pair of gear differentials—one for the front and one for the rear. These are ultra-rugged, sealed diffs that contain six metal bevel gears (most cars in this category only have two smaller counter gears, while the FW-05R has four). The O-ring seals around the outdrives allow for the diffs to be filled with thick silicone fluid, which increases the stiffness of the diffs. Thankfully, Kyosho includes such fluid in the kit (the front diff is filled with 20,000wt while a 50/50 mixture of 20,000 and 500wt fluid is used for the rear diff). Kyosho has made the diffs lighter by employing a two-piece ring-gear/diff cover—only the ring gear is metal.

Next up is the shoe-type two-speed transmission, which resides at the center of the chassis like that of the SuperTen. The two-speed maintains a low CG by using 46 and 51-tooth spur gears in 0.8 module fine pitch (which also makes the gears' mesh smoother and more efficient). As there is no center diff, a single disc brake setup is all that's needed to bring the FW-05R to a halt. Kyosho's design uses steel pads and fibrous liners which must be glued to the pads prior to assembly. Kyosho recommends using rubber cement for this task, but we have had better luck using CA super-glue, as the completed pads are less likely to come apart during a race. Plastic outdrives exit each side of the two-speed assembly, while lightweight-yet-strong aluminum dogbones run out to the front and rear diffs. For maximum efficiency, the dogbones are positioned perfectly straight in both horizontal and vertical axes.

STEERING FOR GOLD

As the shaft-drive runs straight down the middle of the chassis, Kyosho had to abandon the V-One R's central steering bellcrank in favor of a more traditional dual-bellcrank setup. An aluminum link-plate connects the bellcranks (there is an optional plate that offers steering Ackermann adjustment), and a built-in servo-saver is housed within the left-side bellcrank for extra protection against servo damage. The only bummer is that the steering tie-rods are so short that Kyosho couldn't fit turnbuckles; you must remove the tie-rods to change their lengths if you wish to adjust the front toe angle.

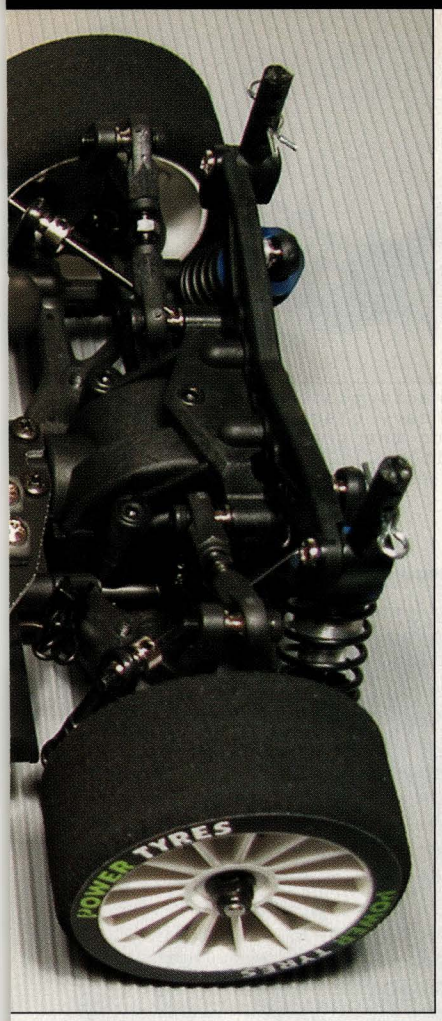
BROWN PLATE SPECIAL

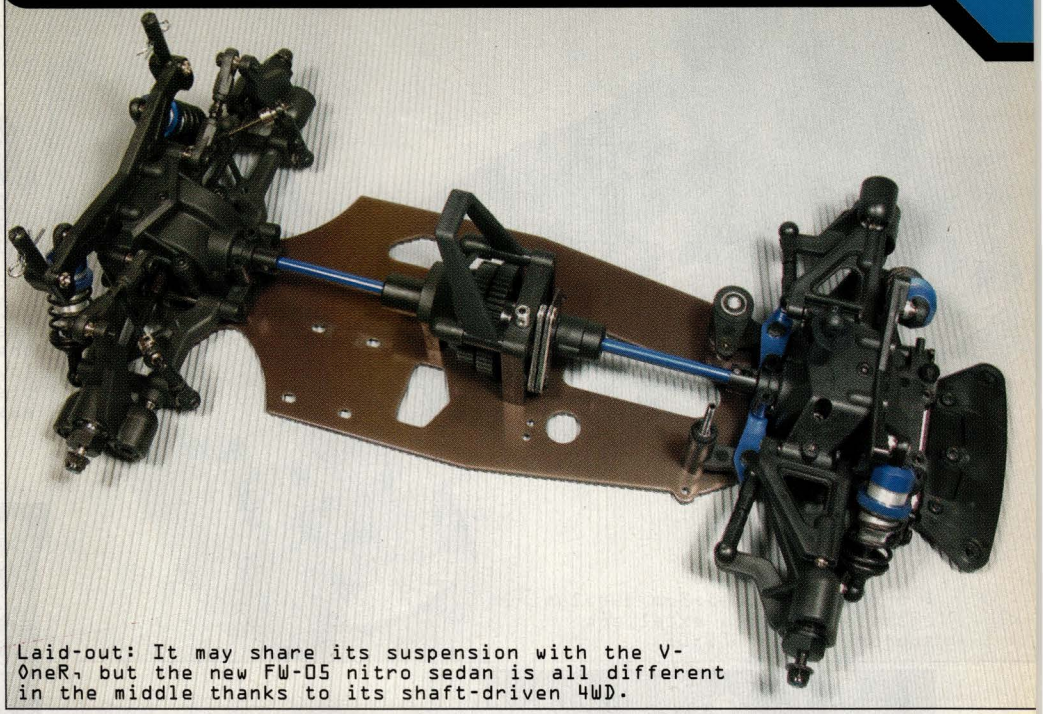
The FW-05R has a stout foundation consisting of a 3mm-thick plate of duraluminum. Anodized in a bronze-ish color, this chassis endows the FW-05R with a rigid backbone and a very trick appearance. An FRP (fiber-reinforced plastic) upper chassis deck spans between the molded diff cases found at either end of the car. This increases the overall rigidity of the chassis and provides a place on which the servos and electronics can be attached (and removed for easier maintenance). Another aspect of the upper deck is that it makes for the lowest possible CG; the steering servo is installed horizontally, while a molded plate places the receiver battery as low as possible (the plate is designed to accommodate a five-cell flat pack only). Also attached to the upper deck is a transponder mount that can accommodate standard or personal transponders.

PIVOTAL SUSPENSION

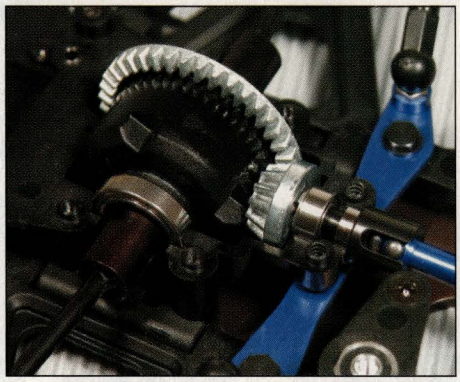
The FW-05R uses a pivot-ball style independent suspension similar to that of the V-One R—but with one important difference: the FW-05R has longer arms to provide less change to the suspension's geometry as the arms move up and down. In addi-

KYOSHO FW-05R

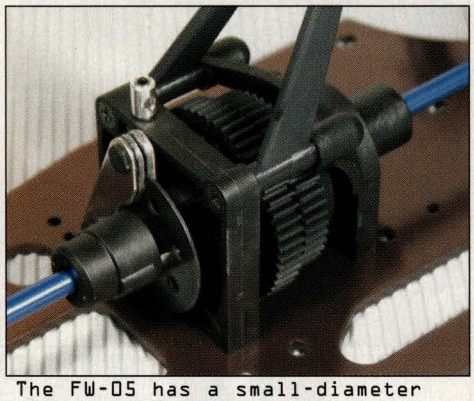




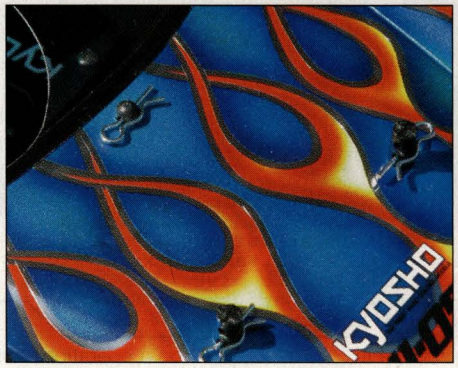
Laid-out: It may share its suspension with the V-OneR, but the new FW-05 nitro sedan is all different in the middle thanks to its shaft-driven 4WD.



Sealed gear diffs reside within the front and rear gearboxes. The diffs are spun by rugged metal ring and pinion gears.



The FW-05 has a small-diameter shoe-type 2-speed, which is mounted mid-ship. Brakes are steel with fiber-lined pads.



Kyosho added an additional front body post to provide additional support for the nose of the body during high-speed running.



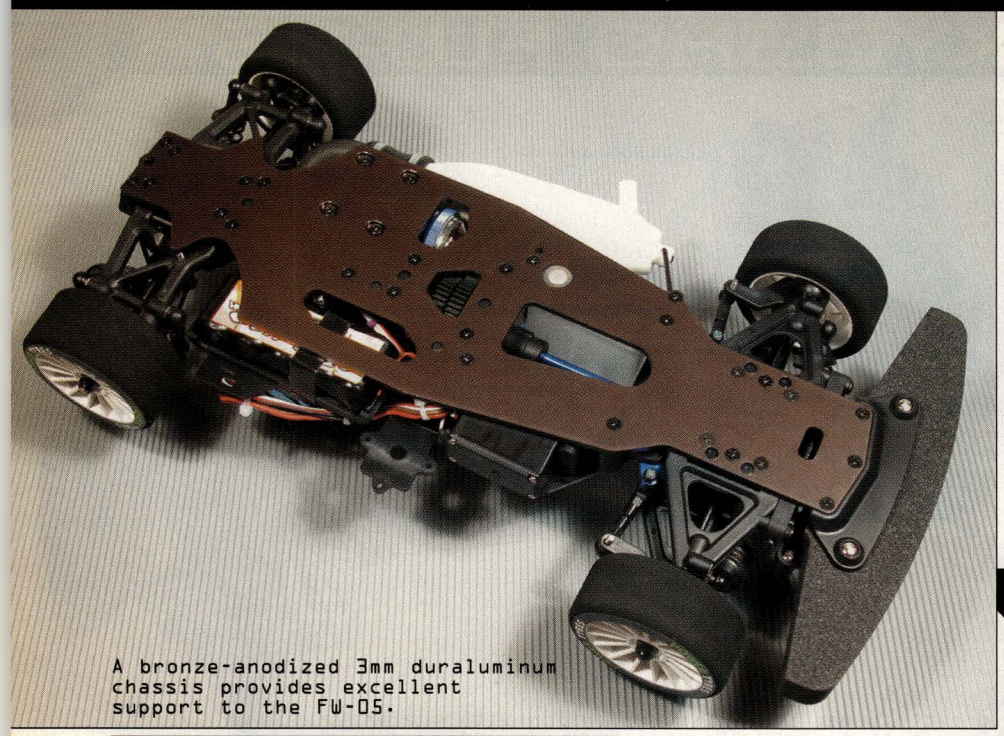
Low-profile engine mounts, a small diameter flywheel and an adjustable push-style clutch are standard FW-05 gear.

tion to being extremely durable, this type of suspension offers another important benefit: it's extremely adjustable. Everything you'll need to tune the FW-05R to meet track conditions is available at your fingertips. Caster, camber, toe, shock angle and track width are each adjustable in minutes. By incorporating molded plastic pivot-ball retainers, Kyosho has also reduced the suspension's unsprung weight, improving the car's response through bumps.

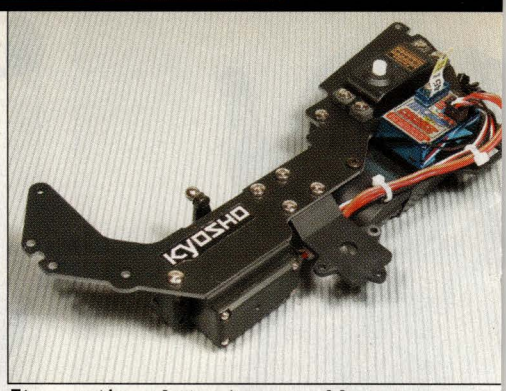
Up front you'll find an adjustable blade-style ball-and-socket stabilizer bar. By altering the orientation of the blades' flat sections, you change the stiffness of the bar and as a result, loosen or stiffen the front end's roll resistance. A more conventional wire-style roll bar is use for the rear suspension (Kyosho offers several optional rear bars of various thicknesses).

MAKING A PUSH

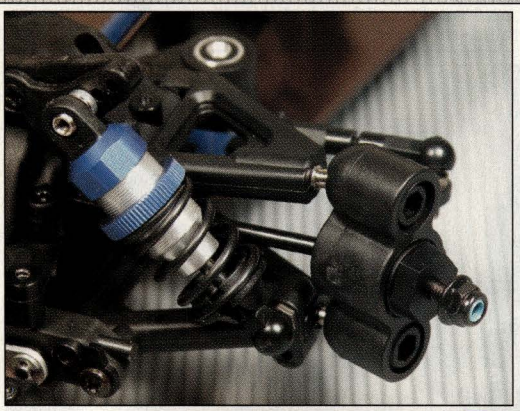
One of the main reasons we were able to confirm the FW-05R's status as a racer was the inclusion of an adjustable push-style clutch, which has become the norm for many of today's high-end racing machines. Unlike conventional clutch shoes, which are flung outward to engage the inside of a clutch bell as the engine spins, a push-style clutch's semi-circular shoes are flung away from the engine, where they push a circular "ring" against the face of a large steel flange (to which the pinion gears are attached). A slipper-clutch style spring assembly is used to adjust the point at



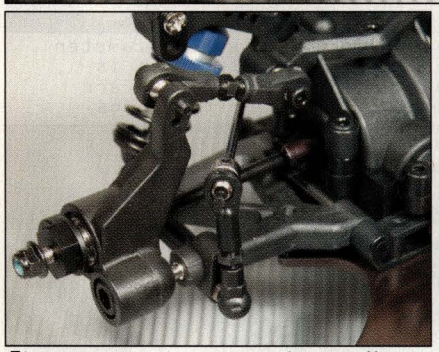
A bronze-anodized 3mm duraluminum chassis provides excellent support to the FW-05.



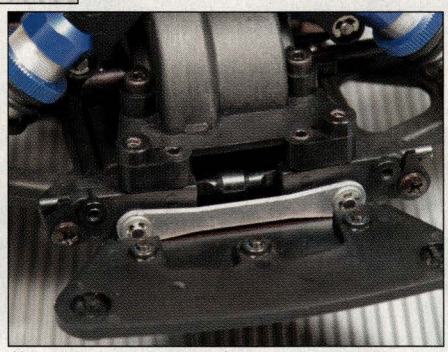
The radio plate keeps all the heavy electronic gear as low to the ground as possible. It comes out easy for maintenance.



The FW-05's suspension is the new "evolution" of the V-One's double-wishbone pivot-ball setup. Threaded aluminum shocks come standard.



The rear end uses a lower H-arm/pivot-ball setup that offers adjustable toe-in. A wire-style sway-bar helps keep the car flat in the turns.



Up front, an adjustable blade-style, ball-and-socket stabilizer bar is used. The FW-05 also has adjustable up- and down-stops.

SOMETHING YOU DON'T GET

What's that, you ask? An exhaust system, that's what! Why is this an issue? Because the FW-05 is unique among all 200mm nitro sedans in that its engine is placed in-line on the right side of the chassis. This means that not only does it require a special exhaust manifold, but also a pipe that has a pressure fitting that's on the opposite side of just about every pipe on the market. The instructions show the necessary parts (the manifold is Kyosho part number VSW009 for rear-exhaust engines and 39013 for side exhaust). However, when we contacted Great Planes (Kyosho's U.S. distributor), we were told that the manifolds were not yet in stock! For side-exhaust engines, Kyosho's SuperTen exhaust systems can be used, but for rear-port engines, we discovered through trial-and-error that Associated's Nitro TC3 rear-port manifold will do the trick (you'll just need to drill different holes for the mounting spring). You can either use a SuperTen tuned pipe with this manifold, or you can find a pipe that does not yet have a hole for the pressure fitting.

which the clutch engages, and the best part is that you can set the spring's tension in seconds—without having the disassemble the clutch.

Along with this clutch, the FW-05R includes a small-diameter flywheel and a set of low-CG engine mounts that combine to allow the engine to sit as low to the ground as possible to improve cornering.

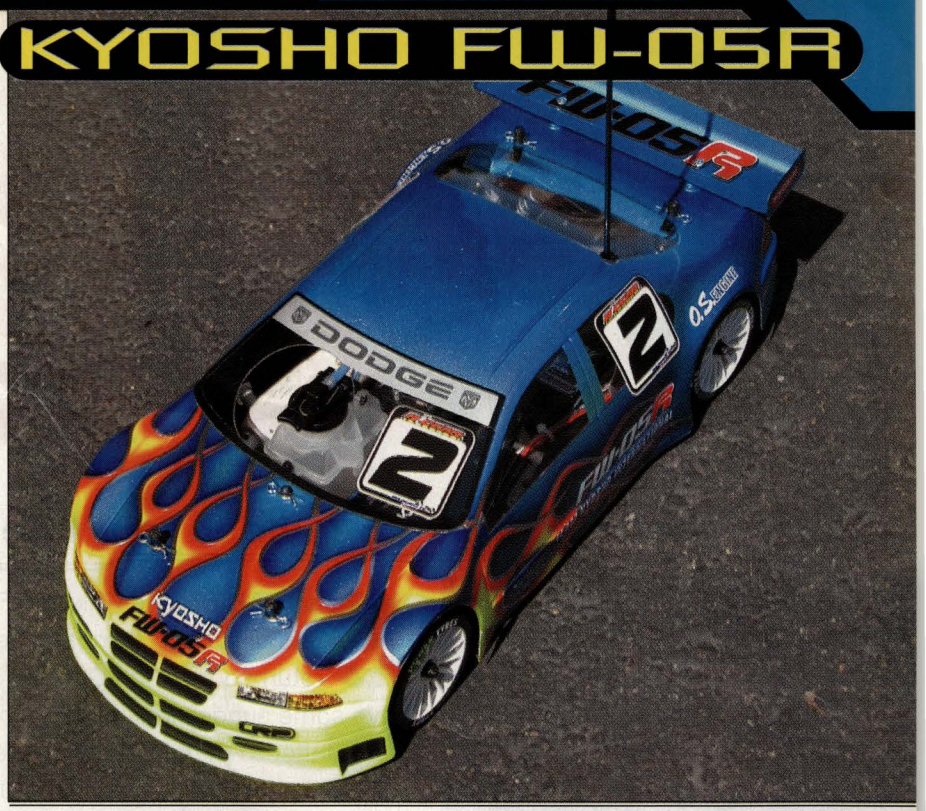
SUPER-SLICK SHOCKS

Kit-included shocks don't get much better than the ones in the FW-05R's box. These oil-filled dampers feature threaded-aluminum bodies that have a friction-reducing coating for extra smooth operation. Inside, the pistons are also made from a low-friction material that reduces wear and also improves smoothness. Kyosho includes a set of extra-firm springs for all four shocks, which should be perfect for medium to high traction surfaces (especially on high-speed circuits).

TIME TO MAKE THE DONUTS

We received the foam-tire edition of the FW-05R, which includes a pre-trued set of GRP foam tires mounted to one-piece, white-nylon spoked wheels. Up front are 26mm 35-shore tires and in back are maximum-width 30mm foams, also 35-shore.

KYOSHO FW-05R



REPORT CARD

Test location: KZ Speedway, Sun Valley, CA
Test conditions: Large permanent asphalt roadcourse

Setup: B

KZ Speedway's track is fifth-scale sized roadcourse that requires a slightly different setup than what comes with most 1/10-scale nitro sedans. With its large, flowing turns, a nitro car really needs a front one-way (and possibly a rear diff spool) to maintain corner speed. The FW-05's stock setup—which includes a stiffly set front gear diff with a looser rear diff—wasn't ideal for this track, but that didn't stop us from getting a good feel for the car. The stock springs and damping were close to perfect.

Steering: B

Off-power and in the slower sections of the track, the FW-05 tucked-in well and instilled confidence with its well mannered, level approach to the turns. The front end never tucked or caused the rear end to react with oversteer, although the lack of a one-way definitely slowed lap times. On power, the stiff front diff tended to make the car drift wide, requiring us to back off on the throttle. Entering the fast right-handed sweeper that followed the main straight (at about 50mph), the FW-05 felt planted. We were able to late-brake deep into the turn, which helped make up for time lost elsewhere on the track.

Braking: A+

If having a front diff rather than a one-way hurt the FW-05 in the turns, having all four wheels available for braking was a big help. The disc brake system worked flawlessly and allowed us to really go deep into the turns before braking.

Acceleration: A

We can't say if shaft-drive is the wave of the future (after all, HPI just won the ROAR nats with their new belt-drive R40), but based on our experience with the FW-05, we wouldn't rule out the possibility of a shaft-driven future. The FW-05 accelerated as if it were linked directly to our brains. The new push-style clutch works wonderfully, and it only took us a few test laps to get it set perfectly. We liked the way the FW-05 felt in the turns; the car coasts freely and never felt as if it wanted to square the turns.

Durability: A

Kyosho has always made durable cars, and the FW-05 is no exception. The car's front suspension design is very strong, and the plastics from which it's made are also crash resistant. The included large front bumper also helps protect the front end during those really hard crashes. The new shaft drive is also more durable than the belt setup of the V-OneR, as it can't be fouled by dirt and small pebbles, which can become caught between the belts and pulleys.

SPECS

Price:	$TBA
Length:	14.8in/377mm
Width:	7.9in/200mm
Wheelbase:	10.2in/260mm
Front/rear track:	6.8in/173mm
Weight:	3.7lbs (w/o fuel)
Chassis:	3mm aluminum
Drivetrain:	shaft driven 4WD
Bearings:	steel ball-bearings
Damping:	oil-filled aluminum shocks
Suspension:	upper/lower wishbones
Tires:	pre-mounted/trued foam
Wheels:	one-piece nylon spoked

Final Score

Highs: Efficient and durable belt-driven 4WD system. Excellent instructions make building the FW-05 a breeze (although it's still recommended for intermediate-to-experienced builders). The included push clutch is an excellent addition to the race package.

Lows: The layout of the FW-05 requires the use of an odd exhaust system. Kyosho should include at least a manifold if not and entire exhaust system with the kit. Buyers will have to chase down the appropriate parts to complete their FW-05s.

The verdict: Kyosho is the latest to join the shaft-drive movement (we will refrain from calling it a "revolution," as the belt-drive contingent still has plenty of fight), and the FW-05 is an excellent addition to Kyosho's nitro sedan lineup. With the revised suspension from the new V-One Evo chassis, the FW-05 is ready to take on the competition at all levels.

SOURCES

Airtronics, 1185 Stanford Ct., Anaheim, CA 92805 • (949) 978-1895; fax (949) 978-1540

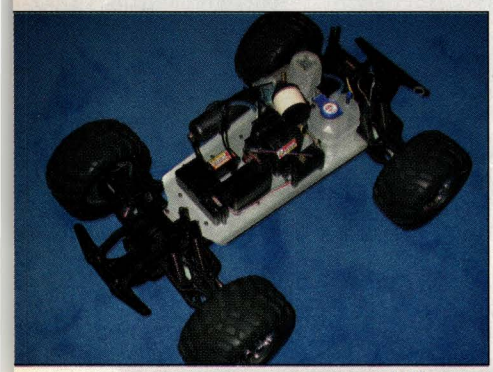
Futaba, Kyosho and O.S. Engines are distributed by Great Planes Model Distributors, 2904 Research Rd., Champaign, IL 61826-9021 • (217) 398-6300; fax (217) 398-0008

Sidewinder Performance Racing Fuel, produced by Morgan Fuels, P.O. Box 311201, Enterprise, AL 36331 • (334) 347-3525

Team Losi, Inc., 4710 E. Guasti Rd., Ontario, CA • (909) 390-9595

RCC's Holiday Wish List

What's going to be under your tree?



Santa Skinny and Chief Elf Frank here to bring all of you boys and girls good tidings of new swag for the holidays! I've just returned from the Chicago Model and Hobby Show and have some suggestions of new goodies for you to include in your "I want" letter to the big guy in the red suit. This year, it looks like you will have plenty to choose from! Just remember that Santa is checking his list (yes, twice) to find out who's been naughty or nice. And don't worry: this year the elves have put a big block in the sleigh to make sure all the toys get delivered on time.

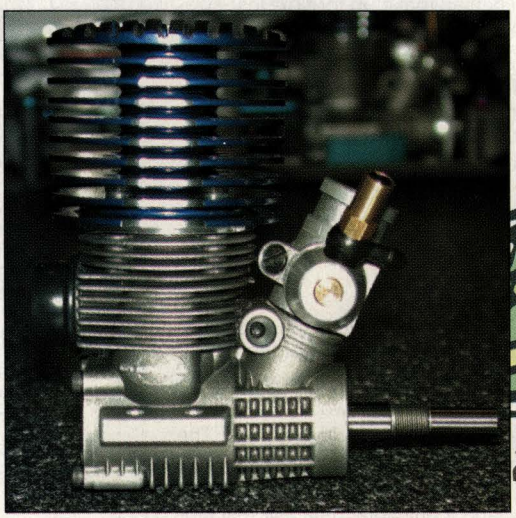


TAMIYA TNX MONSTER TRUCK

Tamiya's Terra Crusher is a very capable and well-built RTR nitro monster truck, but in terms of power-to-weight-ratio, it comes up a bit short to its competition. Not any more: Tamiya has redesigned the TC into a leaner, meaner monster. The new TNX is nearly four pounds lighter than the TC, and it has a new O.S.-built .18 engine that puts the truck squarely in the hunt for monster truck supremacy. Here are some of the TNX's outstanding features:

- New aluminum chassis that spans from the front to rear suspensions (the old chassis was a combination of an aluminum plate and a molded plastic radio box)
- Forward-only transmission. Gone is the TC's ingenious reversing clutch mechanism (although a reverse option is rumored). The TNX has a lighter, more efficient gearbox
- Lightweight wheels and tires that reduce the truck's rotating mass for faster acceleration and more effective suspension action
- A new pre-painted and trimmed body

We have always loved the Terra Crusher's excellent suspension and durability, but we have also felt that it was underpowered and that its reversing mechanism—although clever—had a tendency to rob the truck of what power it did have. The TNX addresses these faults without losing any of the features we have come to love. We can't wait for this one!

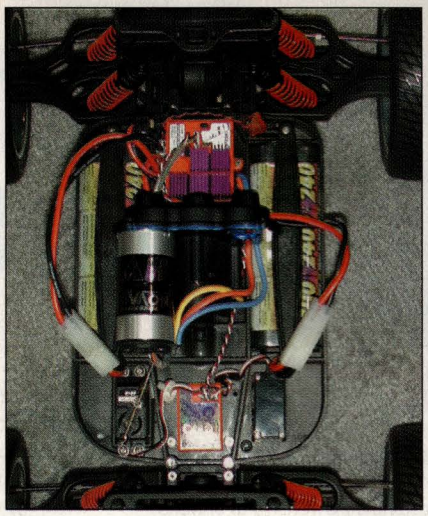


TEAM ASSOCIATED/O'DONNELL .12 ENGINE

Associated has teamed with legendary nitro engine guru Steve O'Donnell to create a rear-exhaust competition .12 small block that will surely make waves in the nitro racing community. Features of the new mill include:

- Precision calculated port layout for optimized power with good fuel economy
- ABC piston and sleeve design for longer life with better compression
- Piston CNC-machined from aluminum bar stock
- Aerodynamically shaped heavy-duty connecting rod with double bushings
- On-road and off-road versions with both standard (threaded) or SG-style cranks
- Slide-valve carb (with dual needles) or rotary-valve carb (with single needle for simplified tuning)
- Made to meet both ROAR and IFMAR legal specifications

NOVAK HV-MAXX BRUSHLESS MOTOR



The long-awaited Novak brushless motor for the Traxxas E-Maxx has finally arrived (and just in time, too!). The HV-Maxx system is a direct bolt-in replacement for the E-Maxx's stock dual-motor and ESC setup. Features include:

- ESC takes up no more space than the stock EVS speed control
- Six-volt, 3 amp BEC output for high-torque steering servo
- Works with as many as 12 cells
- Forward, proportional brake and reverse
- Sensor-based brushless motor for improved response and performance
- Ball bearings for motor shaft
- Industry-first Transmitter Check Mode
- Locked Rotor Detection prevents damage caused by locked-up motor

This should be the motor system that gives a boost in the arm to electric monster trucking. A single Novak brushless motor replaces both 550 Traxxas motors, yet both speed and acceleration should be improved. Expect to shell out about 300 clams for the entire system.



NEW ERA NITRO DRAG CHOPPER

Here's something for those who like to be different. At nearly two feet in length, New Era's Drag Chopper is an impressive piece of work. Check out its many features:

- Accepts most .12 to .18 small-block nitro engines
- Heli-arc welded 4130 Chrome moly tubular steel chassis
- Billet aluminum wheels with rubber tires
- Header and pipe to fit side-exhaust engines
- Six-piece body comes in clear Lexan
- Wheelie bar included
- Plastic fuel tank
- High performance clutch
- Full ball bearings

New Era tells us that it will begin shipping the Drag Chopper by mid-October at a price of $499.90 per kit.



TEAM LOSI XXX KINWALD 2

Losi was the first company to offer a fully optioned factory race kit (with the original Double-X Kinwald Edition buggy), and now it has raised the bar further with the new XXX Kinwald 2 buggy, which not only includes the options we've come to expect in Losi's Graphite Plus series (graphite composite plastic, titanium and specially coated parts), but also has some performance mods that will certainly help cut your lap times even further. Here's what you'll get with the new kit:

- Revised transmission/motor mount that lowers and moves forward the mass of the transmission and motor
- A more aggressive suspension package that takes advantage of the new tranny/motor placement
- Losi's new XXX "Gen II" transmission, which includes a new, smaller diff with new outdrives, a Kevlar spur gear, machined motor plate and a revised molded motor guard
- Variable length suspension arms for unsurpassed adjustment of the car's roll centers
- New molded front arm mount and rear pivot plate
- Machined aluminum rear arm mount
- Unique body and wing design

Losi's XXX is the current IFMAR World Champion, and if the new Kinwald 2 is as good as they say (In Kinwald's own words, "Dude, it's just easier to drive a lot faster"), the competition is certain to be fierce at the Worlds!

XRAY M18 1/18-SCALE MICRO

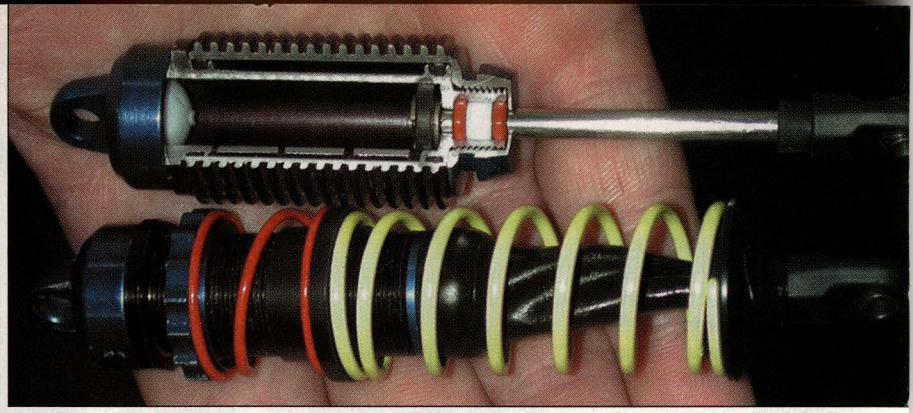
The micro wars should really heat up this winter with the release of XRay's incredible M18 shaft-driven 1/18-scale electric touring sedan. Check out these features:

- Ultra-low CG for better handling
- Variable battery placement—5 cells on left or 3 by 3 saddle pack configuration (with optional chassis and center motor-mount)
- Chassis can also accommodate as many as 6 cells
- Compatible with all HPI Micro RS4 wheels, tires, bodies, batteries and motors
- Sixteen degreased/lightly oiled high-speed ball bearings for greater efficiency and higher speeds
- Ultra smooth and efficient front and rear gear differentials
- Fully independent front and rear suspension with adjustable shock position
- Coil-over shocks for precise handling adjustment
- Many option parts soon to be available

The M18 was one of the hits of the Chicago show, and it will surely spur the momentum of the micro/mini sized R/C market. The car looks like a shrunken 1/10-scale touring car. It should be very interesting to see how it stacks up against the venerable HPI Micro RS4. Expect to pay less than $100.00 for the basic kit, which includes the tires, wheels and body.







RCC's Holiday Wish List

PRO-LINE POWERSTROKE SHOCK KIT

Finally a company has looked at the designs of full-sized shocks and has scaled down some of that technology for R/C use. Pro-Line's PowerStroke shocks are designed for use on most monster trucks that use a pair of shocks for each suspension arm (such as the T-Maxx). Each kit contains four coil-over shocks and four bypass shocks. The coil-over shock features independent primary and secondary springs with a spring travel limiter that provides a real dual-rate spring that provides both a plush ride through the bumps and also plenty of resistance to bottoming. The oversized coil-over shock body also features:

- Threaded spring pre-load adjustment
- Oversized 15.75mm diameter body
- Oversized 3.5mm diameter shock shaft to resist bending

The bypass shock contains both position- and speed-sensitive damping—just like a full-sized racing shock! This allows the shock's damping to change depending upon how fast the shock is compressed or extended as well as in relation to the piston's position in the shock's travel. As a result, the shock is less likely to bottom-out from hard impacts yet still has light damping for smooth suspension action. Other features of the bypass shock include:

- Forty-percent more fluid than conventional shocks
- Integrated cooling fins that keep the oil cooler
- Oversized 15.75mm shock body
- Oversized 3.5mm diameter shock shaft to resist bending

This is by far the most sophisticated shock system yet to grace an R/C vehicle, and the technology is indeed sound. Look for the PowerStroke shocks at your local Pro-Line dealer this holiday season.

POWER RACING SWIFT

The $450.00 Swift RTR 1/8-scale buggy may set a new precedent for features and performance in a low-cost nitro buggy package. The Swift comes with a high-quality Airtronics MX-3 computer radio and such racing inspired features as:

- carbon-fiber low-CG radio deck
- Horizontally mounted steering servo
- Lightweight aluminum 6061 T-6 aluminum chassis
- Threaded aluminum shocks with "accordion" rubber boots
- Hardened, CNC-cut steel ring and pinion gears
- Three-shoe racing clutch
- CV-style driveshafts throughout (wheels and center)
- Machined aluminum chassis braces
- Silicone-filled diffs (a first for an RTR buggy)



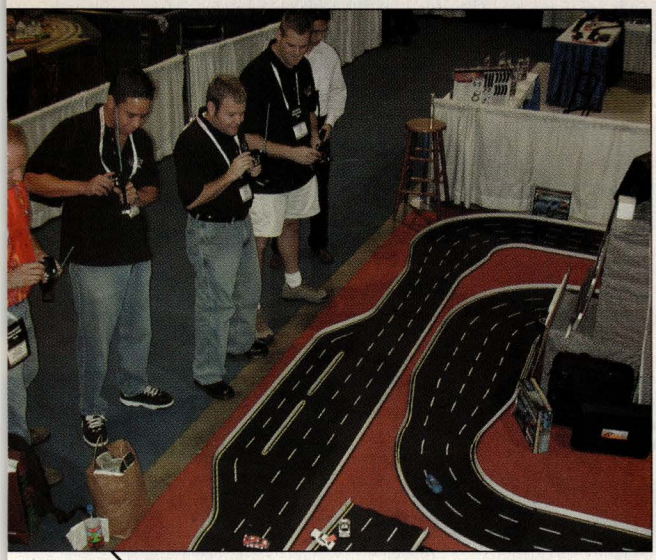


TEAM ASSOCIATED MONSTER GT

Although we saw this truck at last year's Chicago Show, the A-team was back to display a slightly revised version that should be very close to the final production model. Changes to the MGT include:

- A revised starter system for the Thunder Tiger .21 engine. The engine can be started using either an electric drill (via the socket in the engine's backplate) or by using the pull-starter (in case your drill's battery dies in the field).
- The "dual" exhaust system shown on earlier prototypes has been replaced by a more conventional, performance-oriented tuned pipe with a single outlet.

Despite the delay in its release, we're certain that the Monster GT will be at the top of many people's wish list this holiday season! Associated has set the retail price at $839.99 for the RTR package, which comes fully assembled with a pre-painted body (with flag holder!) and Hitec radio system.



APEX RACING MINI R/C TRACK

When the weather turns frightful, Apex Racing has just the ticket for your holiday joy! This is a must-have for year-round training (and good for keeping the kids happy). The track goes together just like a slot-car track and can be assembled and disassembled in minutes. The rubberized surface of the track provides great traction, and the size of the course will accommodate many types of micro and mini sized models. The starter track kit, which sells for just $159.00, is a basic oval that provides 22 feet of all-out racing action. Of course, you can add-on to your heart's content (just be careful that you don't entirely take over the house!). Apex also carries a large selection of its own micro cars, which sell for $79.95 each. So you can create your own indoor R/C racetrack for around $300.00.



YOKOMO MR-4BC SUPER DOG FIGHTER 2

Just in time for this year's IFMAR Off-Road World Championships (to be held in the U.S.), Yokomo is releasing a new 4WD off-road machine to challenge the all-conquering Losi XXX-4. Yokomo kitted the MX-4 shortly after winning the Worlds, but that car was met with criticism for its (lack of) durability. As a result, Yokomo phased out the MX-4 and released a molded-chassis "sport" version called the MR-4BC, which was a great "basher." Now it appears as if Yokomo has turned the mild-mannered BC into a Worlds contender. Look for this car to make a splash at the Worlds (rumor has it that Mark Pavidis will be running the BC), and look for a full test in the coming months.





HPI NITRO MT2

The truck that fared so well in our July '03 issue's Budget Monster Truck Shootout has just received a thorough redesign. The new MT2 should be better than its predecessor in every way. Features include:

- A completely redesigned suspension for better performance and durability
- New T-15 engine with ABC construction and a two-needle carb
- Equipped with HPI's Roto Start electric starting system
- New, Savage-like front bumper for a higher "survival" rate during collisions
- Nitro RS4 3 chassis layout with enclosed battery/receiver compartments
- Easily removable radio tray (held in with three body clips
- New, sleeker body design with bold new graphics (body comes pre-painted, trimmed and decorated out of the box)
- Ninety-eight percent RTR!

SOURCES

Apex RC • phone (209) 843-1795 or online at www.apexrc.com
Associated Electrics, Inc., 3585 Cadillac Ave., Costa Mesa, CA 92626 • (714) 850-9342; (714) 850-1744 fax
HPI Racing, 70 Icon Street, Foothill Ranch, CA 92610 • phone (949) 753-1099; fax (949) 753-1098
New Era Models, P.O. Box 7378, Nashua, NH 03060 • (603) 888-4453
Novak Electronics, Inc., 18910 Teller Ave., Irvine, CA 92612 • (949) 833-8873; fax (949) 833-1631
Power Racing • phone (408) 988-1188 or online at www.happytimehobby.com
Pro-Line, P.O. Box 456, Beaumont, CA 92223 • (909) 849-9781
Tamiya America, Inc., 2 Orion, Aliso Viejo, CA 92656-4200 • phone (949) 362-2240; fax (949) 362-2250
Team Losi, Inc., 4710 E. Guasti Rd., Ontario, CA • (909) 390-9595
XRay, distributed by Serpent USA, 2830 NW 79 Ave., Miami, FL 33122 • phone (305) 639-9665; fax (305) 639-9658
Yokomo USA, 17951 Skypark Circle, Ste. K, Irvine, CA 92614 • (949) 252-8663; fax (949)

Project 4-Stroke F1

Nolan Farmer's incredible nitro Tamiya FSF201

By Frank Masi
Photos by Adam Campbell





Wouldn't it be cool if... How many times have you asked yourself this question? There are hundreds of R/C kits out there—certainly enough to fill just about every niche one could think of. Once in a while, however, we must compromise; we accept what's available although it's not exactly what we want. Nolan Farmer is a man that doesn't compromise, and the car you see here is the result of his creativity, talent and dedication to make something truly unique. His nearly scratch-built 4-stroke powered version of Tamiya's electric F201 Formula 1 chassis is so clean it could very well have rolled off the production line at Tamiya's Shizuoka, Japan headquarters!



Project 4-Stroke F1

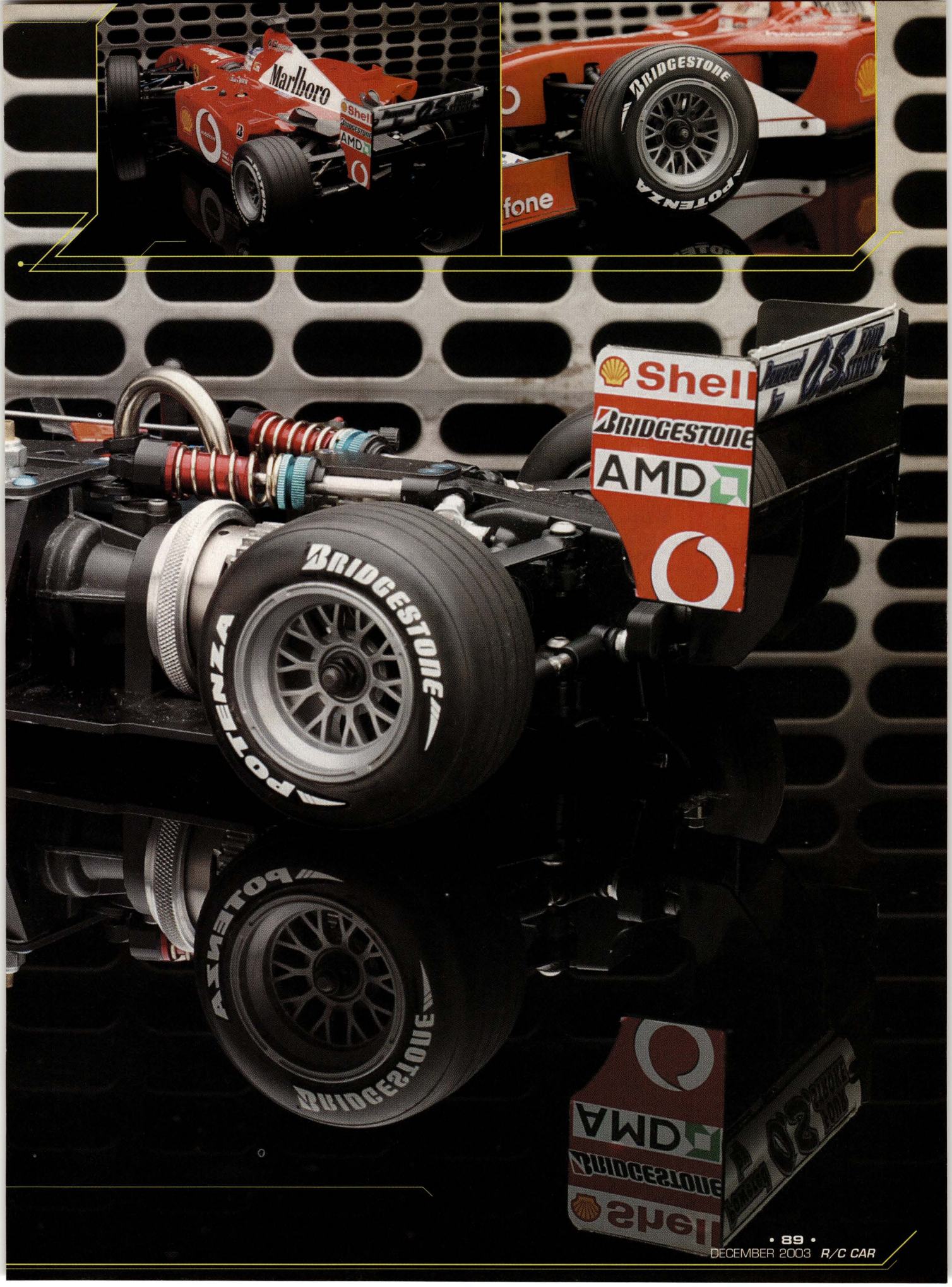
AMAZING ENGINEERING

Nolan's F1 is kind of like looking at the Grand Canyon—there's so much beauty it's difficult to take it in all at once. In this case's it's best to examine it piece-by-piece. The most incredible aspect of this project is that it all fits beneath the scale Ferrari F2001 body, and the credit for this belongs to the ingenious layout of the chassis.

The stock F201's plastic monocoque chassis has been replaced with a black-anodized aluminum plate chassis. Nolan cut the chassis so that it followed the contours of the Ferrari body perfectly, as the components of the nitro conversion would require every bit of room beneath the shell. The nose of the chassis curves upward, where it meets the stock F201's double-wishbone front suspension to preserve the original suspension geometry.

The engine is tipped on its side, with a gracefully formed tubular exhaust pipe that runs to the rear of the chassis, where it exits just below the right-rear wishbone. The fuel mixture needle is easily accessible through a large opening in the chassis. Adjusting the needle is done through the underside of the car. As the placement of the throttle servo and electronics prohibited access to the glow plug, Nolan devised a remote glow-plug heater that allows the plug to be heated from outside the Ferrari body.

The location of the major components, e.g. the engine and steering servo, prohibited Nolan from retaining the 4WD system of the electric F201, however, as F1-purists, we are actually pleased with the outcome. Real F1 cars are RWD, and part of the lure of F1 is the precise control needed to drive them quickly. Four-wheel-drive makes the F201 easier to drive, but RWD is more in the spirit of true F1.


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Project 4-Stroke F1

BACK STORY

An avid motorcyclist who raced both street and dirt bikes, Nolan has always loved little "thumpers." While searching the Web for information on radial valves, he came across O.S. Engine's Surpass .26 4-stroke airplane engine and became very curious. Nolan's search eventually led him to Tower Hobbies' website where he discovered a version of Kyosho's SuperTen that came with the "car" version of the thumper engine, the FS-26S. He had to have one, and after that, he was hooked. Nolan, who owns his own design and prototyping business, had more fun building and modifying that SuperTen than he can describe!

Searching for the perfect home for the little thumper engine, Nolan then installed the FS-26S into an HPI Nitro MT and ran it very hard on a rough and hilly track that he had built behind his shop. Nolan's next idea was to fit the engine into a stadium-style off-road truck, where he would be able to compensate for the overhead-valve engine's higher CG by laying it over on its side. He then realized that the gears, flywheels and the required two-speed necessary for this installation—which were located at the rear of the chassis—collected all sorts of dirt very quickly. Then it came to him: he would find an F1-style chassis for the thumper.

Nolan figured that if he could get the exhaust header in the center of the chassis, he just might be on to something. After laying out a basic design, Nolan was sure that the car on which to base his project would need to be SuperTen-sized, so he began searching for parts. He soon realized that there weren't any suitable F1 wheels and tires available for the larger super-sized cars—this first obstacle very nearly ended the project before it had begun.

Tamiya had released its all-new, shaft-driven 4WD F201 F1 chassis at about this time. Nolan flipped over the F201 and ordered one of the very first Ferrari F2001 kits and went to work on the design using SolidWorks—a 3D CAD design program used to create functional prototypes. Eight weeks later, and after nearly giving up three times due to space constraints, Nolan had finally figured out the vital throttle and brake linkages. During this time, Nolan discovered Jake Davis from formula1-rc.com, to whom Nolan gives credit for helping finish the overall design of the project (Jake also owns the other prototype). The rest is history.

WHAT'S IT LIKE TO DRIVE?

Nolan's earlier prototype has appeared on another R/C publication, however they never ran the car. When Nolan sent us this prototype, he insisted that we run it—OK, twist our arms, Nolan! The FSF201 we received was a newer version and had a few updates that weren't included on that original car. Once the studio photos had been finished, we headed down to Sun Valley, CA, to KZ Speedway's permanent asphalt roadcourse.

At first, no one at the track gave the Ferrari any notice, but when we fired up the 4-stroke, all eyes turned to the track. We have never tested a car that drew as much attention as the FSF201. The little thumper mill has a sound all it's own, but coupled with Nolan's custom-made tubular exhaust, the engine took on a different note; it sounded more like a full-sized car.

The FSF201 is a completely different animal than the electric-powered chassis on which it's based. The 4WD F201 drives like a touring car; the nitro FSF201 is much more sensitive to throttle inputs. It was very easy to induce a rear-wheel drift in the turns, and if we grabbed a bunch of throttle at lower speeds, the car could be made to do donuts. Like a real F1, driving the FSF201 takes a greater amount of concentration and control. It also a more rewarding experience.

The O.S. FS-26S we last tested in the larger and heavier SuperTen impressed us with its torque. The same engine and 2-speed in the much lighter FSF201 proved ballistic. The car was at home on the KZ track, which was designed for 1/5-scale racing. The engine pulled second gear all the way down the main straight at speeds we estimated to be in excess of 45-50mph—and it could have gone faster with more room.

Overall, the FSF201 is a car in the true spirit of F1, where the best drivers in the world drive the most sophisticated and fastest racecars. A stock F201 is easier to drive, but we'd gladly get behind the wheel of the nitro FSF201 anytime—it's unbelievably fast and it's overpowered. You have to have finesse to be quick with this car, but at the end of the day, you'll still be hearing that exhaust note and you'll know that you've driven a truly special machine.



Project 4-Stroke F1

NOSE JOB

The front of the nitro F1 is deceiving because it appears as if the car has 4WD when in fact it does not. Nolan devised an inboard front disc-brake system using the stock ball diff and driveshafts. The disc halts the rotation of the diff, yet the diff allows for limited-slip independent rotation of the front wheels. This system helps to prevent wheel lockup under hard braking and allows the car to turn-in with greater authority. The wishbones are Nolan's own creations, and they have metal nut inserts that eliminate the chances of the pivot balls from pulling out during a crash—very clever. The nose of the chassis extends forward to serve as a mount for the stock wing. You wouldn't want to hit something head-on, as the chassis will surely become bent. Perhaps Nolan needs to modify the chassis with an impact-absorbing plastic nosepiece.

SOMEHOW IT ALL FITS

As amazing as the nitro F1 is, that Nolan was able to fit it all beneath the stock bodywork is equally impressive. Both the fuel tank and glow-plug ignition are accessible from the outside. Nolan cut out the body over the fuel tank's lid and shimmed the piece so that it sat flush with the rest of the body. You can barely tell the lid is there! The remote glow-plug ignition can be seen behind the fuel lid. Running the car is very easy, as there's never a need to remove the body. Fuel stops, glow-plug ignition, engine tuning and starting (via a starter box) can all be accomplished without taking off the Ferrari shell.

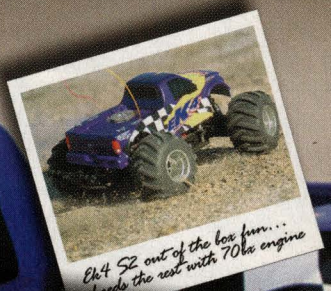
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THE BADDEST MONSTER TRUCK GETS BETTER!

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The EK4 has stacked up an unprecedented reputation for rock throwing brute power coupled with excellent handling for a truck of this size. Additional features such as the completely new Pro-70BX nitro engine, a new head design, and new carburetor design for easy tuning. We didn't stop there; we redesigned the differential cases to handle even more torque along with the a new engine starting plate. Top that package off with your choice of three fully painted and detailed truck bodies. Install your favorite two-channel radio, batteries, fuel, and attach the included starter probe and start shredding in the dirt.

Want cool looking optional parts? Check out the Thunder Tiger ERGAL 7075-T6 anodized accessories designed specifically for a precision fit with your EK-4 S2.



Ek4 S2 out of the box fun... shreds the rest with 70bx engine



New 70bx runs smooth and cool with the new head design



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Features

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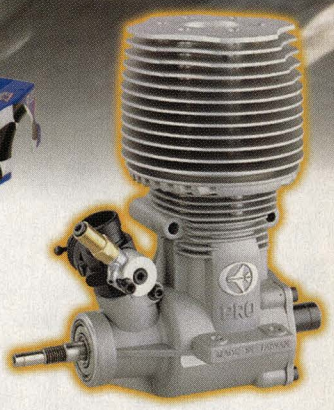


No. 6216-A3 Red

No. 6216-A2 Blue

TTR6216-A EK4 S2 Monster Truck

Shown with Purple body No. 6216-A3, Wheelbase: Adj. from 315mm to 320mm, Front Track Width: Adj. from 295mm to 305mm, Rear Track Width: 300mm, Front Kick-up: 5°, Front Caster: Adj. from 18° to 25°, Rear Anti-dive: 2°, Rear Toe-in: 1°, 2°, or 2.5°, Weight 3200g/7lbs. without engine, tuned pipe, servos.



No. 9447
Pro-70BX Engine

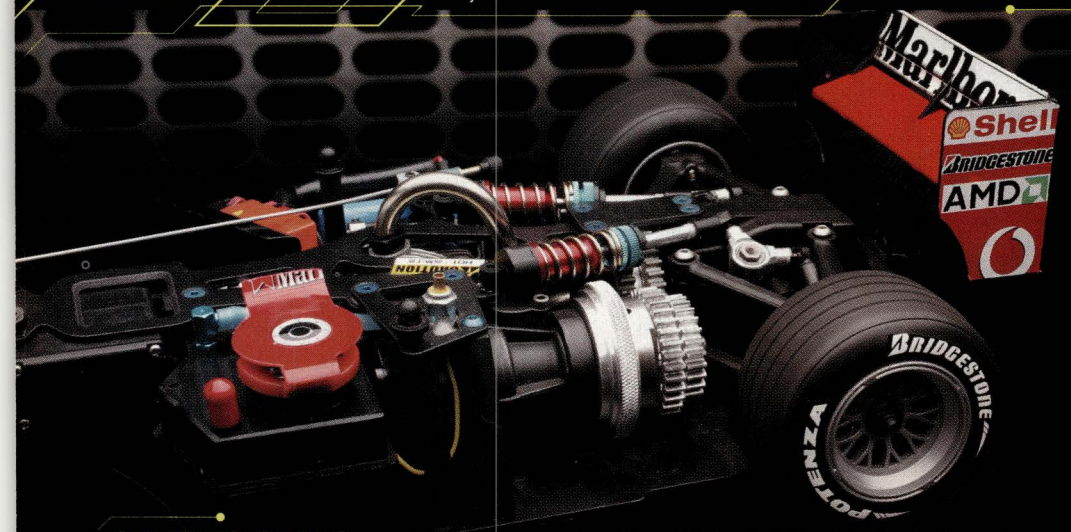
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Project 4-Stroke F1

TIGHT SQUEEZE

One of the most difficult tasks Nolan faced was designing a way to route the throttle and brake linkages. The solution was to use a Futaba S3002 micro-servo. The servo sits atop machined mounts and protrudes through a cutout in the lower chassis to fit within the bodywork. One linkage goes to the carb, a short rod goes back to the rear brake, while a long rod runs all the way to the front brake. Plastic adjusters provide quick adjustment of the front/rear brake bias.

Nolan built the aluminum bracket on which the Novak XXL micro receiver and switch are mounted. A five-cell rechargeable AAA battery pack is safety-wired to the throttle servo. A three-lead switch allows for easy charging without having to access the receiver. As it is, you have to remove the switch just to change the receiver's crystal! The steering servo is attached to the underside of the car's hand-made graphite upper deck, and Nolan built a custom uni-crank steering system to replace the stock car's dual-bellcrank setup.



SHIFTING GEARS

The FS-26S engine has tons of torque, but it gives up rpm to the screaming 2-strokes. A two-speed transmission is considered mandatory with this engine (if you want to go fast, that is), and Nolan was able to adapt the large-diameter flywheel, clutch and two-speed from the Kyosho SuperTen to his nitro F1. A Tamiya F201 ball diff is encased within a scratch-built "cartridge" rear gearbox, which Nolan designed to allow easy access to the diff. He also machined a custom input shaft that connects the stock Tamiya ring and pinion gears to the Kyosho 2-speed. Nolan also miraculously fit a disc-brake system between the 2-speed and the gearbox!

As no commercially available fuel tank would fit beneath the Ferrari body, Nolan hand-machined the fuel tank out of engineering plastic. He adapted a Kyosho flip-top filler lid for faster fuel stops. Nolan has machined everything you see here, including the machined supports for the upper deck!

CONCLUSION

We've seen hundreds of custom projects throughout the years, but we've never seen one that was as well engineered and executed as Nolan Farmer's incredible nitro F1. Now for the best part: Nolan will be producing a limited number of conversion kits in the future. He plans on producing 100 kits, and he tells us that he already has solid "reservations" for 79 of them. If you are interested, you might want to act quickly before all 100 kits have been reserved. You can contact him at Farmer Plastics and Machining in Jamestown, CO, (303) 443-1756.

Thunder Tiger

THE MYTH SHATTERING NITRO MONSTER TRUCK

SSK RTR

The new SSK 4WD Monster Truck, raises the bar to the next level of performance, power and style. A rugged aluminum chassis fitted with steel driveshaft, heavy duty metal gear differentials, and a extra wide track suspension take this truck where others dare not go. Fully adjustable long travel composite shocks, can soak up the biggest jumps, and toughest bumps you can find. Want more? Extra Wide front bumper, enclosed radio box will keep you going through whatever gets in your way. The power comes from Thunder Tiger's own PRO-15BXS. This powerful engine is coupled with a aluminum tuned pipe and header to produce awesome torque and impressive speed. When it comes time to slow down, a single oversized disk brake will bring this beast to a halt in a hurry. All this comes fully assembled with your choice of 2 prepainted bodies, stylish deep dish chrome wheels, and gnarly off road tires that are ready to tear up the dirt.





Included Accessories


TTR 1116 5-Way Wrench


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TTR 1266 Fuel Bottle 300cc


ACE 8217 Jaguar Radio T2P



6710 Yellow/Blue
Silver/Purple shown above

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Two If By Sea



Feeling landlocked? These RTR R/C boats make it easy to get your feet wet!

"Just sit right back and you'll hear a tale... a tale of a fateful trip." Sorry, we just couldn't resist! This isn't a story of a band of wacky castaways who can build a cappuccino machine from coconuts but can't patch a foot-long gash in a wooden boat's hull. No, this is a tale of two boats: the Wave Max from Power Racing and the Villain EX from Traxxas. Why are we writing a story about boats when the name of this mag is "R/C Car"? (Funny, our publisher asked the same question...). Well, why not? They are R/C and nearly all of the running gear is identical to the stuff you might run in your Losi race truck.

In the R/C industry, many of the companies we work with make other products beyond cars and trucks. We must expand our horizons, you know. R/C boats have always intrigued us, so when the opportunity to test a couple of them had arisen, we jumped at it. Both of these boats are electric RTR (ready to run), totally affordable and aimed at the newcomer (this includes us as well).

FINDING OUR SEA LEGS

We wanted good run time and speed for this test, so we invested in some Team Orion 3000mAh stick batteries. Setup was easy for both boats; it only took a few minutes to get them ready for their sea trials. All you need to do is install the batteries, turn on the boat and check that it is all running correctly. Both boats were setup spot-on and only required some slight adjustment to the steering trim. Simple and easy, we love that!

You should have seen us once we got he boats into the water. We were laughing like kids. It was really fun to roost these boats around the lake. It was by far the most fun we have had on a photo shoot in a long time. And driving (or is that "piloting"?) the boats took no time at all to master; the boats' controls work just like those in your R/C car or truck—throttle and steering.

POWER RACING WAVE MAX

Price: $129.00

The Wave Max is a cool-looking boat that comes in two flavors: white and yellow. You can get the Wave Max as an RTR or as a pre-built kit that requires you to install your own electronics. As we always prefer instant gratification, we went with the RTR in yellow. The boat itself measures over 30 inches in length. From our investigative research we found this is about average size for a boat of this type.

COOL FEATURES

The Wave Max comes with a single 550-sized electric motor, and requires a 7.2-volt battery pack that you will need to supply. It uses an old-style mechanical speed control, which helps keep the price low enough for the first-time buyer. The electronics and the motor compartments have removable foam covers that seal to the ABS hull to prevent water penetration. The Wave Max also has a nice decorative cover that resembles a cockpit, which covers the compartments and is securely fastened by Velcro.

SURF'S UP!

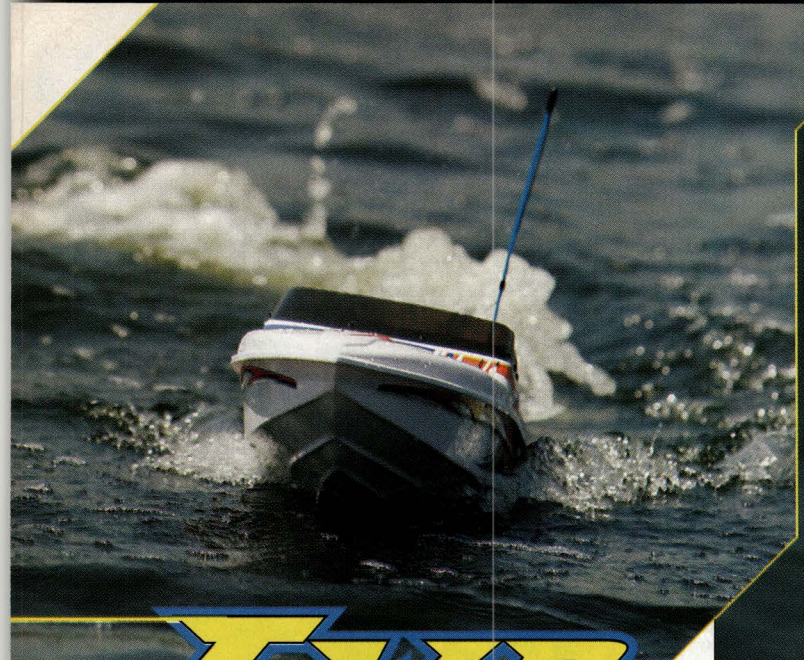
After we checked the Wave Max and were reasonably certain that we would not have to go swimming out after it, we let it rip for the photos. This was where the fun began. The Wave Max accelerated quickly, and topped out just as fast. For the first time R/C pilot, this will probably be perfect, but us diehard speed freaks will soon yearn for more speed. The boat's hull has an excellent shape and cut the water well; handling was very crisp and the Wave Max was easy to control. After seeing how the boat handled in the water, we immediately began thinking about ways to hop it up to use its full potential. We plan to use a mod motor (maybe even a brushless system!).

WHAT WE REALLY THINK

The Power Racing Wave Max is definitely a cool-looking boat and looked at home in the water. The design and layout is great for the first time R/C pilot, and the boat's hull lends itself to be fully hopped-up—the Wave Max has potential, so you won't need to buy a new boat as your skills and "need for speed" increase. To draw a parallel for us car people, it is like buying an RTR monster truck such as the T-Maxx. Once you catch the "bug," you want to hop it up. We all know that the T-Maxx is worth spending some money on to make it better, and you're not throwing good money after bad. The Wave Max is a good starting point, and you will have fun with it.



The Wave Max comes with a 550 electric motor and its own mechanical speed control. You must install your own battery pack. Note the sealed compartments for the water-sensitive electronics.





TWO IF BY SEA

TRAXXAS VILLAIN EX

Price: $200.00 (est.)

The Villain EX is patterned after cigar racing ocean boats. The EX has a deep-V hull design, and is powered by Traxxas' innovative 14.4-volt, dual electric 550 motor system (first seen on the E-Maxx truck). The Villain EX is also fully assembled and (as Traxxas puts it) is "Ready-To-Race." Like the Wave Max, the Villain EX was up and running in no time. The Villain EX comes in your choice of white, so of course we chose the white. It looked too cool in the water, and it was screaming at us to take it out and open it up. We were ready. Looking at those twin motors and twin props really had us going!

COOL FEATURES

The Villain EX has an impressive electronics bay, with an enclosed compartment to keep the goodies safe from water. Inside the Villain's waterproof compartment is a water-cooled marine version of the ESC Traxxas uses in the ever-popular E-Maxx truck. By the way: Novak Electronics makes it in the USA. The Villain EX has Traxxas' twin Titan 550 Marine fan-cooled motors that really put spin the props—the Villain was of course the faster of the two boats.

Another standout feature is the twin rudder/twin prop setup. According to Traxxas, the Villain uses a new propeller design that is "engineered to operate with speed and efficiency using full-size boat technology." The props are also counter-rotating to prevent torque roll and eliminate the need for trim tabs. Traxxas also has a dual "steer-able out-drive" system that has a rudder / propeller combo that directs the propeller's thrust and makes the Villain change directions so quickly your head will spin as well as the boats too.

WALKING ON WATER

The Villain EX accelerates as quickly as the lighter Wave Max, but with the extra motor on board, it had a much higher top speed. With its







The Villain EX borrows its awesome 14.4 high-voltage power system from the land-lubbing E-Maxx truck. This dual-550, fan-cooled motor setup features a special version of the Novak EVS electronic speed control. Dual batteries provided over 10 minutes of full-throttle, wave jumping fun.

deep-V design, the Villain went through the waves like a knife, but with a double edge. It handled well through the chop, and it would turn well, but at speed it would want to jump out of the water when called up to make tight turns. This scared us a few times and we thought that sooner or later one of us would be going swimming.

With the Villain's speed, it was extremely fun to pilot. It had us laughing and having a great time. It also has a long run time. The more expensive electronics really help make good use of the batteries' capacity; we got a good 10 minutes out of the Villain, and we had it punched must of the time.

WHAT WE REALLY THINK

We enjoyed the Villain EX a great deal. It was fast, handled well and we had a lot of fun piloting the craft. The whole boat was well thought out and the electronics were of high quality and worked excellently. We only had one complaint about the Villain: the decorative lid that is used to cover the electronics bay came off during our test. The cover has a twist-lock fastener, and when you would lock it down. It would feel like it was secure when in fact it wasn't. Ours flew off about 30 feet from shore, and there was no way we were going swimming! Too bad Traxxas didn't put some foam on the cover so it could float. If you get a Villain EX, make sure to lock the cover correctly. While you're at it, glue some foam to the cover—just in case. Overall, this is an excellent craft, and if you have a bigger budget to start with, the Traxxas Villain EX is worth looking into.

DOCKING THE STORY

These boats are great fun and will give hours of entertainment at the lake. The fact that they are RTR and electric make them easy to use and a no-hassle way of entertaining the troops on those long watersports weekends. Boats are a great way to go out and relax and have some fun, and after all, that is what this hobby is all about!

SOURCES

Power Racing, distributed by Happy Time R/C • phone (408) 988-1188; online www.happytimehobby.com
Traxxas, 1100 Klein Rd., Plano, TX 75074 • phone (972) 265-8000; fax (972) 265-8011

R/C Car

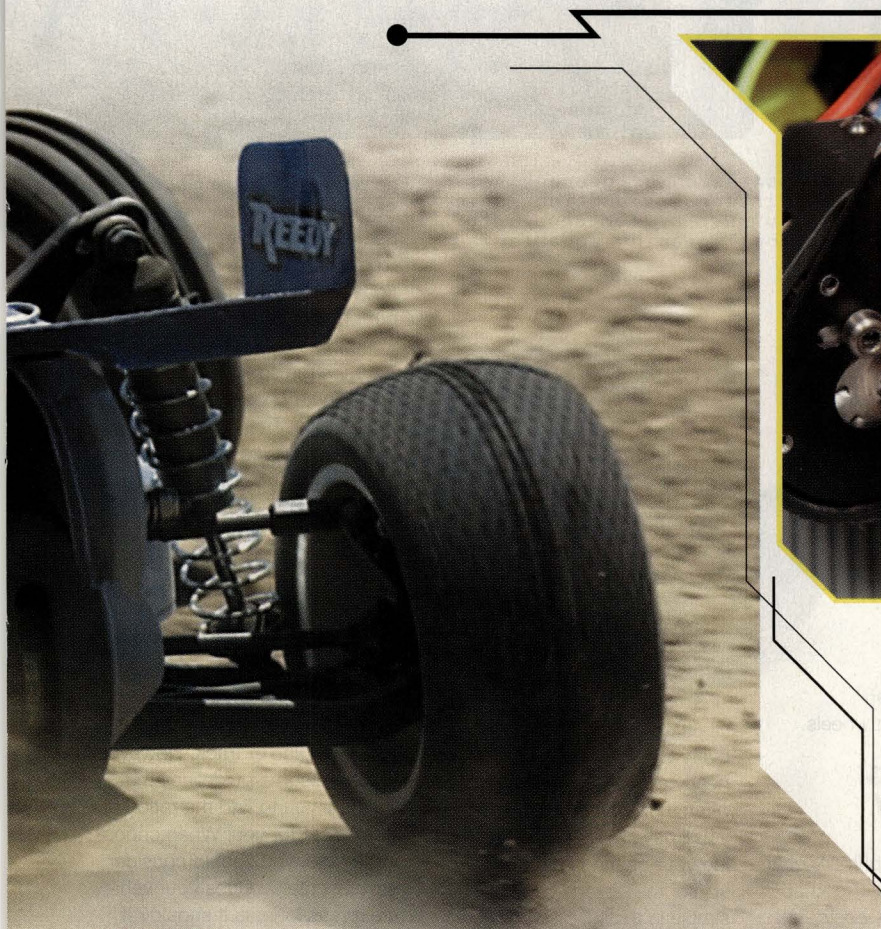
Part I: Gearing

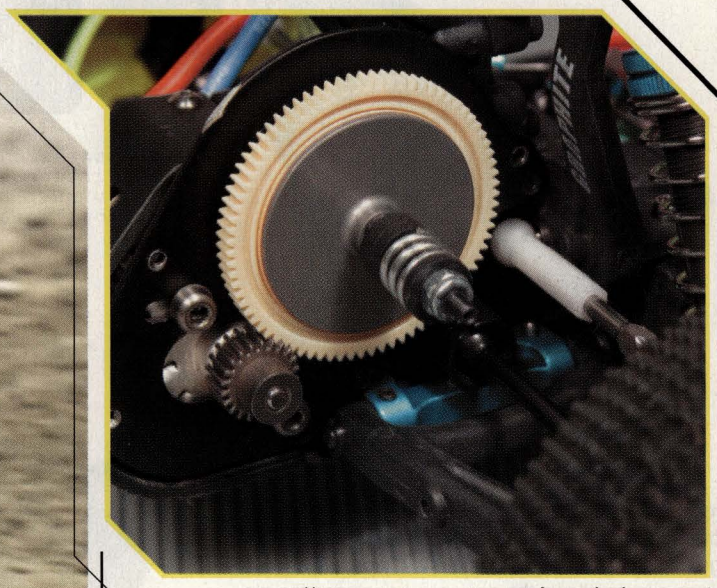


If you want good acceleration and top speed, learning to find the right gear ratio for your truck, buggy or on-road racer is essential.

In an effort to address the needs of those of you who have just started out in R/C, we have created this "Basics Series" of articles. Each month we'll address one particular subject indispensable for developing a sound grasp of the more technical aspects of the R/C car hobby. In this first installment, we'll take a look at one of the most perplexing topics facing the newcomer—gearing!

Basics Series





Your car or truck's pinion and spur gears are what's referred to as its "primary gear ratio." These are the gears you'll change to fine-tune your ratio.

WHY YOU SHOULD CARE ABOUT GEARING

First let's define the term "gearing" as it relates to R/C cars and trucks (and bikes, too, if that's your interest—it's all the same!). When you hear one R/C guy ask another how he's geared, what he is asking about is the other fellow's primary gear ratio. By "primary" we are referring to the sizes of the vehicle's pinion and spur gears. These are the two "outside" gears that link the electric motor or nitro engine to the vehicle's transmission (which has its own gearing, but we'll get to that in a minute).

The pinion gear can either be the small metal gear that you attach to your electric motor or it can be the clutch bell that's attached to the output shaft of your nitro engine. The spur gear is the gear that mates to the pinion gear. Together, these two gears define the car's primary gear ratio, and they are used to match the power of the motor or engine to the speed and acceleration requirements of the vehicle and the track on which you're running.

WHAT ABOUT THE OTHER GEARS?

Unless you own a direct-drive "pan" car—i.e. a car that has a pinion and spur gear but no other type of transmission between the motor and the wheels—your car or truck has its own internal gear ratio in addition to the ratio of the pinion and spur. For example, the new Associated T4 off-road truck has a sealed transmission that contains a set of three gears. This gearbox is located between the motor, the primary (pinion and spur) gears and the truck's wheels. On the T4, the gearbox has a ratio of 2.6:1. What this means is that the spur gear must turn 2.6 times to spin the gearbox's outdrive cups—and the truck's wheels—once.

WHY DO I NEED ANOTHER SET OF GEARS?

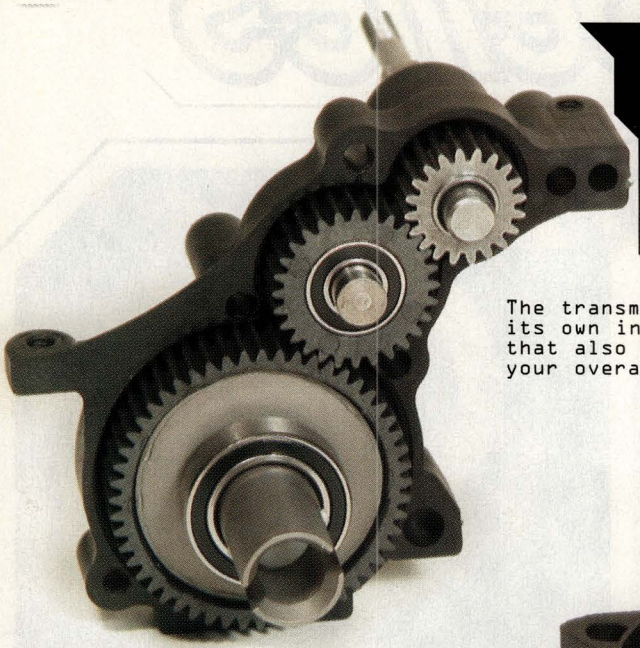
Good question. So why not make every vehicle direct drive and do away with unnecessary gearboxes? The answer is simple: it's about leverage and space. The reason that your motor or engine isn't hooked directly up to the wheels is that its rpm is much, much higher than the desired rpm of the driven wheels. A modified motor can easily spin at 25,000 rpm; however, it could never, ever have the torque to spin the vehicle's wheels at that rpm—it lacks the necessary leverage to do so! This is where gearing comes into play; it provides the motor with enough leverage to turn the large-diameter wheels and move the weight of the vehicle.

Again, why don't we just have pinion and spur gears? Why do we need additional transmissions? The answer to this is space; a gearbox such as that of the T4 is needed to increase the amount of the motor's leverage beyond that provided by the pinion and spur gears alone. Sure, you could do away with the gearbox, but you would need a much, much larger spur gear, and that would not only take up too much space, but it would force the designers to place the spur gear between the

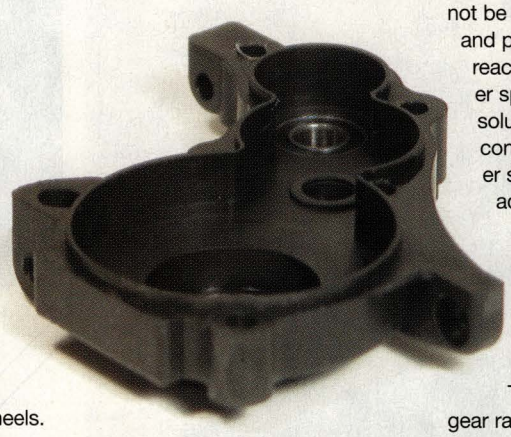
R/C Car Basics Series

WHEN LOW IS HIGH & HIGH IS LOW

When gearing is involved, logic sometimes goes out the window. Take for example the commonly accepted nomenclature of gearing. For example, when someone says that they are "geared high," they are really talking about a lower numerical ratio that gives them more top speed. If they are "geared really low," they mean that they have a very high numerical ratio that gives them better acceleration. It's confusing, but not impossible, to learn this lingo! Don't give up.



The transmission or gearbox has its own internal reduction ratio that also must be factored into your overall gearing equation.



rear axles (can you imagine your off-road truck with a huge spur gear sticking out of the back!). A transmission allows the designers to use smaller pinion and spur gears and keep everything compact and low to the ground—both desirable traits for high-performance machines.

RATIO BASICS

The basics of gear ratios are as follows: the higher the number, e.g. 2.6:1, the greater the leverage. More leverage also means better acceleration—remember this for later! A transmission that has a 2.6:1 ratio will make it easier for the motor to spin the wheels than a transmission with less leverage, e.g. a transmission with a ratio of only 2.1:1. The only problem with gearboxes is that their ratios are fixed; you can't change the ratio of the gearbox! However, you have other options.

The pinion and spur gears are designed to be easily changed, and with good reason: they are how you change your vehicle's gearing to optimize your motor or engine's acceleration and speed! Just like the gearbox's ratio affects how much leverage the motor has over the driven wheels, the ratio of the pinion and spur gears is equally important. It is used to fine-tune the overall ratio of the vehicle's entire transmission, which includes the pinion gear, the spur gear and whatever gearbox lies between them and the driven wheels.

DETERMINING THE PRIMARY GEAR RATIO

Finding out your primary gear ratio (or any gear ratio for that matter) requires only basic math—division (oh, no!). To determine your vehicle's primary ratio, all you have to do is divide the number of teeth on the spur gear by the number of teeth on the pinion. If you are using an 87-tooth spur gear and an 18-tooth pinion, your primary ratio is 4.8 to one. What this means is that for the spur gear to rotate once, the pinion gear has to rotate 4.8 times.

WHEN TO CHANGE GEARS

The engineers who designed your vehicle are very smart, and they made sure that the vehicle's internal ratio, i.e. the ratio of its "non-changeable" gearbox, is square in the ballpark when used with a selection of spur gear sizes. Most often, a kit will come with a spur gear that can accommodate just about every type of motor/engine for nearly all types of terrain. More often than not, the only thing you'll have to do when fine-tuning your gearing is to switch the size of the pinion gear. How simple is that?

The rule of gearing is this: To increase acceleration, use a smaller pinion gear. To increase top speed, use a larger pinion gear. Using a 17-tooth pinion instead of an 18-tooth pinion in our example changes the ratio from 4.8:1 to 5.1:1. With this ratio, the motor can spin more times to each rotation of the driven wheels. As a result, it has more leverage and more torque to move the vehicle with greater ease. If you increased the number of teeth of the pinion gear to 19 teeth, the ratio would change to 4.6:1. In this scenario, the motor has less leverage over the driven wheels and the vehicle will have slower acceleration. It will, however, have more top-end speed.

You should only have to change the spur gear when the ratio you require can't be achieved by switching pinions. Sometimes you may need to use a larger spur gear when running a very hot (low turn) modified motor. In this case, you may not be able to move the motor and pinion close enough to reach the spur gear, so a larger spur provides an easy solution. There are pros and cons to using larger or smaller spur gears, but this is an advanced topic and is really beyond the scope of this article.

WHAT'S MY "RIGHT" GEARING?

There is no single correct gear ratio for every vehicle, motor, engine or track. However, there are some guidelines that will help you to find the ratio that's best for you. When choosing a ratio, you should consider several criteria. Does your vehicle run as long as it should? If it's electric, does the battery dump prematurely, or does it run longer than expected? Do your battery, motor and speed control overheat? Does your nitro engine run too hot? A higher numerical ratio, i.e. a smaller pinion, will make your vehicle run longer and cooler.

What if your vehicle runs for a long time, but it's very slow compared to how fast you think it should go? In this case, you may be running a ratio that's (numerically) too low. In this situation, switching to a larger pinion gear would improve the vehicle's top speed. Generally, you want to find gearing that will give you the best of both worlds: strong acceleration and good top speed. Once you've determined this ratio, you can fine-tune it to match a particular track type and size.

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Dialing in your Team Losi XXX Buggy

Tune your buggy like a pro!

By Todd Hodge



Hey, racers! This month I am going to go over some setup information and building tips for your XXX buggy so you can smoke your competition. To start things off, 2WD is probably one the hardest classes to get a grasp on driving, so with this article I hope to educate you on what different adjustments to do to your car so you can get a better hold on what things are doing.

XXX

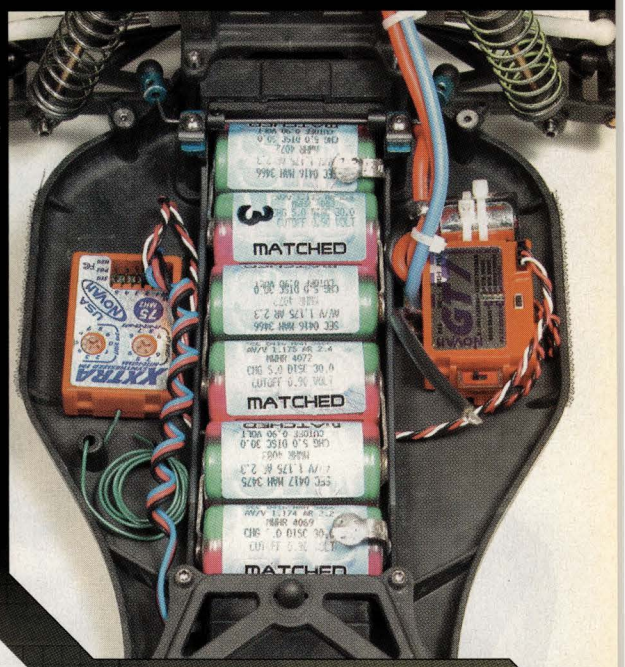
With my car, I always run close to the same setup from track to track. This makes things a lot easier to figure out. I will start at a new track by solely testing tires to get a feel for things. Whenever I get to a new track, I watch what some of the local fast guys are running and start there. Then I go by a driving feel on what I might want to change. A lot of racers use an Orion lap counter to see how fast they are going. I personally find these frustrating when you are trying to find the dialed setup for your driving needs. You can spend a whole day just battling to catch the fastest lap time and you then end up making your car hard to drive and usually end up blowing out during qualifying. Other racers may disagree, but it is my opinion.

XXX

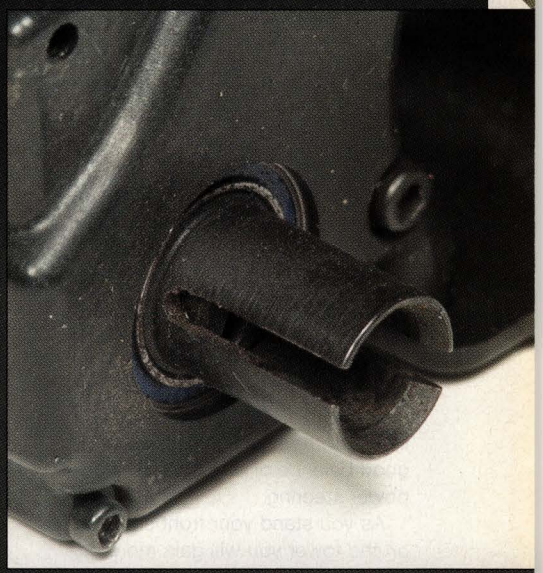
FOOD FOR THOUGHT: WEIGHT TRANSFER

Something else to keep in mind is weight transfer. You can change a lot with this. This can be done one of many ways, and I'll start with the battery. Running the battery forward will give you less forward traction, more on-power steering and a car that is easier to drive. As you move the battery back, you will gain forward bite, as more weight is being put on the rear axles. You will also gain more steering into the turn because the weight is going to cause the rear of the car to swing through the turn. Another thing I like to do with my battery is to raise and lower its height. You can do this by using a 0.030-inch-thick piece of lexan that's been cut to the size of the battery area of the chassis. Raising your battery will increase forward traction and steering because you are raising the CG of the car and causing more weight transfer. This works great on club tracks that do not have a lot of traction.

Last and most important is static camber and ride height. The more negative camber you run, the more rear-end steering you will have. This also decreases the tendency of catching ruts or bumps. I like to keep my camber anywhere from zero to one degree. Any more negative camber usually makes the car feel dumpy over the rear. You can achieve a lot with ride height. By raising your rear ride height, you will gain forward traction and side bite. By lowering it, you will achieve just the opposite.







OUTDRIVE CHOICES

A lot of people ask about the differences between dogbones versus CVDs and steel outdrives versus plastic outdrives. Well, there are a lot of differences between all of them. The main difference that we see between the dogbone and CVD is steering. The Losi dogbone generally has more steering in the center of the turn and less forward traction, where the CVD has more side bite, more on-power traction and also helps the car initiate the turn faster.

Why? It's simple: with a CVD, you have the steel axle and a steel coupler that links the axle to the CVD bone. When this coupler starts to get some wear on it (usually within a couple of runs), it causes more bind and makes more friction. This friction equals traction when the CVD is under a load. The Team Losi dogbone does not have this, as the link between the dogbone and axle is a plastic yoke. This yoke creates less friction, which makes the suspension work freer under higher loads. As for the outdrives, I am a firm believer in steel outdrives. They provide more traction and have a more consistent feel. The reason they have more traction is similar to why the CVD gives more traction: the steel outdrive and steel dogbone pin create a lot of friction under load. All of this friction creates a bind which helps keep the rear suspension moving, giving you more traction. This is also a reason your car may not feel as good as it did before you installed a new diff with new outdrives—there is less friction, so less traction. Plastic outdrives do offer some benefit; they are great to use when you are on super high-bite tracks where you want less traction and more on-power steering. The plastic outdrive gives you less traction because there is less friction between it and the steel dogbone pin. One thing to consider: if you do change from a steel diff to a plastic diff, make sure to use the Trinity Outdrive Savers (part number TK1801), and you may also want to decrease your shock oil since you are removing a XX ounce of weight from the rear of your car.

Dialing in your Team Losi XXX Buggy



FRONT END

I will start with some of the setup changes to the front end. For shock position I start with the middle hole on the tower and middle hole on the A-arm with .050-inch limiters on the inside of the shock, which offers a good balance of off-power and on-power steering.

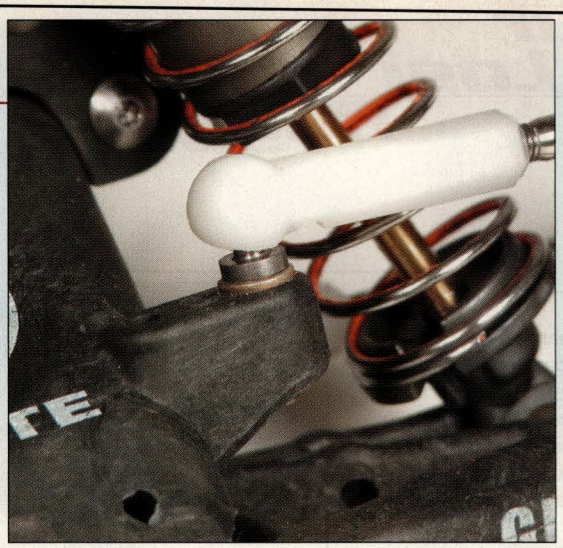
As you stand your front shocks up on the tower you will gain more off-power steering and more on-power steering, and this can also make your car feel twitchy. By moving the front shocks to the inside hole you will lose some all-around steering; however, your car will have a much smoother feel and be easier to drive. This can be good on super high-bite tracks where the front end may get overly aggressive. At times you may want to run a stiffer spring as you lay the front shocks in.

tAs for the arm/shock position: by going to the inside hole on the front arm you will gain off-power steering and lose on-power steering. When doing this, you will also need to increase your spring rate and possibly your damping because there is less leverage on the front arm now and your front end will feel softer. You will also need to add some limiting to keep the down travel of the shock close to the same. A .090-inch limiter should work well. The outside hole on the front arm is rarely ever used. However, it will give you less off-power steering and monster on-power steering. A softer spring will be needed when running this location.

As for shock springs, I like to run Team Losi orange springs all the time. If you want the car to have more steering, then a stiffer spring will give that option (and vice versa with softer springs).



For pistons, I normally run number 55 pistons with 32.5 to 35wt shock oil. This works well on bumpier tracks to keep the front end nice and flat over the bumps. Since this piston/oil combination has less pack, it does not allow as much weight to be transferred to the rear end, as a number 56 piston might allow. However, on higher bite tracks, this can cause the front end to feel grabby in the middle of the turn. I will then go to a number 56 piston with 27.5 to 30wt oil to keep the front end from rolling over itself. The weight of the oil generally depends on the temperature at the track. Out here in sunny California I will generally stick with the oil I mentioned. As you go back east and run on the indoor winter tracks—such as CRCRC—you will want to decrease your oil to get your suspension to work more to help you get more front and rear traction.

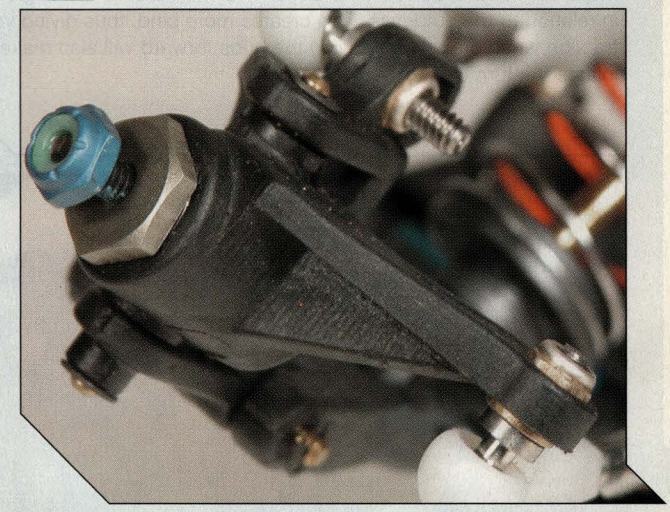


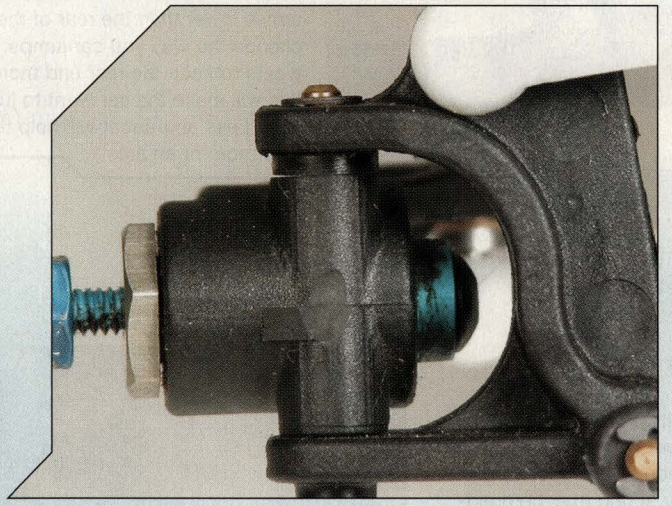
On to the front camber link. I like to use the 3/B position with one gold washer. This offers a good amount of off-power steering and releases the turn well. At times I will run 2/A with one gold washer to reduce off-power and gain on-power steering. As you lengthen the front camber link you will have less off-power steering, and your car will be more responsive around the center of your steering wheel throw.

The XXX has the option of raising and lowering the front inner camber-link ball stud. This does a lot. By raising the front ball stud you will increase off-power steering and decrease on-power steering. Lowering it will do just the opposite and will help the car get through bumpy parts of the track as the front end will have more camber gain.

Another front end adjustment you should not forget about is bump steer. This is a very simple adjustment that has a significant effect. By adding washers to your spindle ball-stud you will be giving your car "bump in" (toe-in as the suspension is compressed). This helps the front of the car stay flatter when entering a turn—giving you less steering—and also helps keep the car more stable under braking. By adding washers to the bellcrank ball stud, you will be giving your car "bump out." This will make the car want to steer more when entering the turn. On high-bite tracks, this can make your car kind of erratic.

You can also raise and lower the spindle on your XXX. Personally, I leave mine in the low position. As you raise the spindle you will gain steering and the car will feel more responsive.





As for caster blocks, I always use the 30-degree blocks. More caster will make the car steer into the turn more and have less steering on exit. This means more rear traction when getting on the throttle. There are 25-degree caster blocks available, and they will give you less steering into the turn but more on exit. If you do run the 25-degree blocks, you should probably use one gold washer on your spindle ball-stud to retain the same bump steer.

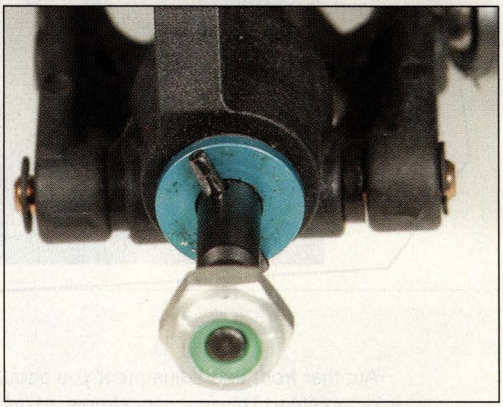
Whenever you are tuning, your first concern should be static camber, front toe, and ride height. You can really change the way your car handles with the simple twist of your turnbuckles. By adding negative camber to your car, you will gain more steering, while less camber will do just the opposite. As for front toe-in and toe-out, I will usually end up running one degree or so of toe out. Toe-out will give you more steering when entering the turn and less when exiting. Toe-in will give less steering into the turn, but will have more steering on exit. Ride height can also do a lot on the car, and this can change by just putting different tires on, so make sure you pay attention when changing front tires. Lowering the front ride height will give the car less steering, and raising it will give you more. On the XXX, I will usually run the rear dogbones level and then make the front of the chassis level with the rear. Depending on tires, this will usually make the front arms a hair below level.

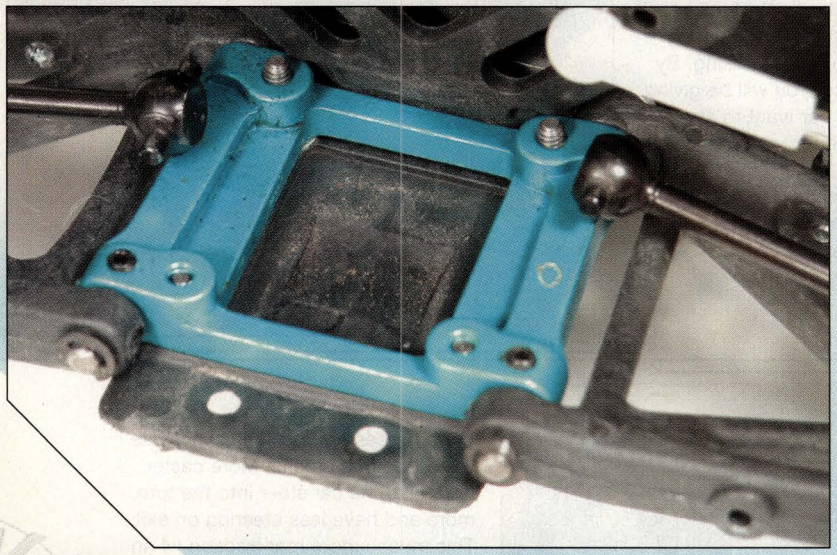
Dialing in your Team Losi XXX Buggy

REAR END: STATIC SETTINGS AND MORE

Moving onto the rear suspension, we will start with the rear toe-in. The XXX comes standard with three degrees of toe-in per side. You can increase your toe-in with aftermarket hubs made by Team Losi and Trinity. Increasing your toe-in will give you more forward traction and side bite. More toe-in will also make your car transfer weight to the front when you let off the throttle, so this can make the car want to initiate the turn quicker. One downside is that more toe-in will hurt the car through the bumps. On dusty or low-bite tracks, more toe-in may be good.

Another way to add traction to your car—without increasing rear toe-in—is to move the hubs forward on the arms. This will increase the angle of the dogbone in relation to the outdrives. This creates more bind, thus giving your car more traction when on-power. Moving the hubs forward will also make the car want to initiate the turn quicker.





Anti-squat is another tuning option you can explore. The XXX comes standard with two degrees of anti-squat. Anti-squat is the angle of the rear arm in relation to the rear pivot plate (with the leading edge of the arm being higher than the rear edge). More anti-squat gives you more forward traction and more off-power steering. More anti-squat is generally better on lower bite tracks. Less anti-squat will give your car less forward traction and more side bite. Less anti squat helps on higher bite tracks. Generally, I run the stock two degrees of anti-squat. Another thing that anti-squat and pro-squat (when the leading edge of the arm is lower than the rear of the arm) do is change the way you car jumps. As anti-squat wants to keep the rear end more locked up, this will make the car want to jump more nose high. Less anti-squat will help the car jump with more of an arc.

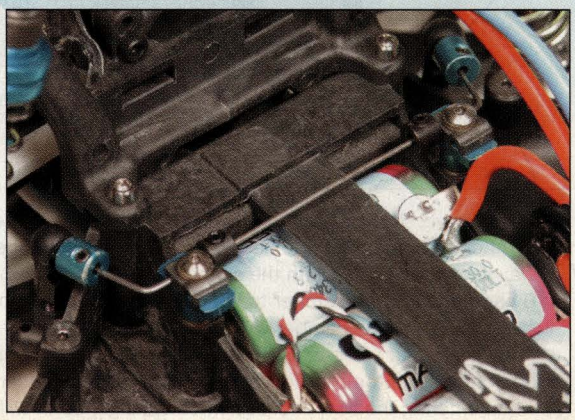
REAR END: SUSPENSION SETTINGS

I like the "rear swaybar setup" the most. This is when we run:

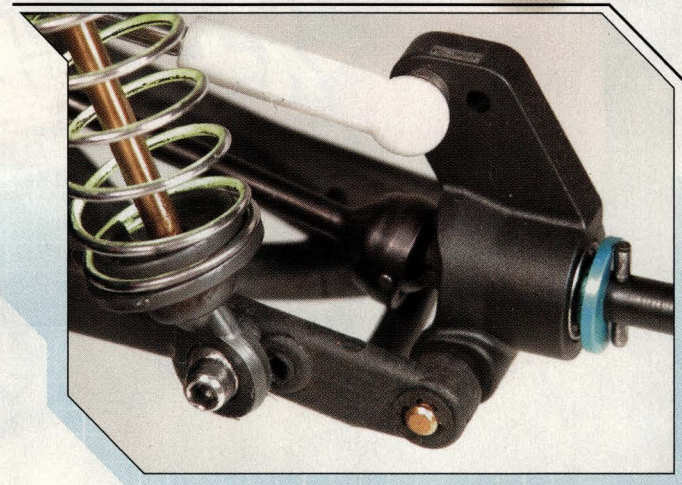
- a rear bar of between .040 to .060-inch-diameter
- Losi's yellow springs
- number 56 (red) pistons
- internal shock limiters of 0.050-inch thickness
- 27.5wt shock oil

This setup has the most rear traction and stability. For shock positioning on the tower, as you move outward on the tower you will gain forward traction and side bite. As you move inward you will lose forward traction and the car will feel a bit softer, so a stiffer spring may be needed. If I want more steering from the rear of the car, I will go to a number 55 (orange) piston.

Running a stiffer swaybar will give the rear end less rear traction and more steering. A softer bar will do just the opposite. If I want more steering from the rear of the car—but with less stability—I will then remove the shock limiter and move the shock to the outside hole on the arm, and use the pink springs. I will run the 56 pistons with 25 to 27.5wt oil. The swaybar will also come off as well. This rear shock setup will let the car rotate the center of the turn more and have more on-power steering.







For the rear camber link, I will always start with the 2/A rear camber link position as it helps the car rotate the center of the turn well and helps square-up the car upon corner exit. However, at times, other rear links are good as well. Position 2/B will keep the rear of the car flatter and more stable. The one problem is that on bumpy tracks, running the B position on the hub will make the car bouncier. Another good link to run is 3/B. This has the same length as 2/A, but offers more side bite in the center of the turn and helps on-power steering.

Another tuning aid on the rear camber link is the Trinity aluminum hubs (Part number TK5102). These hubs enable you to mount the ball stud vertically, which allows you to adjust the height of the outer ball stud. To obtain the standard position you will need to run two gold number 4 washers. By moving the ball stud up, you will decrease the roll stiffness, and this will give you more on-power steering and less forward traction. This will also help your car go through the bumps better. By removing washers you will increase the roll stiffness and gain forward traction and more rear stability. I personally like the standard two washers on this setup.

CONCLUSION

Hopefully this article has taught you a little about your XXX 2WD buggy, and you will be able to destroy your competition. If you have any questions, you can email me at *thodge@horizonhobby.com*. Until next time, good luck and remember to have fun!

SOURCES

Team Losi, Inc., 4710 E. Guasti Rd., Ontario, CA • (909) 390-9595

Trinity Products, Inc., 36 Meridian Rd., Edison, NJ 08820 • (732) 635-1600; fax (732) 635-1640

XTM NITRO



By now we all know that the RTR is here to stay, and XTM is at the top of the heap with its "X" Line of RTRs, which include the imposing X-Factor monster truck (see our review in the May '03 issue) and the X-Terminator 1/8-scale buggy (which won our March '03 issue's 1/8-scale RTR buggy shootout). XTM is on a three-peat with the new X-Cellerator gas truck. They appear to have once again hit the ball out of the park.

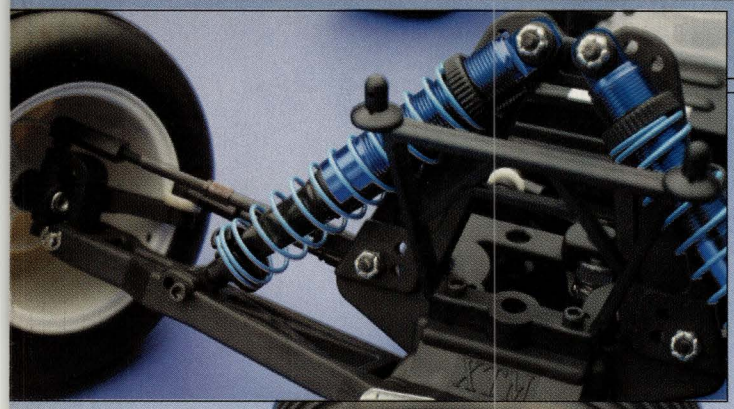
For an RTR, the X-Cellerator is one of the most race-ready GTs out on the track, but with its large .18 engine, it's also right at home bashing in the backyard. XTM didn't fool around when it came time to design the X-Cellerator. They looked at, err, let's say, "Were inspired by," the top racing 1/10-scales on the market, and incorporated the ideas into the X-Cellerator. Once the X-Cellerator arrived at the office, we looked it over and found that many traits from Losi, Mugen, Associated and Kyosho had been designed into the X-Cellerator. You could call the X-Cellerator a mutt, but this mutt has some pedigree behind it!

XTM hits another

X-CELLERATOR



RTR homerun!



Check out those shocks! Long-travel, threaded blue-aluminum bodies and silicone dust boots—who could ask for anything more. Turnbuckles are also standard, as is a king-pin/ball-stud style front spindle.





How it comes: With the exception of the decals (which are pre-cut), this is what the X-Cellerator looks like when you pull it from the box.

OUTSTANDING FEATURES

As we have come to expect from XTM, their latest RTR is stuffed with little features that make good selling points to the first time buyer.

OVERALL LAYOUT

When you remove the X-Cellerator's body, a race bread chassis layout—much like that of an Associated, but with a couple of Losi features thrown in—is revealed. It's a clean setup. We hate to draw parallels to other trucks, but it's hard not to with the X-Cellerator. Everything is where a true race truck should have its parts, and the weight distribution is dead center. As with all 2WD gas trucks, the battery hangs off the back. XTM used a similar battery case to that of the Losi, and in fact we were able to use the new JZ Dace Brace made for the Losi battery case—it was almost a direct fit for the X-Cellerator and kept the case from breaking during our test. When you get your X-Cellerator, we highly recommend you invest in the Dace brace. It is extra insurance for which you will thank us later.

While on the subject of the battery case, we have to mention that XTM included a sweet three-way harness on-off switch that has a charging harness already included. This is unique for an RTR and its inclusion is sheer genius. Our hats off to XTM for this great move. Another nice addition to the layout is fuel line clamps that are integrated into the fuel tank. This keeps the fuel lines nice and neat and out of harm's way. Like we said: the X-Cellerator is well thought-out and you can literally pull it out of the box and race it as we did (but you might want to change the rear tires first).

SUSPENSION

The suspension layout is race-ready out of the box. XTM again went out of its way to make the X-Cellerator a true performer. As should all good

trucks, the X-Cellerator has many tuning options. The suspension arms are (as that editor "super brain" boss of ours would say) "quadra symmetrical." This design puts all the A-arms at equal lengths and makes for a harmonious suspension feel and creates equal grip at both ends of the truck.

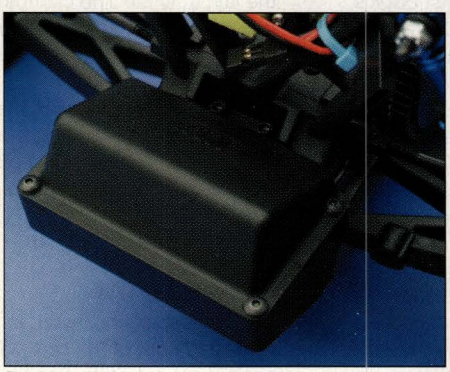
Moving onto the shocks, XTM went the extra mile here, too. The shock bodies are threaded for excellent spring pre-load adjustment. The shocks are also large for a truck of this size. The shock bodies are oversized, and this provides extra space for more shock oil. This translates into better shock action and better damping (that will remain more consistent during long runs). But wait: there's more! XTM installed silicone boots on the shafts, much like those of 1/8-scale buggies. This was another cool feature that no one else does. In fact, many of the local fast guys were checking out the X-Cellerator the night we went to race. All of them wanted to get their own X-Cellerators at the hobby shop as soon as XTM puts them out—who would have thought. As for how the shocks worked, the X-Cellerator handled pretty well for just being straight out of the box. As always, we don't touch our RTRs; we test them as the come out of the box so we can give you an idea of what you can expect. Isn't that nice of us? Overall, the suspension was good and can only get better once you set it up to your preference.

TRANNY

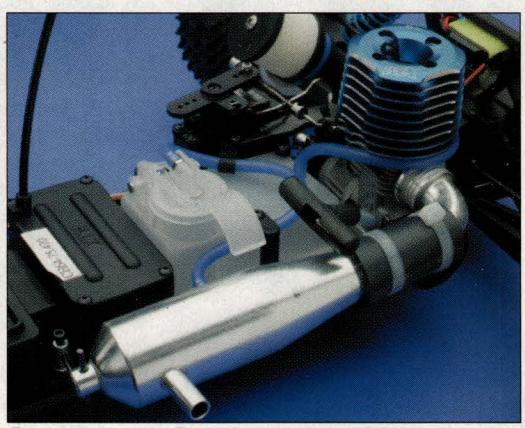
The X-Cellerator's transmission is similar in design to that of an Associated RC10GT. It uses a three-gear power transfer with a racing-style adjustable ball diff at the bottom. The top gear also supports an adjustable slipper clutch that is surely one of the reasons for the truck's good traction and reliability. Of course, the entire transmission—including the wheel axles—is supported by efficient and durable ball bearings. We had no problems with the tranny during our test, and believe us, we bashed this thing a lot in the short time we had it.

COSMETICS DEPARTMENT

As we pulled the X-Cellerator from its box, it looked good enough to make us go out and try it out right away—this is exactly what an RTR should do. What makes it even better is that the body is pre-painted and pre-trimmed. To make it even more attractive, the sticker kit is pre-cut, too! This is another plus to XTM's approach to making the X-Cellerator a great RTR. It was so easy to get the truck ready to go test that we think many first-time hobbyists will get spoiled after they get hooked on driving their X-Cellerators and move to the next level. By then, however, it will be too late they will be into the sport much like we are. We can't wait!



Deja vu: We've seen this view before... we just can't quite place it...



Powerhouse: The included .18 pullstart engine and tuned-pipe combo ripped up the track during our test! A great engine for an RTR.

XTM NITRO X-CELLERATOR



REPORT CARD

Test Location: Hot Rod Hobbies Saugus, CA (661) 255-2404]

Conditions: Hard packed and dry dirt off-road course

Steering: A

As amazing as it sounds, the steering was on par with many race trucks we have tried. Although (you knew this was coming) the stock rear tires were only good for wet or loamy dirt and grass. You will need to invest in some good tires if you plan on running the X-Cellerator at any type of track. The front tires were surprisingly good, and we were happy with them; it was only the rears that did not want to stay hooked-up. Trust us: invest in some Pro-Line, Losi or Panther tires and this will end this problem

Acceleration: A

The XTM .18 engine is a good match for this chassis. It accelerated with authority and had great top speed. You did need to use throttle control, because the .18 has some torque! It will break the rear end loose in a heartbeat if you lay into the throttle. We did need to adjust the slipper clutch after four tanks of fuel; once it became seated, it began to slip more than we wanted. This category is really about the engine, and we think that the XTM .18 engine worked well for the entire test. It started to life with ease every time, and it would just sit and idle. The XTM .18 engine is one of the best RTR engines we have used—absolutely no problems.

Suspension: A

For an out-of-the-box RTR, the X-Cellerator's shocks and the suspension were almost perfect. We know that might be hard to believe, but XTM got it right. Someone in R&D obviously does some racing, because it was setup well. All we needed to do was set the pre-load just little when we went racing. That was it. The X-Cellerator did have a slight kick when it landed from jumps, but this was nothing that couldn't be adjusted out. Remember: we tested it as is! The shocks are great. Being larger helps put more oil to work, giving you better damping. To top it off, XTM put rubber booties over the shafts to protect them.

Durability: A

The overall X-Cellerator package is phenomenal. It is well thought-out and is made of quality material. We had no problems with the truck whatsoever—nothing even came loose. There is only one real issue to this otherwise flawless truck: the pull starter hangs out in the breeze! We noticed this when we were done racing in our last qualifier. The starter case had been slightly shoved back from landing jumps; it bent the front screw that holds the plastic case, and this caused the pull-starter to bind a little. We had to replace the screw to fix the binding. We hope XTM sees this article and works this out. It's not a big problem, and knowing XTM, they will fix this little problem in no time..

SPECS

Price:	$259.99 (varies with dealer)
Length:	16.1in/410mm
Width:	12.9in/325mm
Wheelbase:	11.5in/292mm
Front/rear track:	(F) 12.4in/315mm/(R) 12.6in/320mm
Weight:	4.3lbs (w/o fuel)
Chassis:	3mm aluminum
Drivetrain:	gear driven RWD
Bearings:	steel ball-bearings
Damping:	oil-filled aluminum shocks
Suspension:	upper/lower wishbones
Tires:	ribbed front, block-tread rear
Wheels:	one-piece nylon dish

Final Score

Highs: The X-Cellerator has set a new benchmark in the RTR market. It has several features even the most expensive race trucks don't have. If you wish, it is totally ready to go out and race; it has a 75 band AM radio, so you won't need to wait for the scarce 27-band frequencies to become available. It handles great out of the box, and if you just want to play out in that dirt lot by your house, it is very durable.

Lows: You don't have one yet! The only issues we had were that the rear tires were not up to the task of taming the power of the .18 engine. The starter was prone to smacking on the ground after landing a jump. That's it.

The verdict: We think you can tell we liked the X-Cellerator; it is one of the nicest RTR's we have ever tried. It is also one of the best "bang-for-the-buck" trucks you can buy. Would we take it over a pro-level truck? No, but you get a lot for your money and is an excellent RTR. If you are looking to get into gas trucks, but don't want to fully commit to building a race kit, you owe it to yourself to check out the X-Cellerator.

SOURCES

XTM, distributed by Global Hobby Distributors, 18480 Bandilier Circle, Fountain Valley, CA 92708 • phone (800) 854-8471

JR RACING SC-1 ESC



Small in price and stature, large in performance

The earliest sport ESCs were bricks. In many cases, they were nearly as large and heavy as the mechanical speed controls they replaced (servo included!). Boy, have we come a long way! Today's sport ESCs are smaller and, in many instances, more efficient and smoother operating than the so-called "racing" ESCs of the past. Such an example of a modern sport-level ESC is the new SC-1 from JR Racing. The SC-1 is one of the smallest and lightest reversing ESCs we've seen.

FEATURES

The SC-1 offers a lot of features for both budget bashers and sportsman racers alike:

• High-frequency operation for smoother throttle response and greater efficiency. The SC-1 switches at 1500Hz, which is a good "middle of the road" frequency that will provide stock-motor users with plenty of punch, yet will also give excellent control when used with modifieds (of no fewer than 15 turns).

• One-touch programming. Using the SC-1 couldn't be any easier. A single pushbutton is used to match the SC-1 to your transmitter. A multi-function LED helps guide you through the setup process.

• The SC-1 is one of the smallest and lightest "sport" ESCs on the market—and definitely among the tiniest of all reversing ESCs. Its case is just 1.45 x 1.71 x 0.89 inches and its weight (with wires) is 1.92 ounces.

• Insurance against overheating is provided courtesy of built-in thermal-overload protection. Should the SC-1 become too hot, it will shut itself down until its temperature is reduced, at which time the unit will resume operation. A large aluminum heatsink comes factory installed.

• Although not clearly mentioned in the instructions or on the box, the SC-1 is a forward, brake and reverse ESC; it functions like a standard forward-only-with-brakes racing ESC, with reverse being engaged when the throttle trigger is pushed to full brake twice. This feature protects your transmission against sudden reversing, which can strip your gears.

SETTING UP

The SC-1 is one of the easiest ESCs to set up. Once you set your transmitter correctly, e.g. ensure the servo reverse and EPA (end-point adjustment—if your radio is so equipped), it's a simple matter of using the SC-1's Set button and red LED. The transmitter and ESC are switched on (in that order, of course), and you must press the button once before its initial blinking cycle ends (you have about two seconds in which to do this). This programs the radio's neutral position. Next, you pull full throttle, press the button again (it will blink twice), then move the trigger to full brake and press the button one last time (the LED blinks three times here, which tells you if you've performed the setup correctly). The SC-1 should now be perfectly matched to your radio.

WHAT WE REALLY THINK

We tested the SC-1 in a Team Associated B4 off-road buggy, using an Orion 3000mAh sport battery and Venom Racing Fireball 17-turn mod motor. Installation involved no soldering; the Orion pack and Venom motor plugged right into the SC-1's Tamiya-style and bullet connectors. On the track the SC-1 provides very good throttle response with plenty of punch. Run times were very good—exceeding six and a half minutes with ease—and following the run, a finger to the ESC's heatsink verified the SC-1's efficiency—no scorched digits! Overall, you can't really beat the SC-1's combination of efficiency, ease-of-use, throttle feel and compact dimensions. Adding in a very useable reverse just sweetens the mix.

Part no.: JRPSP100
Price: $64.99

SOURCES

JR Racing, distributed by Horizon Hobby Distributors, Inc., 4105 Fieldstone Rd., Champaign, IL 61821 • (217) 355-9511

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LRP PULSAR SPORT

"Sport" doesn't do this charger justice



The term "sport" has come to have many meanings in the R/C world. For some, it means cheap; to others it means budget-priced. Still, there are some people to whom the word "sport" means "free from unnecessary functions." It is at this latter crowd that LRP has aimed the latest charger in its Pulsar line—the Pulsar Sport. You see, the Pulsar Sport is intended for those who wish to have the high-end charging features of the more expensive Pulsar Competition, yet don't want or need the "non charging" features of that charger (such as the discharge, cycling and motor run-in modes). In terms of charging ability, the Sport and Competition are identical twins.

WHAT IT DOES

The Pulsar Sport is the charge-only version of the higher-priced Competition model, and as such it contains the same charging technology that is sure to give both your economical NiCad packs and your expensive NiMH race packs their optimum charge. Here's a review of the Sport's features.

- Charges one to eight cells at an adjustable current of between 0.1 amps all the way up to 7 amps for you voltage hounds.
- The charger works from a wide variety of input voltages (from between 11 to 15 volts DC).
- It uses PWM (pulse width modulation) for maximum charging efficiency.
- Features an adjustable delta-peak cutoff (from between five to 80 millivolts), which allows you to custom-tailor the sensitivity of the auto shutoff function to match the needs of each individual pack.
- It has LRP's exclusive auto restart system, which automatically resumes the charge mode when power is restored following a power failure.
- A large, 16-line multi-function LCD screen displays all pertinent charge information. Four simple pushbuttons are used to scroll through the charger's features and to select the value of each charge criteria.
- It allows you to set and store your own custom charge profile. When you arrive at the track, you won't have to waste time programming the charger—it has remembered your previous settings!
- A large air vent allows hot air to escape during charging to maintain efficiency. The vent is covered with a cool-looking aluminum mesh screen to keep out larger dirt particles.
- A set of 13-gauge silicone flexible charge leads with alligator clips allow the Pulsar Sport to hook up to any style of pack and batter connector.

USING THE SPORT

The Pulsar Sport works just like the more expensive Competition model. The controls are very intuitive and scrolling through the various functions couldn't be simpler. As the Sport and the Competition share their charge software, the quality and accuracy of the charge is first-rate—regardless of cell and pack types. We charged a single NiCad cell from a glow-plug igniter, a five-cell NiMH receiver pack and a high-voltage matched NiMH six-cell pack with fantastic results. The Sport is up to the task of charging consecutive packs at high amperage rates without worry; each pack will receive the same level of efficiency and power.

WHAT WE REALLY THINK

The Pulsar Sport is a great charger for those who don't want all the bells and whistles of the Competition model, but still want one of the best high-performance chargers on the market. The only problem we have is with the price; the "street" price for the Sport model is only about $15 less than that of the full-blown Competition model (the "list" price difference is around $80.00), which adds a host of useful features such as motor run-in, discharging and cycling. We also prefer the Competition's "metalized" blue case (the Sport's case is blue plastic) and its blue-backlit LCD. Otherwise, if you're in the market for a high-performance DC-only charger, you really can't go wrong with the Pulsar Sport.

Part no.:.....LRP4145
Price:.....$164.99
(varies with dealer)

SOURCES

LRP, distributed by Associated Electrics, Inc., 3585 Cadillac Ave., Costa Mesa, CA 92626 • (714) 850-9342; fax (714) 850-1744

100th TCS RACE DRAWS 163 ENTRIES

RESULTS

Formula-1

First Place	Neil Rabara
Second Place	Mark Rebek
Third Place	Steve Williams
Best of Show	Chris chan
Top Qualifier	Mark Rebek

Touring GT1

First Place	E.J. Evans
Second Place	Ling-Kang Tong
Third Place	Jim Bishop
Best of Show	Charlie Barnes/ Suradaj Ellis
Top Qualifier	Timmy Valles

Touring GT2

First Place	Rudy Rodriguez
Second Place	Michael Rydwell
Third Place	Steve Williams
Best of Show	Chris Lim
Top Qualifier	Rudy Rodriguez

Touring GT3

First Place	John Christensen
Second Place	Ian Aquino
Third Place	Izzy Suarez
Best of Show	Steve Tolmasoff
Top Qualifier	Ian Aquino

Mini

First Place	Craig Richter
Second Place	Chris Ledray
Third Place	Bill Wallace
Best of Show	Bill Wallace
Top Qualifier	Craig Richter

TL-01 Spec Exhibition

First Place	Casey Tsukiyama
Second Place	Hideki Ohyama
Third Place	Mark J Holoway
Best of Show	Emily Chang
Top Qualifier	Casey Tsukiyama

Rally Exhibition

First Place	Johnny Dale La Sing
Second Place	Victor Lee
Third Place	Johnny Shin
Best of Show	Artie Ottaviano
Top Qualifier	Johhny Dale La Sing

Entries

Racers	**116**
Second Entry:	**47**
Total Entries:	**163**

BELOW LEFT: 116 competitors entered an historic 100th TCS race at Tamiya's home circuit on August 24, 2003.

BELOW: Day turned into night as the winners of the 100th TCS Race received their awards.





TOUGH COMPETITION IN WASHINGTON

RESULTS
Burien Toyota
Burien, WA

Formula-1

First Place	Ritchie Reynolds
Second Place	Dave Palmar
Third Place	Kevin Michellich
Best of Show	June Partee
Top Qualifier	Ritchie Reynolds

Touring GT1

First Place	Ramil Basco
Second Place	Korey Harbke
Third Place	Dave Palmer
Best of Show	Dave Palmer
Top Qualifier	Brett Sisley

Entries

Racers	**63**
Second Entry:	**25**
Total Entries:	**88**

Touring GT2

First Place	Ryan Partee
Second Place	Chris Ledray
Third Place	Mark Tveten
Best of Show	Richard Shaw
Top Qualifier	Mark Tveten

Touring GT3

First Place	June Partee
Second Place	Ryan Partee
Third Place	James Dong
Top Qualifier	Ryan Partee

Mini

First Place	Arvin Thomas
Second Place	Troy Crabtree
Third Place	Ty Follis
Best of Show	Fred Forg
Top Qualifier	Ty Follis

TL-01 Spec Exhibition

First Place	Brian Young
Second Place	Andrew Balatico
Third Place	Terry Haddow
Best of Show	Andrew Balatico
Top Qualifier	Brian Young

Rally Exhibition

First Place	Mark Tveten
Second Place	Andrew Meek
Third Place	Ritchie Reynolds
Best of Show	Joe Diga
Top Qualifier	Mark Tveten

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9 AM RACING BEGINS
TRIPLE A MAINS

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2) SPORTSMAN STOCK TRUCK
3) EXPERT STOCK BUGGY
4) EXPERT STOCK TRUCK
5) MODIFIED BUGGY
6) MODIFIED TRUCK
7) 4WD MODIFIED

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Class_____ Freq. 1st_____ 2nd _____ 3rd _____ Personal Transponder #_____

Class_____ Freq. 1st_____ 2nd _____ 3rd _____ Personal Transponder #_____

Class_____ Freq. 1st_____ 2nd _____ 3rd _____ Personal Transponder #_____

***MAKE CHECKS OR MONEY ORDERS PAYABLE AND SEND TO RCRACEPLACE**

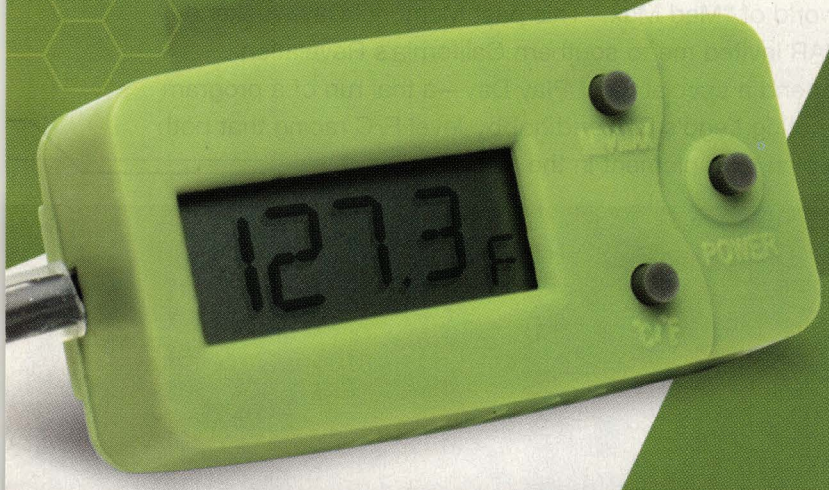
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LET GO OF

A toy giant sets its sights on the R/C hobby!

By Brian Skinner

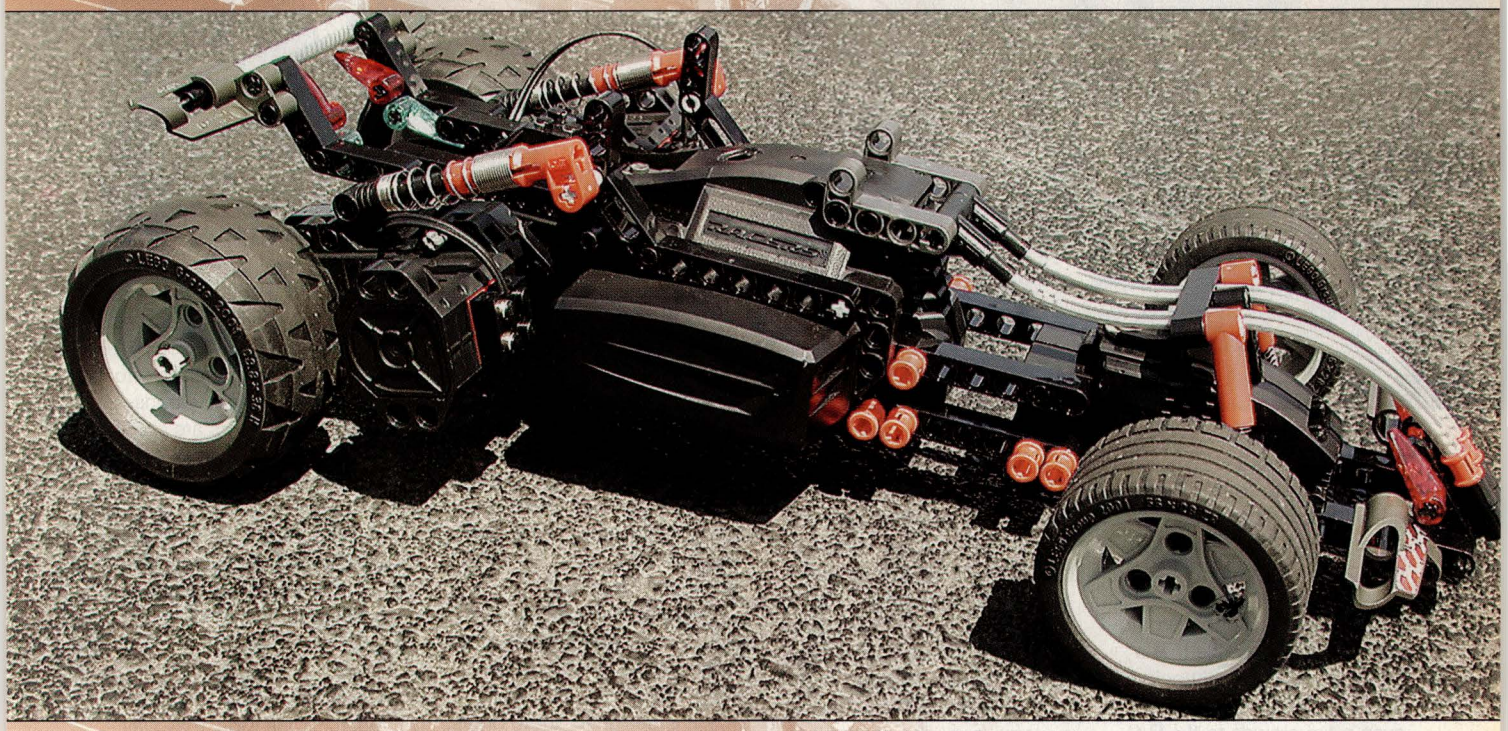




Hey, boys and girls, guess what? Lego—the king of the building block set—is getting into R/C! Well sort of, anyway: teaming up with ROAR (Radio Operated Auto Racing), Lego seeks to promote its new line of R/C vehicles, which includes at the moment a wild creation that looks like something from the post-apocalyptic world of "Mad Max." This past Memorial Day weekend, Lego and ROAR invited me to southern California's Revelation Raceway to attend a special Kids' Play Day—a trial run of a program aimed at promoting Lego's R/C and hobby-level R/C racing that both organizations plan to implement in the coming year.



MY LEGO!



Why you may ask? Well it seems I might have helped put the two together, and heck, they like us!

You see, Lego is releasing their new R/C toy to the general public soon and they would like to use ROAR and R/C in general to promote it to the public. ROAR is looking for outside corporate sponsorship to promote on-road and off-road Nationals and R/C in general, so it only seems natural that they work together. This could work out to be a great deal for everyone involved, and I may yet get my dream of a first class "real" National, with corporate sponsors and everything!

LEGO KIDS' DAY

On Sunday, August 29th, 30 children were invited to Revelation Raceway to build and then play with the Lego R/C vehicles in mock races. In addition, there were plenty of cool things being handed out, such as posters, stickers and cool little robots that the kids got to take home after the day was done. If that weren't enough, there was free popcorn, snow cones, hotdogs and drinks. All good ingredients for a fun day, and everyone went away a winner.

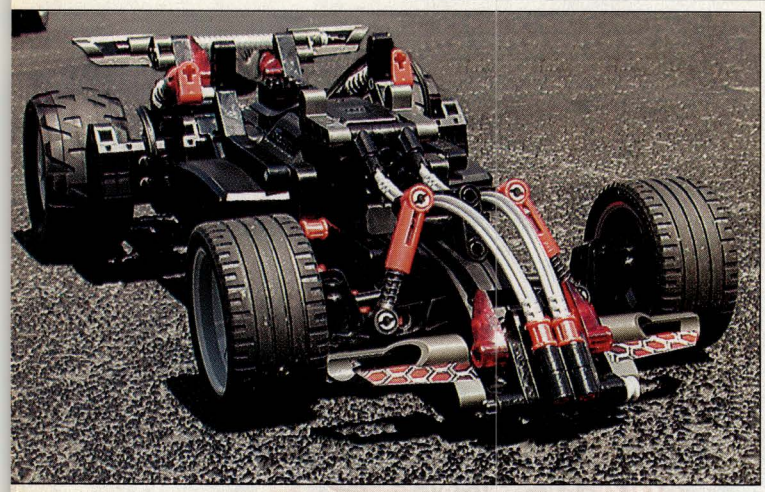
In the morning, all the children got to assemble and play with the Lego vehicles; then they had mock heats. After a quick bite for lunch, they went into the finals. During the lunch break, ROAR President Rick Wilson and other industry bigwigs such as Gil Losi Jr. broke out their racecars and put on a demo race, which was intended to show the children (and their parents!) the excitement and performance of hobby-level R/C vehicles.







LET GO OF MY LEGO!





A POTENTIALLY BRIGHT FUTURE

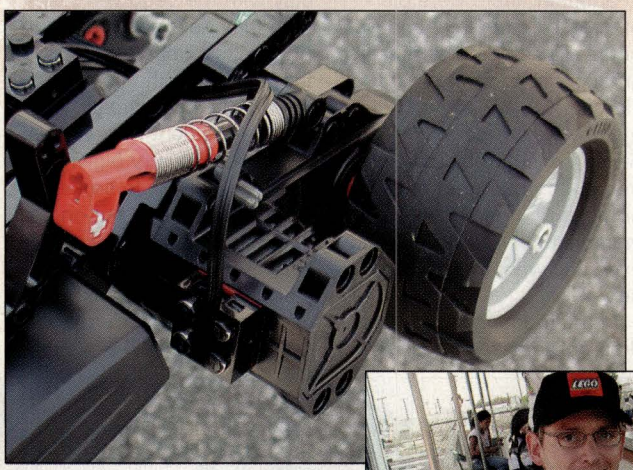
In the future, this pilot program will be expanded to accommodate a much larger crowd, and will be run at southern California's Lego Land Park. In conjunction with this promotion, it is also possible that a future ROAR National could be held at Lego Land to help bring even more crowds to the R/C side of life. Another plan that has been discussed is to have Lego vans cruise the country and take the show on the road. They would show up at hobby shops and R/C tracks around the U.S. and do a Kids' Play Day in conjunction with major races and shop promotions. This really could be a great boost for Lego and for R/C.

A CLOSER LOOK AT THE LEGO VEHICLE

At this point you're probably asking, "What about the Lego car?" I'll tell you: it is a toy R/C car that is designed for children of between five and ten years of age. A child can play with the R/C vehicle by itself, or if they have any of Lego's block systems (and who doesn't?), they can customize or even custom-build their own R/C vehicle—their imagination's the limit. This is really a cool idea and will definitely help in a child's creative development, and will help grow hand-eye coordination in a fun manner.

The kit itself is pretty cool and looks like a futuristic "exoskeleton" vehicle you might see in a science fiction movie. Construction is completely snap-together for easy building, and the vehicle has many safety features that will put parents at ease. Here are some of its features:

- A dual motor design that has built-in shut-offs should the motors become too hot or overloaded.
- It is designed not to break, but to snap apart during the inevitable collision. This way, a child cannot get cut on the parts.
- Speed is limited to seven mph so children cannot be hurt as a result of a collision (or hurt mom's favorite furniture).
- The vehicle has multiple power configurations, so other Lego toys can be added for further customization.
- For us R/C techno-weenies, the Lego vehicle has a nicely designed front suspension that has a cool rocker-arm shock-load-transfer system that would really be cool for our cars. The motor is unitized into the suspension, and its transmissions and motors are completely enclosed in the swingarm assemblies. There is more to this "R/C toy," but you will have to wait, because Lego was kind enough to hand over one of the kits for us to test (any six-year-olds want to help?).



CONCLUSION

We think the Kids' Play Day is a great idea for Lego, ROAR, the R/C hobby and especially for the kids. If the program comes together the way we hope it will, it will be a great shot in the arm for R/C promotions. Many people already involved in R/C have children who are too young for conventional hobby-grade models, and the Lego vehicle is perfect as a starting point to bring these youngsters into the hobby when they are ready.









TEAM LOSI TECH-TALK

Tech Tips # 18

By now many of you know that there have been some new parts released for the XXX-4 as well as a few for all of the Team Losi off-road racers. In particular we want to look at the new XXX-4 G+ routed shock towers and the Titanium Nitride hinge pins. The need to use Titanium Nitride on suspension pins is for the same reason it has become so popular on shock shafts. This cool looking, gold colored, hi-tech coating is extremely hard and wear resistant yet offers a higher level of lubricity for lower friction. Until recently, this wasn't possible but a new process has been developed so now you can enjoy the benefits. The new generation of Titanium Nitride used on these pins results in freer suspension movement and less wear on both the pin and the arm. Don't worry, all you 2WD and truck racers have not been forgotten, as there are Titanium Nitride hinge pins available for the XXX, XXX-T and XXX-NT as well. The new routed shock towers for the XXX-4 and XXX-4 Graphite Plus have proven very successful in competition. These new units offer improved geometry and are more flexible and shock absorbing. If you race you should plan on putting these on your XXX-4 but you need to be aware of a few additional set up items that are needed for optimum performance. At the front, the shock mounting holes are lower than on the molded unit to reduce up-travel so you will need to add .090" limiters to your shocks to maintain the proper travel. This is most easily done using the LOSA5050 shock spacer set. One each of the largest spacers in this set need to be placed under the piston between the cartridge and e-clip that retains the piston. When installed on the new shock tower there is no difference in travel and all ride height adjustments are the same. At the back you will need to mount the shocks off the back of the routed tower instead of the front as the molded unit. More importantly, you will need to reverse the rear arms to maintain proper shock angle. This is done by putting the left arm on the right side and the right arm on the left side. Now that the shocks and arms are adjusted correctly you will need to adjust the dogbone angle by spacing the hubs all the way back. Simply remove the outer hinge pin and remove the spacer that is at the back of the hub and place it at the front with the spacer already in front of the hub. Once again, the shock has been lowered so you need to replace the shaft with the LOSA5064 1.0" Ti-Nitride shaft and use .100" shock limiters. The LOSA 2216 rear hub spacers are .050" each so you will want to use two of these in the same location, between the piston and cartridge, as you did for the front. The shock and camber link locations stay the same. You will also want to use common #4 washers under the heads of the mounting screws where both the front and rear shock towers mount to the chassis. You will be amazed at the improved performance these new parts offer. Until next time, good luck and good racing.

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R/C PRO SERIES LANDS

Racers ante-up in Antioch!

By Skinny

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During the first week of August, round two of the R/C Pro Series (and, in my mind, the real "first" west coast event), went off in Antioch, California, at the wonderful Delta Raceway facility. The guys from Delta did an excellent job of track preparation and a great job running the event.



Motocross-style gated starts are a staple of the Pro Series.





The beautiful Delta R/C Raceway facility.

ON TO THE RACING

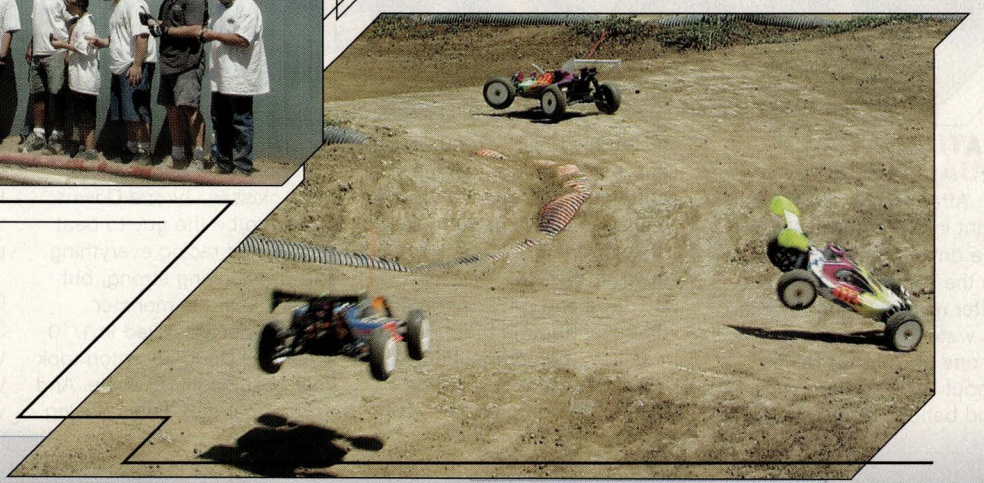
As usual, we were on deadline, and I couldn't leave until we were finished (Frank's a slave driver). This meant that I didn't leave LA until 9pm on Friday, and my lovely wife Leslie (bless her; she is such a good R/C wife) and I arrived at Delta at a good time—2am Saturday morning! We figured we would just catch some Z's in the Dodge Durango at the track; most small town hotels are closed for the night this early in the morning. We were just about asleep when "Team Judy" (that would be the police in laymen's terms) banged on our window to tell us that we couldn't sleep there, and that we needed to go find a hotel. We tried to explain our situation, but the cop wouldn't have it. Of course, no hotel was open, so we ended up sleeping in a hotel parking lot.

Unfazed, we headed out to the track at 6:30 am, and already people were showing up and ready to pull trigger. Amazingly, I felt good after practice; I was feeling great and my driving was some of the best I had done all year. Maybe no sleep is the answer!

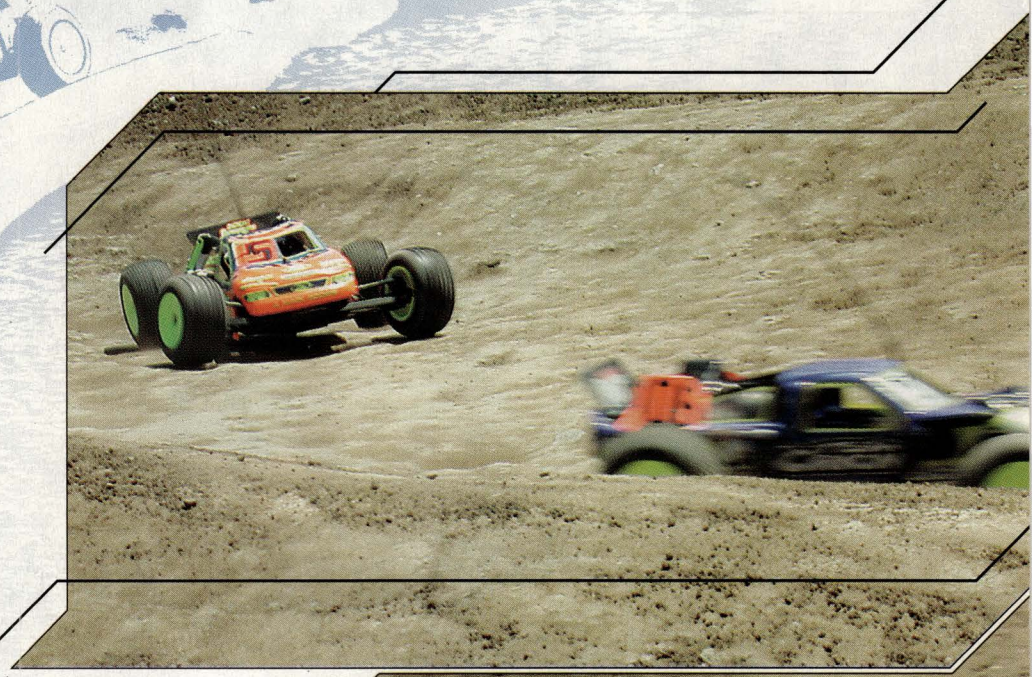
ON THE WEST COAST



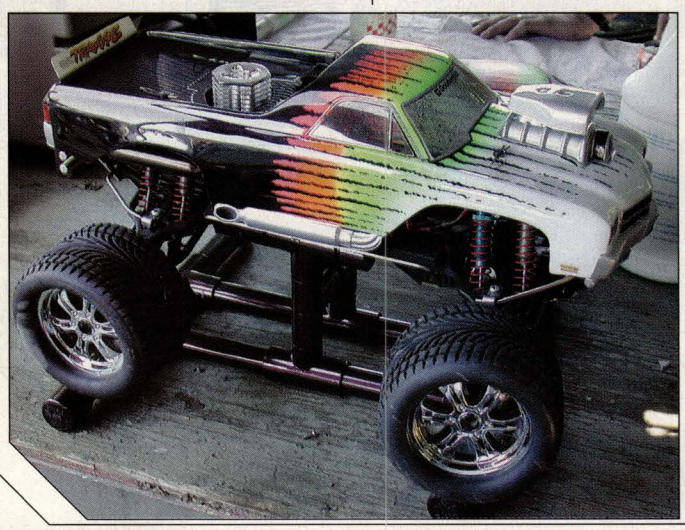




R/C PRO SERIES



Adam Drake in action.





SATURDAY QUALIFIERS

After practice they went right into the qualifiers and the drivers that did show up to the event were top-rate. After my qualifying I was able to watch the pro classes (this is one of the best things about R/C Pro Series), and lo and behold, Adam Drake and his buddy Phillip Atondo were out there. I thought all the hot-shoes had passed on this event, so it was good to see at least one or two factory guys.

By day's end it was apparent that even though the turnout was low, the competition was not. Adam Drake would be the guy to beat in both 1/10 and 1/8 scale pro classes. In the sportsmen and monster truck classes, Tyrone Downs looked to be the guy to beat. Tyrone was racing everything and was looking strong, but he only TQed in monster truck—Tyler Vic TQed in 1/10 scale and Doug Thornton took pole position in 1/8 scale. And what about me? I was driving well but had some small gremlins with my cars. However, I was looking good to be in the hunt for the top positions.

MAIN EVENT SUNDAY

What a beautiful day it was. With cool air and bright sun, it was marvelous. Leslie and I

got to sleep in a bed...at a hotel, and it felt good to get some rest! I was ready to do battle, and as we pulled up to the track it looked like everyone else felt the same. Dale, the main man behind Dace Manufacturing, hooked me up in his pit area. After looking over my cars, Dale helped me prep them for the A-mains, making sure I would not have mechanicals like I did the day before.

• **Monster Truck A-main**—As the Pro Series employs a gate-style start, I knew that the first corner was going to be ugly. That is just about how it went; everyone went flying into the first turn only to be caught in a huge pileup. After hanging back at the start, I just motored around and into the lead. Yeah, for about a second! Going into the second corner I had the whole pack running up my tail and got chewed-up and spit-out! It was my turn heading into the third corner, and we all went at it again—we could not get out of each other's way. Meanwhile, Art Cardinali, Brad Bowman and Tyrone were slowly walking away from us all. My quest ended went I got T-boned and my pipe got pushed off. I was back out after a quick pit stop, but that incident dropped me back to sixth. In the end, Cardinali took home the gold and did a great job of driving.

• **1/10-Scale Sportsman**—Tyler Vic pulled a great holeshot and never looked back. Vic completely dominated the main event, winning by seven laps. Danny Meeks was in second place at the start, but he ran into trouble, which allowed Dan Villella to inherit second place. After Meeks got it back together, he was able to overtake Villella and regain his position. That's how they finished—Vic, Meeks and Villella.

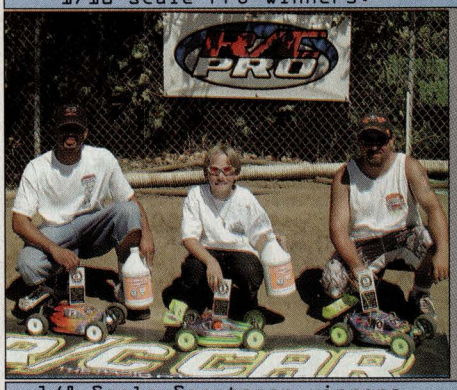
• **1/10-Scale Pro**—Drake and Atondo looked to be the drivers to beat. At the start, Drake grab a great holeshot with Team Associated's Lloyd Dassonville running strong in second place. Atondo had a disastrous start. Nathan Lavery, the winner of the Sportsman Gas Truck class at recent Hot Rod Hobbies Shootout ("Sportsman"?) was solidly in third. Soon into the main, Dassonville had some troubles and became sidelined for a while. Drake was still leading with Lavery up in second and Atondo, who had moved up to third place, making a hard charge. Late in the race, Atondo charged hard and got around Lavery for the second place position. Atondo broke on the last lap, but still managed to limp across the finish line in second. At the end it was Drake, Atondo and Lavery.

• **1/8-Scale Sportsman**—I don't think that anyone really pulled the holeshot, but I do know that I arrived at the second corner with the lead! It was, however, short lived, and by the second lap, Tyler Vic flew past me and into the lead. Vic went wire-to-wire, and it was apparent that he was on fire. Tyrone Downs ran a good solid second place, but in the end he was two-laps down from the leader (but one lap up on third place finisher Doug Thorton). I was also in the hunt, but landed wrong off a jump and broke a C-hub. Amazingly, the boys from Dace and I got the C-hub changed and I was able to get back on the track to finish seventh. The race had pretty much spread out and stayed in its original order for the remainder of main. Very clean racing for the Sportsman class.

• **1/8-Scale Pro**—Adam Drake grab the holeshot once again, but the field looked like a freight train for the first two laps. You should have seen the first three corners—it was packed up like the 405 freeway at rush hour! As the pack thinned out, Todd Clymens looked like he was going to give Drake's OFNA a run for its money; he was all over the leader for the first 15 laps. Unfortunately for Clymens, a wing problem forced him to pit for some impromptu "body work." That gave second place to Mark George, but George soon blew out his rear diff and handed second place back to Clymens. As if all this weren't dramatic enough, Clymens then had a tire blowout and had to come for a tire change! Amazingly, he was able to hold off Brad Bowman for second. In the end it was Drake, Clymens, and Bowman. Nice Sunday drive guys!



1/10-Scale Pro winners.



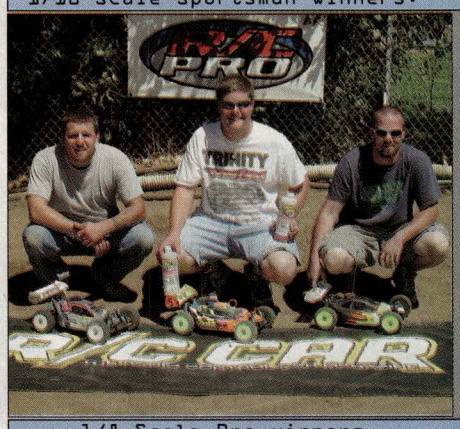
1/8-Scale Sportsman winners.



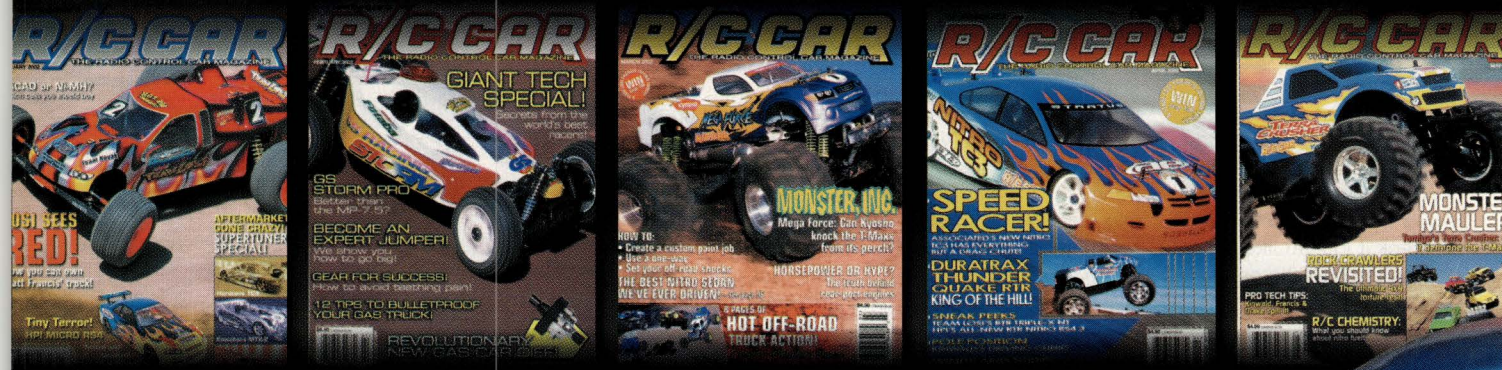
Monster Truck Winners.



1/10-Scale Sportsman winners.



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THE 5TH ANNUAL PARKING LOT CHALLENGE

By Scott Madrigal

Poway, California: This year marked the fifth running of the Hitec/Hobby People Parking Lot Challenge. Hitec, with the assistance of Hobby People's "Blue Crew," put on an outstanding event with over 200 drivers, ten classes, and 23 heats. But the biggest task for the combination of crews was the fact that the Parking Lot Challenge was to be held all on one day.



PRE-RACE

The Challenge formally began on Saturday morning at 8 a.m. sharp, but practice for the race was open to drivers the night before. Over 100 drivers showed up for the night session of practice, most hoping to get an early handle on the race-setup for the parking lot surface. Drivers had a second chance practice session on Saturday morning at 6 a.m. with the start of the race to come later at eight.

THE TRACK

As in years past, Hitec and Hobby People one again used their race-proven plastic boundaries, coupled with plastic dots and cones for the corners. The layout mimicked that of last year, but had its own line and feel. Overall the track was wide in most areas to allow for some great door-to-door racing action.

THE RACE

When it comes to running races, Hobby People's "Blue Crew" has what it takes to get the job done. Qualifiers started on time and were run in a quick routine throughout the day. "This was the smoothest one that we've had," commented Mike Mayberry of Hitec. "It just gets better and better every year." The heats were pretty competitive for most of the field running that day. Many of the classes came down to sheer seconds separating drivers in the different mains. The main events were, as expected, more competitive than the qualifiers, with many of them coming down to fractions of a second and last-minute passes for the win. Overall the races were clean and fast.

THE MICROS

The biggest change to this year's event was the addition of a class for the micro racers. In this class any 1/18-scale car was allowed to compete as long as it met certain standard requirements. The class had 15 racers entered and is looking to have many more waiting to come out for next year. As far as the racing action goes, the track was extremely wide in comparison to the 1/10-scale cars, which allowed a lot of side-by-side action. Many of the cars were also hopped-up which made









the back straightaway speed much the same as the 1/10 scale counterparts. The Micro's replaced the Super Nitro class from last year, a class that had been dwindling for a while.

THE MAINS

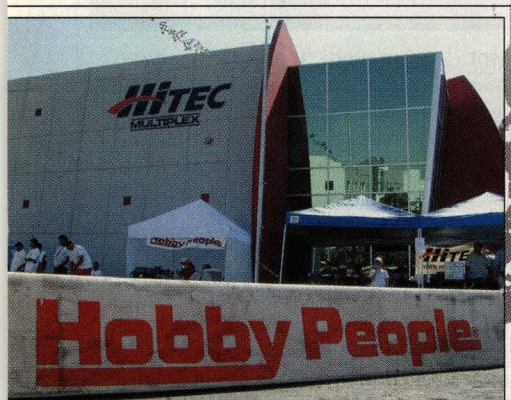
In the **On-Road Rookie** class, Enrique Armeneariz took the win with a few seconds over a great battle between Larry Faureau and Justin Lew. Also, Sportsman 4WD was won by Mike Sved who powered his Associated TC3 to the finish with a JR radio, P2K motor, Orion 2400 batteries, a Novak GT7 ESC and Novak XXL receiver, KO servo and Sorex tires.

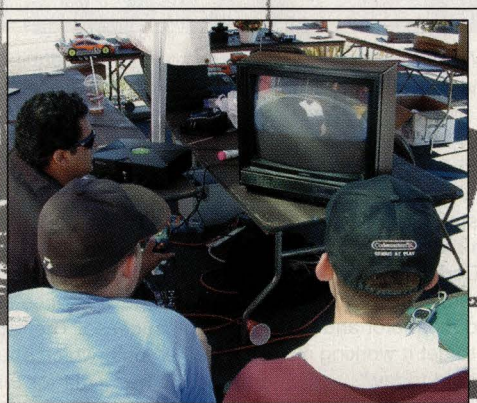
In the **Intermediate Stock** class, Kevin Smith took the close win over Ian Aquino. Kevin drove a Losi XXX-S powered by Pro-match batteries and a Monster motor. He also used an Airtronics M-8 radio and receiver, Novak GT7 ESC, and Sorex tires.

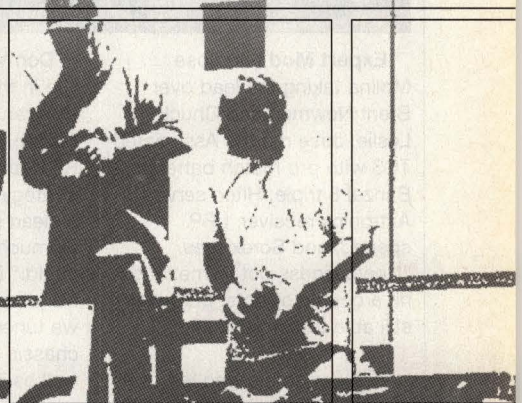
For the **Expert Stock** class, Albert Guardado took the lead over Danny Egger and Travis Lawrence. In fact, the top five drivers in this class all finished within six seconds of each other. Albert won with his XXX-S, Peak batteries and motor, JR radio equipment, Novak ESC and Sorex tires. After the Race, Albert said, "This is my third consecutive win at a Hitec event." In years past he has won both Expert stock and mod, and also ran in the Expert Mod class today.

For the **Micro** class, Mike Rydwell took the win over Mark Deevers. Mike drove an EXO 2, which was designed by both him and a partner. The car was powered by a Speed 300 motor, LRP ESC, Pro Match batteries, and Futaba radio equipment. "The car felt good, I mean we're still learning it and trying to find a good setup."

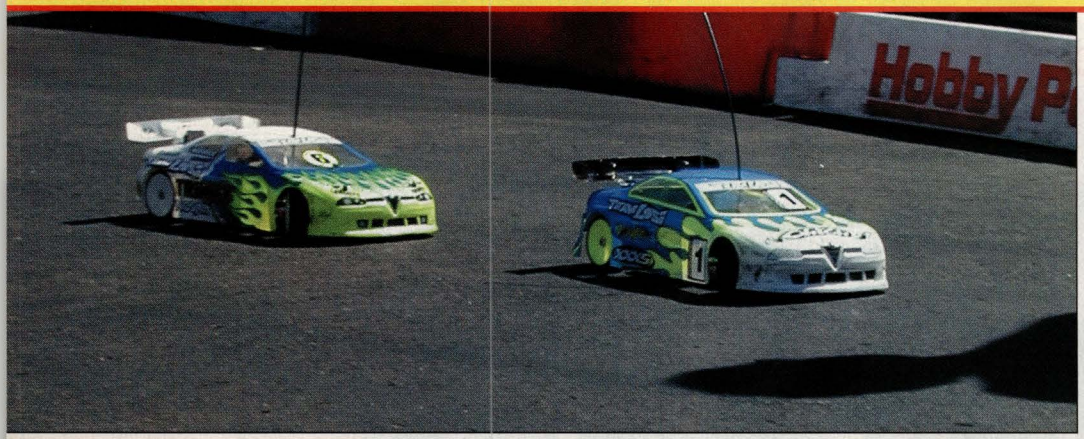
The **Sportsman Mod** class was won by Travis Lawrence, who declined an interview but did show us his Losi XXX-S. He powers it with Airtronics radio equipment and a Reedy spec class mod motor from a past race. He also uses an LRP ESC and Sorex tires.



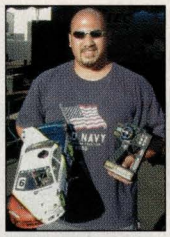




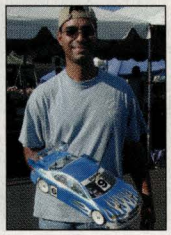
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THE 5TH ANNUAL
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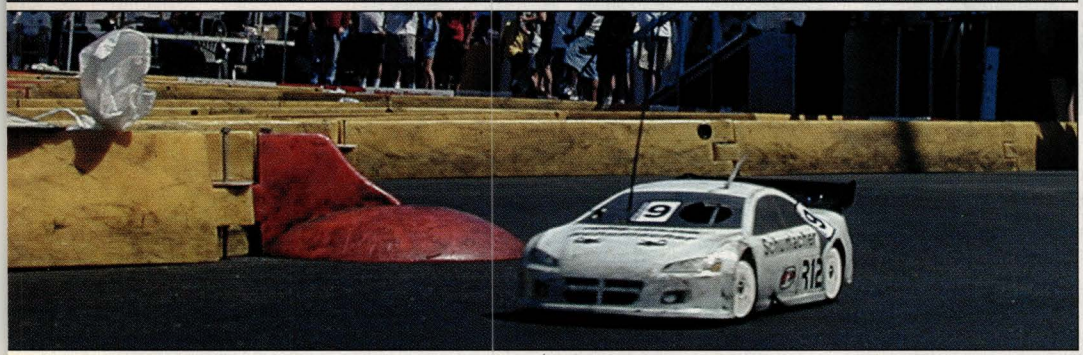


















Expert Mod had Jose Molina taking the lead over Brent Newman and Chuck Leslie. Jose ran the Associated TC3 with pro Match batteries, a Banzai 8 triple, Hitec servo, Airtronics receiver, LRP speedo, and Sorex tires. "Nervousness got to me, and I hit a couple of dots, but I was still able to catch him."

Eric Cunamay, who led over Joe Hegman and Andy Stapels, won **Nitro Sportsman** with his Nitro TC3. Eric powered his TC3 with a Mugen engine, KO radio and Aitronics servos. "This is my first Hitec Challenge...it was fun, and all of these races are really organized."

Don Vinkemulder took the win in the **Nitro Expert Class**. Don ran his Schumacher Fusion R12 with a Novarossi RS12 and GRP foam tires. "My strategy was to just try and get a clean start, and to try and get as much breathing room as I could." Don went on to thank his pit man Jay Neill. "Together we tuned the motor and the chassis to get it working as well as it did today."

When he wasn't sleeping, Brian Kinwald was winning mains, like the **Factory Mod** main where he beat out Mike Truhe and Fill Saenkov for the top-spot. Brian ran his Team Losi XXX-S with Trinity Power, a Novak Speedo, and Airtronics radio equipment. "This race is fun, the times I've been there, there haven't been any hang-ups, and I only live an hour away, so it's great."

OVERALL

Overall the Parking Lot Challenge was once again a huge success. The race had 225 entries, which sounds to be the new limit for this race, 23 heats, and ten different classes. Best of all was that with an event of this size, everything was completed on one day before sundown. In a last interview with Mike Mayberry, calls for changing the event to a two-day event could be heard in the background. "It already is a two-day event, many people come down for the practice on the night before, and then stay for the race. I just assume keep it the way it is," Mike stated, "I do want to thank the Hobby-People guys who do a great job every year, we really couldn't do it without them." And that couldn't be more deserved. The "Blue Crew" from Hobby People did an outstanding job keeping everything running smoothly. Lastly, both crews from Hitec and Hobby People deserve a compliment for providing a race that has the size and scale of a national event, with the feel of a small backyard race.



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Schumacher USA, Inc., 6302 Benjamin Rd., Suite 404, Tampa, FL 33634 • phone (813) 889-9691; fax (813) 889-9593

Serpent USA, 2830 NW 79 Ave., Miami, FL 33122 • phone (305) 639-9665; fax (305) 639-9658

Sidewinder Performance Racing Fuel, produced by Morgan Fuels, P.O. Box 311201, Enterprise, AL 36331 • phone (334) 347-3525

Speed Tech R/C, 20199 E. Valley Blvd., unit C, Walnut, CA 91789 • phone (909) 869-9443; fax (909) 869-7539

Tamiya America, Inc., 2 Orion, Aliso Viejo, CA 92656-4200 • phone (949) 362-2240; fax (949) 362-2250

Team Losi, Inc., 4710 E. Guasti Rd., Ontario, CA • (909) 390-9595

Team Orion, 22601 LaPalma Ave., Suite 103, Yorba Linda, CA 92887 • (714) 694-2812; fax (714) 694-2815

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R/C CAR "PREFERRED" HOBBY SHOP

THE RADIO CONTROL CAR MAGAZINE

ALABAMA

BRYANS HOBBY SHOP	900 COMMONS DR. #105	Dothan	36302	334-793-2439
CULLMAN RC HOBBIES	14 COUNTY RD. 1471 # B	Cullman	35055	256-775-2491
HOBBYTOWN USA RACEWAY	450 SCHILLINGER RD S.	Mobile	36608	334-633-8446
OAK MOUNTAIN HOBBIES	2659 PELHAM PARKWAY	Pelham	35124	205-685-8980
RC HI TECH RACEWAY	3303 MERIDIAN ST.	Huntsville	35811	256-539-1347

ALASKA

ALASKA HOBBIES & COLLECTIBLES	303 BAWDEN ST. #B	Ketchikan	99901	907-225-4022

ARKANSAS

ADVANCE DISCOUNT HOBBIES	312 N. MAIN	Monticello	71655	870-367-5200
HOBBYTOWN USA	9101 W. MARKHAM #STE 18	Little Rock	72205	501-223-5155
HOBBYTOWN USA	1415-A HWY. 71st.	Fort Smith	72901	479-649-9229
MARKS HOBBY SHOP	2516-G CANTRELL RD.	Little Rock	72202	501-296-9956
RC HOBBIES	2810 E HIGHLAND DR.	Jonesboro	72401	870-933-0479
LAKE AREA ELECTRONICS RADIO SHACK	1001 HWY 25 B NORTH	Heber Springs	72543	501-362-5050

ARIZONA

COMPETITION HOBBIES	3930 W. COSTCO DR.	Tucson	85741	520-297-8162
HOBBY DEPOT	216 WEST SOUTHERN AVE.	Tempe	85282	480-968-1800
HOBBYTOWN USA	1915 E. BASELINE RD.	Gilbert	85233	480-837-7674
HOBBYTOWN USA	4825 E. WARNER RD. #19	Phoenix	85044	480-598-5282
HOBBYTOWN USA	3700 E. SPEEDWAY	Tucson	85716	520-882-8888
HOBBYTOWN USA	485 E. WETMORE RD. #109	Tucson	85705	520-888-9777
SCOTTSDALE R/C RACEWAY	3023 N. SCOTTSDALE RD.	Scottsdale	85251	480-945-2186

CALIFORNIA

BEE GEE HOBBIES	234 GOLF CLUB RD.	Pleasant Hill	94523	925-798-5133
BETTY'S TOY BOX & HOBBIES	716 E. MAIN ST.	Grass Valley	95945	530-274-7229
BUSY BEE HOBBY SHOP INC.	461 W. HIGHLAND AVE.	San Bernardino	92405	909-886-2669
COVINA HOBBY SHOP	140 N. CITRUS	Covina	91724	626-331-1910
CYCLE ART RACING	2211 N. PLEASANT WAY	Fresno	93705	559-233-3665
DELTA R/C RACEWAY & HOBBY SHOP	1201 W 10th ST.	Antioch	94509	925-778-2965
D & J HOBBIES	96 SAN THOMAS AQUINO RD.	Campbell	95008	408-379-1696
DOLLHOUSE TRAINS & MORE	300 ENTRADA DR	Novato	94949	414-883-0388
EXTREME MOTOSPORTS	2750 JEFFERSON	Napa	94558	707-251-9876
FOOTHILL HOBBIES	973 W. FOOTHILL BLVD.	San Luis Obispo	93405	805-544-8697
FRANCISCIAN HOBBIES	1920-A OCEAN AVE.	San Francisco	94127	415-584-3919
GIZMO'S HOBBY	2010 WEST BURBANK BLVD.	Burbank	91506	818-842-8200
HOBBY CENTRAL	13461 COMMUNITY RD.	Poway	92064	858-513-0373
HOBBIES TOYS & MORE	17600 COLLIER AVE. #H172	Lake Elsinore	92530	909-245-1147
HOBBYTOWN	2085 MONTIEL RD. #105	San Marcos	92069	760-739-0672
HOBBYTOWN USA	2500 E.IMPERIAL HWY #130	Brea	92821	714-990-9652
HOBBYTOWN USA	4420-A TREAT BLVD.	Concord	94521	925-685-3802
HOBBYTOWN USA	3069 WEST BULLARD AVE.	Fresno	93711	559-435-3342
HOBBY TOWN USA	6347 JARVIS AVE.	Newark	94560	510-796-2744
HOBBYTOWN USA	27031 McBEAN PKWY.	Valencia	91355	661-253-4999
HOBBYTOWN USA	280 EL CAMINO REAL	San Carlos	94070	650-594-1919
HURRICANE HOBBIES	134 N. CHINA LAKE BLVD.	Ridgecrest, CA	93555	760-371-7771
JAKES PERFORMANCE HOBBY	6650 COMMERCE BLVD. #21	Cotati	94928	707-586-3375
JAX HOBBIES	17421 BROOKHURST #107	Fountain Valley	92708	714-378-8924
KIT & CABOODLE	425 SAN PABLO AVE.	Albany	94706	510-524-9942
KZ SPEEDWAY	8295 TUNJUNGA	Sun Valley	91352	818-771-1003
MARTY'S HOBBIES	1728 N. MOORPARK RD.	Thousand Oaks	91360	805-497-3664
MODESTO HOBBIES	401 BANGS AVE. H	Modesto	95356	209-529-7310
PALMDALE HOBBIES	2127 E. PALMDALE BLVD.	Palmdale	93550	661-273-6229
PIT STOP R/C HOBBIES	3554 STATE ST.	Santa Barbara	93105	805-898-3902
RACERS HAVEN	7401 WHITE LANE #12	Bakersfield	93309	805-835-0441
R/C COUNTRY HOBBIES	6011 FOLSOM BLVD.	Sacramento	95819	916-731-5868
R/C TECH	1618 SULLIVAN ST. #105	Daly City	94015	650-992-7600
RC UNLIMITED	14918 CAMDEN AVE.	San Jose	95124	408-377-3771
SACRAMENTO R/C RACING & HOBBIES	6201 27th ST. #C	Sacramento	95822	916-424-4001
SAVAGE MOTORSPORTS	948 MAIN STREET	Ramona	92065	760-788-7733
SHELDON'S HOBBIES	2135 OLD OAKLAND RD.	San Jose	95131	408-943-0220
SHOWTIME R/C SPEEDWAY	3824 CHESTER AVE.	Bakersfield	93311	661-328-1481
SO CAL R/C RACEWAY	19118 BROOKHURST ST.	Huntington Beach	92646	714-963-7484
SPEED WORLD RWY & HOBBY	1677 ROADRUNNER DR.	Roseville	95747	916-783-8864
SRS & HOBBIES	407 FRONT ST.	Salinas	93901	831-424-4044
THE HOBBY PLACE	10549 W. PICO BLVD.	Los Angeles	90064	310-441-0075
ULTIMATE HOBBIES	2378 N. ORANGE MALL	Orange	92865	714-921-0424

COLORADO

COLPAR HOBBIES	804 S. HAVANA ST	Aurora	80012	303-341-0414
HOBBYTOWN USA	4348 S. COLLEGE	Fort Collins	80525	970-226-3900
HOBBYTOWN USA	9120 WADSWORTH BLVD.	Westminster	80021	303-431-0482
HOBBYTOWN USA	800 SOUTH HOVER RD.	Longmont	80501	970-226-3900
MHOR R/C RACEWAY	12559 E. KENTUCKY AVE.	Aurora	80012	303-343-0151

CONNECTICUT

A & A PITSTOP LLC	266 D MAIN ST. RT 25	Monroe	06468	203-778-9249
ACES NITRO R/C	1125 NORTH AVE.	Bridgeport	06604	203-330-1788
TIME MACHINE HOBBY LLC	71 HILLIARD ST.	Manchester	06040	860-646-0610
RC MADNESS TRACK & HOBBY	640 ENFIELD	Enfield	06082	860-741-6501

DELAWARE

HOBBY STOP SPEEDWAY	22762 SUSSEX HWY.	Seaford	19973	302-629-3944

FLORIDA

ACE HOBBIES	2127 S. RIDGEWOOD AVE.	Daytona Beach	32119	904-761-9780
ARTS HOBBY SHOP	1475 ATLANTIC BLVD.	Neptune Beach	32266	904-246-0601
ATOMIC HOBBIES	13205 S.W. 137 AVE. #103	Miami	33186	305-235-3232
AURORA HOBBIES	2760 W 84TH ST. #2	Hialeah	33016	305-821-6668
BILLY BONES HOBBY	10602 S. FEDERAL HWY.	Port St. Lucie	34952	772-335-3715
BOB'S HOBBY CENTER	7333 LAKE UNDERHILL RD.	Orlando	32822	407-277-1248
BOGGY CREEK R/C RACEWAY	6948 BETH RD.	Orlando	32824	407-948-7197
COLONIAL PHOTO & HOBBY	634 N. MILLS AVE.	Orlando	32803	407-841-1485
COMPU HOBBIES	2653 N.W. 79TH AVE.	Miami	33122	786-845-8705
CRAFT HOUSE HOBBY SHOP	1379 N. MILITARY TRAIL	West Palm Beach	33409	561-683-0764
CROWN HOBBIES	7439 S.W. 24TH ST.	Miami	33155	305-264-3964
D & S HOBBY SHOP	750 W. HAMPSHIRE BLVD. #1 PINE SPRINGS PLAZA	Citrus Springs	34434	352-527-1500
ERNIES HOBBY SHOP	631 S. APOLLO BLVD.	Melboure	32901	321-724-5257
FELIX HOBBY	13394 W. DIXIE HWY.	North Miami	33161	305-895-5362
HARCO HOBBIES	11532 TAMIAMI TRAIL E.	Naples	34113	239-417-1099
FRANK'S HOBBY WORLD	3788 E. GULF TO LAKE HWY	Inverness	34453	352-341-0454
G & C HOBBIES	1228 HYPOLUXO RD.	Lantana	33462	561-547-3812
GO RACING INT'L	3784 W. OAKLAND PARK BLVD.	Ft. Lauderdale	33311	954-731-7223
HOBBY SHOP				
HOBBY NUT INC.	12679 DIXIE HWY	South Miami	33156	305-235-9584
HOBBYTOWN USA	2464 W. BRANDON BLVD.	Brandon	33511	813-655-6366
JACKS HOBBIES	1759 N.E. JACKSONVILLE RD.	Ocala	34470	352-351-2224
LEMON BAY HOBBIES	2670 S. McCALL RD. #3	Englewood	34224	941-475-0083
MORRIS KOHL'S RACEWAY & HOBBY	1202 W. WATERS	Tampa	33604	813-931-1626
PHIL'S HOBBY SHOP	6050 PARK BLVD.	Pinellas Park	33781	727-545-1251
QUALITY AIRCRAFT R/C HOBBIES	6839 S US HIGHWAY 1	Port Saint Lucie	34952	772-460-2844
R.C. HOBBIES	6800 N. UNIVERSITY DR.	Tamarac	33321	954-721-5720
RACING HOBBIES	10722 WILES RD.	Coral Springs	33076	954-346-2226
SCOTT'S HOBBIES	26690 61ST RD.	Branford	32008	904-935-0758
SPACE COAST HOBBIES	2135 PALM BAY RD. NE #1	Palm Bay	32905	321-722-3696
SUPERIOR HOBBIES	1478 E. SEMORAN BLVD.	Casselberry	32707	407-834-9299
TAVERNIER BIKE & HOBBIES	91910 OVERSEAS HWY	Tavernier	33070	305-852-2859
TEAM AUTO HAUS	424 BLANDING BLVD.	Orange Park	32073	904-279-5432
WARRICK CUSTOM HOBBIES	7676 PETERS RD.	Plantation	33324	954-370-0708
EXTREME R/C HOBBIES	3491 NORTH HIATUS RD.	Sunrise	33351	954-748-7053

GEORGIA

HOBBY MART	6889 PEACHTREE INDUST. # H	Peachtree Corners	30092	770-840-8495
HOBBYTOWN USA	6770 VETERANS PKWY # 1	Columbus	31909	706-660-1793
HOBBYTOWN USA	800 E. BARRETT PKWY	Kennesaw	30144	770-426-8800
HOBBYTOWN USA	3360 SATELLITE BLVD. #14	Duluth	30096	770-418-0850
SUGAR BOWL SPEEDWAY	5272 NELSON BROGDON WY	Sugar Hill	30518	770-945-6709
R/C TOYS FOR BOYS	2220 COBB PARKWAY N.	Kennesaw	30152	678-797-0406
BIG BOY TOYS HOBBY SHOP	5035 MT. ZION PARKWAY	Stockbridge	30281	770-507-6288

HAWAII

ACE RADIO CONTROL	1005 LEHUA AVE.	Pearl City	96782	808-456-1279
THE HOBBY COMPANY	98-1005 MOANALUA RD.	Aiea	96701	808-487-2473

IOWA

FAGAN'S	2327 CENTRAL AVE.	Dubuque	52001	563-588-0846
HOBBY CHEST	209 E. MAIN	Ottumwa	52501	641-683-4436
HOBBY HAVEN	2575 86th STREET	Urbandale	50322	515-276-8785
HOBBY SHOP	1672 SYCAMORE STREET	Iowa City	52240	319-338-1788
HOBBYTOWN USA	2406 E. 53RD STREET	Davenport	52807	563-355-2071
HOBBYTOWN USA	2737 16TH AVE S.W.	Cedar Rapids	52404	319-364-3289
HOBBYTOWN USA	620 LINCOLN WAY #6	Ames	50010	515-232-9060
OUTBACK HOBBIES	2014 S. ST. AUBIN ST.	Sioux City	51106	712-276-7079
WILD BILLS R/C HOBBIES	901 W. JONES	Knoxville	50138	641-842-5973

IDAHO

DAPCO HOBBIES	2211 GARRETT WAY	Pocatello	83201	208-233-8163
HOBBYTOWN USA	1870 W. PULLMAN RD.	Moscow	83843	208-882-9369
HOBBYTOWN USA	3317 N. COLE RD.	Boise	83704	208-376-1942
MONSTER HOBBIES	267 W. HAYDEN AVE.	Hayden Lake	83835	208-772-0422
THE TOY SHOP	837 POLELINE RD.	Twin Falls	83301	208-734-2725

ILLINOIS

ALLEN'S R/C CARS	3115 LEACH RD.	Rochester	62563	217-498-7345
AL'S HOBBY SHOP INC.	121 ADDISON, BOX 449	Elmhurst	60126	630-832-4908
CORNER HOBBY	308 NORTH VIRGINIA AVE.	Swansea	62220	618-277-6030
DEPOT HOBBY SHOP	180 SOUTH SEMINARY ST.	Galesburg	61401	309-342-9323
HIS N HERS HOBBIES	1206 TOWANDA PLAZA #2	Bloomington	61701	309-827-0204
HOBBYLAND	616 N. MAIN	Bloomington	61701	309-828-1442
HOBBYTOWN USA	1000 LAKE STREET	Oak Park	60301	708-445-8056
HOBBYTOWN USA	3627 EAST MAIN STREET	St. Charles	60174	630-587-1256
HOBBYTOWN USA	8750 N. SECOND STREET	Machesney Park	61115	815-282-0727
HOBBYTOWN USA, Oak Mill Mall	7900 N. MILWAUKEE AVE.	Niles	60714	847-470-9577
JIMS HOBBIES	814 FRONT ST. #B	McHenry	60050	815-363-0333
LEISURE HOURS HOBBIES	2712 N. PLAINFIELD RD.	Joliet	60436	815-439-1477
OUTLAW RC HOBBY	1614 BROADWAY AVE.	Mattoon	61938	217-234-6229
PAT'S HOBBIES & CRAFTS INC.	5730 W. 95th ST	Oak Lawn	60453	708-424-6131
SPRINGIELD HAMMERS HOBBIES	2448 S 10th ST.	Springfield	62703	217-523-0265
STANTON HOBBY SHOP	4718 N. MILWAUKEE AVE.	Chicago	60630	773-283-6446
VENTURE HOBBIES	23 HUNTINGTON LANE	Wheeling	60090	847-537-8669

INDIANA

BE COMICS & KARDS & ROCKETS & HOBBIES	130 W. VAN BUREN ST.	Columbia City	46725	260-248-8020
BIG BOY HOBBIES	8893 PENDLETON PIKE	Indianapolis	46226	317-898-6284
B & R HOBBIES	9014 CRAWFORDSVILLE RD.	Indianapolis	46234	317-297-4257
BREMEN HOBBIES	308 N. BOWEN AVE.	Bremen	46506	574-546-3807
CUSTOM MADE HOBBIES	1600 MORNINGSTAR LN.	Decatur	46733	260-724-3040
DUNELAND HOBBIES	2556 PORTAGE MALL	Portage	46368	219-763-1610
GRANGER HOBBY STOP	12131 STATE RD. 23 UNIT L	Granger	46530	574-243-2390
HAPPY HOBBIES	1398 EASTERN BLVD.	Jeffersonville	47129	812-282-0060
HOBBY HANGER	189 PERRY ST.	Vernon	47282	812-346-6497
HOBBY LAND	416 W. COLISEUM BLVD.	Fort Wayne	46805	260-483-8186
HOBBYLAND INC.	2564 MIRACLE LANE	Mishawaka	46545	574-255-1722
HOBBYTOWN USA	6336 E. 82ND STREET	Indianapolis	46250	317-845-4106
HOBBYTOWN USA	1858 E. 80TH PLAZA	Merrillville	46410	219-736-0255
P & T HOBBIES AND RWY	2412 N. POORFARM RD.	Bedford	47421	812-849-6666
PHILS HOBBY SHOP	1722 LAKE AVE.	Ft. Wayne	46805	260-424-0065
R & D HOBBIES	4217 FRANKLIN ST.	Michigan City	46360	219-879-7563
RIDER'S FORT WAYNE	4724 COLDWATER RD.	Ft. Wayne	46825	219-496-8811

KANSAS

HOBBY HAVEN	10560 METCALF	Overland Park	66212	913-381-3111
HOBBYTOWN USA	8229 EAST KELLOGG	Wichita	67207	316-683-7222
HOBBYTOWN USA	9270 METCALF	Overland Park	66212	913-649-7979

KENTUCKY

BLUEGRASS HOBBIES	274 LAMPTON LN.	Columbia	42728	270-384-9131
HOBBYTOWN USA	12615 SHELBYVILLE RD.	Louisville	40243	502-245-5755
RADIO CONTROL WHEELS OR WATER	1308 W. SHELBY ST. #2	Falmouth	41040	859-654-1700

LOUISIANA

HARES ART & HOBBY	4529 LEE STREET	Alexandria	71302	318-443-2755
HOBBY HUT	5029 VETERANS BLVD.	Metairie	70006	504-885-0804

MAINE

R/C SPEEDWAY & HOBBIES	87 MAIN ST.	Fairfield	04937	207-453-4588
MAXIMUS HOBBY SHOP	647 US ROUTE 1 YORK MEADOWBROOK PLAZA	York	03909	207-351-1520

MARYLAND

DOUG'S HOBBY	24404 THREE NOTCH RD.	Hollywood	20636	301-373-6674
GPA HOBBIES	2431 CROFTON LANE # 6	Crofton	21114	301-858-0004
GARLAND'S RC CAR LAND	635 SUMMIT AVE.	Hagerstown	21740	301-416-4700
HOBBY CITY	15751 COLUMBIA PIKE	Burtonsville	20866	301-421-5977
HOBBYTOWN USA	1305 W. 7TH AVE #28	Frederick	21702	301-694-7395
HOBBYTOWN USA	6714-D GOVERNOR RITC	Glen Burnie	21061	410-590-4950

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S&J HOBBIES	10476 CAMPUS WAY S.	Largo	20774	301-324-6680
THE TRACK	16806 OAKMONT AVE.	Gaithersburg	20877	301-417-9630
MASSACHUSETTS				
BARN SPEED HOBBIES	109 CENTER STREET	Lee	01238	413-243-2651
BIG BOYS TOYS	2 GALLERIA MALL DR.	Taunton	02780	508-677-9400
BIG BOYS TOYS	33 FATHER DE VALLES BLVD.	Fall River	02721	508-677-0060
BIG BOYS TOYS	999 S. WASHINGTON ST.	N. Attleboro	02760	508-699-6609
DAVE'S HOBBIES	281 CABOT STREET	Beverly	01915	978-921-1559
FLYING YANKEE HOBBY SHOP	1416 CENTER STREET	Roslindale	02131	617-323-9702
HENRY'S HOBBY HOUSE INC.	67 W. BOYLSTON STREET	West Boylston	01583	508-835-6165
HOG HEAVEN HOBBIES	494 MAIN STREET	Fiskdale	01518	508-347-9350
LAND SEA & AIR HOBBIES	1282 PARKER STREET	Springfield	01129	413-782-2115
MASTER HOBBIES	565 MAIN STREET	Cherry Valley	01611	508-892-1440
R/C EXCITEMENT INC.	36 HARLOW STREET	Worcester	01605	508-753-8676
MICHIGAN				
ACTION HOBBIES	211 EAST MAIN	Niles	49120	616-687-8550
ANYTHING GOES	5108 ROCHESTER RD.	Troy	48085	248-740-2277
CAPITOL CITIES HOBBIES INC.	15357 HALL RD.	Macomb	48044	586-532-0050
DIRT BURNER RACING	3295 HAGGERTY RD.	Commerce	48390	248-926-1140
EAST BAY HOBBIES	364 W. HOUGHTON LAKE DR.	Prudenville	48651	989-366-5306
HOBBIES & TOYS	106 WEST MAIN STREET	Gaylord	49735	989-732-3963
HOBBYTOWN USA	2252 S. MAIN ST.	Ann Arbor	48103	734-996-2444
HOBBYTOWN USA	12821 S. SAGINAW	Grand Blanc	48439	810-695-9088
JOE'S HOBBY CENTER	35151 GRAND RIVER RD.	Farmington	48335	248-477-6266
KECK HARDWARE & HOBBY	2132 WEST RD.	Trenton	48183	734-676-2282
LARRY'S PERFORMANCE R/C'S	42246 MOUND RD.	Sterling Heights	48314	586-997-4840
NANKIN HDWRE & HOBBY	35101 FORD RD.	Westland	48185	734-722-5700
P & D HOBBY SHOP	31280 GROESBECK HWY	Fraser	48026	586-296-6116
PASTIME HOBBIES	2700 PINE GROVE RD. #16	Port Huron	48060	810-982-2874
PROP SHOP HOBBIES, INC.	23326 VAN DYKE	Warren	48089	586-757-7160
R & L HOBBIES & RACING	9782 PORTAGE RD.	Portage	49002	616-323-3686
R/C NITRO ZONE	306 N. FOURTH STREET	Brighton	48116	810-225-9586
RIDER'S HOBBY	32115 JOHN "R" RD.	Madison Heights	48071	248-589-8111
RIDER'S HOBBY	42011 FORD RD.	Canton	48187	734-981-8700
RIDER'S HOBBY SHOP	22789 NORTHLINE RD.	Taylor	48180	734-287-7405
RIDER'S HOBBIES	2061 S. LINDEN RD.	Flint	48532	810-720-2500
RIDER'S HOBBY	4417 S. WESTNEDGE AVE.	Kalamazoo	49008	616-349-2666
RIDER'S HOBBY SHOP	2055 28TH ST S.E. UNIT 12	Grand Rapids	49508	616-247-9933
RIDER'S HOBBY SHOP	4035 CARPENTER RD.	Ypsilanti	48197	313-971-6116
RIDER'S HOBBY SHOP	6250 S. CEDAR ST #7	Lansing	48911	517-393-1500
RIDER'S HOBBY SHOP	30991 FIVE MILE RD.	Livonia	48154	734-425-9720
THE HOBBY HUB	526 FRANDOR AVE.	Lansing	48912	517-351-5843
TUCKEY MOTORSPORTS	706 E. CHICAGO RD.	Coldwater	49036	517-278-9689
MINNESOTA				
HOBBY TOWN USA	7916 BROOKLYN BLVD.	Minneapolis	55445	612-424-6052
HOBBY WAREHOUSE	7120 CHICAGO AVE S.	Richfield	55423	612-861-5587
HUB HOBBY CENTER	82 MINNESOTA AVE.	Saint Paul	55117	651-490-1675
HUB HOBBY CENTER	6410 PENN AVE. S	Richfield	55423	612-866-9575
R.C. CAR KINGS	1307 EAST HWY 13	Burnsville	55337	952-895-9643
TWIN CITIES HOBBY & RWY	7577 BROOKLYN BLVD.	Brooklyn Park	55443	763-569-5069
MISSOURI				
CHECKERED FLAG HOBBIES	4491 LeMAY FERRY RD.	St. Louis	63129	314-892-5353
HOBBYTOWN USA	524 N.W. ENGLEWOOD RD.	Kansas City	64118	816-459-9590
JOPLIN R/C HOBBIES	1900 S. RANGELINE #5	Joplin	64804	417-623-0011
MARK TWAIN HOBBY CTR	2793 WEST CLAY ST.	Saint Charles	63301	636-946-2816
MOVIE MANIA R/C HOBBIES	204 SOUTHWEST DR.	Kennett	63857	573-888-9223
REAL R/C	12019 EAST 47th	Raytown	64133	816-358-0238
SLEETH HOBBIES	1912 E. SUNSHINE ST.	Springfield	65804	417-883-1118
MISSISSIPPI				
MONTANA				
EXTREME HOBBIES	928 BROADWATER AVE.	Billings	59101	406-259-8505
NORTHLAND HOBBIES INC.	1325 HWY 2 WEST	Kalispell	59901	406-257-1808
PRAIRIE UNIQUE	114 S. LOGAN ST.	Terry	59349	406-635-5598
THE TREASURE CHEST	1612 BENTON AVE.	Missoula	59801	406-549-7992
NORTH CAROLINA				
ACTION HOBBIES	8500 PINEVILLE MATHEWS RD.	Charlotte	28226	704-540-0311
HOBBY TOWN USA	8332 PINEVILLE MATHEWS RD.	Charlotte	28226	704-544-2303
HOBBYTOWN USA	3346 ROBINHOOD RD.	Winston Salem	27106	336-774-2324
K/C HOBBY INC	10948-G NORTH MAIN ST.	Archdale	27263	336-434-3482
KING R/C	614 S. MAIN ST.	King	27021	336-983-3969
Z N Z HOBBIES	972 TALBERT BLVD.	Lexington	27292	336-249-6127
NORTH DAKOTA				
HOBBYTOWN USA	4501 15th AVE. S.W.	Fargo	58103	701-746-0708
NEBRASKA				
FUN TIME HOBBY	2020 CENTRAL AVE.	Kearney	68847	308-234-1806
HOBBYTOWN UNLIMITED	220 NORTH 66th ST.	Lincoln	68505	402-434-5056
HOBBYTOWN USA	13110 BIRCH DR.	Omaha	68164	402-498-8888
HOBBYTOWN USA	3537 WEST 13th ST. #104	Grand Island	68803	308-382-3451
NEW HAMPSHIRE				
HOBBY ETC. INC.	90 WEST PEARL ST.	Nashua	03060	603-883-4919
LEISURE TIME HOBBIES	56-B MARLBORO ST.	Keene	03431	603-357-9975
NEW JERSEY				
ALLIED HOBBIES	264 BURLINGTON CENTER	Burlington	08016	609-386-5044
CRUIZIN WITH RC'S INC.	53 EAST MAIN ST.	Ramsey	07446	201-825-4884
FISHKIN BROS.	285 MADISON AVE.	Perth Amboy	08861	732-826-0048
G&S HOBBIES	44 ANCHOR BLVD.	Old Bridge	08857	732-727-7871
HOBBY WORKSHOPS	510 WEST KINGS HWY	Mount Ephraim	08059	856-931-2400
JACKSON HOBBY SHOP	2275 W. COUNTY LINE RD.	Jackson	08527	732-364-3334
JERRY'S HOBBY CENTER	336 RT 22 W	Greenbrook	08812	908-752-6030
THE HOBBY SHOP	1077-C STATE HWY 34	Aberdeen	07747	732-583-4189
WIDE WORLD OF HOBBIES	974 TEANECK RD.	Teaneck	07766	201-862-9393
ZEPPELIN HOBBIES & RACEWAY	92 RT. 23 RIVERDALE SQUARE MALL	Riverdale	07457	973-831-7717
NEW MEXICO				
ALBUQUERQUE HOBBY CO	2252 D WYOMING N.E.	Albuquerque	87112	505-275-1882
BIG BOYS TOYS	1735 JUAN TABO N.E.	Albuquerque	87112	505-298-1023
HOBBIE'S & STUFF	2801 EUBANK N.E. #P	Albuquerque	87112	505-293-1217
NEVADA				
DANSEY'S INDOOR R/C HOBBIES	741 N. NELLIS BLVD.	Las Vegas	89110	702-453-7223
HOBBYTOWN USA	5085 W. SAHARA AVE. #134	Las Vegas	89146	702-889-9554
NEW YORK				
ACTION HOBBIES	1070 MIDDLE COUNTRY RD.	Selden	11784	631-736-1574
AMERICAN HOBBIES	913 PORTION RD.	Lake Ronkonkoma	11779	631-736-6606
BRUCKNER HOBBIES	3587 E. TREMONT AVE.	Bronx	10465	800-288-8185
BROWNIES PRO & SPORT	124 BENNETT ST.	Staten Island	10302	718-727-2194
HOBBIES COMPETITION HOBBY SUP	1006 LOUDON RD.	Cohoes	12047	518-786-3622
CRAFT WORLD & ACTION HOBBIES	509 W 3rd ST.	Jamestown	14701	718-484-1780
EAST COAST HOBBIES	2515 65TH ST.	Brooklyn	11204	718-627-3814
ELMSFORD HOBBIES	129 E MAIN ST.	Elmsford	10523	914-592-0600
FANTASIA HOBBIES	17169 46TH AVE.	Flushing	11358	718-460-5671
FORDHAM HOBBIES	2446 CRESTON AVE.	Bronx	10468	718-562-1906
GJ'S HOBBIES	38-40 WASHINGTON AVE.	Endicott	13760	607-754-3003
HOBBIES UNLIMITED	158-38 CROSS BAY BLVD.	Howard Beach	11414	718-845-4545
THE HOBBY HOUSE	2378 LYELL AVE.	Rochester	14606	585-429-6280
HOBBY WORLD	311 BROADWAY	Monticello	12701	845-794-8770
HURRICANE HOBBIES	2425 MIDDLE COUNTRY RD.	Centereach	11720	631-737-3157
NAGENGAST HDWR & HOBBY	68-02 FRESH POND RD.	Flushing	11385	718-821-0958
PERFORMANCE HOBBIES	15 WEST MAIN ST.	Webster	14580	716-872-4990
RACING CITY HOBBIES	110 MAIN STREET	South Glens Falls	12803	518-792-7272
RAMPAGE R/C & HOBBIES	1164 RT 9G	Hyde Park	12538	845-229-1379
RMC HOBBIES	2485 ROCHESTER RD. BLDG. 1	Canandaigua	14424	585-394-1210
TONY'S HOBBY SHOP	220 HARRISON AVE.	Harrison	10528	914-835-4765
TRANS BORDER CUSTOMS	1 TRANS BORDER DR.	Champlain	12919	514-687-6214
UNIVERSAL ENTERTAINMENT	1611 PINE AVE.	Niagara Falls	14301	716-282-4840
WALT'S HOBBY	2 DWIGHT PARK DR.	Syracuse	13209	315-453-2291
WILLIS HOBBIES	300 WILLIS AVE.	Mineola	11501	516-746-3944
OHIO				
CAPSTONE HOBBIES	562 W. SCHROCK RD.	Westerville	43081	614-899-6313
DIVE IN SCUBA CENTER	3182 WARREN SHARON RD.	Vienna	44473	330-856-6275
D&D HOBBY CENTER	201 E. MAIN ST.	Lexington	44904	419-884-0001
GRANDVIEW HOBBIES	1460 W. FIFTH AVE.	Columbus	43212	614-486-3532
HOBBY STOP WEST	4550 MONROE ST.	Toledo	43613	419-471-1108
HOBBYTOWN USA	8000 PLAZA BLVD.STE 9	Mentor	44060	440-946-5588
HOBBYTOWN USA	14785 PEARL RD.	Strongsville	44136	440-846-1770
RIDER'S HOBBY SHOP	5333 MONROE ST.	Toledo	43623	419-843-2931
STRONGSVILLE HOBBY SHOP	13325 PROSPECT RD.	Strongsville	44149	440-572-0430
THE HOBBY SHOP	153 N SPRINGBORO PIKE	Miamisburg	45449	937-436-6161
VICTORY CIRCLE R/C PRO.	4340 HEGNER AVE.	Cincinnati	45236	513-794-1963
WINGS WHEELS & WAVES	14 LINCOLN WAY E.	Massillon	44646	330-830-7755
OKLAHOMA				
ACTION HOBBIES	4955 S. MEMORIAL DR.	Tulsa	74145	918-663-8998
OREGON				
AERO SPORT & HOBBY	17941 N.E. GLISAN	Portland	97230	503-669-7665
EUGENE TOY & HOBBY	32 E. 11th AVE.	Eugene	97401	541-344-2117
LEISURE HOBBIES	982 LANCASTER DR. N.E.	Salem	97301	503-588-9884
R C ADDICTION	830 S. FRONT ST.	Central Point	97502	541-665-2700
R/C PLUS HOBBIES	1685 25th ST.	Salem	97302	503-364-9188
TAMMIES HOBBIES	12024 S.W. CANYON RD.	Beaverton	97005	503-644-4535
ULTIMATE HOBBIES	1210 JANTZEN BEACH CTR	Portland	97217	503-247-8194
PENNSYLVANIA				
ADAM & EVES PET & HOBBY	313 LATROBE 30 PLAZA	Latrobe	15650	412-539-7130
ACTION HOBBY	8708 NEW FALLS RD.	Levittown	19054	215-949-9750
ALLIED HOBBIES	114 EXTON SQUARE MALL	Exton	19341	610-363-6988
CRANBERRY HOBBY DEPOT	20555 ROUTE 19 CRAN-MAR Plaza	Cranberry Twnshp	16066	724-776-3640
HOBBY EXPRESS INC.	1713 ROUTE 228 #L 1	Cranberry Twnshp	16066	724-779-2000
J.C. R/C HOBBIES	13 YORK RD.	Warminster	18974	215-672-5200
J&K HOBBIES	1240 ALLEGHENY ST.	Jersey Shore	17740	570-398-8171
LITTLE PLUM R/C HOBBIES	333 LITTLE PLUM RUN RD.	Lock Haven	17745	570-769-1984
LOCO LOUIES MODEL TRAINS	2365 MAC DADE BLVD.	Holmes	19043	610-583-7711
MARSHALL'S HILLTOP HOBBIES	RR 4 BOX 4265 PA ROUTE 652	Honesdale	18431	570-729-7458
MODELLBAHN HOBBIES	1145 PHILADELPHIA AVE.	Gilbertsville	19525	610-367-5925
RC OUTFITTERS	519 BROADWAY	Hanover	17331	717-633-9490
RHODE ISLAND				
INSANE TOYS	141 PARK AVE.	Cranston	02907	401-467-8878
SOUTH CAROLINA				
BANDITS HOBBIES & MODELS	2037 S MAIN ST.	Darlington	29532	843-393-3333
D & S HOBBIES	1314 S. FOURTH ST.	Hartsville	29550	843-383-0017
ED'S HOBBY SHOP	702 MAIN STREET	Myrtle Beach	29577	843-448-8685
HOBBY CONNECTION	4148 CALHOUN MEMORIAL HWY.	Easley	29640	864-295-1209
HOBBY STOP	939 S. ANDERSON RD.	Rock Hill	29730	803-327-4121
HOBBY TOWN USA	1812 SAM RITTENBERG BLVD.	Charleston	29407	843-769-5808
HOBBYTOWN USA	101 VERDAE BLVD. #340	Greenville	29607	864-627-9633
HOBBYTOWN USA	134 STATION DR.	Anderson	29621	864-261-8479
THE GREAT ESCAPE	1426 LAURENS RD.	Greenville	29607	864-235-8320
SOUTH DAKOTA				
HOBBYTOWN USA	1007 W. 41st ST.	Sioux Falls	57105	605-339-6613
TENNESSEE				
AAA MODEL SUPPLY	5237 HWY 126	Blountville	37617	423-323-1513
ARF HOBBIES	305 SPARTA ST.	McMinnville	37110	931-474-7223
COOKEVILLE RACEWAY & HOBBIES	148 S. WILLOW AVE.	Cookeville	38501	931-520-6017
GADGET HOBBIES	204 TRENTON ST.	Harriman	37748	865-882-7528
J & D ELECTRONICS INC.	4373 MAYNARDVILLE HWY.	Maynardville	37807	865-992-4312
HOBBYTOWN USA	206 B COOL SPRINGS BLVD. #205	Franklin	37067	615-771-7441
HOBBYTOWN USA	2884 WOLFCREEK PARKWAY	Memphis	38133	901-213-2682
HOBBYTOWN USA	634 NORTHGATE MALL	Chattanooga	37415	423-877-9885
HOBBYTOWN USA	8901 TOWN & COUNTRY CR.	Knoxville	37923	865-690-1099
HOBBYTOWN USA	1741 S. RUTHERFORD BLVD.	Murfreesboro	37130	615-890-6777
TEXAS				
ABC RADIO CONTROL HOBBIES LAREDO	1600 WATER ST. # D-18	Laredo	78040	956-722-2845
ACTION HOBBIES	2005 9TH ST.	Wichita Falls	76301	940-766-2667
AERO HOBBIES	2305 S HWY. 121 # 110	Lewisville	75067	972-315-1854
AL'S HOBBIES	7121 HWY. 90 W. # 150	San Antonio	78227	210-645-1050
BIG MIKE'S HOBBIES & TOYS	2157 GILMER RD.	Longview	75604	903-297-7814
DRYCREEK HOBBIES	2518 130 WEST	Greenville	75402	903-527-5381
GUADALUPE HOBBY CENTER	200 SIDNEY BAKER S.STE 5	Kerrville	78028	830-895-5654
HOBBY CENTER	18177 GULF FREEWAY	Webster	77598	281-488-8697
HOBBY TIME	201 WESTGATE PKWY. UNIT H	Amarillo	79121	806-352-9660
HOBBYTOWN USA	3033 W. PARKER RD. #120	Plano	75023	972-758-7875
HOBBYTOWN USA	4638 S. COOPER #190	Arlington	76017	817-557-2225
HOBBYTOWN USA	5276 S. HULEN ST.	Fort Worth	76132	817-263-1196
HOBBYTOWN USA	1201 AUSTIN HWY #102	San Antonio	78209	210-829-8697
INDY RC WORLD	2020 SATURN RD.	Garland	75041	972-271-4844
M & M HOBBY CENTER	6703 CHIMNEY ROCK	Bellaire	77401	713-661-7137
MIKE'S HOBBY SHOP	1605 CRESCENT CIRCLE #300	Carrollton	75006	972-242-4930
ONEALL SPECIALTY HOBBIES	3321 W. EXPRESSWAY 83	McAllen	78503	956-686-6521
ROY'S HOBBY SHOP	1309 N. NORWOOD DR.	Hurst	76053	817-268-0210
T & T R/C CARS	3420 AVE K	Plano	75074	972-633-2470

SHOP LOCATOR

THE RC HOBBY SHOP	13835 S.W. FREEWAY	Sugar Land	77478	281-265-4844
WINGS & THINGS	5307 50th ST. #B	Lubbock	79414	806-793-7777
VICTORIA HOBBY SHOP	5211 JOHN STOCKBAUER DR.	Victoria	77904	361-575-4194
UTAH				
HOBBYTOWN USA	5578 S. REDWOOD RD. #A	Salt Lake City	84123	801-964-8242
HT'S RC'S	166 S. FORT LANE	Layton	84041	801-546-6959
VIRGINIA				
BROWN BROTHERS HOBBIES	14300 SMOKETOWN RD.	Woodbridge	22192	703-492-7788
CROSSWORD HOBBIES	1104 W. MAIN ST.	Salem	24153	540-387-3414
DRCW RACEWAY	2200 COMMERCE PARKWAY	Virginia Beach	23454	757-340-6681
GRAYMIA LLC	9105 CENTER ST.	Manassas	20110	703-369-1197
GRIFFINS HOBBY SHOP	1051 ISLAND RD.	Bristol	24201	276-466-0998
HOBBYTOWN USA	4000 VIRGINIA BEACH BLVD. #196	Virginia Beach	23452	757-464-4140
LINVILLE HOBBIES	7065 WENGERS MILL RD.	Linville	22834	540-833-2222
RT MODEL & HOBBY SHOP	401 N MAIN ST.	Danville	24540	434-799-8536
STREAM HOBBY SHOP	10015 JEFFERSON AVE.	Newport News	23605	757-591-0720
TSG HOBBIES	251 W. LEE HWY #691	Warrenton	20186	540-347-6590
WASHINGTON				
BURIEN TOYOTA	15025 1ST AVE. SOUTH	Seattle	98148	206-243-0700
FANTASY WORLD HOBBIES	7901 S. HOSMER A-6	Tacoma	98408	253-473-6223
FOUR SEASONS R/C RACING	2941 SLEATER KINNEY RD N.E	Olympia	98506	360-491-2430
HOBBYTOWN USA	18500 33rd AVE. WEST	Lynnwood	98037	425-774-0819
MITCHELL RC HOBBIES	N. 4715 CRESTLINE #B	Spokane	99207	509-482-6188
PERFORMANCE R/C	320 E. FAIRHAVEN AVE.	Burlington	98233	360-755-9464
RAIN CITY RACEWAY	2006 196th STREET S.W. #119	Lynnwood	98036	425-776-8241
REDMOND HOBBIES	16260 REDMOND	Redmond	98052	425-885-3639
TACOMA R/C RACEWAY	4802 S. ADAMS ST.	Tacoma	98409	253-565-1935
THE CLOVERLEAF	4110 MAIN ST.	Union Gap	98903	509-453-8959
ULTIMATE HOBBIES	131 E. MAIN ST.	Auburn	98002	253-939-2515
WISCONSIN				
ABC RC INC.	244 W. MAIN ST.	Waukesha	53186	262-542-1245
BRISTOL R/C HOBBIES	8671 198th AVE.	Bristol	53104	262-857-3400
DIRT HEAVEN HOBBY & RACEWAY	6028 COUNTY RD. K	New Franken	54229	920-866-9096
DOCKTER'S HOBBY WORLD	402 WESTGATE MALL	Madison	53711	608-274-0024
FOCUS INC.	75 S. MAIN ST.	Fond Du Lac	54935	920-922-5999
GREENFIELD NEWS & HOBBY	6815 W. LAYTON AVE.	Greenfield	53220	414-281-1800
HOBBY JUNCTION	1729 STEPHENSON ST.	Marinette	54143	715-732-6333
HOBBY TOWN USA	17115 BLUEMOUND RD. # C	Brookfield	53005	262-652-1561
HOBBY TOWN USA	2730 HERTIAGE DR.	Delafield	53018	262-646-5755
HOBBYTOWN USA	2075 S. KOELLER	Oshkosh	54901	920-426-1840
HOBBYTOWN USA	2767 S. ONEIDA ST.	Green Bay	54303	920-490-9996
JOHN'S HOBBIES	54 N. MAIN ST.	Hartford	53027	262-673-7454
KDM HOBBY	711 E. SPRUCE ST.	Abbotsford	54405	715-223-4414
PHIL'S HOBBY & CRAFTS	409 W. MAIN ST.	Wautoma	54982	920-787-7232
R/C PERFORMANCE & HOBBIES	4702 E. BROADWAY	Madison	53716	608-222-8846
S&N'S TRACKSIDE HOBBIES	3635 N 124th ST.	Brookfield	53005	262-783-4699
WEST VIRGINIA				
DW REED HOBBY STOP	142 W. MAIN ST	Bridgeport	26330	304-842-2742
FULTON'S HOBBY SHOP INC.	3301 CHAPLINE ST.	Wheeling	26003	304-233-5355
HOBBYTOWN USA	67 NITROMARKET PK.	Charleston	25313	304-776-7259
WEST VIRGINIA HOBBY & CRAFT	PUTNAM VILLAGE SHOP CTR.	Teays	25569	304-757-6474
WYOMING				
XTREME HOBBIES & RACEWAY	1300 BUTCHER	Gillette	82718	307-682-6077
PUERTO RICO				
ED's HOBBY SHOP	PINO ST #H-36	Caguas	00726	787-460-2677
HI SPEED C. RACEWAY	422 SAN CALUDIO AVE.	San Juan	00926	787-283-0198
ISLAND HOBBIES	DELFIN-OLMO 166	Arecibo	00612	787-871-1129
LA SORPRESA	1759 AVE. MILITAR #1	Isabela	00662	787-872-2396
RACER'S HOBBY	873 SAN PATRICIO AVE.	San Juan	00921	787-783-5910
CANADA				
HOBBY GUYS	#1, 222-16 AVE. N.E.	CALGARY	ALB	T2E 1J8 CANADA 403-230-8821
PM HOBBY CRAFT	2020 B 32ND AVE. N.E.	CALGARY	ALB	T2E 6T4 CANADA 403-291-2733



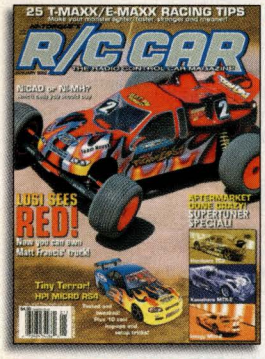
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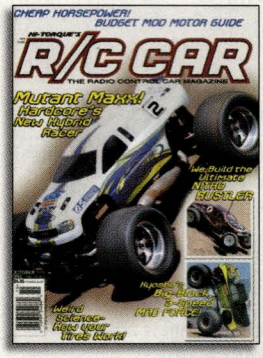
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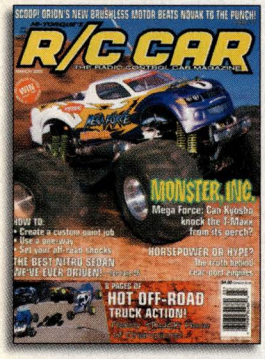
❑ **JANUARY '02**
Test Drives: HPI Micro RS4, Tamiya TXT-1, Team Losi Matt Francis Edition Triple XT, Kyosho MP7.5 Sports Features: Pro-File: Gil Losi Junior, Tamiya 414M: The "Secret" Tamiya Sedan, Just Like Driving A Car Super-Tuner Special Kawahara/ Mugen MTX-2, Hardcore Racing/Team Associated TC-3, Integy/TopCAD Kyosho Mini-Z Product Tests: Novak Millennium Pro, Trinity Brush Warehouse



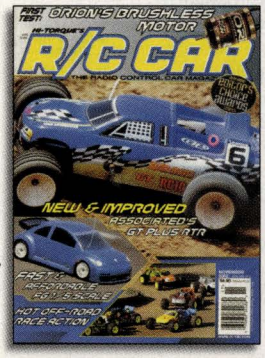
❑ **OCTOBER '02**
Test Drives: Hardcore Mutant Maxx, Yokomo GT4-Pro, Kyosho Mad Force, Cross Fire Force, Tamiya TA04-SS MR-S Features: Reedy Invitational Race, Solving Handling Woes, Quest For Traction, Project Traxxas Nitro Rustler, Budget Modified Motors Buyer's Guide, ROAR Off-Road Nationals, Garage Business Gone Big, N.O.R.R.C.A On-Road Nationals Product Test Ride Shock Air Remover, Takara Digi Q, Eagle Racing Tire Warmer 2s



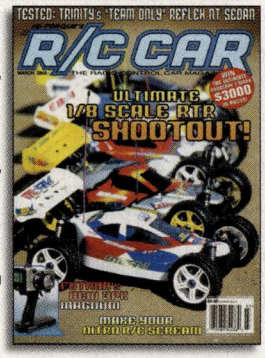
❑ **FEBRUARY '03**
Test Drives HPE Savage 21, Tamiya AMG Mercedes CLK DTM, Tamiya XB Mugen Integra Features First Test: Associated BFT!, Rock Crawling Part 3, Kyosho Gunwalker, Inside The World's Fastes R/C Car, Reedy Truck Race Of Champions, Inside The Reedy Truck Race Winners, All-American Truck Race, Racing With Rick Hohwart, Second Opinion: Tamiya 414MII, ROAR 1/5-Scale Nationals, Movie Maxx



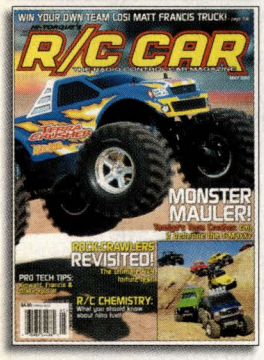
❑ **MARCH '02**
Test Drives: Kyosho Mega Force, BoLink Little Red Wagon, Kyosho FW-04 Loctite Mugen NSX, Tamiya Dyna Storm, Kyosho Baja Beetle QRC Features: Maxxed Out!, Rear Port Myths, Pro Paint Tricks, Reedy Truck Race Of Champions, Project Outlaw V-One R Pro Tips Section: Scott Hughes On Shocks, Jack Johnson On Servo Tape, Mark Pavidis On One-Ways, Brian Dunbar On Jumping Product Tests Dynamite Vision Peak Plus And Mega



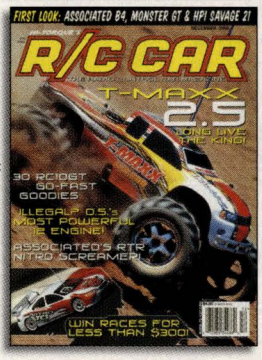
❑ **NOVEMBER '02**
Test Drives: Associated RTR GT Plus, GS Racing Vision Pro, Xray T1 Evolution, FG1/5 Scale Sport Beetie Features: Editor's Choice Awards—We Pick The Best Of The Best, Quest For Traction, Brushless E-Maxx, 5th Annual Hot Rod Hobbies & R/C Car Shootout, Penguin Micro RS4 Chassis Product Test LRP Pulsar Competition Charger, Team Orion Micro Chassis, Venom Battery Charger, Associated Starter Box, Trinity Matt Francis Edition P94



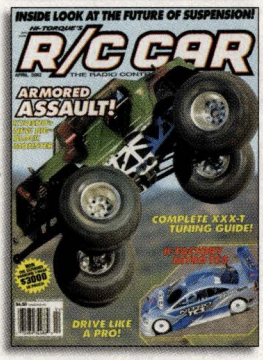
❑ **MARCH '03**
Test Drives: Losi XXX-S Graphite Plus, Team Losi XXX-S Sport, Tamiya Raybrig NSX 2002, Trinity Reflex NT "Team Only", CEN ATX Features: Big Buggy Bash, Monster Mash—Shock basics for the truck set, Second Opinion: HPI Nitro RS4 3 Type SS, Off-Road Tuning Basics, Bump-Start Maxx, 10 Ways To Make Your Nitro Faster, Is Brushless Technology Worth The Wait?, Home-built Hardcore Mini RS4, HPI Challenge



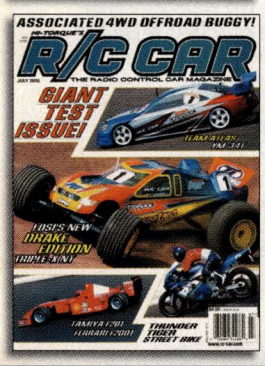
❑ **MAY '02**
Test Drives: Tamiya Terra Crusher, Mugen MSX-3, Team Losi XXX-NT Sport, HPI Dash Features: How A Clutch Works, Rock Climbing Revisited, R/C Chemistry, Inside Kinwald's Team Losi XXX-S, Project Wolf Pro Tips: World-Champion Electronic Tips, How To Gear Your Off-Roader, Tackling Technical Tracks Product Tests: L. Collari 12RT5, Team Orion Big Block Micro Motor, Team Sorex Sedan Tires, Reedy Quasar AC/DC Charger



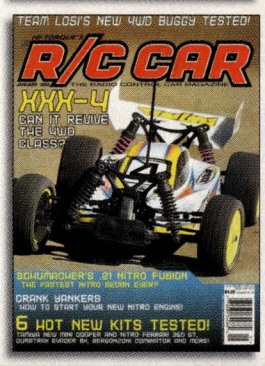
❑ **DECMEBER '02**
Test Drives: Traxxas T-Maxx 2.5, Tamiya Beams Honda Integra, Team Associated Nitro TC3 RTR, CEN Fun Factor ST 2 Features: Trinity Gold Peak 3300 Cells, Sneak Peek: Losi XXX-4, Inside Putnam Pro-Pulsion, First Look: HPI Savage 21, RC10GT Hop-Up Buyer's Guide, Hitec Parking Lot Challenge Product Test: Warp Speed Mission Chassis, O.S. Engine 12TR (T), Airtronics MX-3, Walburn 10L3 Hubs, Xtreme Racing E-Maxx Chassis



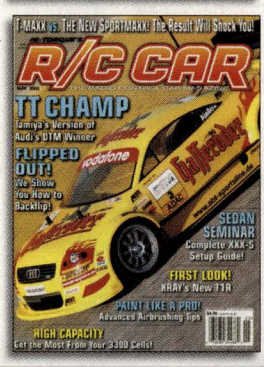
❑ **APRIL '03**
Test Drives: Mugen Seiki MST-1, Kyosho Mad Armor, tamiya Ferrari Enzo, Team Losi XXX-T Sport, Kyosho Xanavi Nismo GT-R Features: Losi XXX-T Tuning Guide, 2nd Opinion: Associated NTC3, Driving 101, Swag: New Mini-Z Stuff, How To: Make Your RTR More Efficient, Future Shock, Crazy Nut Micro, First Look: JR Racing XS3, Rally Planet Part II, Freestyle Losi NT, Living Room Whirlybird, Endurance Champs



❑ **JULY '02**
Test Drives: Kyosho F1 Mini-Z, Atlas YM34T, Losi Triple-X NT Drake Edition, Lauterbacher L3SS, Thunder Tiger FM 1e, Buratrax Overdrive ST, Tamiya Porsche, Tamiya Ferrari F-2001 Features: Project Sledge Hammer, Project Losi Triple-X S, Getting The Most Out Of Your HPI Micro RS4, Starter Box Buyer's Guide, Project Yokomo RTR GT-4, 10 Ways To Prepare For Race Day, Touring Car Tire Tips, Radio Daze, Home Built TC3 "0"



❑ **JANUARY '03**
Test Drives: Team Losi XXX-4, Tamiya Nwe Mini Cooper, Schumacher Nitro Fusion, Bergonzoni Dominator, Tamiya Ferrari 360GT "Daytona Version," Dura-Trax Evader BX Feautures: Tamiya TCS North American Finals, Swag Report: New Mini-Z Goodies, Second Opinion: Tamiya F201, HPI Challenge, Swag Report: New From Tamiya, How To Start Troublesome New Engines, Max Trax Promotional Racing, Rally Planet, Project Two-Wheel



❑ **MAY '03**
Test Drives: Tamiya TB Evolution III, Traxxas SportMaxx, XTM X-Factor, Traxxas Nitro Rustler 2.5, Tamiya ABT Audi TT-R DTM, MRC/Academy RT-4 Features: First Look: Fantom FR12.03R Engine, Track Treasures, SportMaxx vs. T-Maxx, How To Backflip, 4th Annual Dirt Nitro Challenge, What's Up with ROAR?, Girl Power, Pro Tip: Get The Most From Your 3300 Cells, All About One-Way Bearings, Advanced Air Brushing Techniques

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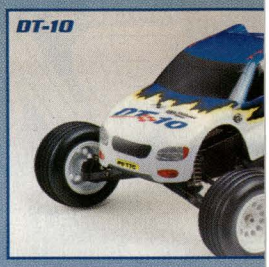
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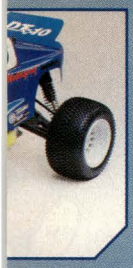
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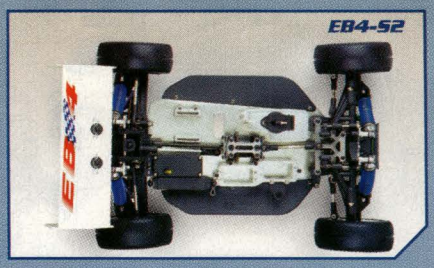
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Tri-State R/C Raceway, 205 Hallene Rd., Warwick, RI 02886, Lenny Sosa (401) 738-4908

SOUTH CAROLINA

Carolina R/C Speedway, 4148 Calhoun Memorial Hwy., Easley, SC 29640; Craig Prahl, (864) 295-1209; *www.carolinarc.com*

Myrtle Beach R/C Park, 5976 Grace Lane, Myrtle Beach, SC 29577 Brad Smith, (843) 234-0096

The Grove Racing Center, 939 S. Anderson Rd., Rockhill, SC 29730, Mike Durham or Don Faris, (803) 327-4121

ORA Atomic Racing, 373 Boyd Pond Rd., Aiken, SC 29803; Bill Felak, (706) 855-0846 or (803) 642-0314

R/C Racing Connection Speedway 4375 Juniper Bay Rd. Conway, SC 29527 (843) 397-0124

TENNESSEE

Cookeville Raceway & Hobbies, 148 S Willow Ave. Cookeville, TN 38501 (931) 520-6017

HobbyTown USA, 206 B Cool Springs Blvd. # 205, Franklin, TN 37067; Bobby Mills, (615) 771-7441

W.O.W. Raceway, 59 Luray Rd., Beech Bluff, TN 38313; Kelly Bean, (901) 427-7874; *windix60@pipeline.com*

XS Speed, 5237 Hwy. 126, Blountville, TN 37617, (423) 323-1513

HobbyTown USA, 8901 Town & Country Circle Knoxville, TN 37923 (865) 690-6423

Intense Raceway, 2143 Payne Ave. Alcoa, TN 37701 (865) 379-8600 www.intenseraceway.com

TEXAS

215 Speedway, 1814 County Rd. 215, Abilene, TX 79602; Clyde Gardner (915) 673-2351

Big Mike's R/C Raceway, 1405 W. Cotton St. Longview, TX 75604; (903) 297-7814

Discount Hobbies, 1722A West Anderson Loop, Austin, TX 78757; Tony Bermudex, (512) 458-2324

Drycreek Raceway, 2518 I 30-W Greenville, TX 75402 Micky Alphin, 903-527-5381, web.pulse.net/drycreek email: dycreek@pulse.net

Hobbycraft Speedway, 819 N. Main St., Corsicana, TX 75110; Keith Hoffman (903) 872-6761

HobbyTown USA, 1201 Austin HWY. #102, San Antonio, TX 78209; Joe Sena, or Clark Baisdon, (210) 829-8697

Indy R/C World, 2020 Saturn Rd., Garland, TX 75041, (972) 271-4844

Issac's Race Track, 18177 Gulf Frwy., Webster, TX 77598; Issac Ben-Ezra, (281) 488-8697

Lunatic Hobbies, 1631 Hwy. 6 South Houston 77077 (281) 496-1200 www.lunatichobbies.com

Reflex R/C, 1106C Witte Rd., Houston, TX 77055; Jorge Tabush or Terry Schmid, (713) 464-4458

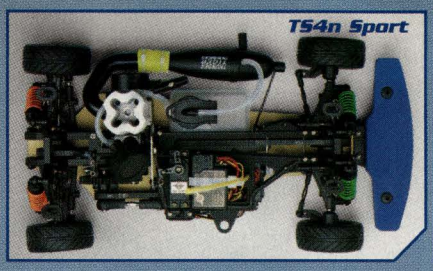
Rio Grande Valley Gears R/C Track, 400 Wichita, Harlingen, TX 78550 (956) 686-6521 www.oneallspecialtyhobbies.com

Texas Speedway, 6703 Chimney Rock Bellaire, TX 77401 (713) 661-7137 www.mmhobby.com

T-N-T R/C Cars, 3420 Ave. K Suite 154, Plano, TX 75074 (972) 633-2470 (972) 238-0965 Joe Sullivan

Al's Hobbies, 7121 HWY. 90 W. Suite San Antonio, TX 78222 (210) 645-1050









UTAH

Spooky's R/C Raceway, 362 South 671 West Pleasant Grove, 84062 (801) 796-0992

VIRGINIA

Star/Car Raceway, Debbie's R/C World, 2200 Commerce Parkway, Virginia Beach, VA 23454, (757) 340-6681

Dirtona, 515 Front Ave. Salem, VA 24153 Steve Cooper (540) 387-3044

Linville Hobbies Raceway, 7065 Wengers Mill Rd. Linville, VA 22834 (540) 833-2222 www.linvillehobbies.com

Roanoke Race Club 5080 Stable Rd. Roanoke, VA 24014 540-989-4529 www.roanokeraceclub.com

Shamroc Raceway, 106 Cheviot Pl., Stephens City, VA 22655; Scott Janow, (540) 869-3551

WASHINGTON

Alfie's, 108 South K St., Aberdeen, WA 98520; (360) 533-6638

A-Main Raceway, 14011 NE 3rd Ct., Vancouver, WA 98685; Monty Coleman, (360) 571-8404

Burien Toyota R/C, 15025 1st Ave. South, Seattle, WA 98148 Ray Meek, (800) 654-6456

Cedardale Raceway, 16733 Cedardale Rd., Mount Vernon, WA 98273; Joe Madonia, (360) 659-0072; *getchell@halcyon.com*

Four Season R/C Racing, 2941 Sleater Kinney Rd. NE Olympia, WA 98506; Gary Brown (360) 491-2430

HobbyTown USA Lynnwood, 18500 33rd Ave W Lynnwood, WA 98037 (425) 774-0819

Performance R/C, 320 East Fairhaven Ave., Burlington WA 98233 (360) 755-9464

Rain City Raceway, 2006 196th St. S.W #119, Lynnwood WA, 98036, Debbie Cartwright (425) 776-8241 www.raincityraceway.com

Redmond Hobbies, 16260 Redmond Way Redmond, WA 98052 (425) 885-3639 www.redmondhobbies.com

Tacoma R/C Raceway, 4802 S. Adams St., Tacoma, WA 98409; Scott Brown (253) 565-1935

WEST VIRGINIA

Burr-Fab Raceway, 90 Davis St., West Union, WV 26456; Mark Travis, (304) 873-2487

Fulton's R/C Raceway, 3301 Chapline St., Wheeling, WV 26003; James Fulton (304) 233-5355

WVRCA R/C Club, 142 West Main, Bridgeport, WV 26330; D.W. Weed

WISCONSIN

Hobbytown USA, 2075 South Koeller, Oshkosh, WI 54901 (920) 426-1840

Johns Hobbies, 54 N. Main St., Hartford, WI 53027 (262) 673-7454 www.explorewisconsin.com

Pro-Star Racing, 726 Pine St., Green Bay, WI 54301; Chuck, (920) 494-1233

S&N's Trackside Hobbies and Raceway, 6405 N. Green Bay Ave., Milwaukee, WI 53209; Scott Ernst, (414) 351-1910

WYOMING

Wind River R/C Racing Association, 309 N. 4th West, Riverton, WY 8250; Shannon Watts, (307) 857-0418

Xtreme Hobbies Raceway, 1300 Butcher Ct., Gillette, WY 82716; Kreig Balls, (307) 682-6077 email: xtremeraceway@collinscom.net

CANADA

Mid-Canada R/C Auto Racing, Hwy. #1 East at Symington Rd. Winnipeg, Manitoba Canada R2J 4E6 (204) 231-3324 www.midcanadarcautoracing.com

Circuit Teleguide Off Rd. Granby, 450 De LaGrande Ligne St. Paul D' Abbotsford Quebec, Canada (450) 776-3730

Nitro Extreme R/C Park, Blackfoot MX PK Calgary, Alberta, www.nitroextreme.com, e-mail: information@nitroextreme.com

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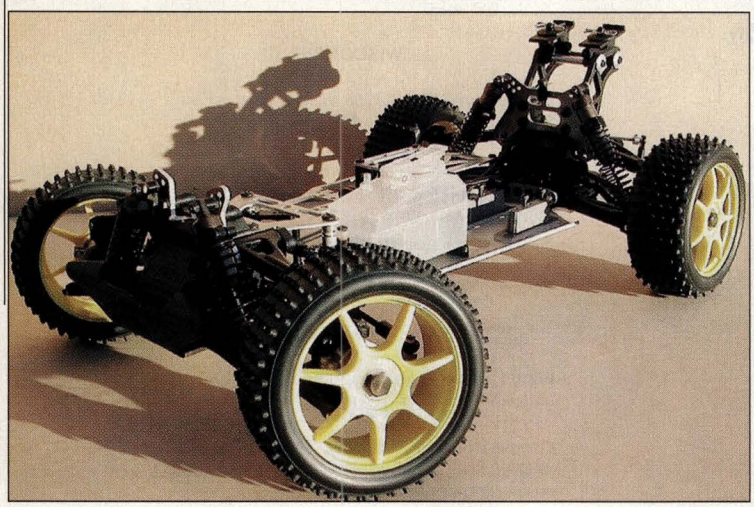
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Thunder Tiger

Kyosho Inferno: The Beginning of a 12-Year Streak

The Inferno is without a doubt Kyosho's most successful racing model. The Inferno was the culmination of many years of experience in the 1/8-scale buggy racing sector of the market. Kyosho was one of the early pioneers of nitro racing—and their racing buggies can be traced as far back as the late 1960s.





The first of the gas buggies to really make an impact on the competition off-road scene would have to have been the Land Jump. This car was a pioneer for the class—and many manufacturers copied its design. Then came the Vanning, Presto and numerous "spin-offs." Along the way, these cars have always shown marked improvements in handling and durability with every new model.

By far the biggest "jump" for the 1/8-scale scene was Kyosho's Burns. This car set incredibly high new standards in chassis and suspension design—all freely available to anyone off the street. You did not have to be a sponsored team driver to have a top car.

The top-of-the-line Turbo Burns really made a huge impact. It was this car (albeit in modified form) that the Kyosho team took to the world title in 1992. This modified car was to become officially known as the Inferno. To this date, the Inferno has never been beaten in a world championship. That's right; the Inferno series has won six consecutive world titles.

THE BRIGHTEST FLAME?

Now that we have a little bit of background on the "lineage" of the Inferno, let's have a look at my newly built "worlds" kit. (This is one of the few NIB kits I own that I have been totally unable to resist building!)

When looking at the comparable cars of the time it is not hard to see why Kyosho was, and still is, at the top of the 1/8-scale buggy tree.

DRIVETRAIN

One can only describe the drivetrain on the original Inferno as rock solid. Even in standard form, the Inferno was able to handle all you could throw at it (even in terms of modified engines at the time) and still come back for more. Here are some of the features of the Inferno's drivetrain—and remember, ALL of this was standard equipment in the kit!

- Shaft driven 4WD via steel dog bones
- Steel universal-joint drive shafts for the front wheels
- Adjustable front disc brake
- Rear disc brake
- Full bearings
- Sealed planetary-geared differentials—three of them!
- Adjustable front-to-rear split drive
- Torque rod for chassis support

Those are just a few of the standout features of the car. Quite impressive for the time, as I am sure you will agree. This spec even outshines some of the current 1/8-scale buggies on the market!

WHAT TO LOOK FOR

One of the first things to look for on any 1/8-scale buggy is, obviously, general wear and tear. These buggies have a terribly hard life. Even when looked after carefully, wear is always going to be high with the oil and dirt combining to make a nice grinding paste on all those parts! That being said, the Inferno suffered less wear and tear than most because of the standard "chassis deflectors" and general use of excellent materials. One thing to definitely check is that the alloy chassis is not "tweaked" (bent slightly in any direction). There are a number of parts that are still being used on the Inferno that are still in current kits; however, some parts are getting pretty hard to come across. Just inspect carefully. If you can't inspect—ask a lot of questions before you buy!



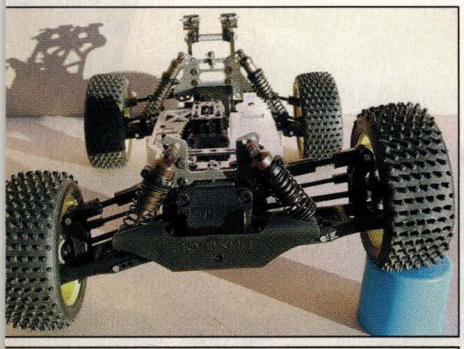
BY DARRYN JOHNSON

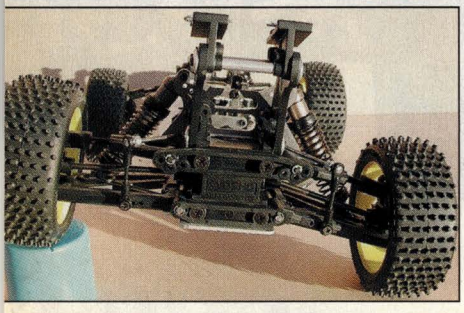


SUSPENSION: THE SHOCKING TRUTH!

The real advantage for the Inferno was its tremendous ability on rough tracks. The car seemed to have an amazing ability to soak up even the roughest terrain and jumps—something that the current Inferno 7.5 is still well known for. Here are a few standout features of the suspension:

- Longer wheelbase than the Burns—and all other cars of the time
- Massive, oversized (even for 1/8-scale) hard-anodized alloy shocks
- Fully adjustable ride height
- Advanced alloy shock towers, with multiple adjustments available
- New plastic material for the suspension arms—nearly twice as strong as previous materials
- Steel ground hinge pin suspension mounts
- Adjustable camber
- Rear anti-sway bar as standard



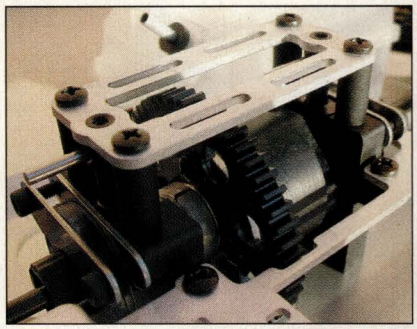


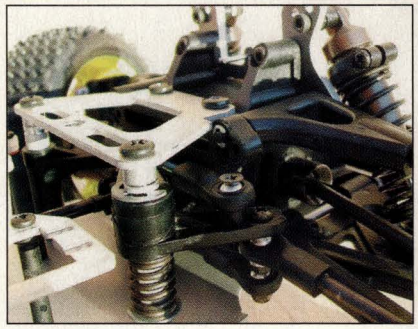
CHASSIS & OTHER TIDBITS

There were many features of the car that were so well done that I could probably take up quite a few pages! However, some of the standouts were:

- Channelled alloy chassis. SUPER stiff and strong!
- Full bearing set
- Side "splash" guards. These stopped a lot of dirt being deflected from the wheels into the "guts" of the car
- Fully adjustable wing mounting system
- Heavy-duty clutch
- Countersunk screws for chassis underside
- Easy access gearbox feature

Not much could be said against the spec of the original Inferno. There was one glaring omission from the kit, though. Incredibly, there were no turnbuckles included with the kit! With a kit of such high potential, one wonders why Kyosho decided that they were not needed.





WHAT'S IT WORTH?

This is a tough one! I have seen NIB kits exchanging hands for well over $1000! I have yet to see one on eBay, although to be fair, I haven't been looking for a NIB kit. The officially stamped "92 Worlds" kits (shown here) are particularly sought after by collectors and racing fans alike. New built versions should reach at least the $600 mark and upwards. A lot depends on whether or not the car has the engine included and of course the original box as well.

Used cars are easier to gauge. I have seen original Infernos go on auction for just over $200 in running condition with radio gear, etc. I would warn, however, that buying a used nitro on the Internet is a pretty tough call. KNOW your seller as well as possible—and ask as many questions as you feel you need to until you are comfortable.

CONCLUSION

I would have to say that this is one of the most aggressive and attractive new-builts that I own. Not just because of its size or even its magnificent engineering; I like it because of its rich historical standpoint as well. This is the car that started the total domination by Kyosho of the world 1/8-scale buggy scene. The absolute quality of all the materials, the fact of the history of the car and the sheer presence it commands on the display shelf will make this car a true bright light in anyone's collection.



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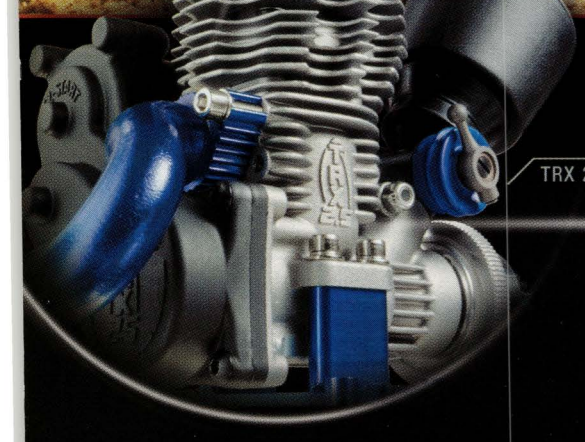
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