

VOL. 6, NO. 66

**RADIO CONTROL**

# MODEL CARS

JULY 1991

**AND TRUCKS**

# Wah!

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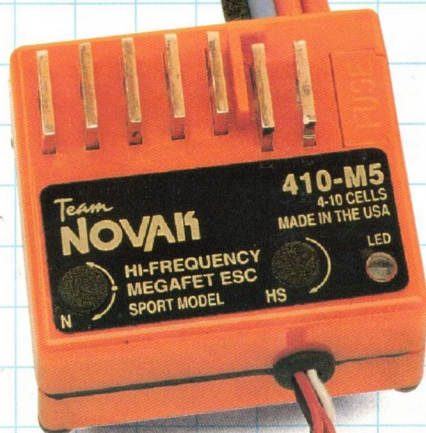
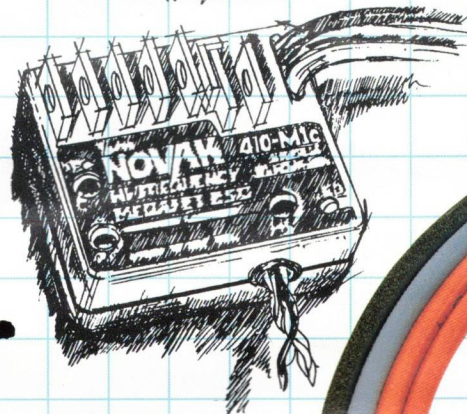
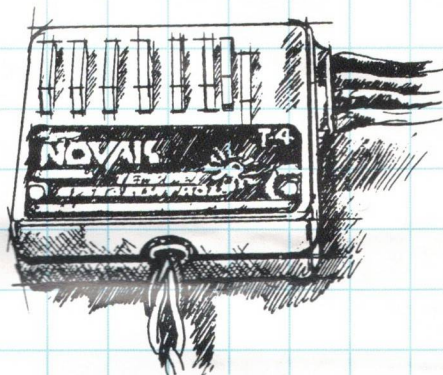
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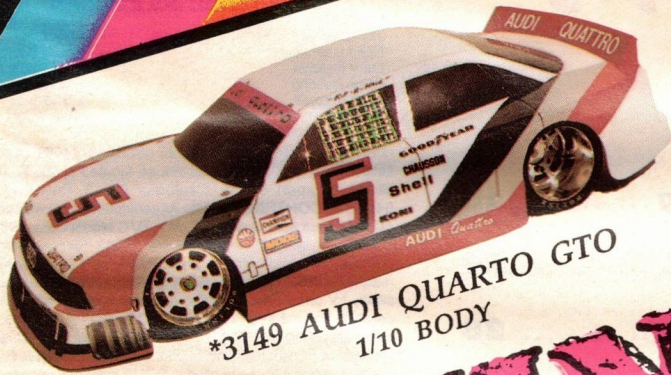
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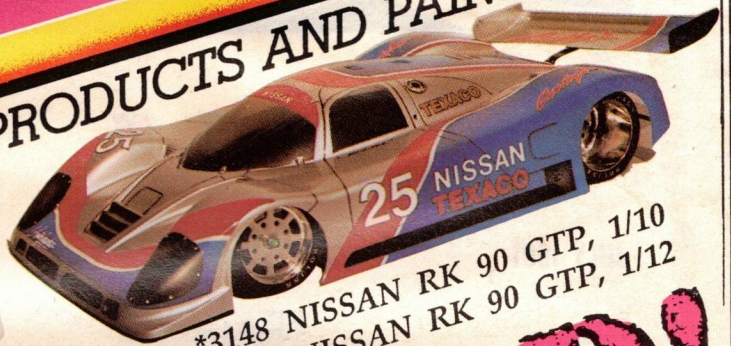
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# Radio Control MODEL CARS

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T S

JULY 1991

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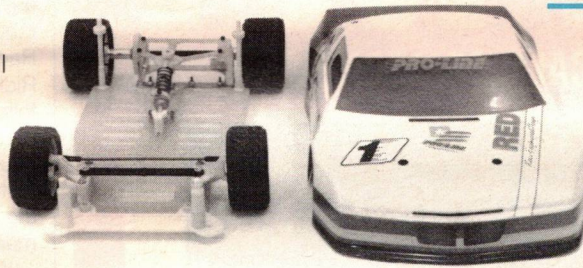


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Convert your off-road RC10 into an awesome street ready machine by adding the Striker I (#1051) Rear and Striker III (#1053) Front tires to PRO-LINE's direct fit Cone Dish Racing Wheels (#2557 Front & #2558 Rear). Featured here with the specially designed RC10 Magnum Racing body. Also available using Cone Dish Racing Wheels for JR-X2 (#2531 Front & #2560 Rear) and Kyosho (#2561 Rear & #2566 Front).



## LASER PAVEMENT POUNDER

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## BY PROLINE 10L SUPER STOCK

It's the real thing! PRO-LINE's Striker tires and the RC10L are the perfect combination for unprepared asphalt and concrete surfaces. 10L Super Stock featured with Striker I (#1051) Rear and Striker III (#1053) Front tires along with aerodynamic direct fit Cone Dish Racing wheels (#2557 Front & #2567 Rear) and Pontiac NASCAR body (#3016).

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Rear 1.3" Wide Track  
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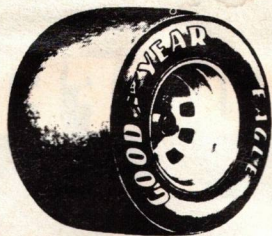
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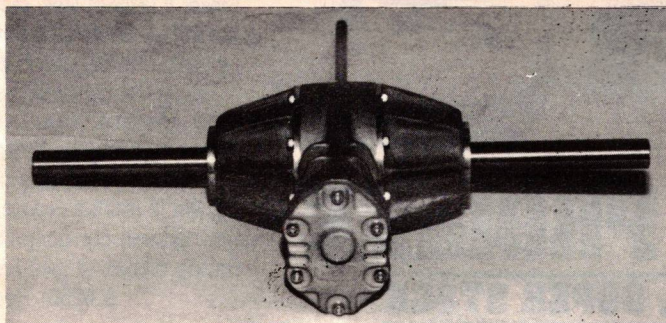


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# HEMI

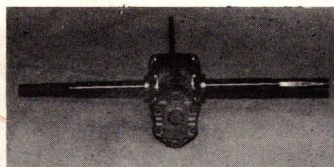
## QUARTER SCALE COMPONENTS



### DRAG REAR

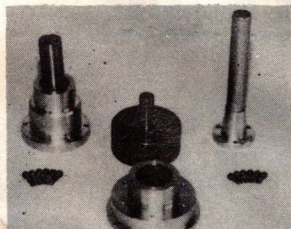
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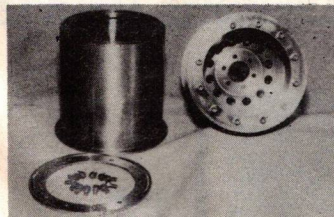


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## Track Time

**A**s the cover says, it's summer racing season! All across the country, tracks are going full-tilt into the night with race programs tempting avid R/Cers who have race fever.

We're turning up the heat at this end with coverage of the Florida Offroad Championships and the ROAR 1/12 Indoor Nationals, including an in-depth look at Nats winner Bud Bartos' 12th-scale racer.

Want to get in on the action? Well, this month Rich Hemstreet reviews a car that could well put you in front of the pack at any oval race in the land: the Hyperdrive belt-driven H10SC, a high-tech 1/10th machine that swept the standings at the recent Reedy Race of Champions at Lake Whippoorwill. Rich delves deeply into the mechanics of this fine road car, beginning on page 24.

Is dirt your desire? Then Derek Arita has your number as he outlines the new Associated RC10 Team Car, a refined version of the most popular 1/10th offroad racer ever manufactured.

If you are an aficionado of quarter scale racing, check out Al Novotnik's coverage of the new Wen Car sprinter. This big car, powered by a Zenoah gas engine, has impressive detail and beefy construction designed to take on the hard knocks associated with quarter scale action. Al's article begins on page 68.

We keep hearing from readers who want to see more full-size prototypes in the magazine from which they can not only model their own R/C cars, but also just to keep abreast of the world of racing. Jack Wright visited a combination Monster Truck and Mud Bog event in North Carolina, and came back with some intense photos. On a completely different scale, Richard Dowdy brings us full-color action from the U.S. Grand Prix for Formula One racers, detailing the new cars and drivers in this pressure-packed world championship battle. His color feature, "Formula One Review," begins on page 92.

In our April, 1991 issue, we had a feature on battery discharge devices, in which the author stated that illegal copies of his own manufactured "Battery Bug" were being proffered. We have learned that these "copies" were in fact not copies, and that further they were not illegal, as no patent existed for the product. We regret any misunderstanding.

Now, it's time to get busy and check out all the features we have for you this month. Read through the magazine, then get busy preparing for the race coming up near you this weekend. Wherever you are, there's bound to be some fine racing going on. Seek it out, and have a ball! See you next month, right here.



***Kyosho gas power gives you the sound, speed and feel of a whole new way of racing.***

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**Rampage 2WD with O.S. .12 CZ-R and recoil starter**



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# Letters

## MOTHER OF ALL

Dear RCMC,

I don't know if this will get to you in time. I'm over here in Saudi and I saw your contest in your magazine for designing a Parma car body. My friend sent his in on the entry form, so mine's hand drawn. It would be great to have a car here to run around the desert with the camo paint job. It would fit right in. Well, even if I don't win, let me know what you thought of it. Just a letter back would be nice. I'll be here at least until July for clean up of other units.

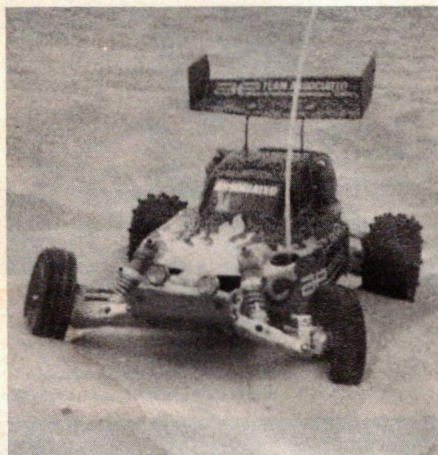
Sgt. Donald Kershner  
Operation Desert Storm

**Don: Your design for the Parma racer was rad, but about a year after the contest deadline! I'm sending you some more current magazines to help pass the time. Hope all is well with you.—Ed.**

Dear RCMC,

Your magazines have been distributed in care packages to the U.S. Army's 826th Ordnance Company that's participating in Operation Desert Storm. Your magazine has been read by a large majority of the Company and I've been told by quite a few people that I should submit a photo of my "Desert Shield"—built RC10, so here are the specs: APL Lethal Weapon Tranny, Trinity Magic Speed motor, SCI Dominator ESC, Reedy World Pack batteries, and it was sent to me in Saudi Arabia by Southside Hobbies in Indiana.

Lucas Bruheim  
Madison, Wisconsin 53704



Lucas' RC10 in Saudi sand

Dear RCMC,

I'm here in Saudi Arabia and I'd like to say thanks for the copy of *R/C Model Cars*. I read your magazine from cover to cover, and it is excellent. Good action shots, good reading and advertising. I think the model cars would work very well out here. This place would make a good offroad track. I'm

from Florida, in an airborne unit (Special Forces) about five miles from the Iraq border, but tomorrow I'll be a lot closer. If anyone wants to write, my address is: SSG. Raymond Post c/o 354th Civil Affairs Brigade, 404th Civil Affairs Co., APO New York, NY 09616.

SSG. Ray Post  
Saudi Arabia

## LOOKING FOR PEN FRIENDS

Dear RCMC,

I'm a modeler and would like to correspond in English or Polish, especially from modelers and computer enthusiasts who would like to help me with R/C electric cars, helicopters, and airplanes. I hope by writing to you that you will help me find a few pen friends in the USA, and possible other countries too. I am not able to send money out of my country, but I can receive model magazines, plans, accessories, and so on. I can swap things from Poland, like plans of airplanes and ships, paper models, and I have a great collection of Polish stamps (mint and used) that I can sell or trade. I need a small ignition engine, like a Zenoah or Quadra 35. If anyone has one they no longer need it would be a great help to me. In Poland it is hard to find engines. Interested modelers write in English or Polish, I will answer every letter.

Marian Nazimek  
Lesna 1/1  
46-250 Wolczyn,  
Poland

## REED'S LAST RIDE

Dear RCMC,

I was sorry to read the last chapter of "Days of Thunderdrome." Sad because I didn't want it to end! Let Reed know that he has a real fan out here who is also an R/C racer with dreams of winning. And also tell him I have money to invest in his string of velodrome races. I want to read more of his stories. Bring him back.

David Coulter  
Grenada, California

Dear RCMC,

You can tell Reed Deanfield for me that he was a wimp to skip out on the final race at the 'Drome! After burning up his car with too-hot batteries and then taking Richard's car and selling it and heading for the border, I don't think he is much of a friend either. He would have been better off sticking around and racing in the final race and then worry about getting rich quick. What happened to him is only what he deserved. I really liked his dog, though.

Skip Lomond  
Columbus, Ohio

Dear RCMC,

If Reed Deanfield comes to our track and wants to race he can, but we won't loan him any cars or stuff, and we sure will watch our wallets. He's a shifty kinda guy, and I don't think he can be trusted with someone's R/C equipment or their money. He does write a funny story though, you have to give him that.

Terry Leonard  
Colorado Springs, Colorado

## NEW TRUCK

Dear RCMC,

I just finished the June issue with the new RC10 truck on the cover. When will this truck be available? It really looks rad, and I am sure it's as good as the RC10 which I have. I can't wait to get one for myself. I am saving for it.

Shane Dignan  
Los Angeles, California

**Shane: The new Associated truck should be on the dealers' shelves by the time this issue hits the newsstands. We'll follow up our exclusive preview look with a complete review of the RC10 truck soon.—Ed.**

Dear RCMC,

It looks like trucks are taking over the hobby. I have never seen so much coverage of monster trucks, flashy pickups, big Bullheads, etc. Let's get back down to earth and have more stories on road racing and open-wheel racers. I like offroad, but enough is plenty. And lay off that pulling stuff. It is about as exciting as watching paint dry on a summer's day.

Joel Bergen  
Valdosta, Georgia

Dear RCMC,

After reading your June issue I decided to subscribe. My check is enclosed. I have a suggestion. Why don't you have a monthly contest for the best crash photo? I have plenty of crashed cars, and I know that they aren't the last. I'm sure I can get pictures of my cars being whacked. You could give a new car away to replace the ones that are trashed. How about it?

Marvin LeBlanc  
Ontario, Canada

## MONSTER SHOOTOUT

Dear RCMC,

Jack Wright's shootout between the USA-1 and the Tamiya Bullhead in your May issue was okay, but I'd like to see the JRX-T go up against the RC10 Truck. That would be a real shootout! C'mon Jack, get it together.

Dennis Daly  
Porterville, California



# WHEN PUSH COMES TO PULL

## You Need Parma Monster Truck Accessories

Whether you need parts for a hot looking truck or a hot running truck, Parma has what you need. The truck on the left belongs to Jay Heiser of Nu-Wave Gرافix and is a true winner. It took first place in concours at the 1990 Truck Pull Nationals and features our Bigfoot® Ford F-150 body (#10293) and fully detailed Hemi Engine Kit (#10411). **The one on the right could be your next concours winner.** It features our new "Gravedigger" body and decal (#10310); an exact replica of the coolest Monster Truck on the TNT/HOT ROD circuit. To get this look is as simple as a black paint job and minor detail work on the grill and headlights. The rest is all on the decal sheet!

Other Parma truck stuff includes lexan replacement bodies for the Blackfoot, Clod Buster, Lunchbox and Midnight Pumpkin with all the detail of the originals. We also have tons of decal sheets ranging from mild to wild plus all kinds of body mount kits especially for trucks.

Other bits like tires, wheels, and wheel adaptors, shocks and steering blocks keep you on the winning track.

To keep you running in top form, Parma offers a full range of Stock and Modified motors and a variety of battery packs for any conceivable use. This includes the new Sanyo 1400 MAH SCR's and a "C" cell pack (#11224) made to fit the Clod Buster and give extra run time.

Stop at your local hobby shop and ask about Parma R/C accessories. To see the complete line, send \$3.00 for a full color catalog and huge poster showing our most popular bodies and decals.



Sorry, we cannot make retail sales. For parts and information visit your local Hobby Shop.

# Readers' Pages

Friends: Here I am again with a new crop of fresh photos from readers just like you. If you would like to see your car or truck here, and have a chance to get a free six-month subscription to the mother of all R/C car magazines, all you have to do is send your picture (the better the photo, the better your chances!) along with some information about your vehicle, to me, Del Bagshaw, Readers' Pages Editor, 898 W. 16th St., Newport Beach, California 92663. If your picture is chosen for this page, you win a subscription! All other chosen photos get a sheet of R/C Model Cars decals. Such a deal! C'mon, send yours in now!!



Tom McAdam, of Pensacola, Florida, painted this Lynx II with a Parma Buick body to represent Bobby Allison's car driven by Rus Stricklin in the Winston Racing Series. It uses a Novak T9X ESC and NER-2X receiver, with a Futaba servo. Tires are T/M Radial Golds with a T/M Silver on the left front. Tom painted the body by hand, as there are no decals on the market for this car. Excellent job, too.



"Here's a Big Bear. I call it Law Breaker. It has a different look with a '57 Chevy Sport Coup 1/12th Monogram model car kit custom paint ruby red metalflake with a Futaba radio and LeMans 240S motor." Marty Branham, Louisville, Kentucky.



Another Chevy, this one took 1st in the NR/CTPA World Pulls in concours. Don Hubert's Big Bear has: complete chrome chassis; fuzzy dice in front window; fur carpet; headliner; working interior lights; white Persian cat with eyes that light up; working head, tail and turn lights; custom tilt hood; detailed engine; MIP gears; custom diff gears; Black Magic 550 pulling motor; Pro-Line rims; and more! Wild ride!

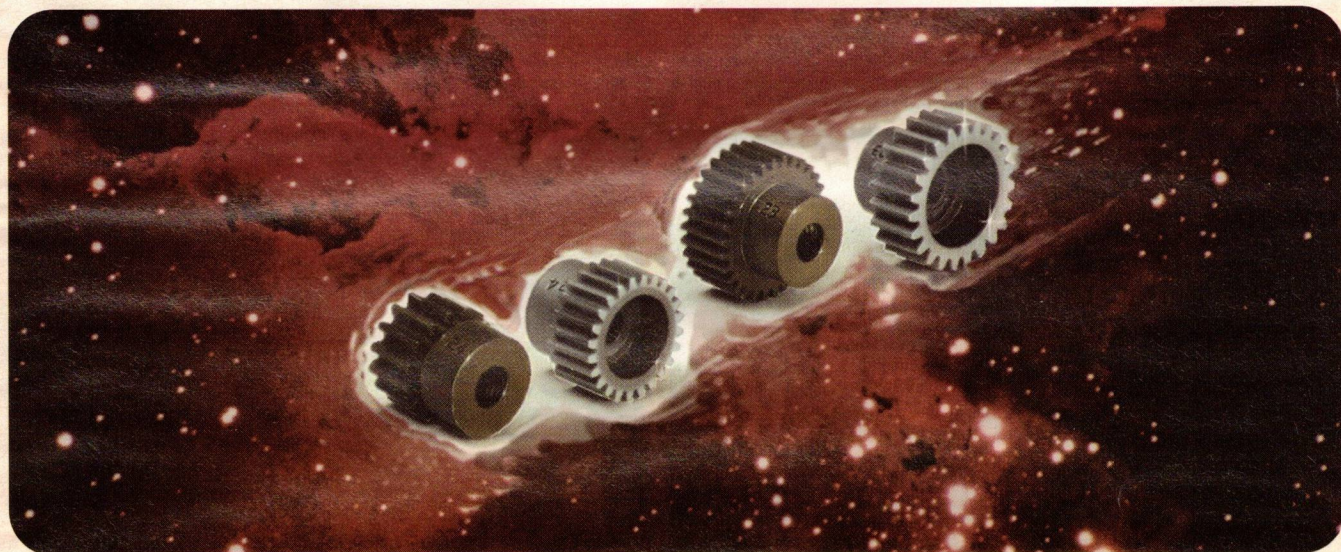


Rick Grant, from Colorado, sends us this photo of three top onroad trucks from the Hobby City Onroad Truck Series in Auckland, New Zealand. These Pro-Line Teamsters feature the Nissan Hardbody, Deep Dish chrome wheels, and Striker tires on front and rear. Racing is done on asphalt in New Zealand.



Spicy paint job on this Kyosho Raider from Tomas Jirku, of Mississauga, Ontario. Tomas says even though it is a three-year-old car, the Race Prep ultrastock motor and Novak ESC really make it go. He's added bearings, CRP rims, Associated and Yokomo tires, oil-filled shocks, and a Parma Ferrari 348T body.

# EXPERIENCE THE SPEED OF LITE.



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### **Manufactured like no other.**

Not a crude extrusion or casting, our space age computer generated machining cuts 48 and 64 pitch gears from solid billet aluminum and steel, allowing exacting tooth contour that, until now, was unattainable. Result? Platinum operation is amazingly quiet and vibration free.

### **Lighter than no other.**

In fact, Platinum steel pinions average a **40% lower rotating mass - the lowest in the industry!** Platinum Lite aluminums are a whopping **77% lighter than steel gears!** It doesn't take a rocket scientist to figure the awesome advantage here!

### **Metal Impregnated like no other.**

Platinum steel pinions are coated with **Stealthcoat**. No other manufacturer has it. **Friction is cut up to 68%. Surface life increase 25 times, on average.** Platinum Lite aluminums are hard coated with our own unique formula to provide planet hopping performance at the ultra high warp speeds today's motors dish out!

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Sneak past the competition with the stealth-like quietness of Hyperdrive's Platinum series pinions.

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A Wild Child, from Michael Ford, of Visalia, California is a Blackfoot with Andy's body, oil-filled shocks, Sees aluminum wheels, Thorp rear end, gears, dogbones, and more. The motor is a Race Prep, with Futaba radio gear and ESC. Mike says it's good-looking, and fast too!



Here's a cool cat in a Wild Thing, from James Herron, of Maryville, Tennessee. His truck is a Clodbuster, with a Futaba radio, two stock motors, and all decals were hand-cut. James says it is a truck that lives up to its name.



This 1940 Monster Ford Coupe is from John Monteiro, of Santa Clara, California. Under the body is a JR-X2 with Pro-Line's conversion kit and Duratrax tires. Control is from a Futaba radio and custom-made ESC, and the motor is a Twister.



Doug Clark's Clodbuster is pulling a homemade trailer that Doug built from scraps in his shop. The undercarriage is hardwood from an old hockey stick, and the axles were made from a lawn ornament and tires and rims were off an old RC10.



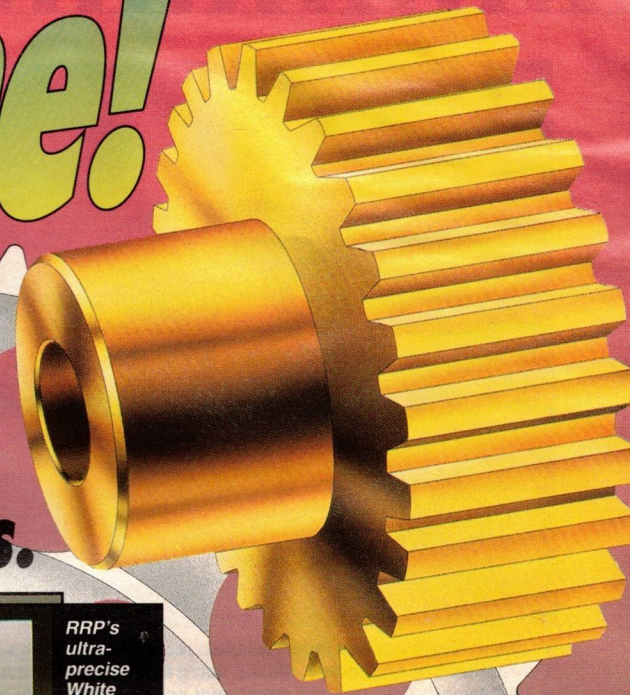
Tom Rutkowski's Monster Beetle has Pro-Line street tires, and 14 other tires. Bearings, a Robinson Ball Diff, and Modified Trinity motor, plus competition shocks add up to a potent package. Tom's from Glen Ellyn, Illinois.



Here's a realistic Blackfoot with Beetle rims, bearings, a Futaba radio and ESC, Thorp Dirt Burner rear end, Twister motor, RC10 shocks, JG shock towers and too much other stuff to mention. The pinstripes and front grille, and the rest of the paint was all done by its owner, Big Bill Loeffler, of California, now stationed in Germany. Neat driver is Big Bill himself!

# Awesome!

## The World's Finest Gears And Accessories Are From Robinson Racing Products.



RRP's Super Spurs are half the thickness of standard spurs, for less friction and a lower rotating mass, and that means better acceleration and a higher top speed!

48 pitch are available in 72, 75, 78, 81, 85, 87, 90 and 93 tooth sizes. 64 pitch are available in 96, 100, 104, 108, 115 and 125 tooth sizes.

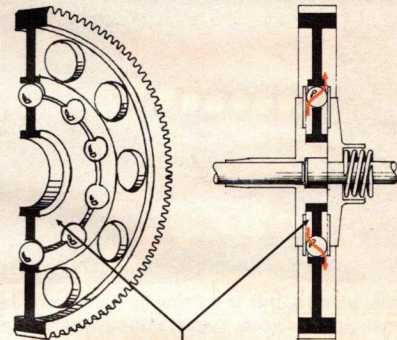
RRP Super Spurs will definitely "put you ahead of the pack!"



RRP's New super thin Super Spur

RRP's ultra-precise White Machined Spur

Robinson Racing's unique Grease Pocket has been designed into all RRP diff gears.



Calculated Grease Pocket configuration directs a precise flow of lubrication around 10 diff balls for the continuous elimination of abrasive dirt.

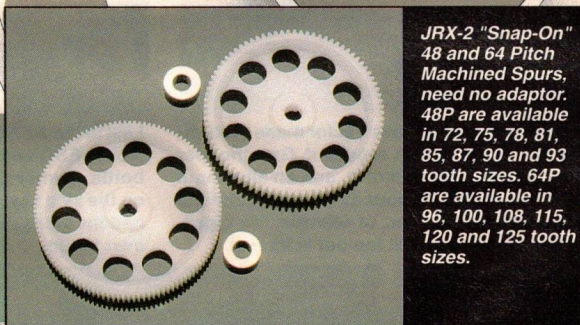
### 93 TOOTH SPUR GEAR

| PINION | GEAR RATIO |
|--------|------------|
| 12     | 7.75       |
| 13     | 7.15       |
| 14     | 6.64       |
| 15     | 6.20       |
| 16     | 5.81       |
| 17     | 5.47       |
| 18     | 5.16       |
| 19     | 4.89       |
| 20     | 4.65       |
| 21     | 4.42       |
| 22     | 4.22       |
| 23     | 4.04       |
| 24     | 3.87       |
| 25     | 3.72       |
| 26     | 3.57       |



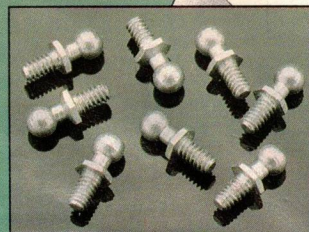
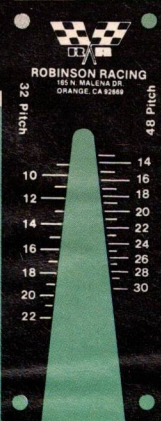
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All RRP spur gears with a handy gear ratio chart for that gear.



JRX-2 "Snap-On" 48 and 64 Pitch Machined Spurs, need no adaptor. 48P are available in 72, 75, 78, 81, 85, 87, 90 and 93 tooth sizes. 64P are available in 96, 100, 108, 115, 120 and 125 tooth sizes.

RRP's Gear Checker eliminates tooth counting. Works on 32, 48 and 64 pitch pinions. #RRP-0250

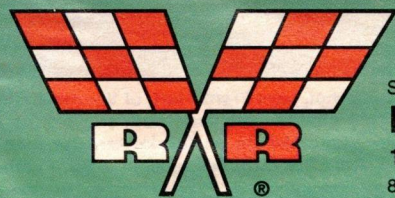


NEW Solid Titanium Ball Ends are twice as strong as steel and 1/3 the weight!

Available in sets of four #RRP-2014 and twelve #RRP-2015



32 Pitch Pinion Gears Available in 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 19 tooth sizes.



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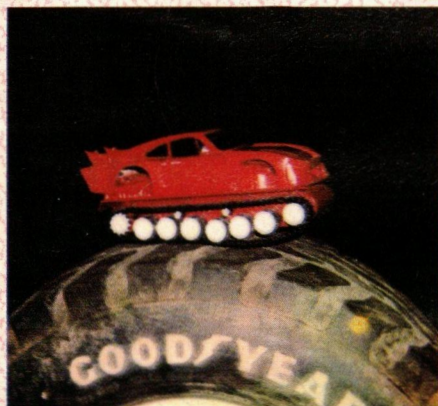
8 Page Catalog \$2.00 U.S.A. & Canada, All Others \$3.00 (U.S. Funds Only). Stickers, T-Shirts & Sweatshirts Available.



Richard Petty's Pontiac racer has been recreated in 1/10th scale by Leon Fahrenthold, of Anchorage, Alaska, using a Pro-Line Grand Am body over a TRC Lynx II Elite chassis. Additional equipment include a Tekin ESC, Futaba radio, and a 12-turn Single Reedy Blue Dot for speed.



Another Grand National racer, this one Harry Gant's Bandit Olds. Under the body is a BoLink Eliminator Sport chassis with a Speedworks Monster Mash motor, Futaba ESC, bearings, Losi 64-pitch gears, Race Prep Pro Connectors, and TRC tires. Owner is Joe Waldschmidt, of Wheaton, Illinois.



A real bizarro, this is a Porsche Tank from Jay Benefield, of Hixson, Texas, who says he took an old Porsche car and used the body on a Sherman Tank from Radio Shack. Jay painted the whole thing red, and as he says, "It turned out great."



Next in bizarro class is this tractor made of aluminum bar stock with a modified Grasshopper tranny, Monster Mash motor, and an aluminum sled. It has pulled 75 pounds on grass, and the owner, Richard Hooker, of Stanton, Michigan, says the weight box will top out at 25 feet.



Last in the world of the bizarre is this RC10 with a Novak ESC and a new body made out of a soda bottle. Owner Gordon Miller says the greeting on the side says, "Saddam, kiss my missile." Too bad the war's over, Gordie; you could send this over to him.



Action shot of the month: Jim Tevis, of Elverson, Pennsylvania, says his Blackfoot drove up a tree and flipped onto its wheels. Unfortunately, the picture of the landing didn't come out. Still, pretty cool photo, Jim.



These Ferrari F-40 racers are *real* hot, says Frank Hart, of Voorheesville, New York. The RC10L and TMS chassis cars were both stolen from a carpet track he helps run on weekends! Be on the lookout for them. Stormer racing motor mount, Pro-Line front suspension arms, Futaba radio. That is all.

 **Schumacher**

# SHOTGUN

**The Serious Contender**

2 WD Truck  
Based on our 2 WD European  
Championship winning COUGAR



The SHOTGUN is a true off road racing machine. It has been designed so that adjustments can be made to suit different track conditions and driving styles, enabling you to be competitive at all times.

Straight forward modular construction and clear concise instructions will give experts and beginners alike superb reliability and great performance. Have a blast! Enjoy your racing!

The kit comes with NEW stronger rear wishbones, hub carriers and rear bulkhead; new nickel plated long front and rear shocks, a clear chassis cover to keep the dirt out and an easily adjustable body mounting kit.  
14 ball diff. and Hi Torque Kevlar Drive Belt  
48 D.P. gears

## Tune up parts for the SHOTGUN

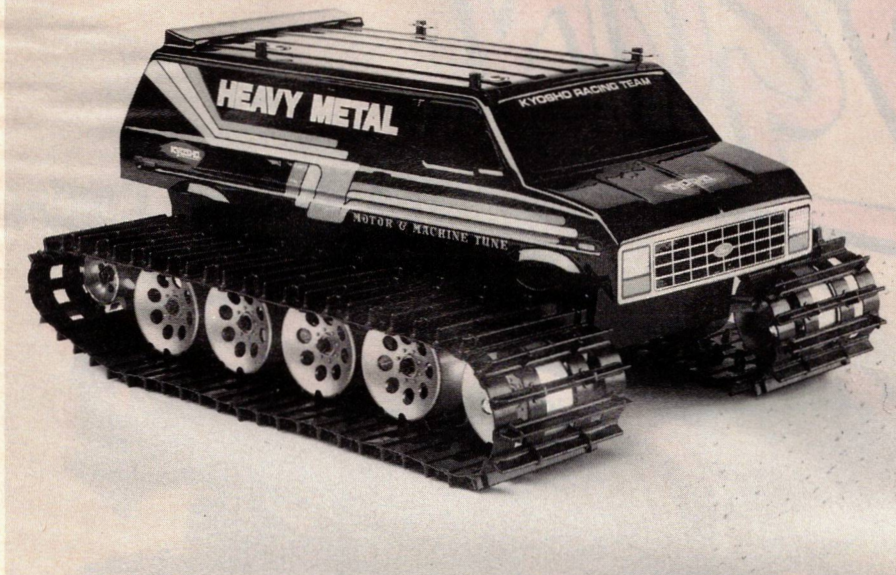
|        |                                     |
|--------|-------------------------------------|
| U745S  | HEX Super Diff.                     |
| U366W  | Aluminum Eccentric Bearing Housings |
| U743Q  | Saddle pack tray & straps           |
| U768P  | Long Spring Tuning Kit (4 pair)     |
| U 739M | Rear Anti-Sway bar kit              |
| U780B  | (8) sealed 8x16x5 ball bearings     |
| U781 C | Aluminum Trans. Housing             |



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**Performance and technology that YOU CAN BUY!**

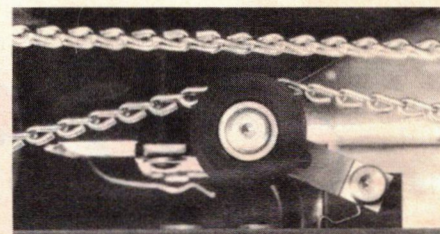
# What's New



## HEAVY METAL

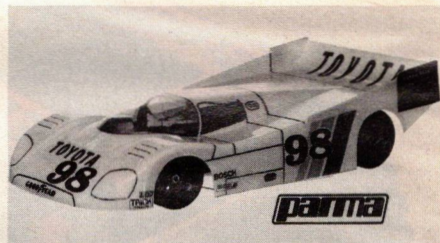
A unique 1/10th-scale electric monster tank is more than just big—it's an unstoppable juggernaut! The one-of-a-kind Caterpillar tracks on bogey wheels will pull the Heavy Metal over and through dirt, sand, rocks,

snow, or car hulks with ease. The kit comes with a pre-assembled gearbox with variable-speed, two 380-size electric motors, a speed control, and decals. Optional ball bearings are also available. Distributed by Great Planes Model Co.



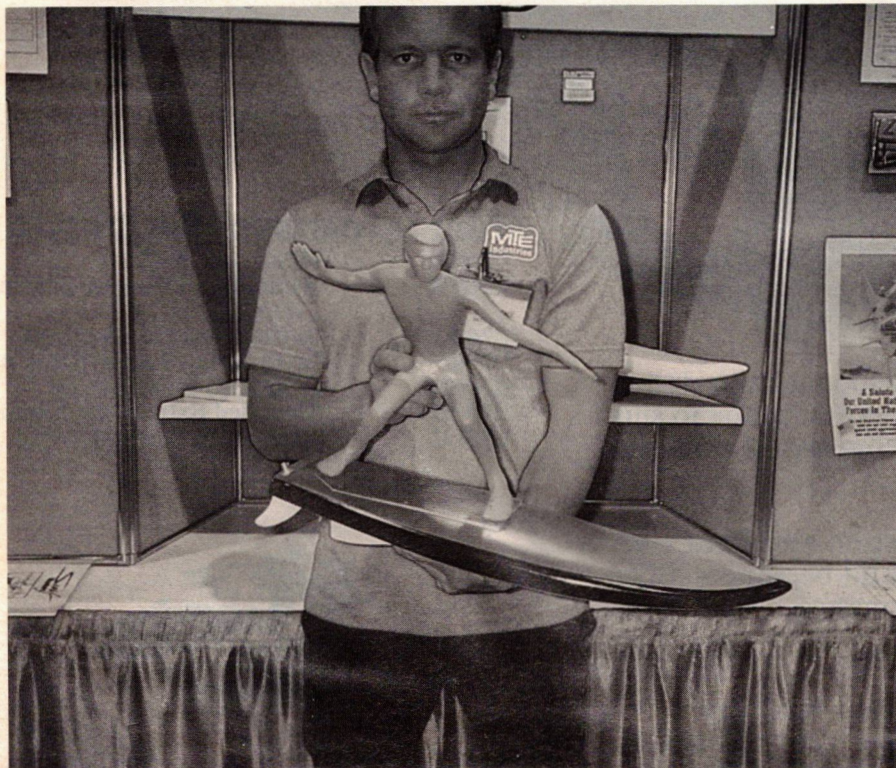
## ON TRACK TENSIONER

Here's an item for the Optima Mid, Slingshot, Schumacher Cat, Dominator, and Lazer. The new On Track Tensioner is a high-precision, spring-loaded chain and belt tensioner machined from lightweight, anodized aluminum. The Tensioner lengthens chain life, stretches the chain evenly, helps prevent chain from derailing, and saves sprockets. This one device can end your chandrive woes! See your hobby shop or write. On Track Enterprises, Box 1635, San Jose, California 95109. Price of the Tensioner is a low \$29.95.



## 1/8th GROUP C RACER

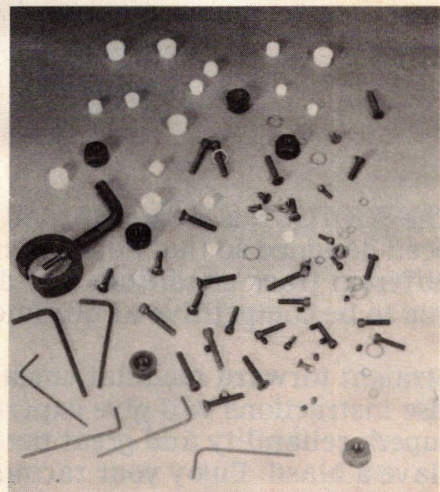
Windtunnel tested and detail-molded, Parma's Group C body has been scaled up to 1/8th scale size, and maintains all the aerodynamic qualities of the 1/10th version. Perfect for all 1/8th chassis, the Group C racer can make you come home a winner!



## R/C SURFER

Whoa, dude! It's not an R/C car, but it sure looks like fun this summer! MTE Industries is manufacturing this realistic-looking, electric-powered surfer designed to ride one- to three-foot waves. The Surfmaster has a 540

electric motor, a manual speed control, a surfing dude, and all necessary hardware. A two-channel radio and a 7.2-volt saddlepack are required. And coming soon, a smaller 380-power model for lakes, ponds, and swimming pools. Cowabunga!



## ASSORTED HARDWARE

BoLink has gathered together a wide assortment of nuts, bolts, and other hardware that will fit most 1/10th and 1/12th American R/C cars. Each size screw, nut or other item is packed separately, so you don't have to spend a fortune to make a small repair. All hardware is high quality, and most screws are socket type. Most nuts are available in steel, nylon, and nylon insert locking.

# HOT

# TRAXXAS TOUGH TRUCKS



## BLUE Eagle

SLIPPER TRANSMISSION

NEW

National championship-winning performance, without compromise, makes the Blue Eagle your ticket to victory. Eagle is noticeably different from the rest, and it **is** a winner. Kits come totally tricked out with the racing gear you expect (such as full ball bearings, T-6 aluminum racing shocks, graphite towers, 48-pitch gears) plus many new-tech items which set it apart from the crowd. The unique graphite chassis is molded with ridges and coated for extra strength. Specially-designed long suspension arms, a new offset wheel design, and long shocks combine for an unbelievable amount of suspension travel. The precision ball differential stays sealed in the gearbox away from dirt; yet, it can be adjusted in seconds, right on the starting line! Plus, the new Pro Series™ slipper clutch transmission delivers awesome acceleration and control. Tom Owens' national-championship victory proves that Blue Eagle allows you to run with the pack without being just another copy.

Traxxas knows trucks. Traxxas has more trucks for more people, and more different applications than anybody. And nobody builds 'em stronger. Space-age materials combine with innovative design to produce a superior truck, which is built to withstand the most torturous abuse. All Traxxas trucks have turnbuckle adjusted, 4-wheel, independent suspension with unbreakable suspension arms, tough metal-finish wheels, and heavy-duty telescoping drive shafts. All Traxxas truck bodies are fully detailed with colorful graphics and chrome decals. Low maintenance and parts designed not to break mean you and your Traxxas truck are always ready to have FUN.

## THE PRICE AND PERFORMANCE LEADER

Only TRAXXAS, with its enormous international manufacturing facilities, can bring together so much truck for such a low price. Hawk is the best all-around truck, designed to perform well in any environment. The sturdy construction, quality materials, and tough planetary metal-gear differential mean Hawk is ready to take on the demanding terrain found in neighborhoods and backyards just like yours. If racing is your game, Hawk is plenty sophisticated with tunable, high-volume, oil-filled shocks; low profile racing tires; and a tremendous range of gear ratio selections. Plus, all TRX racing and performance accessories are compatible with Hawk in order to perfectly tailor it to your racing needs. With all of these features, and a kit which includes the motor and speed control, Hawk is the clear winner in the "Biggest Bang for Your Buck" department. See it now at your favorite hobby shop.



# NEW

# HAWK

**BOTH SLEDGEHAMMER AND HAWK ARE AVAILABLE  
READY TO RUN WITH RADIO SYSTEM.**

## HAMMER THE COMPETITION

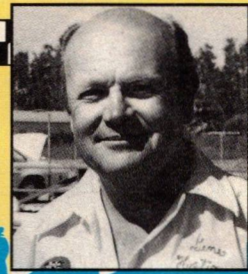


# SLEDGEHAMMER

Sledgehammer rules supreme in the car-crushing arena with huge 5 1/4 inch mud tires, the highest usable ground clearance and 8 (yes, eight!) high-volume, oil-filled shocks to cushion the pounding. Unlike toy or friction shocks, these are fully tunable and can be rebuilt in order to maintain peak performance. Nothing else wheelies like a Sledgehammer Model 1806 which comes equipped with a forward/reverse electronic speed control. The super-tough planetary gear differential puts positive power to the ground for instant throttle response. Sledgehammer's curb-jumping, wheelie-popping, tail-spinning acrobatics attracts a crowd wherever it goes, pushing its fun factor rating clear off the scale! The Sledgehammer is available at hobby shops everywhere, so go see one today.

# TRAXXAS

12150 Shiloh Rd. Dallas, TX 75228



BY GENE HUSTING

# 5th FLORIDA WINTER CHAMPIONSHIPS

**Sponsored by Team Losi,  
the Fifth Florida Winter  
Championships drew a  
large crowd of racers**

**S**tart with 450 entries, add some Florida sunshine, a Georgia clay 1/10 offroad track and racers from all over the USA, as well as England, Germany, Canada and Puerto Rico, and you've got the makings of the Fifth Annual Florida Winter Championships. This annual event has grown to be the biggest offroad race of the year on the East Coast. The event was sponsored by Team Losi, hosted by the West Coast (Florida) R/C Club, and held at Lake Park in Tampa, Florida. Race Director Tim Raskin and the whole club did a super job running this giant race on time, and we were even treated to some great guest announcing by the Mouth of the South, Bob Hoesch.

Generally, in races this big, we like to get to the track a few days early to get in as much practice time as possible. This time, that plan did not work out. We were in the process of finishing our new RC10 ST (Stadium Truck) and we were short on time. Curtis Husting had made all the necessary prototype parts for three trucks, but the production wheels, A-arms and the body weren't finished until four days before we left for Tampa, and we didn't receive the tires from Pro-Line until the day before we left. The three trucks would be raced by Curtis, Cliff Lett and Butch Kloeber. Butch never even saw the truck until he got to Florida! None of the trucks had been raced before. It was time to see if all the hard



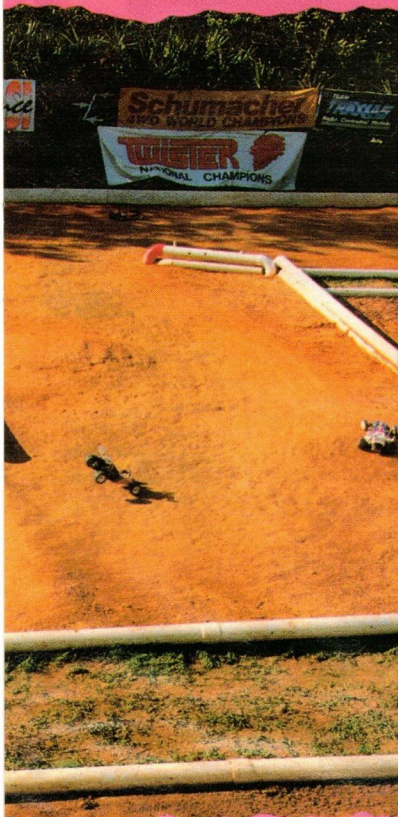
work put in by Cliff, Roger Curtis and Curtis Husting would pay off. It was also time to keep our fingers crossed and pray a lot!

The track is in a big park with all kinds of room for pit area and tents. We arrived with only one day of practice left and with 450 guys practicing, there isn't much practice time. The program was set up so that everyone would get three qualifiers. There were 2WD Stock, 2WD Modified, 2WD Truck and 4WD Modified classes. Something for everyone. Friday and Saturday was qualifying with the mains on Sunday. Friday's qualifying turned out to be like a practice day, but nobody knew it at the time. The track was re-groomed Friday night and it rained that night, and Saturday the track had so much traction the times were a full lap quicker on Saturday than on Friday. As an example, Friday, Rick Vehlow had qualified into fourth spot in the 2WD A Main. He had problems on Saturday and his fourth spot Friday time put him in the E Main on Sunday! There were a lot of guys scattered through the B, C and D Mains who are normally in the A mains.

They did something different this year. There would be three A Mains in 2WD and 4WD, with the best two finishers in each class counting. Everybody liked this idea. If you got hammered or pounded in a heat you could throw that one out. It took more of the luck out of it. I think this system should be used at all big races.



**Curtis Husting, Mike Reedy and Butch Kloeber are deciding which chassis color is best, green or hot pink. Everyone knows Reedy will pick green! At right, Cliff Lett's RC10 ST with Novak ESC and receiver, and Airtronic radio. Pro-Line supplied the tires for Cliff's winning truck.**



**An auspicious start for the RC10 ST stadium truck. Two trucks in the main, and they finished 1-2. Cliff Lett took first and Butch Kloeber second, both using Reedy motors. The Moo paint job on Cliff's truck is all the rage in Southern California now.**



At top, with 450 entries, there was always a line of drivers waiting to run. Above, the custom-built six-wheeler monster truck was made by Morris Kohl from Tampa. At right, one of the nice people, Cecil Schumacher from England, who has always been an innovator. Cecil manufactures the popular Schumacher line

of trucks and cars. Below, the last time I talked to Jay Halsey at a race he was struggling to get up to speed with his JR-X2. I told him that he'd get there sooner or later, but that I was hoping for later! He instead took the sooner route; Jay was top qualifier with his JRX-T truck.



#### 2WD B-MAIN

Cliff Lett worked his way up to first spot and then held it to the checkered flag, closely followed by Carlos Gonzales and Gil Losi Jr.

#### 2WD B-MAIN RESULTS

1. Cliff Lett
2. Carlos Gonzales
3. Gil Losi Jr.
4. Brad Reelfs
5. Frosty St. Clair
6. Erik Andreaseen
7. Chris Allec
8. John Koonce
9. Curtis Husting
10. Steve Dunn

#### FINAL 2WD A-MAIN

After the first two 2WD A Mains, Mark Pavidis looked like he had an insurmountable lead. Mark had won the first A Main and got a second place in the second A Main. Only two drivers had a chance to beat him



going into the final Main. J.D. Beckwith had won the second main, and another win would give him the championship outright. Jack Johnson had a second place in the first main, and a win would give him a chance, depending on what Beckwith and Pavidis did in the final Main. It wasn't over yet!

At the sound of the horn, J.D. Beckwith jumped in the lead down the straightaway, but left just enough room for Rick Hohwart to tuck inside on the sweeper and Rick took over the lead. But in turn 3, Rick put just a little too much power down, got sideways and J.D. drove past, as well as Derek Furutani and Mark Pavidis.

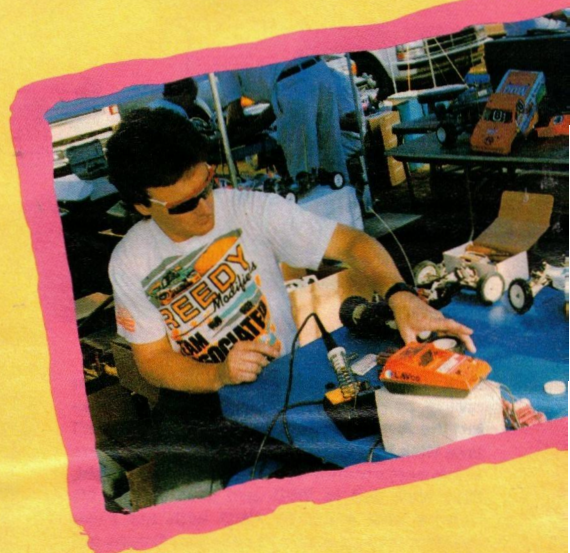
A couple of laps later Mark got a little sideways coming off a corner, and Hohwart, who was right on his bumper, tapped Mark and Mark was passed by four cars. J.D. continued to lead and was slowly pulling away from the field. J.D. had a lot of motor in the car, but he also had it under control. Hohwart was able to get by Furutani and take over second. The first three cars were spread out quite a bit now and stayed that way to the checkered flag. J.D. added another big win to his list with first overall, Pavidis second overall, and Hohwart third overall.

#### 2WD TRUCK B MAIN

Dennis Taylor took the early lead with Curtis Husting on the move. Curtis passed Eustace Moore, then Mike Painter, and by the fifth lap he was 10 feet behind Taylor and closing. But then in passing a backmarker,



At top, the Lake Park area where the race was held had lots of parking and pit room, including tents. Above, J.D. Beckwith and Derek Furutani discuss strategies for their coming mains. Both were very fast. At right, Cliff Lett sits with nothing to do as he awaits the A-main for modified trucks. The result was certainly worth the wait for Cliff.





he got tapped into the wall and an upper link got knocked off, dropping him out. Taylor went on to win, with Moore passing Painter to take second place.

#### 2WD TRUCK B MAIN RESULTS

1. Dennis Taylor
2. Eustace Moore
3. Mike Painter
4. Ian Rutledge
5. Tom Owens
6. Dave Vince Sr.
7. Carl Zamiboni
8. Mike Hamilton
9. Cameron Kellogg
10. Curtis Husting

#### 2WD TRUCK A MAIN

Everyone who has seen trucks race know it's a totally different kind of happening. You can use more power; they're wide, so they take up more of the track; they feel easier to drive fast; and they're just plain more fun to drive.

The drivers were introduced to the standing room only crowd, the cars lined up, the go signal sounded and we were under way. Jay Halsey was two feet off the inside wall going down the straightaway heading toward the RH turn onto the sweeper and Cliff Lett was on the outside as far as he could get away from Jack Johnson in the middle.

Cliff started pulling ahead, so Jack pulled behind Cliff, while Jay kept his inside line. When they got to the sweeper, Cliff stayed high trying to keep away from everyone else. Jack wanted the inside line, so he dove down from the outside all the way to the inside. The problem was he cut Jay off! The two of them tangled and spun sideways. All you could hear was a lot of yelling and booing going on.

Jay recovered quickly and held onto fourth, but Cliff now had about a 10-foot lead over Butch Kloeber. Normally 10 feet is not enough, but Cliff was flying and that lead continued to grow. A couple laps later, Butch got bumped by a backmarker and Jay closed up on his bumper. I've never seen Butch have so much trouble in traffic. Another backmarker spun him out again and Jay went by to take over second.

While all this was going on, Cliff was gone. He was having one of those perfect runs that look all too easy. All the action for the crowd was between Jay and Butch. Butch was getting closer and closer to Jay. There was always a lot of screaming going on from the crowd when one of them passed the other.

Butch closed up on Jay and then it was Jay's turn to get bitten by a backmarker. This let Butch jump back into second with a comfortable lead over Brian Peterson who followed in third. Cliff went on to win by half a lap with Butch following in second about 10 feet ahead of Brian. It was definitely an exciting race.

#### 2WD TRUCK A MAIN RESULTS

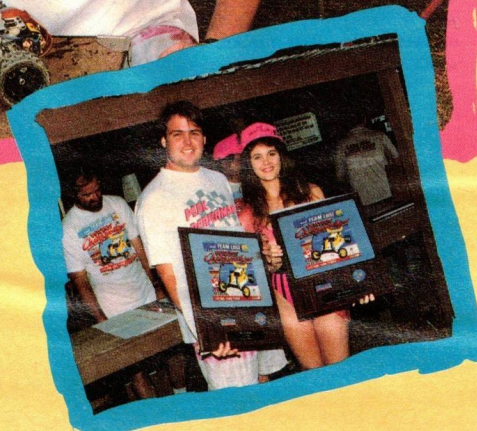
| PLACE | RACER         | CAR     | MOTOR |
|-------|---------------|---------|-------|
| 1.    | Cliff Lett    | RC10 ST | Reedy |
| 2.    | Butch Kloeber | RC10 ST | Reedy |



Steve Dunn's Pro Radiant car (above) featured Novak ESC, Sanyo 1700 SCRs, Losi X-pattern tires, and of course, a Race Prep motor. At left, Steve Dunn was very impressive as he drove to victory in the 4WD mod class with his Race Prep-powered car. Is that a Skull Racing Team T-shirt I see?



Rick Hohwart took about six months off from racing, came back and had a tough time making the A-main at club races at RCH. It didn't take Rick long to get back to his winning form as his performance in Florida proved. At right, Rick took 3rd in 2WD and then added TQ honors and a 3rd in 4WD with his Peak Performance-powered Kyosho car. Trophy girl Lelania got quite a workout this day.



3. Brian Peterson A & L Twister
4. Jay Halsey JRXT Revolution
5. Kyle Reed JRXT Revolution
6. Mike Meighen Traxxas B & R
7. Mike Dunn JRXT Race Prep
8. Gary Kyes JRXT Revolution
9. J.R. Mitch Traxxas B & R
10. Jack Johnson JRXT Revolution

#### 4WD B MAIN

Brian Kinwald ran away with this race winning by half a lap over John Koonce in second and Chris Allec following in third. Brian's time was quick enough to place him second in the A Final. He was another one of those victims of the second day qualifiers.

#### 4WD B MAIN RESULTS

1. Brian Kinwald
2. John Koonce
3. Chris Allec
4. Rick Vehlow
5. Kevin Moore
6. Jurgen Lautenbach
7. Carlos Gonzales
8. Brad Reelfs
9. Mark Pavidis
10. Frosty St. Clair

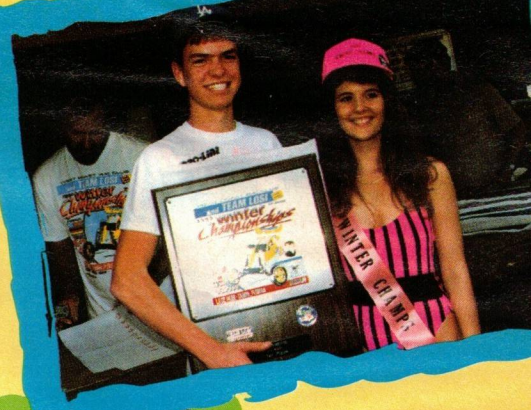
#### FINAL 4WD A MAIN

Going into this Final of the four A Mains, it looked like it was going to be a shootout between Steve Dunn, with a previous first and second place finish, and Rick Hohwart with a first and third. These two drivers have totally different driving styles. Steve is a pedal-to-the-metal type driver, the car always sideways, dirt flying everywhere and a "look out I'm coming through" attitude. They're equally fast, but Rick is a totally different kind of driver. His car is always under control, never sideways, always takes the shortest way around the track, super smooth.

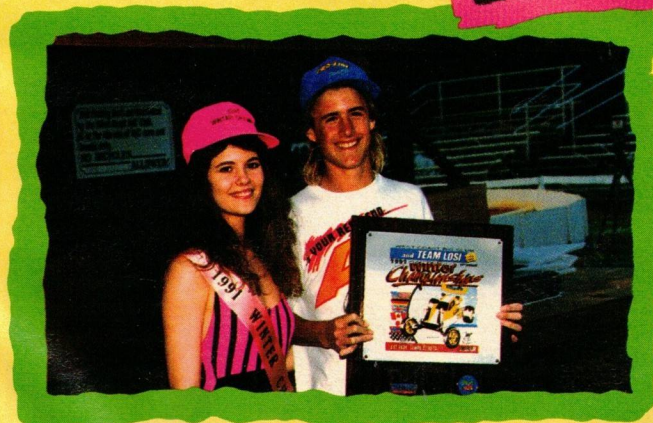
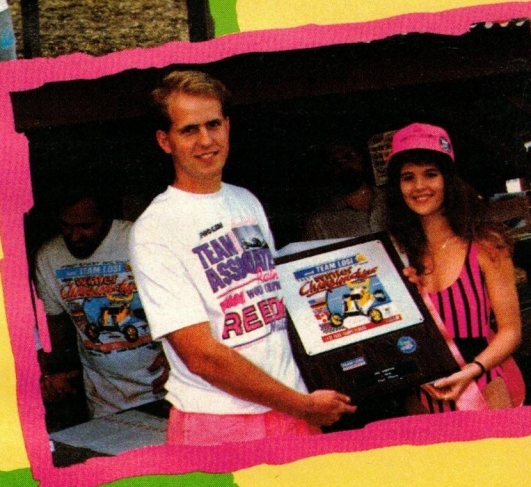
The race started with Rick Hohwart in the lead and closely followed by Steve Dunn, but on lap 2 as Rick slowed to make turn 2, Steve's more aggressive style took him right over the top of Rick's car and into first place. Rick started to drop back but there were three other cars closing in on Steve. Brent Wallace, Gil Losi Jr., and Kris Moore were freight-training it towards Steve.

It took about three minutes, but Brent finally squeezed by to take the win just 1-1/2 seconds ahead of Steve, with Gil and Kris a second behind. Steve's first and second place finishes gave him the overall win with Brent Wallace second and Rick Hohwart third.

At right, J.D. Beckwith wins another big one with his Reedy-powered RC10, taking 1st in 2WD modified class.



Above, Team Losi driver, Mike Tuntakit, dominated 2WD stock class with his JR-X2, taking TQ honors and winning the A-main. Lelania Cher, Miss Winter Champs, presented trophies. At right, Lelania hands a trophy for 2nd in 2WD Modified to Mark Pavidis, who drove a Reedy-powered RC10. Below, Lelania with Brian Peterson, who took 3rd in the tough 2WD Truck A-main with his Twister-powered A&L truck.



#### 4WD FINAL RESULTS

| PLACE | RACER           | PTS | CAR        | MOTOR            |
|-------|-----------------|-----|------------|------------------|
| 1.    | Steve Dunn      | 3   | Radiant    | Race Prep        |
| 2.    | Brent Wallace   | 4   | Schumacher | Twister          |
| 3.    | Rick Hohwart    | 4   | Kyosho     | Peak Performance |
| 4.    | Gil Losi Jr.    | 5   | Kyosho     | Revolution       |
| 5.    | Jonathan Morgan | 9   | Schumacher | Reedy            |
| 6.    | Kris Moore      | 10  | Kyosho     | Twister          |
| 7.    | Derek Furutani  | 12  | Schumacher | Peak Performance |
| 8.    | Jon Anderson    | 17  | Kyosho     | Revolution       |
| 9.    | Matt Ledger     | 17  | —          | —                |
| 10.   | Darrin Stump    | 17  | Kyosho     | Trinity          |

#### 2WD-FINAL RESULTS

| PLACE | RACER          | PTS | CAR        | MOTOR            |
|-------|----------------|-----|------------|------------------|
| 1.    | J.D. Beckwith  | 2   | RC10       | Reedy            |
| 2.    | Mark Pavidis   | 3   | RC10       | Reedy            |
| 3.    | Rick Hohwart   | 5   | RC10       | Peak Performance |
| 4.    | Derek Furutani | 7   | RC10       | Peak Performance |
| 5.    | Kyle Reed      | 8   | JR-X2      | Revolution       |
| 6.    | Darrin Stump   | 9   | JR-X2      | Revolution       |
| 7.    | Jack Johnson   | 9   | JR-X2      | Revolution       |
| 8.    | Kris Moore     | 14  | Kyosho     | Twister          |
| 9.    | Jay Halsey     | 15  | JR-X2      | Revolution       |
| 10.   | Kevin Moore    | 18  | Schumacher | LRP              |

# HYPHER 10SC

**The original belt drive road racer is back as a lighter, improved version**

BY RICH HEMSTREET

**H**yperdrive Racing has introduced their newest 1/10-scale onroad machine, the H10SC, the car that Ralph Burch Jr. drives at all major 1/10-scale events. The H10SC is built on the refined foundation of the original Hyper 10 car, and includes all the graphite, aluminum and Delrin parts necessary to get the car on the track. A full set of ball bearings and Hyperbite wheels and tires are also included. All you have to add is a body, wing mounts, wing and electrics. I was able to get my hands on one of the earliest H10SCs available and raced it at the 1990 R/C Thunderdrome. Since then I have raced the car on a variety of different tracks.

The H10SC features the unique four-ball T-bar that was originally introduced on the Hyper 10. This system doesn't depend on flexing graphite or fiberglass for suspension dampening or control. The rear suspension movement is controlled by three high quality, coil over, oil-filled shocks. The top shock on the H10SC is now attached to the front of the motor pod and goes forward to a shock mount in front of the battery box. By moving the top shock mount the side shocks could be lowered and relocated to outward posi-

tions. The side shocks now attach to a bracket that is bolted to the T-plate instead of being attached to the motor pod as on the original Hyper 10. These small shocks can be effectively adjusted to control the side-to-side movement of the rear pod. They provide very effective weight jacking by simply dialing the knurled ring on the shock. The new shock mounting system has drastically lowered the center of gravity of the car.

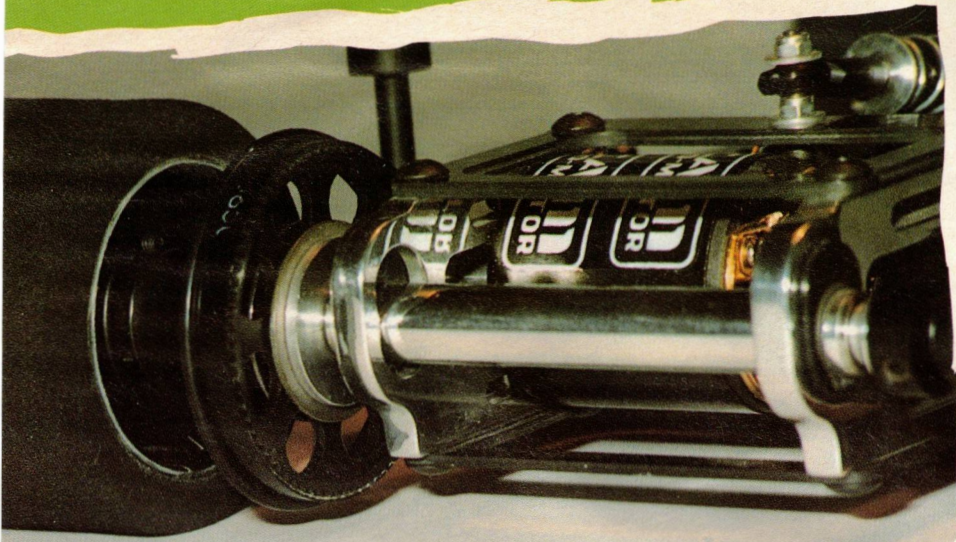
The front suspension on the H10SC uses a standard adjustable beam with fixed kingpins. The kingpins are longer than were used on the old car, which provides room for adding a piece of fuel tubing above the coil spring. The fuel tubing provides dampening while also giving a little more travel. The H10SC continues to use the heavy duty RC10-style steering blocks. One other item, the H10SC continues to use Hyperdrive's exclusive "no bump-steer" servo mounting system. A servo tray is attached to a flat spot on the beam axle. This way the servo, tie-rods and steering blocks move as a single unit when the caster is adjusted. I'm surprised nobody has copied this aspect of Hyperdrive design.



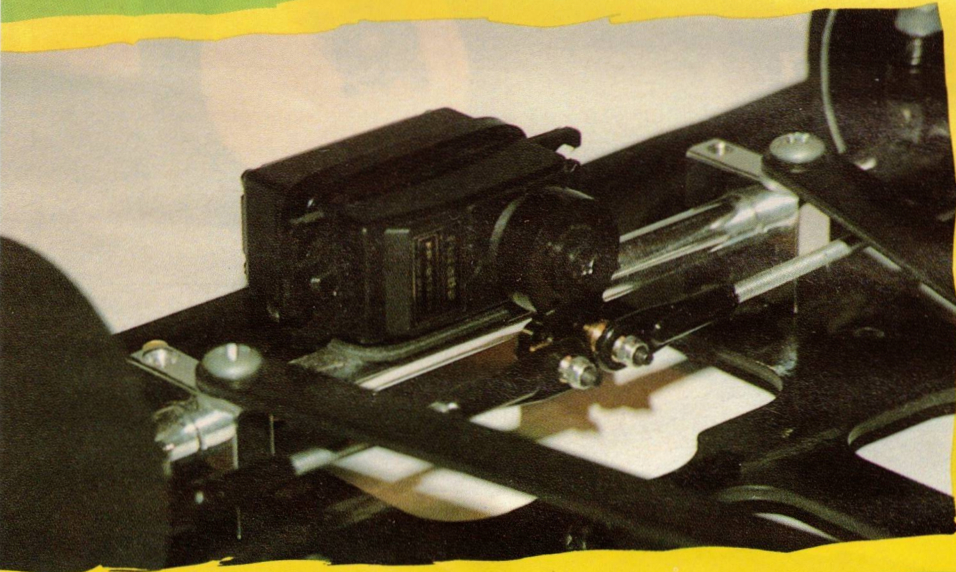
Above and left: The 10SC shown here has the BoLink '89 IROC Camaro body, CKW capped tires, and a Bud's Airflow wing as standard equipment for superspeedway contests.



Older Hyper 10 cars can be easily brought up to date with conversion parts from the 10SC. Newest version, the Hyper 10SE (Superspeedway) will be reviewed soon.



The rear axle tube on the 10SC keeps the bearings in perfect alignment.



Hyperdrive's exclusive "no bumpsteer" servo mounting system has the servo mounted on a tray that is attached to the axle (above and below).

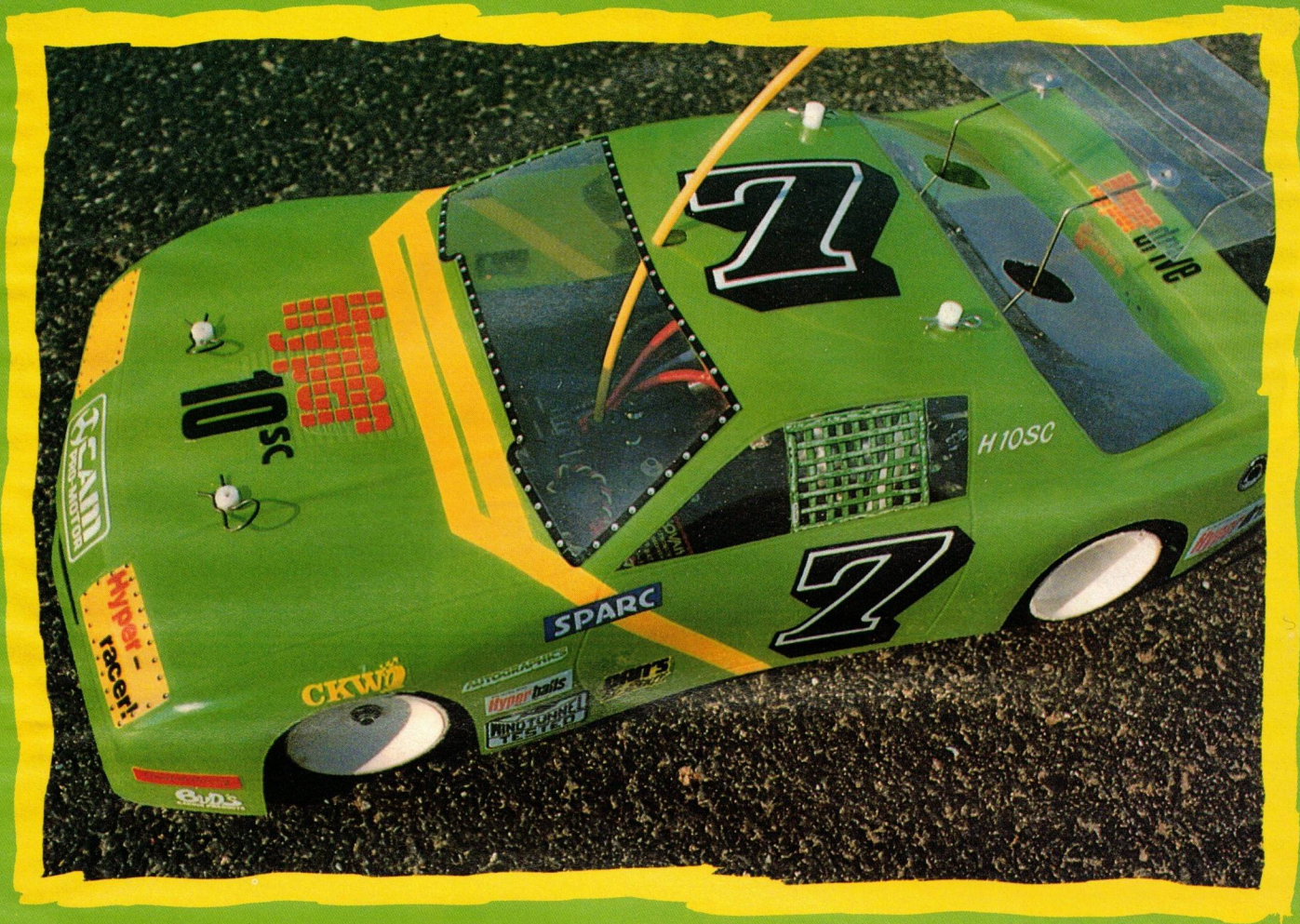


Also new on the H10SC are two new chassis stiffeners. These graphite pieces run from the front T-plate mounting bridge to the beam axle's holding blocks. This makes the front end of the car extremely rigid, which allows the front suspension to work, rather than permitting the front of the chassis to twist to absorb bumps. The Hyperdrive bumper continues to be a favorite of mine. This bumper has a lip that protects the front of the graphite chassis when you take on plow discs while cutting a corner too tight. The way I've been driving lately the bumper has probably saved me a chassis or two. Cheap insurance if you ask me.

A Hyperdrive "pro-style" diff is included with the kit. This diff is designed to accept the larger diff rings that Hyperdrive uses with their belt system. The diff rides in bearings that are mounted in a rear axle tube. By using this rear axle tube the bearings are kept in perfect alignment at all times. The axle tube is mounted in the motor pod on nylon ride height adjusters. A set of three adjusters are included with the kit, giving a total of five different rear axle positions. My biggest gripe about the H10SC is the difficulty I have had in getting these ride height adjusters to fit into the pod. I had this problem with the Hyper 10 and it continues to be a trouble spot. I have discussed this problem with Hyperdrive and I have been told that the ride-height adjusters are affected by temperature and humidity at the time they are molded and they don't always come out identically. I've never run into any that were too small, they have always been too tight a fit for me. But a little time spent with a hobby knife has been able to take care of the problem. The rear axle tube is held into place with three snap rings, so be prepared to buy or borrow a set of snap ring pliers when assembling the H10SC. Snap rings can be a nuisance without the proper tools, but they are a "snap" with the correct pliers.

The H10SC also includes a starter set of belts and pulleys. There are complete instructions included for the proper adjustment of the belts. I've been using the belts for the past two years now and I'm hooked. According to Snuffy Smith, Hyperdrive's owner, "The belts help to plant the rear of the car, making it even easier for beginner and intermediate level drivers to drive the car." However, the H10SC can be run with either the Hyperdrive belt system or with standard gears. The motor pod is centered and designed to mount the motor on either side.

What about the weight? Aren't Hyperdrive cars heavy? They used to be, but not anymore. Recently I was racing my H10SC with a stock car body on it and it weighed in at 42.3 ounces. And that was with a wing and a large, Tekin 700 speed control. The T-plate has been contoured to save weight. The chassis has larger cutouts, but it is stiffer than before because of the new stiffeners. The aluminum rear pod pieces have been narrowed and now use 6-32 hardware instead of 8-32 hardware. Wide Delrin hubs are standard on the H10SC. Optional narrow Delrin hubs are also available.

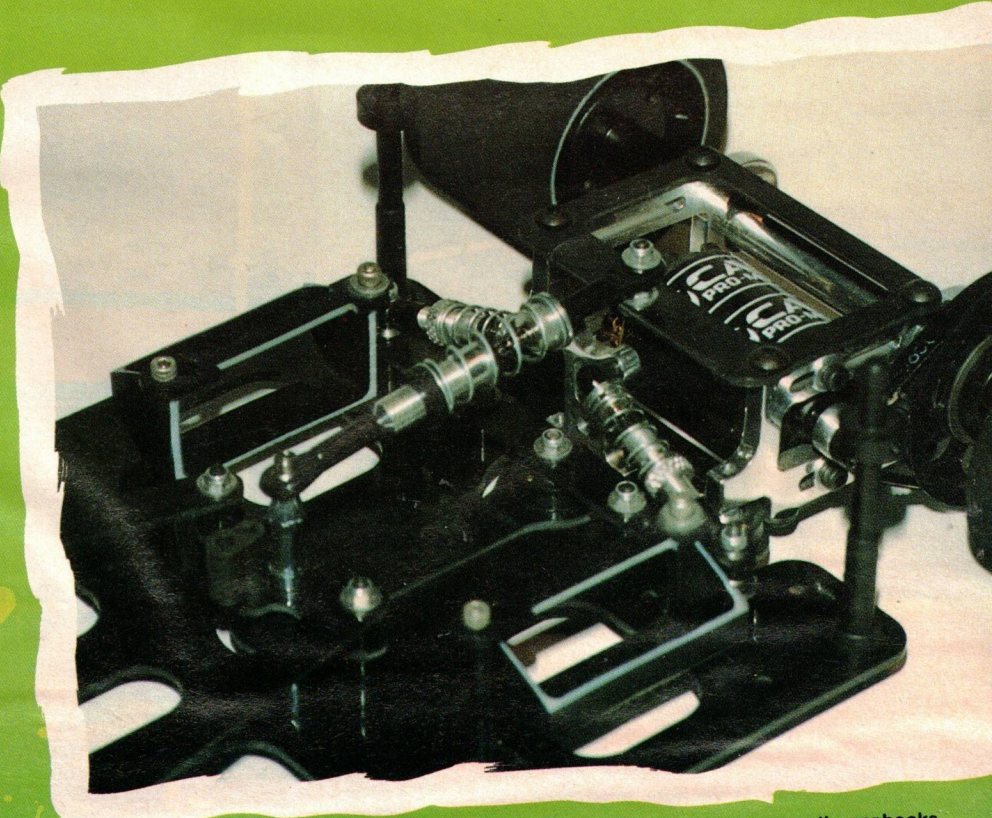


Throughout the H10SC kit you will notice Hyperdrive's commitment to quality. The glossy assembly manual is very clear and easy to follow. Other than using a hobby knife on a couple of the molded pieces (the ride height adjusters and the mounting holes on the mono-ball bases) everything fit without a hitch.

Hyperdrive has been very careful in designing the H10SC so that all the new parts can be bolted onto the original Hyper 10 with a minimum of hassle. The new shock mount conversion kit is highly recommended for the old Hyper 10. Also, Hyperdrive's optional quick-change battery system can be bolted right onto the H10SC for superspeedway or endurance racing. It's harder to design a car that can be updated, but it sure is easier for the owners of the older cars.

So far Hyperdrive has resisted the offset urge, instead they have stuck with the crossways battery mounting at the rear of the chassis. There are four sets of mounting holes for the battery boxes. By using these holes you can actually achieve the same weight offset found on some of the cars with the radical, left side only, battery mounting slots. The H10SC may not look as tricky as some of the oval burners, but it gets the job done.

I drove the H10SC at the R/C Thunderdrome for its initial outing. The car tracked



The new rear shock mount system lowers the center of gravity and improves the way the car hooks up on the track.

*Continued on page 81*



At top, left, Team Rancho's Funny Mud Buggy from Michigan. At top right, small truck really kicks up the mud in the bog. Above, the winner in the monster race and also the freestyle mud bog competition. At right, Insanity won the mud race, finishing in under two seconds.

# MONSTERS IN THE MUD

## Getting down and dirty in North Carolina

BY JACK WRIGHT

I recently had the opportunity to see the Big Boys run at the Winston-Salem Coliseum in Winston-Salem, North Carolina. The Camel Mud and Monster Series came roaring into town with the big guns leading the way. Trucks like Bigfoot, the Carolina Crusher, and the Grave Digger came rolling in, just to name a few, along with the Wild and Crazy Mudders. Just imagine 2000 hp in a lightweight buggy that covers a three-foot deep, 80-foot long mud hole in less than two seconds. In the monster races Bigfoot was the top qualifier but was eliminated in the first round, which left the door wide open for the

truck called Taurus to take the win. Camel offered an additional \$1000 in prize money to the driver who wins the freestyle competition. I had never seen a full-size monster truck go through a mud bog before—but Taurus, Carolina Crusher and Grave Digger all took their shots at it. Again, Taurus took the win. It was just his day.

I would like to thank the folks at the Camel Mud and Monster Series, SRO/PACE Promotions, James Hahler and Charlie Mancuso, the US Hot Rod Assn. and Deputy Butch Sims of the Forsyth County Sheriff's Department for all of their help. •



Above, right, Gary Porter and his pride and joy, the Carolina Crusher. Parma International now has decals to make your big Chevy look just like the Crusher. Right, Grave Digger's driver demonstrates his way of handing competition. Far right, crew chief and driver of the Bigfoot, with 1/10th scale model.

# Truckin'

## 18-WHEELER FOR HAULING A STOCKER

BY JACK WRIGHT

**T**his month we will be taking a look at how to build McAllister's new 18-wheeler truck body kit. The truck body kit uses any 1/10 R/C onroad chassis "turned upside down." The truck cab body kit is made of lexan with upper and lower sections. The cab part number is A-148.

McAllister also offers a car hauler trailer that goes with the cab kit and it's part number is B-148. It also comes in two sections with an upper and a lower. More on the trailer later in the article, for now we will move on to the truck kit.

To complete the McAllister truck you will need an onroad chassis kit, something basic like BoLink's Eliminator Sport. Now let's get to it.

McAllister recommends that you turn the car chassis upside down, and this works well, although it leaves all of your radio gear exposed to kicked-up rocks and dirt, so I decided to make a few changes (as usual).

The first was to mount the truck body in the normal fashion with body posts for ease of removal. McAllister shows you how to make a second axle for the rear to give your truck tandem axles. Of course, only one of them is powered—which is fine but I wanted two live axles. To do this you will need to pick up the following: a BoLink 91 sport conversion kit BL-5065, BL-5702 steel axle kit, rear wheel hubs BL-3511, gear adapt BL-5740 and rear axle bushings BL-5452. With these parts and the templates provided, you can make dual live axles.

### ASSEMBLY

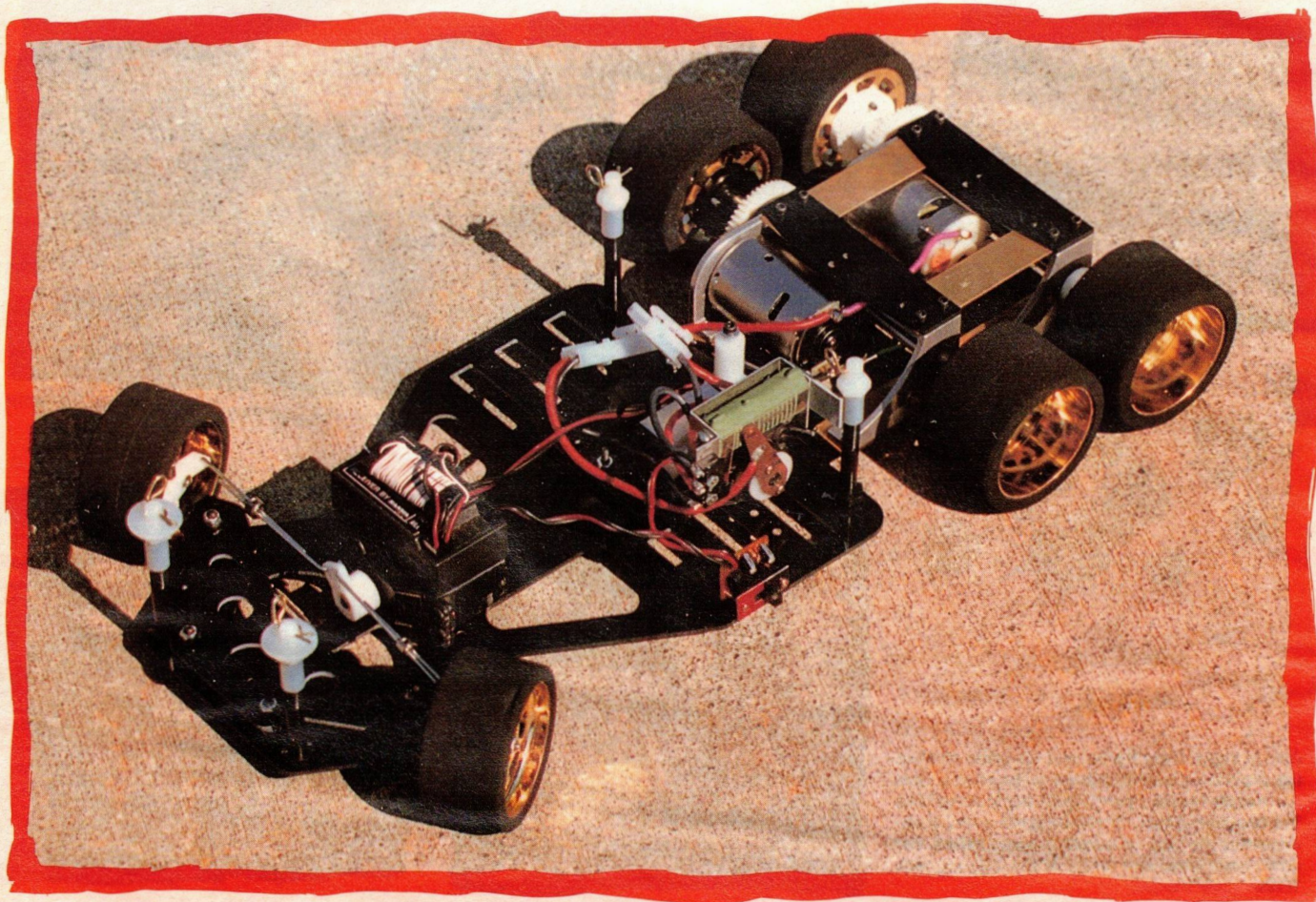
Assemble the BoLink chassis according to the instructions, but stop at the rear axle assembly. Next on to the rear axle setup. Use the provided templates to make the braces, and once you have the braces made, assemble the first axle that connects to the chassis. Put the lower brace between the motor places and the t-plate, then install the

upper brace between the motor plate and the upper pod reinforcement plate. Now you have a place to mount the second axle.

Take the t-plate out of the conversion kit and cut the material as shown on the chart. Now assemble the second rear pod just as you did the first. Once this is done, install both of your rear axles and motors.

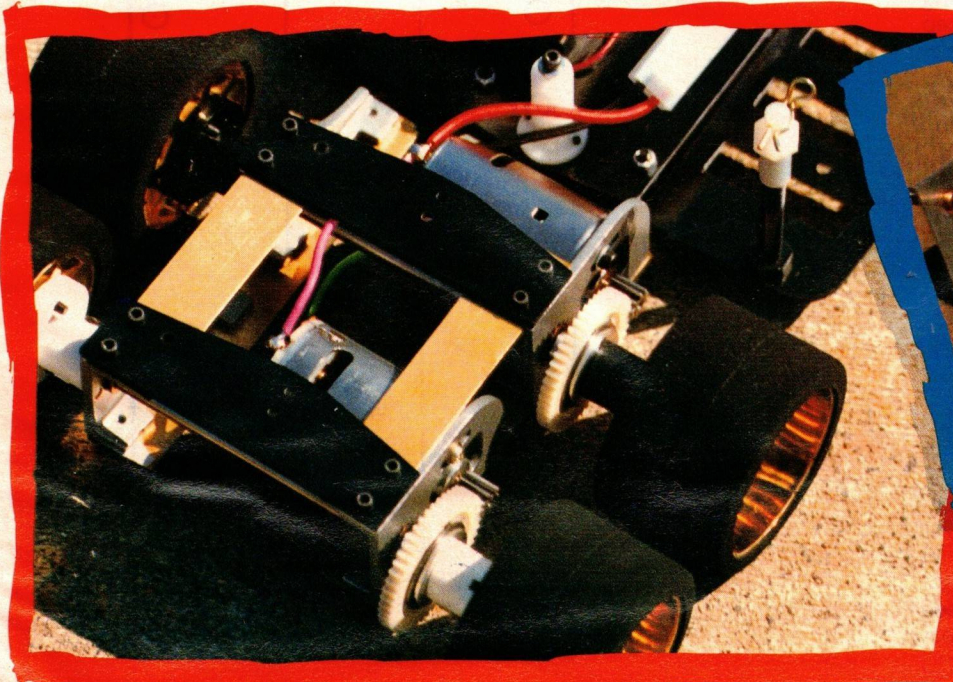
Now you can wire your motors in—either in series or parallel. I chose to connect them in parallel so both motors receive the full power from the batteries. Using series only gives 1/2 the power but it does give you more run time. You might say dual motors is a bit much, but I don't. I like the power! For the electronics, I used the stock BoLink speed controller along with an Airtronics two-stick controller. On the motors, I used two closed-endbell 05s with 9-tooth pinion gears.

Once you have your chassis finished, we'll move on to the installation of the lower half of the body. First, I used two pairs of





Above, the Coors Bill Elliott car (autographed by Bill) was painted by Nu-Wave Graphics. Below, the completed rear axle setup.



Above, this is how your rear axles should look once you've completed this task. Jack used aluminum sheet, .50-inch gauge, instead of the plastic or Kydex recommended in the instructions. Diagrams for making the necessary parts are on the following page.

BoLink two-inch body posts (part #2427). Take the lower body and cut off the rear section where the 5th wheel hooks on and set this part aside for now. After you cut this off, take the main section and set it over the chassis so you can find where to drill the body mount holes. Now when you finish drilling the holes, set the main part aside and get the 5th wheel section. Set it over the rear pod and center it up on the chassis—not the rear pod. When you get it centered, mark your mounting holes at each of the eight bolts on the rear pod and drill the mounting holes with a 1/8" drill bit and a 1/4" hole for the trailer hitch. What this will do is allow the rear pod to act independently from the main body. This helps to smooth out the bumps.

Next I mounted the wheels and tires. I replaced the stock white ones with BoLink Gold stock car wheels part BL-3071-G front and BL-3361-G rears.

To mount the upper body I used velcro instead of the way the instructions said—this way I can have an easier access to the lower body pins which is the access to the batteries and the radio gear.

The paint scheme (if you haven't noticed already) is from the Bill Elliott Winston Cup team. The decals were made by Dolanite Custom Graphics Inc., P.O. Box 206, Smyrna, Delaware 19977. They can make all types of NASCAR, Indy or Drag Racing logos or anything else you may need.

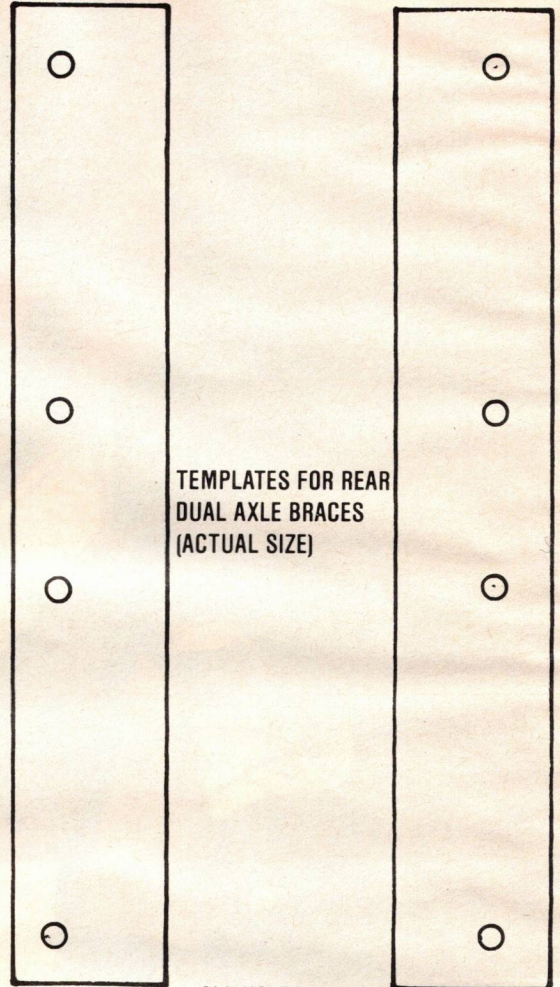
With the truck detailed and assembled, we'll move on to the trailer. Like the truck, it is in two parts. The upper has a place to store tires and the lower is where the car sits. The first step is to paint the trailer sections, then the trim as shown in the instructions. Go ahead and use servotape to join the upper and lower halves together as they ask you to do in the instructions, and just for extra strength drill 1/8" holes—two on each side of the joints and put a 4mm self-tapping screw in each hole. This will help to keep things together.

After you have this step finished next you will need to make a hitch for the trailer. I used a 1-1/2"-wide sheet of plastic and mounted it as shown in McAllister's instructions but I drilled four 1/8" holes in each of the four corners of the hitch (as shown in the photo). To add more strength for the post that goes into the 5th wheel on the truck, I used a short body post from an RC10.

The last step in this project is to make the rear axles for the trailer. McAllister suggests using plastic or Kydex to make your brace to hold the axles. I used some sheet aluminum from K&S—.50-inch. You will need to cut off 1-1/2" from the sheet and use the rest for the brace (as shown in the diagram). After you have bent the brace and drilled your holes, take a 1/4" steel rod and cut two 10" lengths for the axles. So that they would run smoothly, I pressed on BoLink's 1/4" bushings (part number BL-5452)—you will need two of these packs. Now just insert your

LOWER LEFT BRACE

LOWER RIGHT BRACE

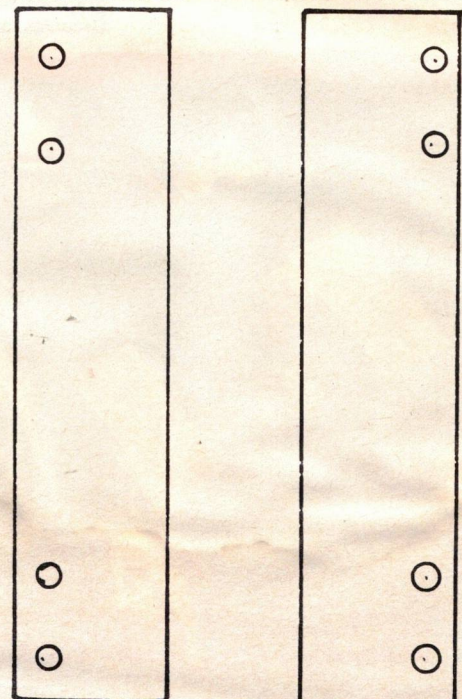


TEMPLATES FOR REAR DUAL AXLE BRACES (ACTUAL SIZE)

ALL HOLES 1/8"

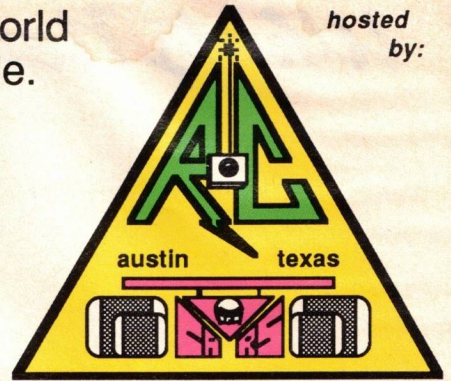
UPPER LEFT BRACE

UPPER RIGHT BRACE



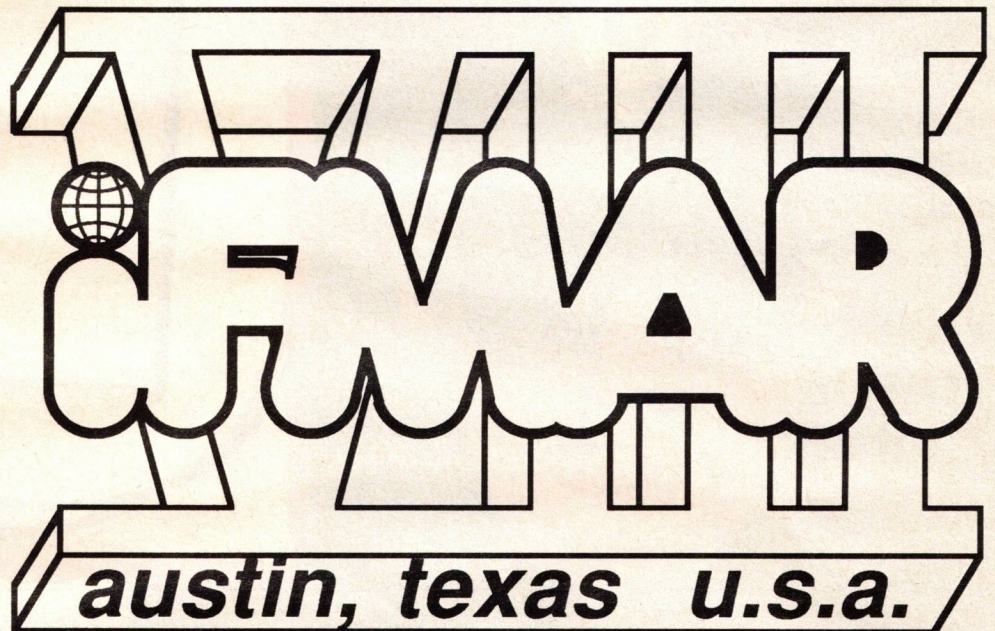
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Every two years 150 of the top drivers in the r/c world meet to decide r/c racing's most coveted title. But only once in six years is this title decided by a race held in the continental United States. This summer the world's best will converge on Austin, Texas at Jon Kinnison Speedway. for a most memorable event.



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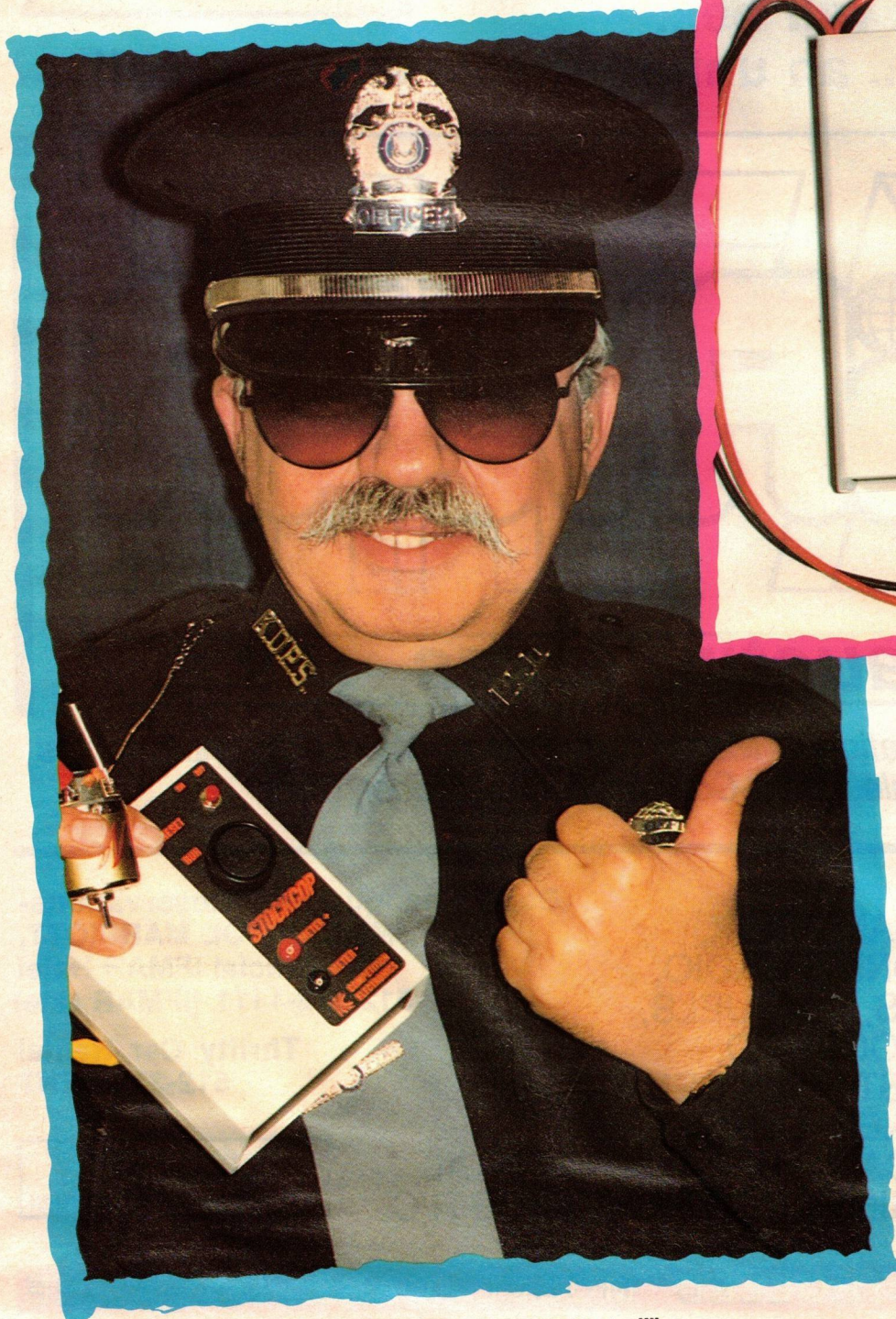
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What's New

## THE STOCK COP



BY JAY BOWMAN

**D**on't Get Caught with a Cheater! The Competition Electronics Stock Cop is a test device designed to measure the relative electrical resistance of stock motor armatures. Theoretically motors not conforming to accepted (ROAR legal) manufacturing specifications may be screened to determine "when a stock motor is not a stock motor."

Ideally, trackside testing of stock motors to determine their "legality" should be accomplished without a teardown and with the motor in the car. The Stock Cop can provide this service and without issuing a ticket. Although the Stock Cop is far from a completely accurate and precise "divining rod" it can be an excellent device for weekly B.Y.O.M. (bring your own motor) club racing.

This enforcer is simple to use but requires a couple of items for operation. First, a six-cell SCR pack to power the unit, and a digital voltmeter to measure the results. The Stock Cop generates an output voltage of less than 1.5 volts to the test stock motor (hooked-up with leads attached to the motor tabs).

"Stock Class cheaters. . .you're busted!"

Continued on page 85

# Bud's

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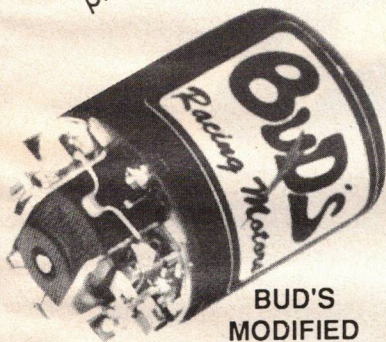
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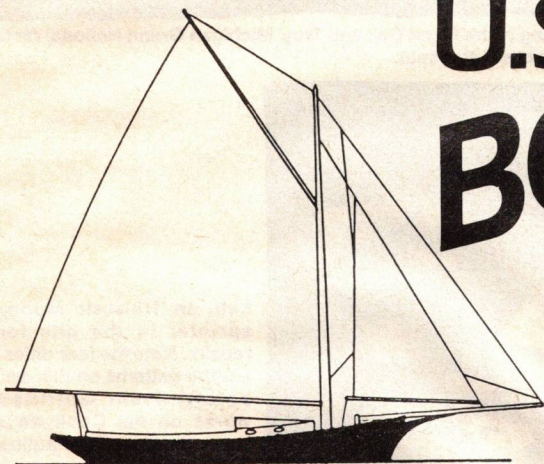
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# Racing Around

## MAKING Q-SCALE CARB ADJUSTMENTS

BY STAN SMITH

I can remember the first few times I tried to get an eighth-scale gas car running and the frustration these efforts created. I had a long background in IMPBA boat racing so gas engines were not new to me. Nevertheless, things didn't go well at first. I know this fear of gas engines is keeping lots of you from trying eighth-scale racing. With the help of a friend who gave me much of this sound advice, I developed the following procedure for getting any 3.5cc engine running reliably in the least amount of time. Let me assure you that following these steps will always lead to success, and you don't have to be an expert or factory driver. If I can do it, you can too! Just be patient and learn to apply the following techniques:

Carburetors have three adjustments: idle screw, low-speed needle and high-speed needle. The first thing you want to accomplish is to just get the engine running and idling at a reliable speed. Start by closing the main needle gently and then opening it two turns. Leave the low-speed needle wherever it is for now. Then set the idle screw so that the slide valve or barrel is open about 1/32 of an inch. Add about half a tank of fresh fuel and put in a new glow plug. Don't go cheap on either fuel or glow plugs. I use K&B products and always get good results. A mild fuel such as K&B 500 is just fine for club and even regional racing. Be sure your starter and glow plug batteries were charged for at least a full twenty-four hours just before using them. Don't ignore this or your frustrations will be unbearable.

Turn on your receiver and transmitter, put your car on the starter stand, hook up the glow plug battery, and get the engine turning over at a good clip. Blip the throttle and the engine should begin to fire very quickly. If it doesn't, try putting your finger over the exhaust outlet very briefly as the engine is turning over. This will prime the engine and help get it started. As soon as the engine is running, advance the throttle slightly and note how the engine responds.

If the engine runs fast and dies quickly, it's too lean. Cure this by richening (turning the needle counter clockwise) the low-speed needle about an eighth of a turn at a time until the engine stays running. If, on the other hand, the engine just sits there and kind of "blubbers," then slowly dies while sounding sick, the low speed needle setting is too rich and you need to lean it down (turn it clockwise) about an eighth of a turn at a time until you get a reliable idle. Also keep track of the

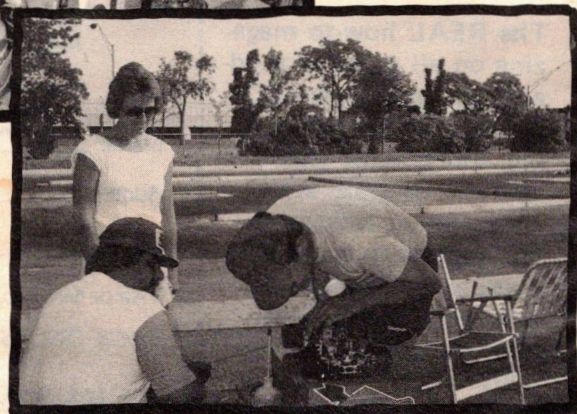
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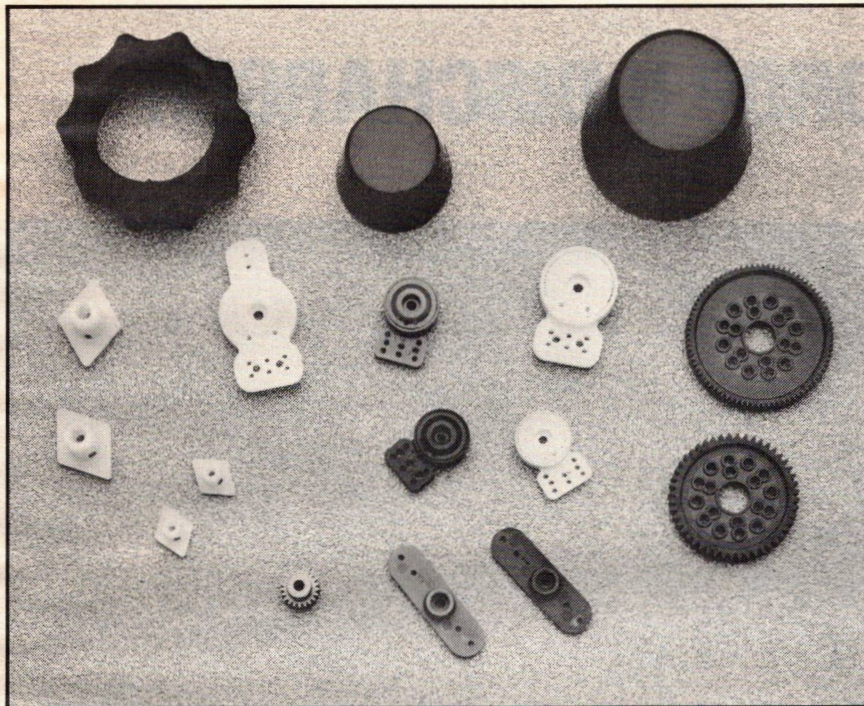
Typical of the quarter-scale cars running in the Royal Oak and Troy, Michigan Grand National races, this Welburn Buick-sponsored car is a clean standout.



Left, an 1/8-scale Moody sprinter in the pits for repairs. Note the four different tire patterns on this car. Below, Brent Gottfried works on his Cook 4WD racer as his wife Pauline looks on.



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# MODEL BUILDER

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## What's New

# QUICK DROP II DISCHARGER

BY JAY BOWMAN

**T**ired of carrying around that string of light bulbs to discharge your batteries? Then you need one of the most useful racing accessories I've found this year, the Revtech Drop Quick II battery discharge unit. Single cells and packs up to seven cells (sorry, no stick packs) can be fully discharged, but get this, each cell is *individually* discharged, in contrast to the pack discharge that most other methods provide.

Discharging an entire pack with a string of bulbs or single resistor can create havoc with the cells. In this format, each cell discharges at a different rate; some faster than others. Those cells that reach a nominal level first may be induced into a reverse charge by the flow of current from cells that are still discharging. The Drop Quick individual cell equalization provides contacts and a resistor for each individual cell so there is no influence from adjacent batteries.

This inexpensive discharge board is available in two formats: assembled (#44537) and unassembled (#44547). The Drop Quick is simple to put together and relies on seven pairs of contact clips. The sides of these clips must be removed in order to "plug-in" an assembled pack. With a pair of pliers and a flick of the wrist, these are easily broken away. After the modified clips are bolted into place, the individual resistors are simply soldered to each pair of clips under the fiberglass board. Then the lower glass plate is added to protect surfaces from the heat of the resistors generated during discharge. The contact clips fit snugly and work well with either braid or gold bar pack connectors.

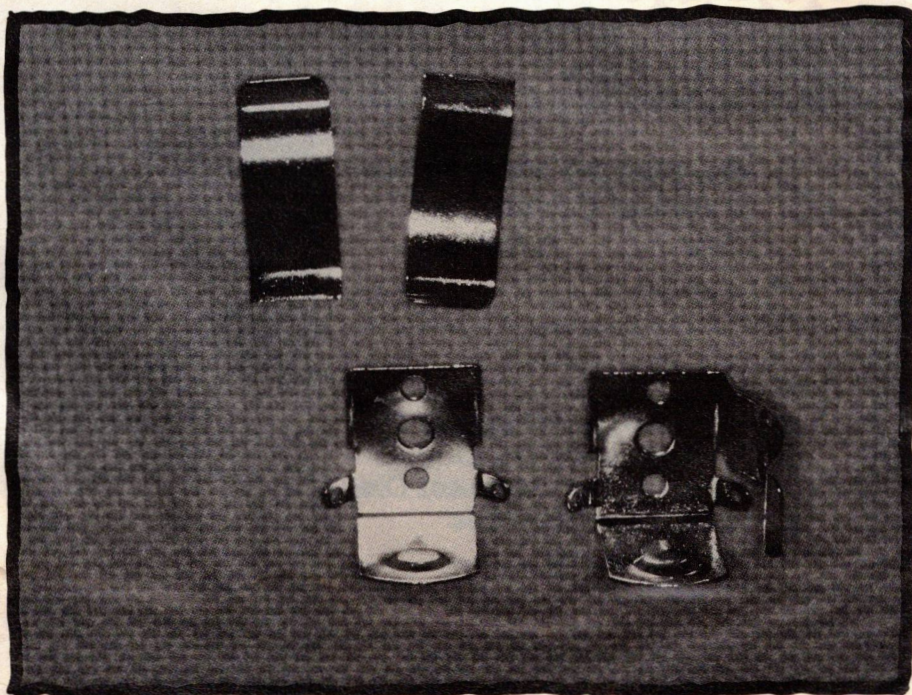
With no alligator clips to fumble with, resistors to solder, or bulbs to break, your race pack is simply taken from your car and slapped into the Drop Quick II and remains there until both the pack and resistors are cool (a cooling fan is helpful). The pack has been safely discharged and is removed from the unit ready for its next race. (Note: it is recommended that SCEs be "rested" for 24 to 36 hours before reusing.)

If that isn't enough to stimulate your interest, Revtech also has an optional resistor set to provide a 22-24 amp discharge rate for your Drop Quick. Also a Drop Quick BARE (kit without the resistors) is available for cell or pack charging and testing (or creating your own applications). Those who prefer the added safety of specific level discharging, there is a Drop Quick Bug version too (#44557).

Drop Quick II is available from Revtech Industries, 108 El Tejon Ave., Bakersfield, California 93308. (805) 399-9753. •



Above, a race pack is placed into the Drop Quick discharger, allowing each cell to discharge individually. Once the pack has cooled, it is removed for charging when needed.



Drop Quick Clips are modified in the kit version. Pliers are used to remove the sides of the individual battery clips. This permits placement of an entire pack of batteries into the unit. One side of the clip may remain on clips that are positioned on the ends of the unit.

# What's New



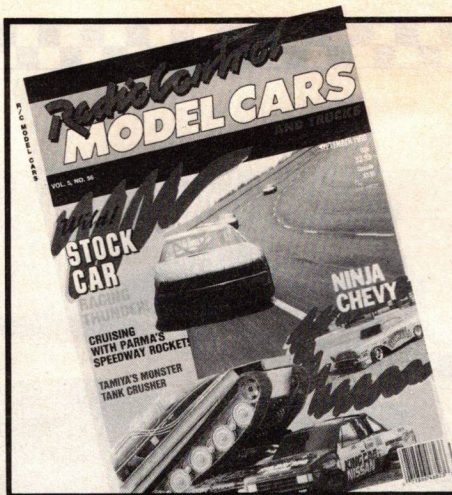
## NOVAK FM RECEIVER

Team Novak has introduced a compact 3-channel, narrow band FM receiver for R/C cars that is compatible with Futaba's 1024 PCM and Airtronics' CS2P and Caliber 3P FM transmitters. This new receiver has been designed to work with electronic speed controls and has protection against reverse voltage. It's the smallest and lightest 3-channel FM receiver available, and the NER-3FM operates at a low voltage for glitch-free performance. Also, the NEW-3FM can be hooked up to your Futaba and Airtronics Direct Servo Controller (DSC) for last-minute servo and speed control adjustments without turning on your radio. The NEW-3FM includes mounting tape, motor filter capacitors, battery and slot plugs, Futaba J plug plastics, and complete instructions and a 90-day manufacturer's warranty. See your Novak dealer!



## SUPER STAR WHEELS

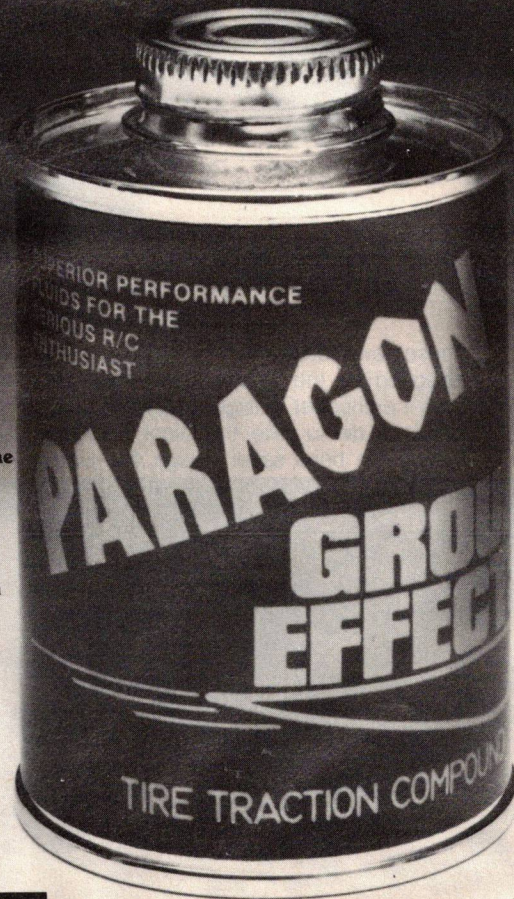
Here are some new wheels for monster trucks and offroad racing from HPI that include adapters to fit Associated, Losi, Tamiya, and Kyosho cars and trucks. The wheels are strong, lightweight, and the front wheel set comes with bearing adapters to accept appropriate bearings. See your hobby shop.



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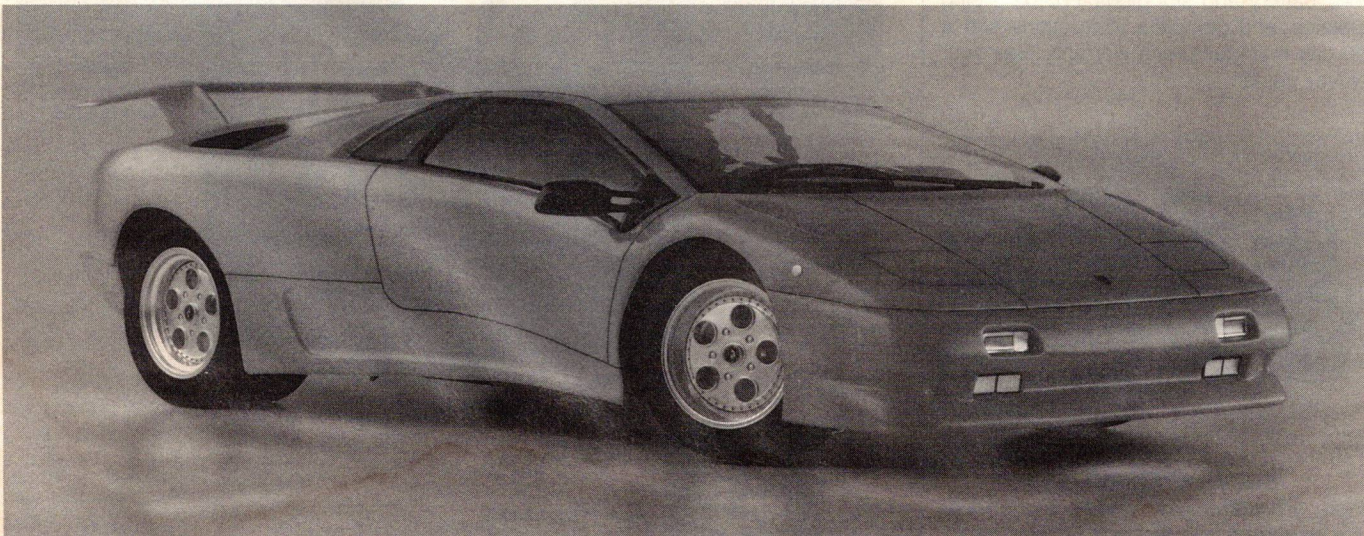
## What's New



### PRO-LINE GIANT TRAC TIRES

These new monster tires from Pro-Line are designed for the serious Clodbuster and USA-1 enthusiast. Designed to beat any terrain from dirt to ozite, the Giant Trac tires feature the bead saver design, Pro-Line's

newest advancement in tire design. The bead saver wraps over the wheel, protecting the rim from side impact, as well as adding an extra-beefy look to your truck. See your Pro-Line dealer.



### LAMBORGHINI DIABLO

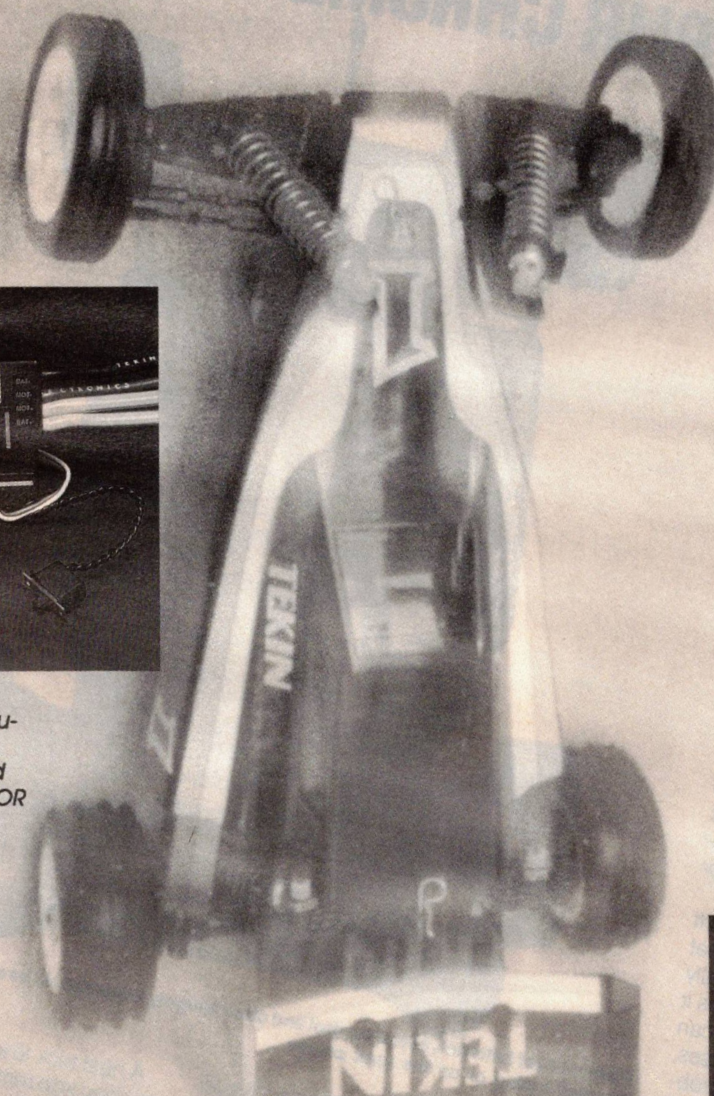
The latest Italian space case is the exotic Lamborghini Diablo. Now Kyosho has released a super-scale version of the Diablo with a complete interior, including seats, steering wheel, gearshift, and dashboard.

Also included is a LeMans stock 05 motor. The strong glass-reinforced chassis and double-wishbone suspension add up to an exciting R/C combination, so get down to your Kyosho dealer for a look.

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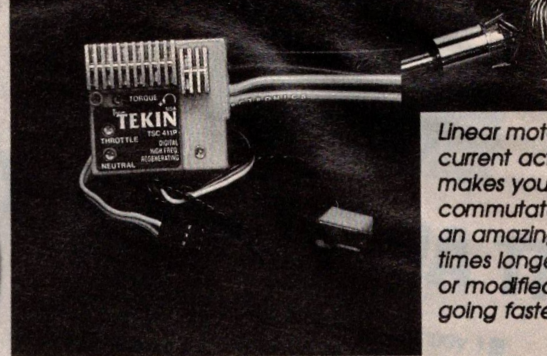
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BY SNUFFY SMITH

## Between Rounds

# IT AIN'T COOL IF YOUR CHROME DON'T SHINE

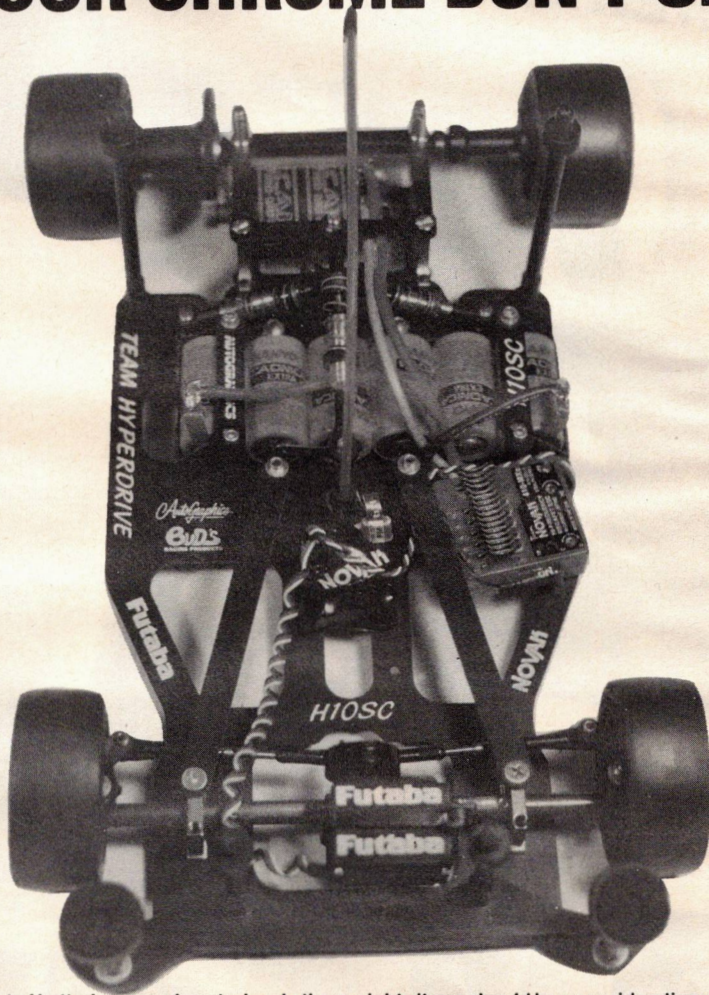
If you have been to some of the "big" races, have you ever taken the time to really look at some of the top drivers' cars? There is usually one thing they have in common. At first glance all the cars look very neat and organized. But way beyond that there are reasons for the placement of just about everything on the race car. Just some of the reasons for the placement of the speed control are weight distribution, shortness of wiring, radio interference, protection from harm, size consideration, heat or cooling and accessibility to adjustment. Since the speed control is the third heaviest item you put on the chassis (batteries being the heaviest and the motor being second heaviest), there are some advantages to placement. For more offset weight needed for a lot of the ovals, place it more toward the left side, and for gaining a little more steering, move it forward. For more rear traction move it toward the back of the chassis.

Heavy gauge wire does weigh a bit so, using the shortest possible length of your wires can be a consideration. Balancing the race car for road course can in most cases be accomplished by speed control placement and or receiver placement. Whatever you do, be as neat as you can.

Polishing parts can be a good way to spiff up your race car. Sometimes racing what looks like a show car can be a way to really psych out your competition. It also makes it much easier to clean. Polishing parts can also make them stronger in some cases, and easier to see cracks and possible problem spots. It also will lighten the parts just a little bit.

Keep your race car clean! There are several ways of easily doing this. A soft paint brush 3/4 to 1-1/2 inches wide will do nicely, or a small hobby compressor. For really serious blowing a small commercial air tank with free refills at any good gas station works great. If you race on carpet, check for carpet "hair" after each run. For some reason these little hairballs will attack your bearings, motor, axle or just about anything that turns. This can cause severe drag and possible death to you bearings, not to mention your pocketbook.

Racing on asphalt or concrete is mostly a dust and grit problem and like carpet, quite a bit of tire dust is picked up on parts. Bearing cleaning can prolong the life of these precious little turkeys for a long time and allow you to buy hop-up parts for your favorite go-fast machine instead of replacement parts. As for carpet racing, tweezers are like



Placement of batteries, speed control and other weighty items should be a consideration whether you are oval racing or on the road course.

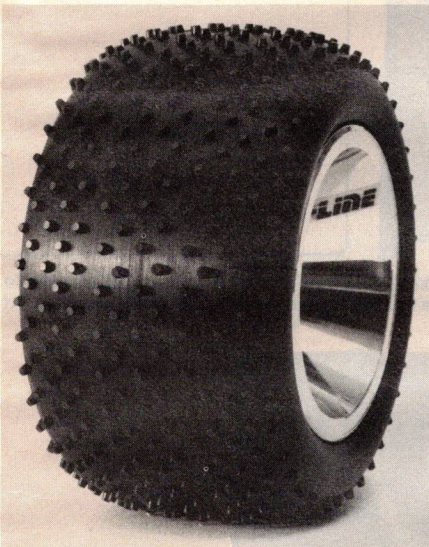
American Express travelers' checks: "Never leave home without them."

Static electricity is a big factor in why your race car wants to collect dust, lint, carpet fuzz and tire dust, anything that has friction will cause this, even the tires scrubbing the racing surface can cause static electricity. The noise that gears make is the "scrubbing" of the teeth as they slide in and out against each other. This noise is nothing more than the creation of static charges that attract just about anything that is floating around inside your race car. Just about anything that is making noise is also producing static electricity. I've used some of the fabric spray static remover with success in limiting the amount of dust and do-bad stuff you pick up off of the track. Just spray a little on the bottom of your chassis and some on the inside of your car body. The only other solution is to eliminate the noise.

A neat trick to keep your lexan body looking good is to remove those paint marks that little tiffs with the wall can leave on the sides of your car (usually the wrong color) with some of the milder motor cleaners such as Dan's Motor Spray. Just put a little on a rag and rub until the blemish is removed. Using just about any kind of wax can make your body brighter and take off most of the overspray on the outside of that, somehow, no matter how careful you are when painting seems to find its way there. Buffing the body in much the same way a full-size car is done can bring some remarkable results. But be careful here not to burn the lexan with this process.

An often overlooked way to keep your race car looking nice is very simple. Don't hit anything! Until next time, keep your powder dry and the dirty side down.

# What's New



## PRO-LINE TIRES WIN

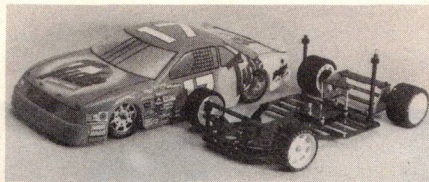
Pro-Line's newest editions to their line of RED racing tires won the two big categories at the recent Winter Champs in Florida. The new tires have a new mini-pin tread, and a compound change to make them virtually unbeatable. The 7080 Pro-80 RED fits 2.0 rear wheels, while the 7090 Pro-90 fits 2.2-inch rear wheels. See your Pro-Line dealer.



## CHEVY SS 554 TRUCK

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SPEED TRAP  
CROSSBORING R/C SPEEDWAY  
DATE: 5/14/91

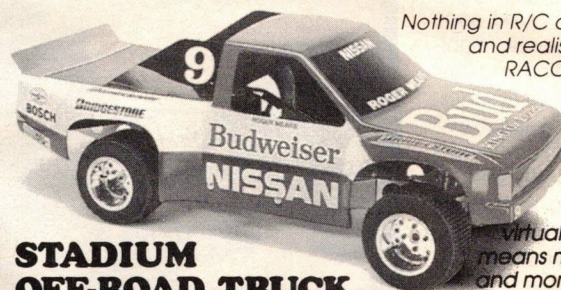
| FINAL POSITION | DRIVER             | CLASS | HEAT | LAPS    | TIME |
|----------------|--------------------|-------|------|---------|------|
| 1              | 80 MARK FISHER     | A     | 29   | 0412.18 |      |
| 2              | 82 BAYLON CORDELL  | A     | 24   | 0405.43 |      |
| 3              | 80 DAVID HOLFIELD  | A     | 24   | 0405.76 |      |
| 4              | 86 RICH HEALAN     | A     | 20   | 0405.08 |      |
| 5              | 90 MARY EAGLE      | A     | 15   | 0154.73 |      |
| 1              | 86 RICHY MCNEBB    | B     | 25   | 0400.15 |      |
| 2              | 84 JOHNATON HEALAN | B     | 22   | 0400.83 |      |
| 3              | 82 WILLIAM VONN    | B     | 29   | 0400.60 |      |
| 4              | 78 JERRY LINDEN    | B     | 27   | 0400.43 |      |
| 1              | 80 MIKE RECORD     | C     | 32   | 0406.80 |      |
| 2              | 76 DYANE HANDELIN  | C     | 20   | 0404.64 |      |
| 3              | 82 MICKEY TITOV    | C     | 21   | 0405.42 |      |
| 4              | 86 GREG FLANNAGAN  | C     | 21   | 0407.44 |      |

\* = TOP QUALIFIER

## SPEED TRAP

Speed Trap is a race management program that was created for R/C clubs and tracks that are working with a limited budget. The program will work on any Commodore 64, with the 1.6 version offering six classes with 40 drivers, and the Version 1.8 handling eight classes with 30 drivers per class. Both versions show full-screen display of class, heat, drivers, laps, and time of all races run. At the end of each race a full printout, to the screen or printer, will show all that information, plus order of finish, final lap times, and best lap made, with average car speed in mph. For more information, or to order, contact Late Night Software, Box 179, Michie, Tennessee 38357. Speed Trap sells for \$19.95 plus \$2.00 for shipping and handling.

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# Big Tips

## TIPS FOR 1/10 AND Q-SCALE RACERS

BY RICK EYRICH

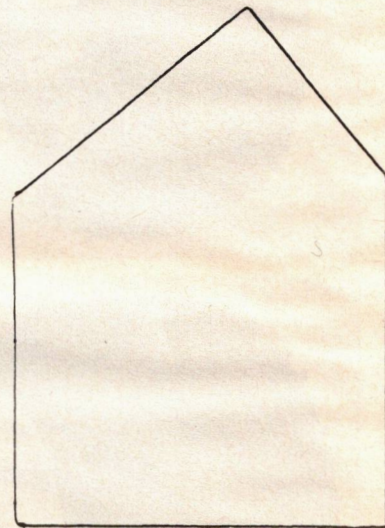
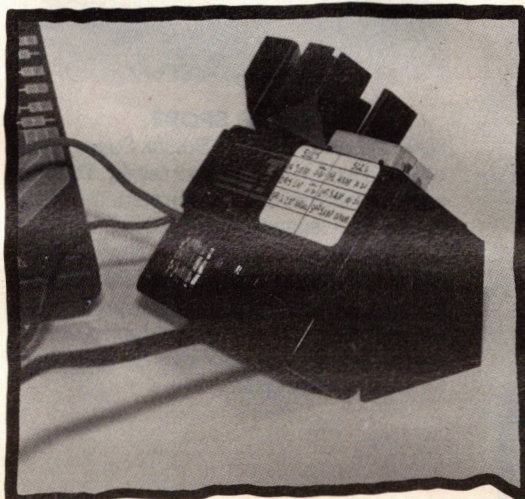
**D**on't get me wrong, I'm a dyed-in-the-wool 1/10-scale electric R/C racer. But I'm also the local quarter-scale engine and drivetrain guru. So in this article I've combined tech hints for both scales of R/C cars that will hopefully help you "run stronger and last longer" at your local track. Just remember, it's not always the racer who spends the most money who's assured of that first-place trophy. It's the best racer/car combination on a given day that takes home the gold.

First off, get yourself a current Tower Hobbies catalog. No, I'm not saying that you buy all your stuff from a mail-order house, and no, I'm not paid to say this, but this catalog is an excellent reference source for *all* types of R/C related bits and pieces. If you're like me, you sometimes look at your R/C car and get a case of the "what-ifs." Like what-if I want to make up a front swaybar for my Losi JR-X2? A quick look through the catalog turns up some DuBro airplane aileron parts and some piano wire, (which I then purchased at my local hobby shop) and presto, one sano homemade swaybar. Need a new eight-ounce (yes, *eight* ounce. I goofed and said four ounce tank in my article on quarter-scale engine tech) for your WCM sprint car? No problem. Again airplane fuel containers are the direct replacements for these cars. You can also use the catalog as a price guide, and judge how much of your hard-earned cash you can spend on R/C goodies.

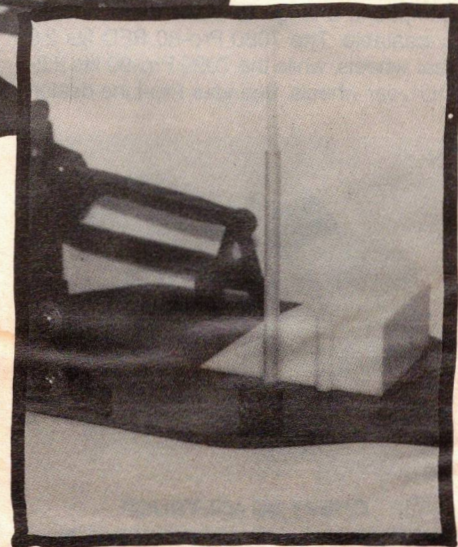
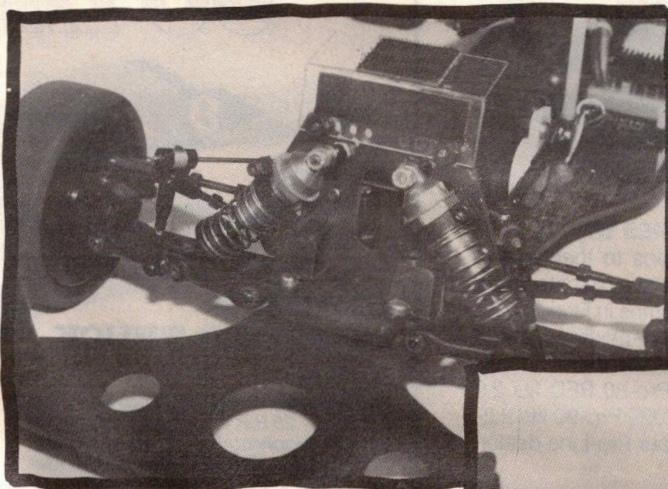
### 1/10 SCALE

Got a wimpy antenna that's dragging on the track behind your car down the straight-away? It just so happens that the plastic draw-tube found inside the quart-sized spray bottle your wife uses to water the house-plants will slide right over your present antenna and double its strength. (Be sure to buy her a new sprayer before she waters again.) Ever try to remove the little leftover chunks of glued-on rubber tire off your rims? Make it easy by chucking up the round wire wheel in your Dremel grinder and brush off the old tire pieces. Wear eye protection, and have a fan blowing air away from you and your work. The rubber and CA fumes can be nasty. Are you worried about your Tekin charger's heatsink burning something or not being able to see the peak light? Cut out two side supports from Kydex or a similar plastic

*Continued on page 80*



Above, the Tekin charger side supports are made from Kydex. Now the charger's peak light is easier to see while it's sitting on your bench, and the charger's heatsink has more air circulating around it. At right, the template for making your side supports.



Above, the author's homemade JR-X2 front swaybar, made from Du-Bro airplane parts. This modification will help reduce oversteer on paved ovals. At right, notice the bottom half of the antenna rod. It's supported with a plastic tubing from the inside of a common quart spray bottle. Just slip the tube over your antenna rod to the bottom and a drop of CA will hold it in place, and will keep your antenna upright for good reception.

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## Q-SCALE ENGINE ANALYSIS

BY RICK EYRICH

In my first article on the Zenoah engine/Walbro carb combination (*RCMC*, May 1991), I covered the basics of operation and maintenance. "Okay, you say—I read the article, but I'm still having a motor problem, now what?" Alright, now we'll touch on some of the "glitches" that can make you pull your hair on race days.

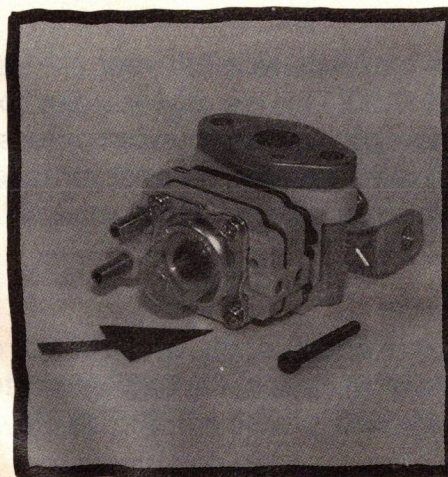
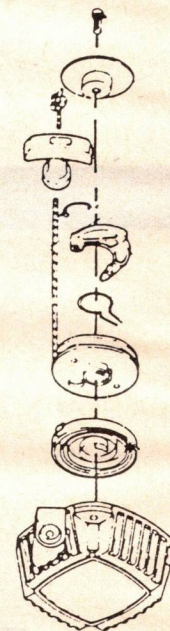
### FUEL SYSTEM

Even though the WY Walbro carb is a tough unit, it can be troublesome if you don't know where to look for problems. After you've disassembled the carb and checked the diaphragms and pump plates, check the following: the pump body's metering arm must be level and move freely. The tiny O-ring found under the main jet must be on straight or your engine will run rich. Make sure the two screws on the fiber manifold between the carb and cylinder are good and tight, and use a fresh gasket on the carb. On reassembly, don't over-torque the four Phillips screws that hold the plates and diaphragms together. But if you do strip out a screw, a 4-40-size screw of equal length will repair the problem. If you adjust the center needle jet on top of the carb often, be forewarned that inside that jet is a micro-sized retaining spring that holds the jet in place. In the first article I recommended putting a dab of silicone sealer on top of the adjuster hole to keep the needle in place. For the adjusters out there, here's an alternative. Cut down to 1/4" an R/C antenna rubber tip and press it over the adjuster housing. Either idea of retainment will work, and is important because this needle jet is not available as a separate part—you must purchase a complete barrel/needle assembly.

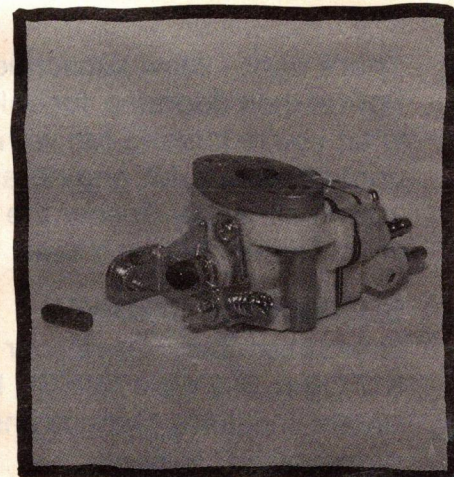
Does your car run fine at the start of a race, then suddenly the engine loses power, dies out, and won't restart, thus causing a DNF and an angry racer? Once you're back in the pit area, you pull the spark plug and it looks fine. You crank the engine through watching the plug (grounded to the outside of the engine) and a big fat blue spark is evident. Then you reinstall the spark plug, yank the starter rope, and to your amazement it starts right up and sits there idling smoothly! You might be experiencing "vapor lock," a condition where the fuel that's entering the carb is being overheated to the point where it shuts down your engine. The time you've spent checking the spark plug has allowed the fuel to cool down and proper fuel flow has returned to the engine.



This is the Zenoah pull starter. Notice the loop in the photo. This is to hold on to for loading and unloading tension on the starter spring.



Stripped-out metric assembly screws on the WY Walbro carb can be repaired by using a 4-40 screw of equal length.



An R/C antenna rubber tip can be cut down and used to cover the jet housing on a WY Walbro carb. This will keep the adjustable jet area clean, and if the jet should back out, you won't lose it.

To prevent vapor lock, make sure all fuel lines and the fuel tank are kept as far away from any heat source (exhaust pipe, cylinder area, etc.) as possible. If you're racing in a very hot climate, remember that track surface temperatures can exceed 120 degrees F., and the cooler your fuel is, the better your race car will perform. Remember, this en-

gine is *aircooled*. Running excess warmup laps before a race will increase engine temperatures and lower power output. Also any trapped air inside the car is heated air, so be sure any air drawn into the car can escape—*heat is your enemy*.

Continued on page 82

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# Wally's Workshop

## SURVIVING LIFE WITH R/C

BY WALLY DAVID

**W**hat a long, strange trip it's been over this long and winding road, but I'm back and better than ever.

Anyway, welcome to Wally's Workshop. Don't worry, this isn't going to be another "how-to" column—not that there is anything wrong with them. You'll be able to get something useful out of reading this column each month, and I won't necessarily tell you how to build, modify, or test something. Think of Wally's Workshop as an R/C car stream of consciousness.

Enough for now about the future, let's talk about the past. For those of you who don't know me, I started in the hobby in the fall of 1986, with a Tamiya Hornet and a twin-stick radio, which I raced on carpet in the suburban Philadelphia area. I progressed to the Associated RC10, which I also raced on carpet. I went on to own and race just about every type of R/C car out there, except gas-powered cars. My favorite form of racing is 1/10-scale paved and carpet oval competition. I began writing articles about R/C cars on a freelance basis, and eventually entered the business fulltime, which gave me the opportunity to race at and cover national events around the country.

Working in the R/C car business allowed me to make many friends, including my best friend and wife, Sara. I've spent the last year racing in New England, where I now live, and actually work at a "normal" person's type of job.

### THE PRESENT, AND HOW I GOT HERE

When I started racing R/C cars, I was competing for a 50-cent ribbon. That was fun racing at its best. Racing once a week was plenty. As I got better, I started racing more, or was it the other way around? Anyway, I became absorbed with the hobby, eating, breathing and sleeping R/C cars. My father said on more than one occasion, "Wally, how do you expect to find a girl if all you do is play with these cars?" What did he know? That's how I found my wife!

When my hobby became my career, it really became my whole life. I spent eight hours a day immersed in R/C cars, and then I'd come home to an apartment that resembled a hobby shop, with stuff piled everywhere. And if I wasn't home working on some project, it was because I was out racing. And you know what happened? I started getting burned out on racing. I was making up reasons not to race or work on my cars.

After my change in career paths, I drastically cut back on my racing activities, and found that I started to like racing again. I looked forward to going to the track. When I was at the track I was having a great time. I even survived a few weeks of no racing in the winter! I'm now back to racing once a week, which is perfect for me. This makes me wonder how many others get burned out.

### "Why is it that the faster you get, the faster everyone else gets?"

I know a number of people who were very gung-ho about racing, and are now out of it completely. I guess I'm trying to say that unless your hobby is your career, keep things in the proper perspective and don't let R/C cars take over your life. You'll enjoy racing a lot more.

### SOME RANDOM THOUGHTS AND OTHER TRIVIAL MATTERS

Why is it that the faster you get, the faster everyone else gets?

R/C racing is great for those of us who can be classified as "large." I was thrilled to find out that at the 1989 ROAR Dirt Oval Championships, my first "big" race, that not only did they have X-large commemorative tee-shirts, they had XX-large and XXX-large. When was the last time you came home from a baseball game or rock concert with anything above a large?

Does anybody ever give you a truthful answer to the question "What gear ratio are you running?"

I was talking to Snuffy Smith, owner of Hyperdrive, the other day. He told me that he is hearing more and more "Average Joe" racers talking about the latest sanctioning body or industry rumor, controversy or feud. That stuff used to be reserved for the national events, but it now seems to be invading the local racing scene. That makes me very sad.

When will we see the long-awaited Custom Works 2WD car in the stores?

My wife brought our three-week-old son

Michael to the local race track to witness the first race of his life. I could swear he was already exercising his trigger finger.

I've decided to switch back to 48-pitch gears. Since I'm always being told my car sounds like it has 48-pitch gears, I might as well avoid the hassle. Meshing gears has never been my strong suit.

Speaking of babies, I came to a startling realization today. Babies and R/C cars are very similar. They both run on a fuel cell that lasts for a finite amount of time. The batteries in my car last for four minutes while the baby's bottle last for about four hours. Also, they both can "dump" at inopportune times.

I can't figure out the logic of racers who brag about fast lap times they record during practice with a clear track. Nine out of ten times, if you ask them how long they ran those times, they won't know. And if you don't actually see the times for yourself, don't worry about it.

Don't you hate the guy who can go from a channel 62 crystal to a channel 88 crystal in the same radio, while you can't stray by more than one channel without problems? He also probably straps the receiver to the battery pack and wraps the antenna around the motor for good measure. Go figure!

Why do most track owners insist on having bathrooms that are totally filthy and disgusting?

Have you ever tried unsoldering a battery pack with a baby in your arms? Try it, it's a challenge.

I love showing up for the first race of the season at the local track, and beating the guy who's been practicing for a month ahead of time, don't you?

Isn't it strange that your friends and family don't share the same enthusiasm for video tapes of your races as you do? I can watch my races over and over again, but I can't convince anyone else to watch.

Did you know that Johnson & Johnson Baby Wipes containers make great storage containers? They are made of plastic with alif that snaps closed tightly, stack easily, and best of all, keep all your parts smelling baby fresh!

Sorry about the lack of focus, but as you can probably tell, the baby is taking up most of my time. They tell me it'll get better! I don't know what I'll write about next month, but you'll be the first to know. Oops, I hear the baby crying, so I've got to go. •

# S O R R Y

DUE TO A MISPRINT IN OUR AD IN THE MARCH ISSUE, WE WERE UNABLE TO TAKE YOUR CALLS. SO, WE ARE GOING TO MAKE IT UP TO YOU BY ADDING MORE PRIZES AND INCREASING YOUR CHANCES OF WINNING SOME OF THE BEST IN R/C EQUIPMENT.

## 1991 I.F.M.A.R. WORLD CHAMPION

WOULD LIKE TO LET YOU IN ON A SECRET OR TWO. HEAR A NEW MESSAGE EVERY TWO WEEKS. GIVING YOU MORE GREAT TIPS. HERE'S HOW IT WORKS.

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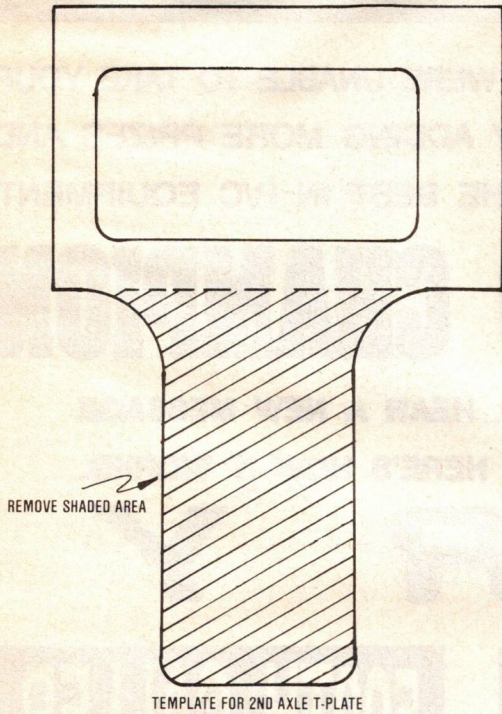
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Continued from page 32



axles. To mount the tires you will need to put hubs on all of the axles. I used two packs of BL-3511 nylon hubs. One side has a set screw and the other side doesn't—it's used on axles with a ball diff. I found the hubs to be a tight fit, so I didn't worry about the set screws. Next I installed the rear tires, using the same BoLink foam tires and Gold rims that I used on the truck.

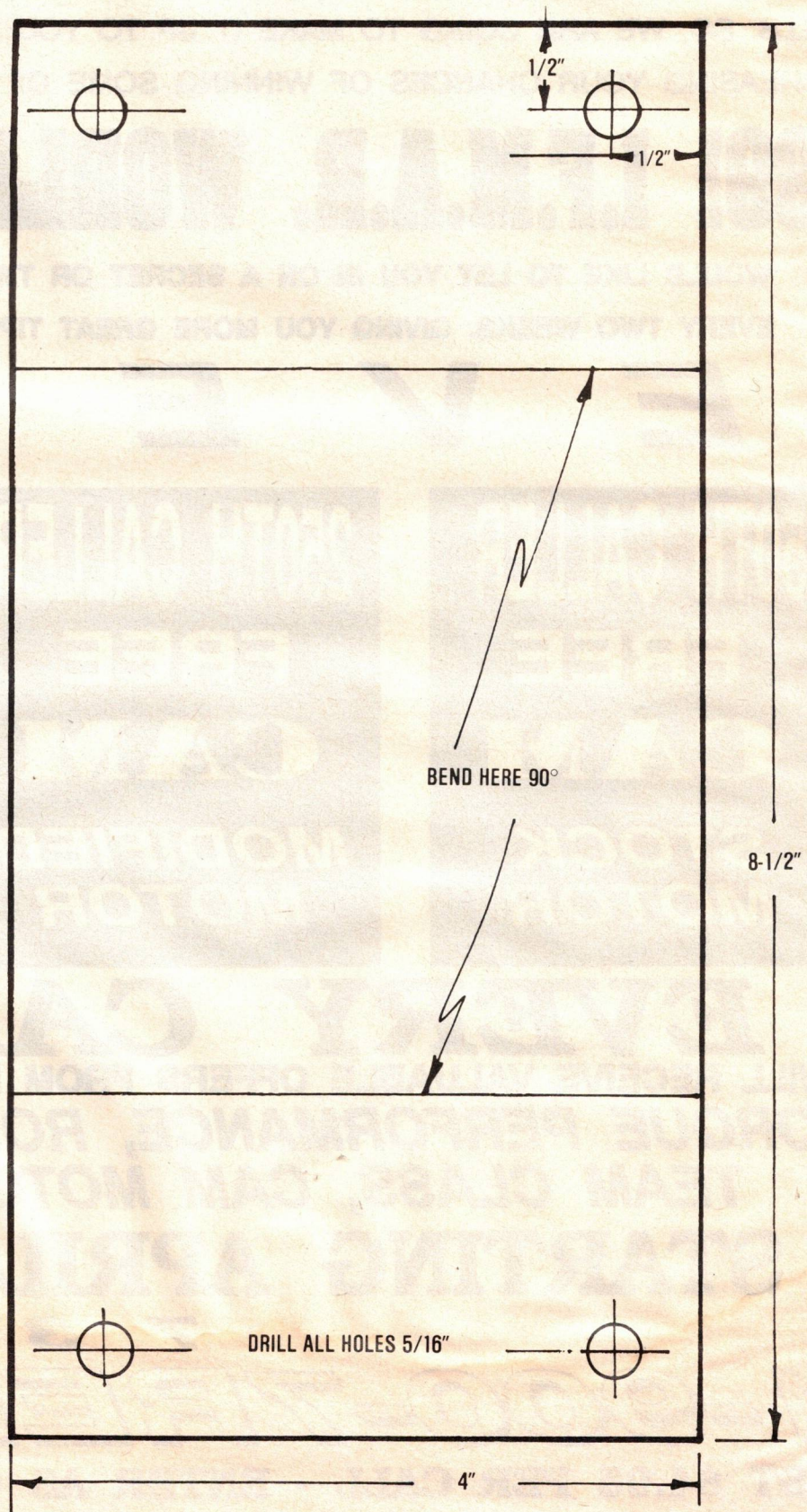
With the rear axles completed, just put some servotape on the braces as shown in the instructions, and now your truck is complete. All that is left to do is to take your favorite race car, put it on the trailer and bring home the concours trophies!

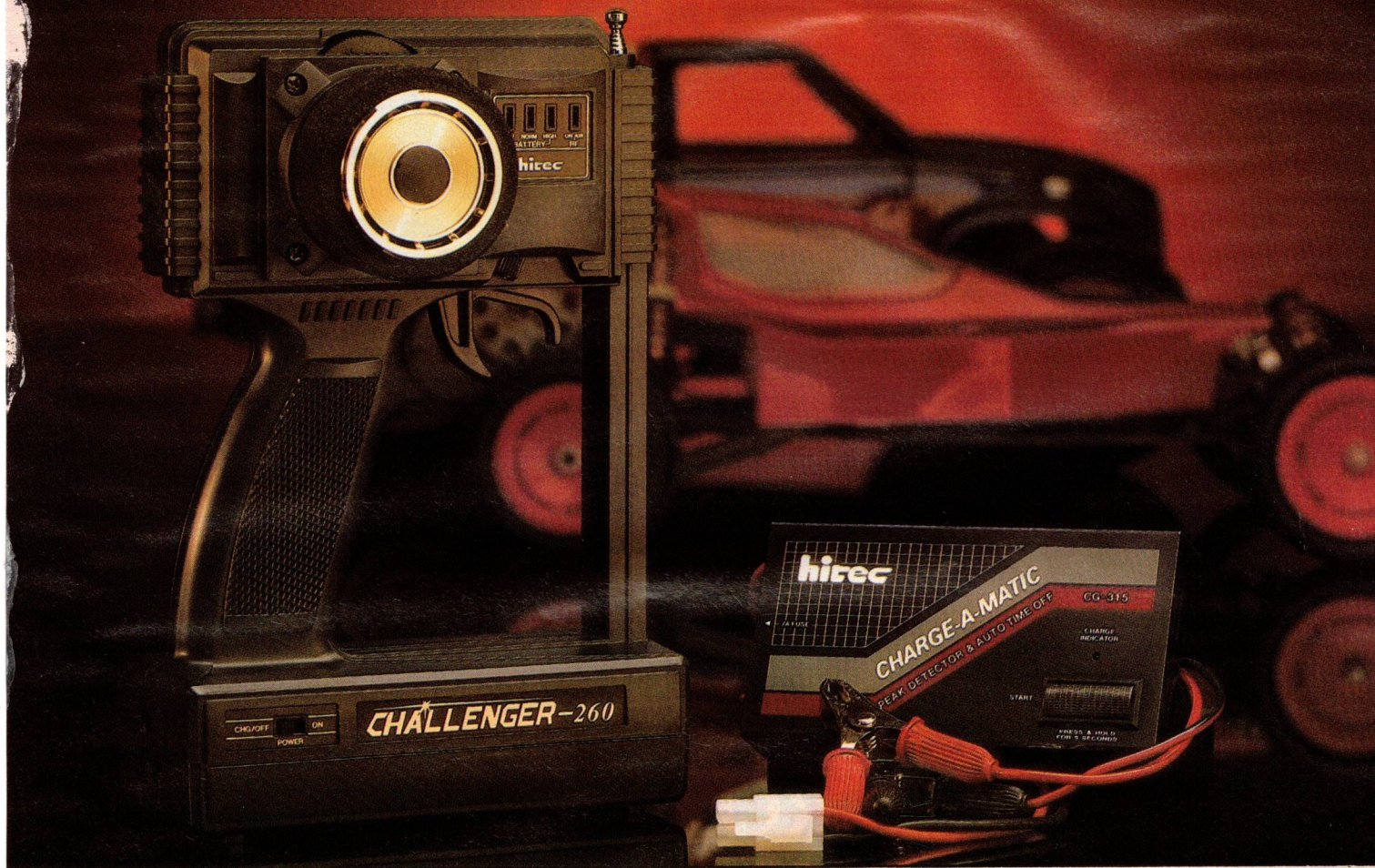
In other Truckin' news:

Parma International has some new products coming out soon, like the new Ford puller body that's a new design, not just a Bigfoot body stretched. Also Parma will have a new Kenworth tractor body which will be a direct replacement for the Bullhead and they also will have a replica of the Equalizer monster truck coming out soon!

At last Team Associated is officially getting into the monster truck ranks with a real truck not a car conversion (see June *RCMC*). The truck will feature a black anodized chassis and a bright orange one. So far the new truck has had tremendous success. In their first outing at the Florida Offroad Winter Championships, it took 1st and 2nd. For their first race, that says a lot! The new RC10 truck will be out on the shelves in May or June 1991.

Next month I'll have the long awaited pulling Clod project, so until then... Keep It Shiny Side Up!





# Control. Power.

## Challenger 260- Pistol Control

Whether you're at the track or just cruisin' the neighborhood, control means the difference between fun and frustration. If you want to spend more of your time having fun, check out the Hitec Challenger 260. Standard features include: BEC receiver, servo reversing, unbreakable steering wheel assembly, reversible wheel for right or left hand use, two rugged HS-300 servos and a full one-year warranty.

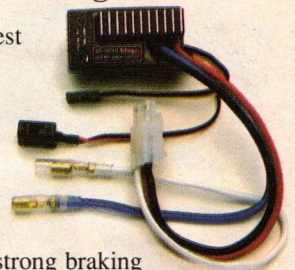
Available on 75 and 27 MHZ, the Challenger 260 is ready to provide perfect control to your on or off-road vehicle. Don't be left on the side lines, go for maximum fun time with the Hitec Challenger 260.



*The Challenger 260 is also available with the RCD Ultra-Micro Shredder Receiver.*

## 1802N Speed Control for Winning Power

To control the power in your latest road rocket, install the new Hitec 1802N Electronic Speed Control. Featuring a switchable BEC, it will handle 6 to 8.4 volts with the BEC switch on and 6 to 15 volts with the BEC off. The 1802N provides smooth forward only proportional throttle response and strong braking power. Compact and light weight, the 1802N will fit virtually any installation. With features like these including heavy gage power wire and an efficient heat sink you should be first to the finish line!



## CG-315 Peak Charger

Power up for peak performance with the Hitec CG-315 Peak Charger. No other peak charger offers simplicity, economy and clean peak charging power like the CG-315. Just connect it to any 12 volt power source, hook up your battery pack and push a button. When charging is completed, the flashing indicator lamp lets you know you are ready to go. If you need a quick, simple and efficient peak charge turn to the CG-315 and turn on the power!

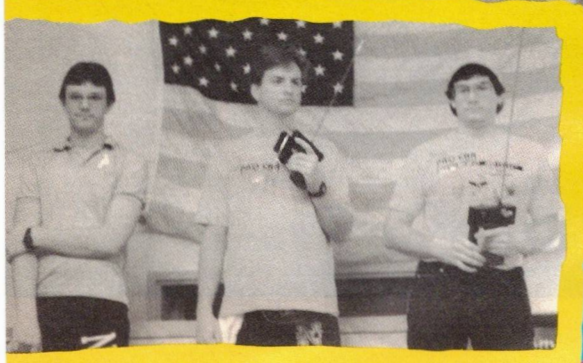


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# ROAR 1/12th SCALE 4-CELL NATIONALS

At top, Bud Bartos took the trophy and ring for winning the A-main in Cleveland. Above, stock class hot-ties: Willy Decker, TQ Jim Piersol and Sean Cochran.

BY JAY BOWMAN

"I love the smell of Paragon in the morning... it smells like victory."

—Major Wood from *Apocalypse Later*

**T**wo hundred and fifty 1/12th scalers prepared to do battle for the first ROAR National Championship of 1991 on the grey ozite carpet of Grand Rapids, Michigan's Rivertown Racers. This is the fourth year of the Winternationals but the first ROAR Nationals in Gerald Ford's hometown. Presided over by newly elected ROAR President Roy Weast, a virtual Who's Who of R/C racing lined up for practice on the Terry Rott-designed racecourse.

In attendance for the event were last year's Triple Crown and WinterNats champion, Joel Johnson, IFMAR World Champion Chris Doseck (and two-time winner of the WinterNats), and Cleveland U.S. Indoor Champ Mike Ebert. The racers couldn't help but miss last year's champion, Rick Hohwart, who was sharpening his offroad skills at the Reedy/Novak Invitational.

With the War in the Persian Gulf just beginning, the event took on a patriotic feeling as drivers placed gold stars on each of the cars



The A-main grid with Johnson, Doseck and Rott in the front row.

in support of the servicemen. The carpet battle was about to begin with four rounds of qualifying but the heavy hitters found a virtual mine-field of accidents and some aggravating radio problems. The crew of Ted McCarthy, Linda Carruba, and Don Holub shuffled the numbers and kept the proceedings motivated.

At the end of the first round of qualifying on Saturday, only 41 laps were possible and Dwight "Ironman" Smith stood at the top. His reign was short-lived, however, as he fell to the B main as speeds and driving came around to the expected National's level. That evening a racing regatta invaded the Holiday Inn pool for an "Offshore Boat Championship." Chris Doseck, Tony Neisinger, Joel Johnson and Brian Berry set sail off the deep end. Brian Berry (driving Bud Bartos' Simpson Family Special) won the Kyosho/Power Push sponsored event.

### STOCK 1/12th NATIONAL CHAMPIONSHIP

One hundred and seventy stock entries sorted themselves out during four rounds of qualifying for the chance to compete for the ROAR title held by last year's champion and Triple Crown winner, Chuck Lonergan. Lonergan had returned to defend his title and redeem his performance at last year's WinterNationals where victory slipped away as his batteries dumped right at the end of the A-main.

Right from first rounds DuQuoin, Illinois residents Jimmy "Fear Strikes Out" Piersol and Sean Cochran (winner at the U.S. Indoor Championship last year) pressed to the top of the pack. Only three drivers managed 40 laps on Rott's Rug and these two young men along with Lonergan staked that claim. Piersol's new Delta ProCar Spyder produced the mark to beat at 40/8:02.

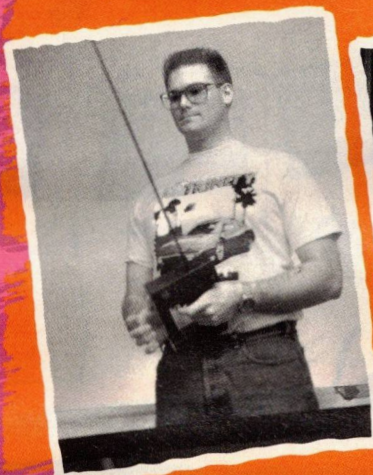
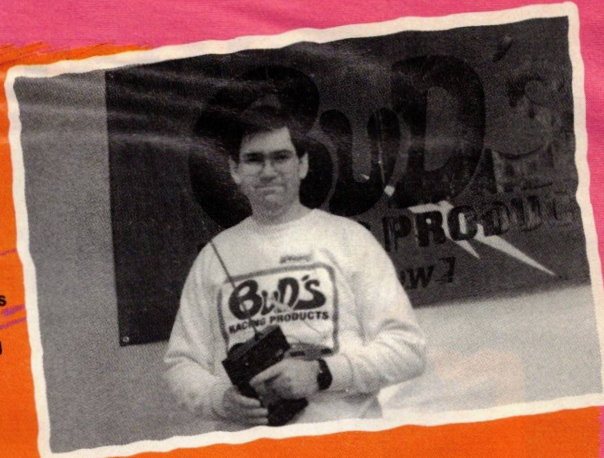
An impressive move into the A-main was made by Anthony Lewis, who started the weekend down in the "M" qualifying group. He out-qualified his class by two laps in his bid for the feature. Other drivers making the grade were Region I Onroad Champ, Greg "Lonewolf" Klugh and Sportsman Cup Champ, Willy Decker.

Less than five... and Klugh burst from the gate and through the dangerous first corner but Steve Boise (winner of last year's B-main) bounced off Klugh and into first. Chuck Lonergan ran him down and passed for the lead as Boise found his own way into the speedway wall after three minutes. Boise knocked the boards again and permitted Lonergan a few more feet.

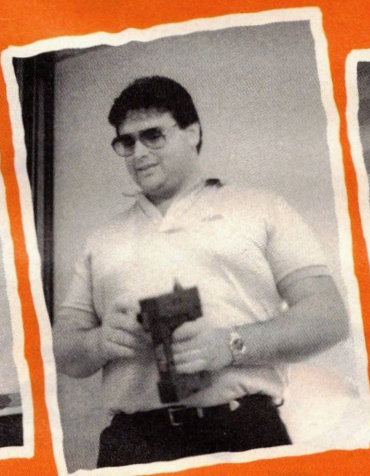
Meanwhile, darkhorse Lewis and Scott Williams tangled for third and fourth. After catching Lonergan, Boise again found the boards and this time bowed to Scott Williams at the five-minute mark. As the seconds clicked down Lonergan must have been wondering if lightning strikes twice and sure enough, it does! Scott Williams reeled in the big fish as Lonergan's batteries drained in a replay of last year's WinterNats. Williams blew by Chuck, who was in absolute agony

## THE WINNERS!

At right, Bud Bartos, winner of the 1/12th Scale Indoor Nationals with his 12L racer and KO radio. See page 54 for an in-depth look at Bud's winning car. Below, finishers 2 through 10 in the A-main.



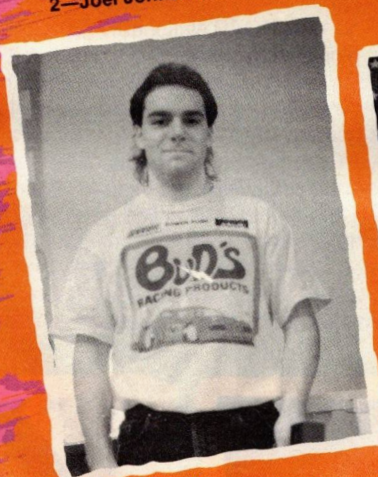
2—Joel Johnson



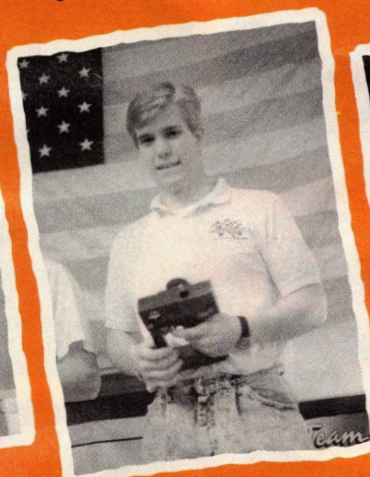
3—Frank Calandra



4—Terry Rott



5—Dean Smith



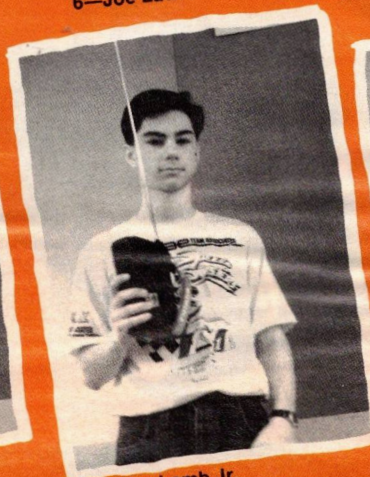
6—Joe Lawrence



7—Mike Seubert



8—Mike Blackstock



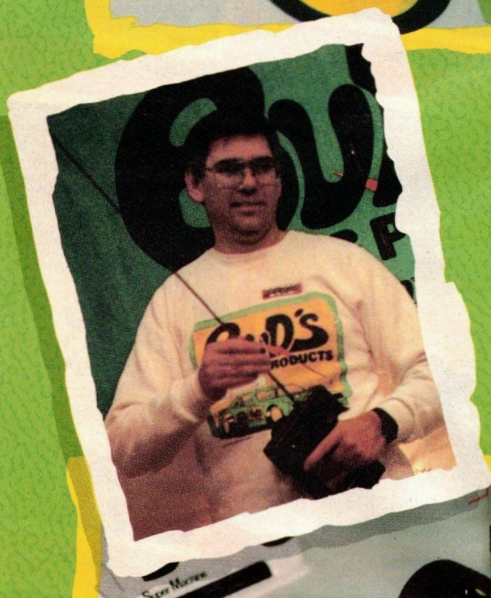
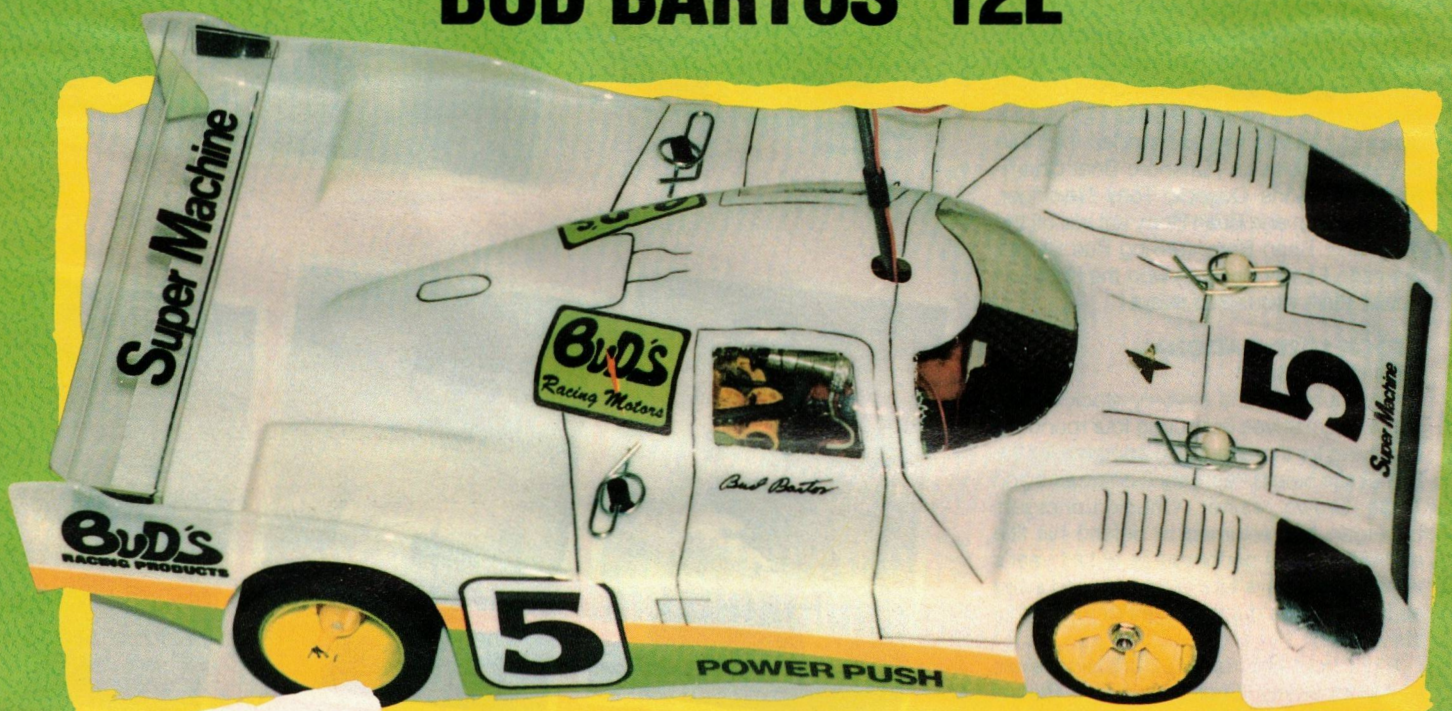
9—Tom Lamb Jr.



10—Chris Doseck

# Scene in the Pits

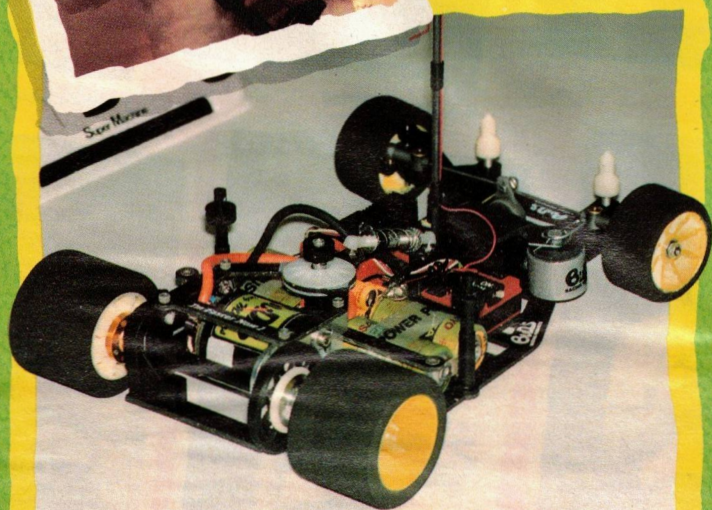
## BUD BARTOS' 12L

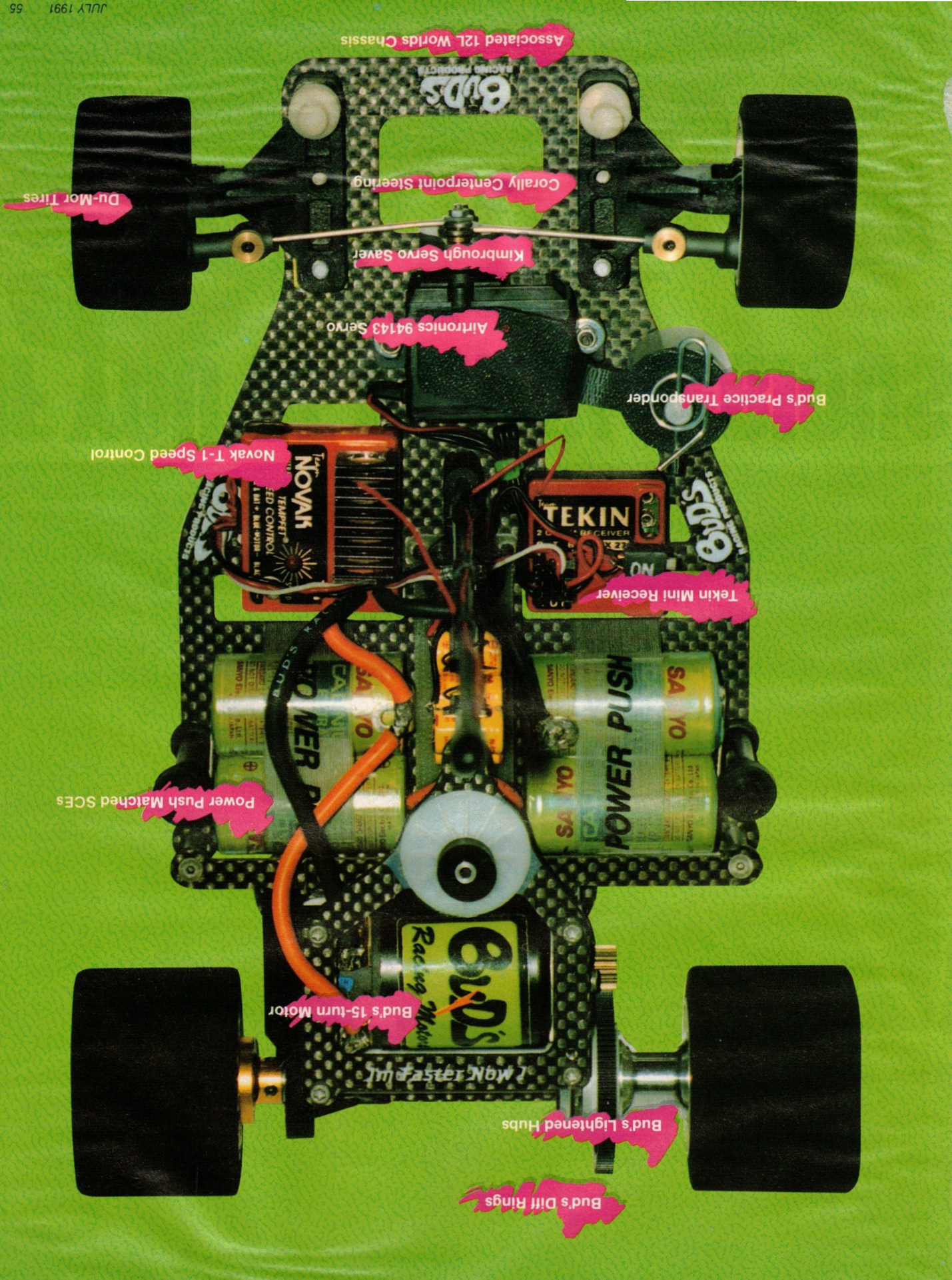


The 1991 ROAR National 1/12th Champion Bud Bartos fielded a car filled with goodies from his own manufacture and other companies too. His Associated Worlds 12L was powered by a Bud's 15-turn motor and Power Push matched SCE cells. Other equipment included a Tekin receiver, a Novak T-1 ESC (with its heatsink drilled out to reduce weight), an Airtronics 94143 servo with Kimbrough's servo saver and a Corally center-point steering mechanism. The 12L Chassis is Associated's 'Worlds' version, and the

body is one of Bud's own Nissan NPT-90 lightweight numbers.

When it comes to Bud's products, you know he's going to load up his car! The 12L includes Bud's 1/8" Crush Sleeves, Practice Transponder Weight and Mount, a Roll-over antenna, Lightweight Wheel Hubs, Thrust Cone Kit, Diff Drive Rings, 14-gauge Silicone Hookup Wire, Locking Body Clips, Rear Stabilizer Wing, HPS Motor Brushes, 'DA' Lite Motor Springs, and DuMor 64-pitch gears. Whew! Congratulations, Bud Bartos.





Bud's Diff Rings

Bud's Lightened Hubs

Bud's 15-Turn Motor

Power Push Matched SCES

Tekin Mini Receiver

Novak T-1 Speed Control

Bud's Practice Transponder

Airtronics 94143 Servo

Kimrough Servo Saver

Corally Centerpoint Steering

Du-Mor Tires

Associated 12L Worlds Chassis



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# ABOUT RACING, THINK BIG.

**RC10—2 TIMES WORLD CHAMPION—1985-1987, 1989-1991**



**AT TEAM  
ASSOCIATED  
WE ALWAYS  
THINK BIG.  
AND WIN BIG.**

Like *World Championships*. Team Associated cars and drivers have won an unparalleled 8, including titles in 1:12, 1:10 and 1:8 scale competition. No other R/C car manufacturer's team has won more than two.

Associated cars win more than just the biggest races, too. Readers of *Radio Control Car Action* magazine voted the RC10 the 1988 R/C Car of the Year, and by a resounding margin of six to one over the second place car! Thank you very much, readers. *Radio Control Car Action* also held a shoot-out between the RC10 and the next most popular car, and the RC10 came out a winner again!

And at the Reedy Race of Champions (called a re-run of the World Championships because all the drivers from *Europe*, *Japan*, and the *USA* who made the A Main at the

World Championships were present), the RC10 finished first and second.

Racers, readers and dealers all agree. Performance, reliability and readily available spares make the RC10 a big Number One.

Whoops, gotta go now. I want to watch *World Champion Jammin' Jay Halsey* take a victory lap with his RC10.



**Associated Electrics**  
3585 Cadillac Avenue/Costa Mesa, CA 92626

Associated's new Team Car with the aluminum chassis is the same car raced by factory driver Cliff Lett.



# RC10

## TEAM CAR

BY DEREK ARITA

**B**ack in the old days, when gas and 1/12-scale were the only forms of R/C car racing, you were hard-pressed to find a competitive car that could meet the stringent requirements of offroad racing. The few cars that were manufactured for dirt were a far cry from meeting the needs of the young Cliff Letts and Masami Hirosakas.

Well, that's the way it was, until December of 1984 when two young men, Roger Curtis and Gene Husting, introduced a car that would carry offroad racing well into the 90s and beyond. And it's carried the sport Big Time! Enter the RC10.

So much has been written about the RC10 that you'd think all had been said, but as Associated has stated time and time again, "We are always working at improving." And improve they did with the introduction of the RC10 Aluminum Team Car.

As with the graphite version, the aluminum version sports all of the team goodies such as hard anodized, teflon coated shocks, universal axles and the much talked about Stealth Transmission. There is no need to buy package after package of aftermarket

add-ons that are here today and gone tomorrow. Why the aluminum, you ask? Associated has always recognized that R/C racing is enjoyed by all skill levels and all ages. What is a necessity to one driver may be a luxury to another, thus the aluminum version, to give all of the team advantages at a more affordable price. Does the aluminum work as well as the graphite? Just ask Cliff Lett, who now races the very same black-anodized chassis. Aside from 25-degree caster, front block carriers and RCPS titanium turnbuckles, you now have the chance to show just what you can do with a race-proven, team machine!

Which RC10 should I get? You now have a choice of the basic Championship Edition (with or without bearings), the Aluminum Team Car and the all-out Graphite Team Car. Check the chart and pick the version that suits your needs and greeds.

### THE KIT

As you might expect from a company like Associated, the Team car kit comes well packaged with a precise and easy-to-follow instruction booklet. Clean photos accom-



pany each step, so you're going to have to make an effort to make mistakes. Don't be intimidated by all of the bags of parts and do keep them organized. The instructions will tell you which bags to grab particular parts from. If you are new to this game, take your time and do it right the first time. How the car works will be determined by how well you've followed the instructions. If you have any questions that can't be answered by local authorities, just call top tech, Topper Klepsattel (say that name five times, fast) and he'll be glad to help. If you are calling for parts, have those numbers ready.

### EYES FRONT

The front end assembly is very straightforward—what the words don't say, the pictures do. There are many nylon parts used, so take care when you tighten screws. Overtightening will result in stripped threads which means a trip to the hobby shop for replacement parts. Whatever you do, don't use an electric screwdriver for assembly.

When fitting the hinge pins into the arms and their supports, they will fit snugly, but not

tight. Remember that the nylon will form to the part after a few runs, so don't be concerned by a little binding here and there. If you think you might have a problem, it might be a good idea to seek some expert hobby shop advice—they should be more than happy to help you out.

Turnbuckles are provided—wouldn't ya know—in order to make linkage adjustment a breeze. Since the end of the turnbuckle should reach to the beginning of the molded nut on the ball ends, it was necessary for me to trim 1/16" from the turnbuckle ends. When you screw the ball ends on, be careful not to drive right through into the cup itself. This could mean another trip to the shop. When you install the linkage, it may be a good idea to position them so that a turn back will shorten the rod and a turn forward will lengthen it. This will save you from having to figure out which way is which when setup time comes.

### TRANNY TIME

Yes, the Team Car does have the revered Stealth transmission. Six years of technol-

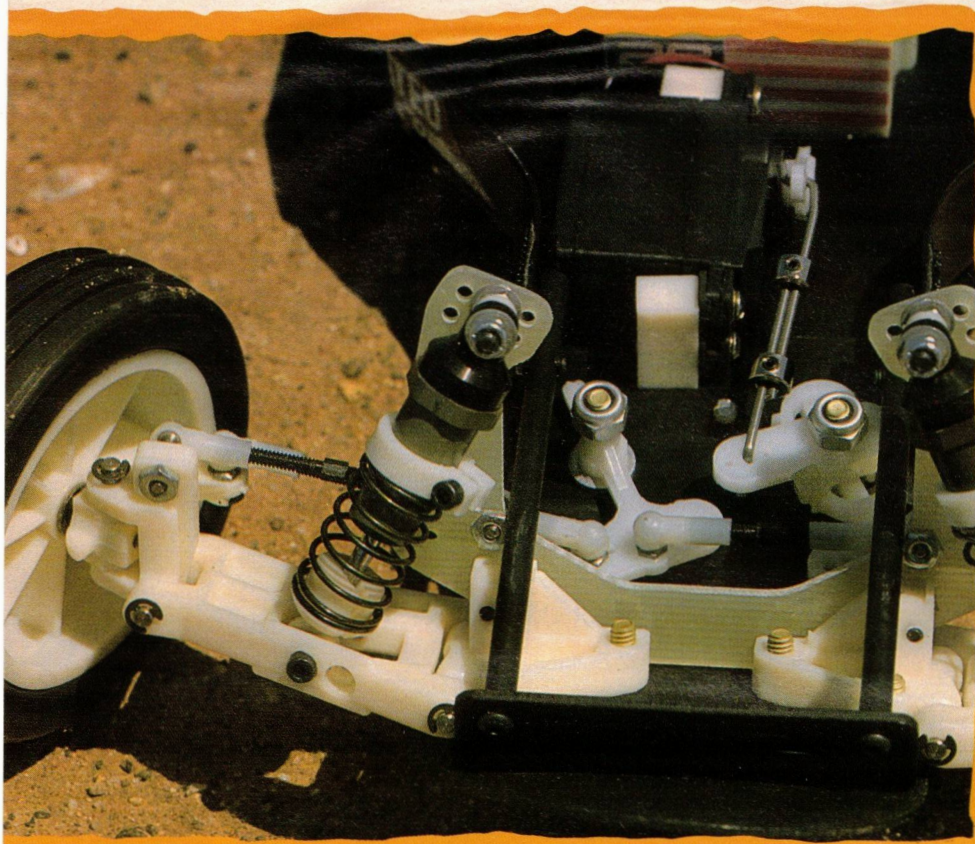


**A close check after testing showed that all on the RC10 was intact, without a loose nut or cracked part to be found. The Team Car continues Associated's reputation for performance and dependability.**

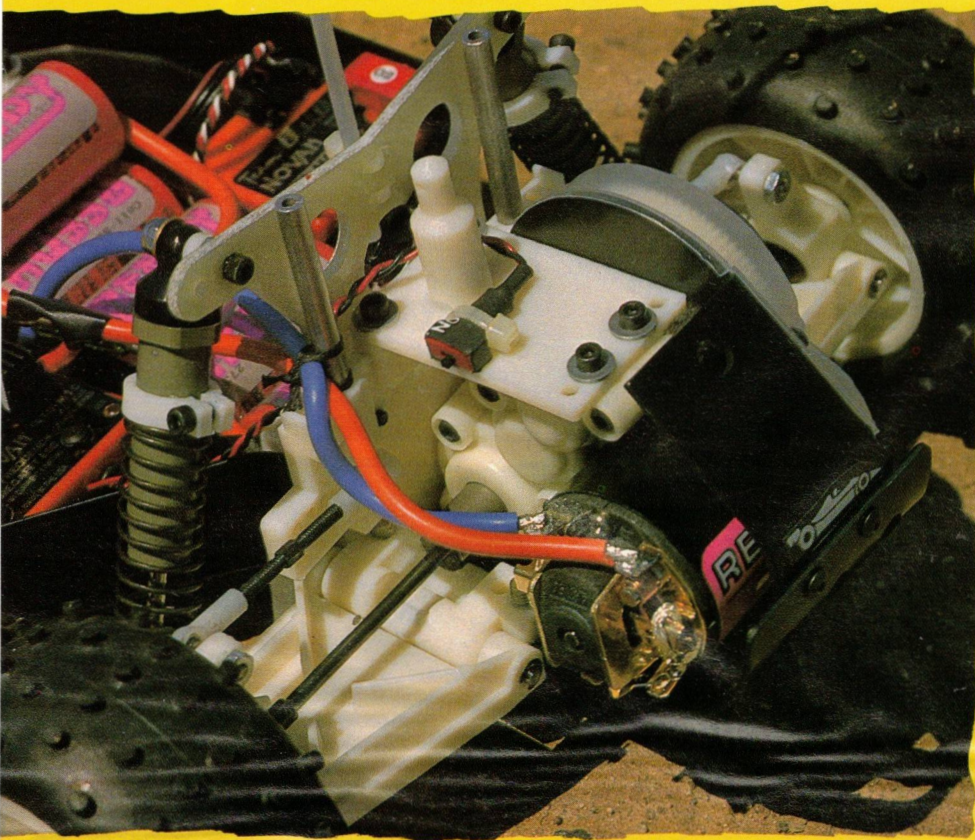




**“With a 20-tooth  
pinion and an  
81-tooth spur, it  
was all I could do  
just to hold onto the  
radio!”**



The shocks are new to the Associated lineup. They are smoother, more precisely machined and even more dependable. Hard anodizing makes the entire shock body ultra-smooth and extremely resistant to wear.



The Team Car comes with the near-bulletproof Stealth Transmission. Author installed a Reedy 16-turn triple, designed for 2WD offroad and 1/12th onroad cars. Each motor is hand-wound and assembled, and comes with an extra set of brushes and springs, and best of all, the capacitors are already installed!

ogy has brought along such features as light-weight design, low inertia, 48-pitch gears, carbide diff balls and Rulon clutch plate for long life and low maintenance. As an added bonus, the Stealth features simplicity and an increased torque capacity to withstand the tortures of today's motors and batteries. A separate differential and clutch make this transmission the prototype of copycat, after-market trannies of the future.

Assembly of the tranny is extremely simple, but again, follow the instructions to the word. You'll come out with a transmission that feels like it was built by Mr. Lett himself.

Try this race tip—before you install the bearings, clean them out with motor spray, then use some Mobil 1 oil to lube. With the teflon sealed out drive bearings, use an X-acto Knife to remove the thin "C" clips that retain the teflon rings. Gently remove the teflon rings, flush out the packing grease, then reassemble. If you've never gone into a bearing before, you may want some help from someone who has. This tech tip will result in a super free-spinning tranny.

As is spelled out in the "Cliff" notes, differential and torque clutch adjustments are crucial. Be as accurate as is humanly possible, because if Cliff ever gets hold of your car, that's one of the first things he'll check. Take note that during the first few minutes of running, parts will seat, so check your adjustments.

Just as a car uses a clutch to allow you to apply power from the motor, the Stealth uses a clutch to allow you to do this very same thing. This unique feature will allow you to put the power down on any track. For low-bite surfaces you'll use a loose clutch setting and for high-bite, a tight setting.

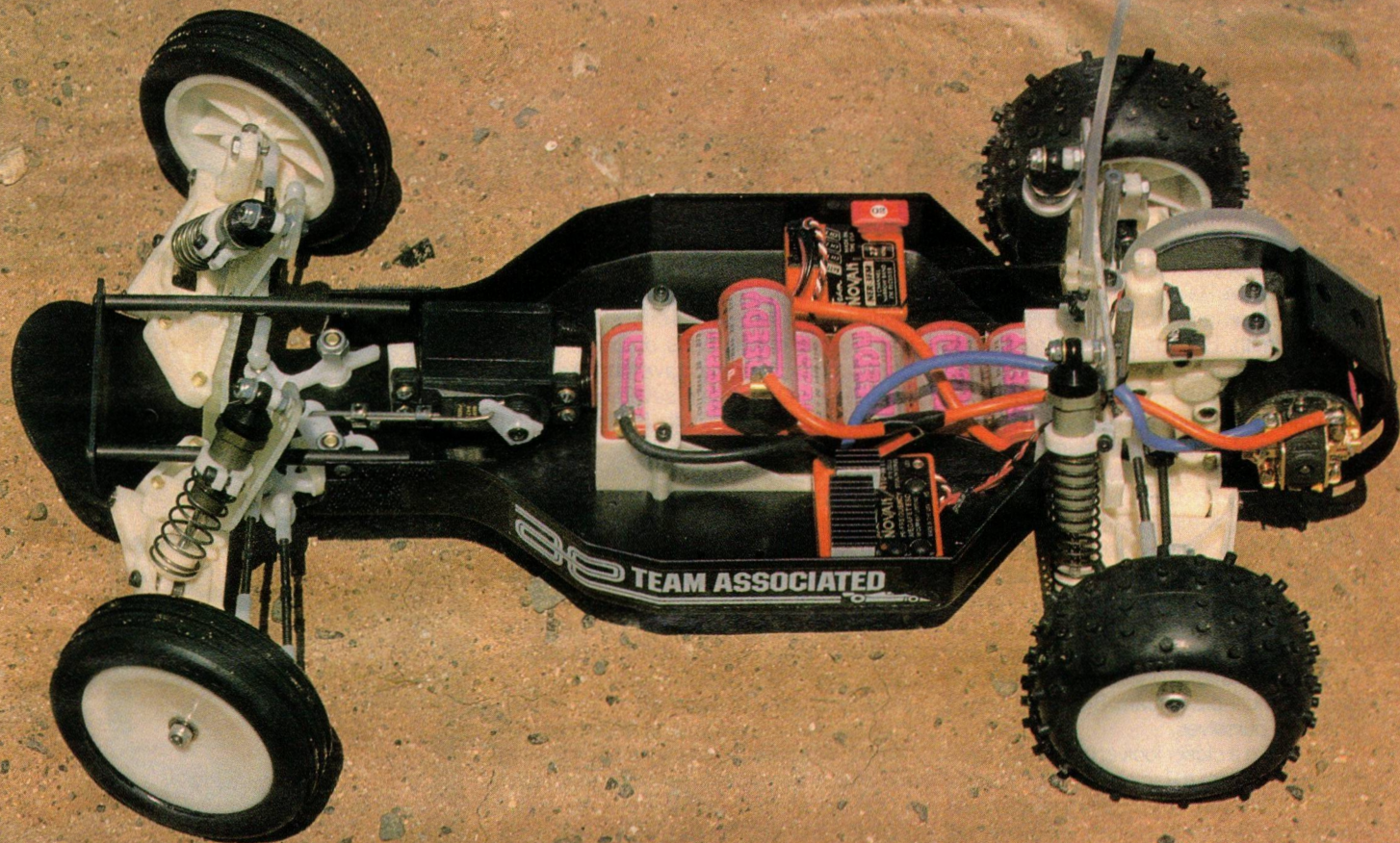
The thin little clutch plate that takes all the beating is made from a material called Rulon. This stuff will withstand temperatures of up to 500 degrees and will have a long life—it's as tough as...well...as gorilla snot.

Along with the tranny, a 48-pitch, 81-tooth gear is provided. This gear mounts to the outer clutch hub via two screws. I just wanted to assure you that all 48-pitch gears will mount to this hub in the same manner, so there's no need to worry about having to purchase special spurs.

This kit doesn't miss a trick! Also included in the team car version are universal dog-bone driveshafts. The main advantage of the universal joint is to aid in the retention of the dogbone in case of a severe impact, which would otherwise cause the dogbone to be hurled into the next zip code. Does the universal give you any more speed? Not really. We're still talking metal against metal, which has a very low coefficient of friction. Less friction equals less drag, which will ultimately result in a freer suspension.

#### EYES REAR

The test of the rear end assembly is simple once again. What still amazes me is that fact that all of that technology in the Stealth is packed into such a neat package—and it fits right into place—how do they do that?



## RC10 COMPARISON CHART

|                  | <b>CHAMPIONSHIP EDITION</b>                                   | <b>ALUMINUM TEAM CAR</b>   | <b>GRAPHITE TEAM CAR</b>   |
|------------------|---|--|--|
| Part             | #6010/6016  | #6035  | #6036  |
| Chassis          | Alum. Gold Anodized   | Alum. Black Anodized   | Graphite   |
| Transmission     | Std. Associated   | Stealth  | Stealth  |
| Motor            | Std. Stock Motor  | None   | None   |
| Speed Control    | Assoc. Resistor   | None   | None   |
| Body             | Protech   | Viper  | Viper  |
| Bearings         | 6010 — No<br>6016 — Yes                                       | Yes  | Yes  |
| Shocks — Front   | .71 Std. Gold Anodized  | .71 Hard Anodized<br>w/Teflon Seal                               | .71 Hard Anodized<br>w/Teflon Seal                               |
| Shocks — Rear    | 1.32 Std. Gold Anodized                                       | 1.32 Hard Anodized<br>w/Teflon Seal                              | 1.32 Hard Anodized<br>w/Teflon Seal                              |
| Rear Axle        | Std. Dog Bones  | Universal Axles  | Universal Axles  |
| Spur Gear        | 54 Tooth/ 32 Pitch  | 81 Tooth/ 48 Pitch   | 81 Tooth/ 48 Pitch   |
| Front Shock Stay | Standard 4 Hole   | New 6 Hole   | New 6 Hole   |
| Front Rims       | 2 1/8" 3 Piece Dish<br>New 6906 Bearing<br>3/16" x 3/8" Plain | 2 1/8" 1 Piece Dish<br>Std. 6902 Bearing<br>3/16" x 5/16" Flange | 2 1/8" 1 Piece Dish<br>Std. 6902 Bearing<br>3/16" x 5/16" Flange |
| Front Tires      | TQ — 71   | TQ — 72  | TQ — 72  |
| Rear Rims        | 2" 3 Piece Dish   | 2" 1 Piece Dish  | 2" 1 Piece Dish  |
| Rear Tires       | TQ — 21 or TR — 8H  | TQ — 22  | TQ — 22  |

Inside

# INSIDE HYPERDRIVE

BY RICH HEMSTREET

**H**yperdrive Racing of Fayetteville, Arkansas, was founded in 1987 by R/C racer Snuffy Smith. His first product (after a full year of intensive testing) was the revolutionary Hyperdrive Belt System that replaces the standard pinion and spur gears on R/C cars with a pair of pulleys and a narrow toothed belt. Since then Hyperdrive has become a force in onroad R/C racing, including qualifying for the A-main in each 1/10-scale ROAR Onroad Nationals since they started. Hyperdrive has also won four of the last eight major superspeedway races, including victories at Whippoorwill, the RC Thunderdrome and Mid-Carolina Superspeedway. All this with primarily one driver, Ralph Burch Jr., not a multi-driver team. But, we're getting ahead of ourselves.

Let's take a closer look at the driving force behind Hyperdrive Racing, Mr. Snuffy Smith. The first time you meet Snuffy you will never forget him. He stands six feet, five inches tall and has a definite "Arkansas drawl." He always finds time to talk to people at races and has been known to spend more time at major events working on other people's cars rather than his own. Smith is constantly challenged to find a better way of doing whatever he is involved in.

Snuffy has an interesting background that includes being a musician who has toured the world, to being a top-notch marksman appearing on ESPN. As a banjo player, Smith not only performed, but also looked for ways to improve his chosen instrument. Thanks to Smith's ingenuity, many of the top banjo pickers in the world today insist on using a Snuffy Smith bridge on their instruments. Smith is also the owner of S.S. Industries, a company that produces gun parts for both the government and civilian gun markets.

His machining and design capabilities also helped him in his professional shooting. He was able to modify parts of his pistols, or build custom parts, that gave him an edge in competition. Once again, several current pro shooters are using Snuffy Smith-designed parts in competition.

When Snuffy got into R/C racing in the mid-'70s he started out racing 1/12-scale cars. Eventually he became involved in 1/8-scale gas racing, where he met Ralph Burch Jr. In 1987, Snuffy Smith came to Lake Whippoorwill International Speedway as the team driver for Advance Engineering, racing a 1/10-scale electric car of his own design. It didn't take long before Snuffy's desire to improve on the development of 1/10-scale cars resulted in the Hyperdrive Belt System. This revolutionary system has been fighting the status quo of the standard gears ever since it was introduced. Few people realize that the full-size Nissan GTPs that have been running away from the IMSA GTP fields the past couple of years are *belt driven*.

Hyperdrive was also working on their own 1/10-scale onroad race car that debuted at the 1988 ROAR Onroad Nationals in Tulsa, with Ralph Burch Jr. driving. Burch solidly put the car in the A-main. In the lower mains 18 cars had the Hyperdrive Belt System installed on their cars, and nine of them won their main events. Later that year, Snuffy Smith returned to Lake Whippoorwill International Speedway as the head of Hyperdrive Racing. The format for the invitational drivers called for Superspeedway racing, with a 200 lap A-main scheduled. Ralph Burch Jr., driving the new Hyper 10, wiped out the competition, winning by nine laps. Burch was also the TQ, by three laps. The second-fastest



Above, the Hyperdrive office staff, including Snuffy at far right with office watchdog, Pardner. At left, Snuffy on the phone again, probably with a racer who needs some advice about his equipment.





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**Hyperdrive**  
*Racing Systems*

Racers can contact Ralph Burch at Hyperdrive for help with technical questions. You don't have to drive one of Hyperdrive's cars to take advantage of Ralph's expertise.





Tammie Floyd is the office manager at Hyperdrive.



Above, Jacque Smith is Snuffy's wife, and secretary/treasurer for S.S. Industries. At left, Jerry Taylor manufactures some parts for the Hyperdrive cars. Below, Bonnie Gedeon is in charge of correspondence and catalogs.



qualifier also used Hyperdrive's belt system on his car. In 1989, Snuffy Smith was the Top Qualifier at the second annual RC Thunderdrome. Ralph Burch Jr. won the A-main event with Smith finishing second, were eight laps ahead of the competition.

The Hyper 10 had several unique features that Smith had designed into the car. The front crossbar that was found on many on-road cars was improved by simply machining it to accept a mounting bracket to hold the front steering servo. This way the steering linkages don't get out of adjustment when you adjust the caster setting. It also prevents bumpsteer by maintaining the proper linkage alignment. This little improvement is but another example of Snuffy not being satisfied with "good enough." The four pivot balls used on the rear suspension led the way in removing the flexing of a T-plate as being crucial in how your pan car would handle. Instead of flexing fiberglass, the Hyper 10's rear suspension is controlled by three high quality coil-over shocks.

In 1989 Ralph Burch Jr. came to work on a full-time basis at Hyperdrive, moving from Texas to Arkansas. Burch is a 15-time National Champion in both gas and electric R/C cars. Ralph started driving in 1979 for Jomac in 1/12-scale. Since then he has also driven 1/10-scale, 1/8-scale and 1/4-scale cars, winning at every level. This past summer, Hyperdrive "loaned" Ralph's services to Team Associated for the 1/12-scale IFMAR Worlds in Singapore. Despite his lack of recent racing time spent in 1/12-scale, Burch still finished third overall in the World. Besides Ralph's superior driving abilities, he also works on research and development. In the office Burch also handles answering technical questions from racers, even if they aren't using a Hyperdrive car.

The Hyperdrive product line has steadily increased in size, partly as they developed ways to install the Belt System on a wide variety of R/C cars. The majority of the onroad cars were quite simple to deal with, but the offroad cars have been a real challenge. Smith doesn't want any product to carry the Hyperdrive logo if he isn't comfortable with its quality. While there have often been easier ways of making a conversion, if it doesn't meet Snuffy's criteria of quality, they keep refining the product until it does. In Hyperdrive's continual push for perfection they continually upgrade everything they sell with no additional charge. They upgraded the original Hyper 10 six times during production and the belt system has been improved three times. If Hyperdrive finds a way to make a part lighter, stronger or more functional, they do it, without increasing the price.

The Kyosho Ultima conversion kit has really been a good match for the Belt Drive System. With the pulley and belts on the outside of the gearbox the Ultima can be geared to really fly (53 mph at the Thunderdrome in 1990). Hyperdrive also makes on-road conversion kits for the Ultima, RC10 and JR-X2. These kits employ a flat fiber-

glass chassis with the Hyper 10 crossbar front suspension. The systems bolt directly to the chassis plate. Of course, the appropriate Hyperdrive Belt System is included with each kit.

For 1991 Hyperdrive has released their new H10SC, a refined version of their original car. Hyperdrive worked hard at the conversion, to be sure the original car could easily be updated to their new design. They didn't want to obsolete any of the Hyper 10s presently being raced. They have developed a kit that will make it possible for all the older Hyper 10s to be brought up to the current specifications, for only \$39.95 retail (approximately a \$110.00 value).

Hyperdrive will soon introduce several more new products, including a new H10SE (Speedway Edition) narrow car and pinion gears. The pinions will be available in both 48 and 64 pitch, either in steel or aluminum. They are lightened to reduce the rotating mass by 40%. The steel pinions are coated with "Stealthcoat" to reduce friction and give the surface close to an 80 Rockwell "C" hardness. The aluminum gears are super hardcoated for reduced friction and increased wear. One more new product from Hyperdrive is the 10L Super Shock Conversion kit, designed to upgrade the rear suspension on Associated 10Ls.

Hyperdrive does most of their own machine work, which is unusual in the American R/C car industry. The Hyperdrive offices and plant are connected to Snuffy Smith's home, and the employees are treated as friends or relatives. While I was at the plant recently, several of the employees joined us for supper one night. Most of the employees have been with Hyperdrive, or S.S. Industries, for many years.

Hyperdrive has 17 employees in the plant and five in the office. Bonnie Gedeon has worked for S.S. Industries since the first year of the company. She answers the phones and is in charge of all correspondence and catalogs. Sharon Wade is in charge of inventory and shipping. Tammie Floyd is the office manager. Tammie handles the payroll, does telemarketing and oversees the bookkeeping. The shop foreman, Jerry McCollough, has been there nearly eight years. McCollough is in charge of production, quality control and scheduling. He writes all the computer programs for the CNC machines.

Two other "employees" that are very visible at the plant are T.C., the company cat and resident mouser, and Pardner, the plant watch dog. T.C. has a desire to travel, he frequently is found hiding in boxes that are just about to be sealed and shipped by Sharon.

Hyperdrive's philosophy is to only sell quality products that work. They are not trying to make a fast buck. What they do is for the love of the sport, and the people that are involved in it. Snuffy Smith wants Hyperdrive to "... give back to the sport all that we can and in the process make a friend along the way."



Here's a portion of the crew of workers who make Hyperdrive components at the Arkansas plant.



Plant foreman Jerry McCollough has been with Hyperdrive for eight years.



Sharon Wade handles shipping and inventory duties.



Pardner the watchdog and his pal T.C. make sure everything runs smoothly at Hyperdrive.

## WEN CAR IS A HOT Q-SCALE SPRINTER

BY AL NOVOTNIK

Open wheel racing has been gaining in popularity over the past few years thanks to the efforts of ESPN in televising Saturday Night Thunder races and the traveling "Greatest Show on Dirt," the world of outlaw sprint cars. One of the most popular cars on the USAC tour has been the "Beast" midget designed and built by Bob East. First there was the Beast sprinter, and then a Silver Crown car.

Now with the popularity of quarter-scale open wheel racing a new manufacturer is on the scene: Wen Car of Huntington Station, N.Y. (516/673-7022). The car shown in this article is the latest state-of-the-art design featuring a chrome-moly frame, jig built, and tig welded. The chassis design is very close to the full-size "Beast." The elimination of the upper parallel frame rail makes engine installation a breeze. Any 23cc 1.3 cu. in. engine that is QSAC approved will fit in the chassis. With the popular down tubes, the chassis is very rugged. No painting is required on the chassis as it is powder-coated to a high luster. As with most of the sprint car designs, the Beast features cross torsion bar suspension. Bronze bushings are located at either end of the torsion bar housings and the torsion bars themselves are made of hex stock. The torsion arms and stops are

The Wen Car here has been modified with the installation of a Conley 1/8 gas engine. Tecna-craft wheels were also chosen as a modification.

**Newest quarter-scale sprint car kit is a winner, with Skellenger's quick-change rear end, jig-built chrome-moly frame, and a Zenoah 23 cc engine.**

machined from aluminum with broached holes for the hex torsion bars. When assembled the torsion bars are fully adjustable. Shock absorbers are also adjustable to rate desired.

The front end assembly includes both the axle and brackets in chrome-plated chrome-moly tubing. Spindle assembly and hubs are

turned aluminum with ball bearings installed. The front stabilizer bar is fastened to the axle and the frame with spherical joints. The torsion arms ride on small rollers mounted to the axle assembly. Radius pods are also spherical joint mounted on either end of the rod.

The steering servo is mounted on the front axle to eliminate bump steer. Tie rods and steering are all held in place with aluminum spherical joints.

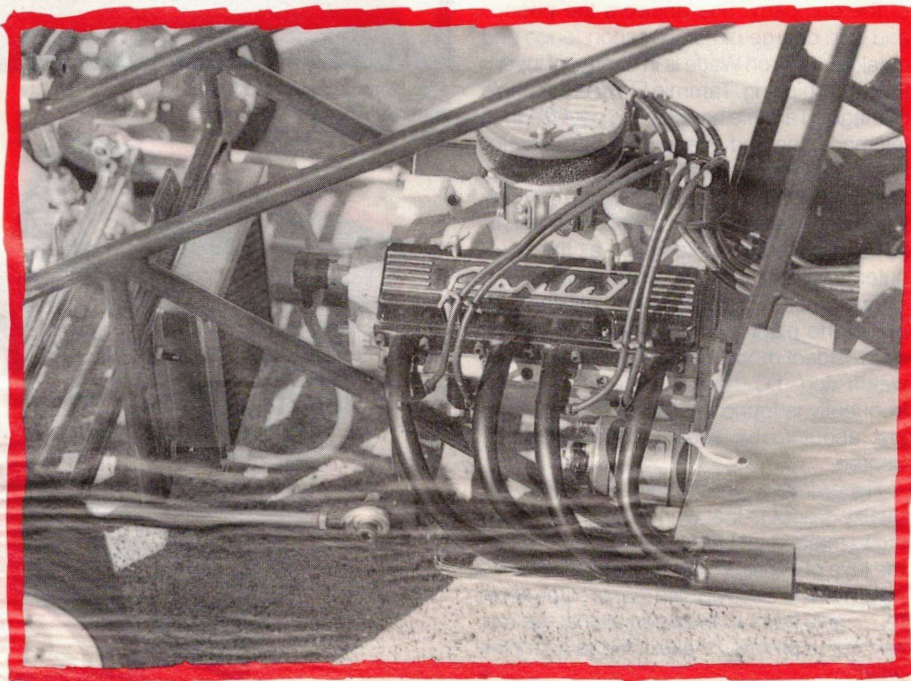
A chrome bumper finishes off the front end of the racer. Nerf bars and the rear bumper are also chrome plated.

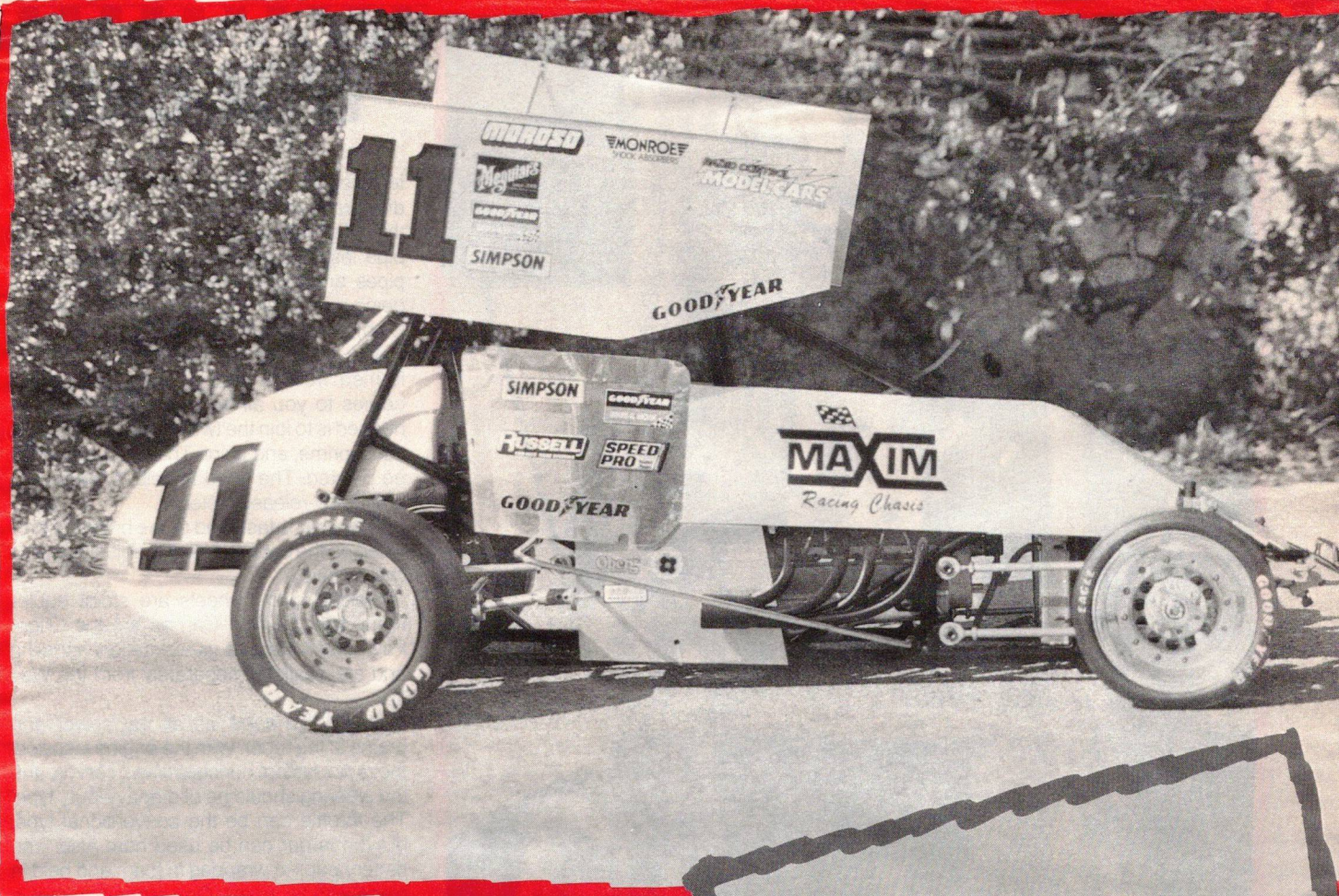
The rear end in the Beast is a Skellenger quick-change, a copy of a full-scale Hallibrand rear using a panhard bar for stabilization, and machined bird cages with husky ball bearings. The rear axle is made of 1/2" dia. 7075 aluminum alloy for superior strength.

The rear torsion arms and shock absorbers mount to the rear bird cage assembly.

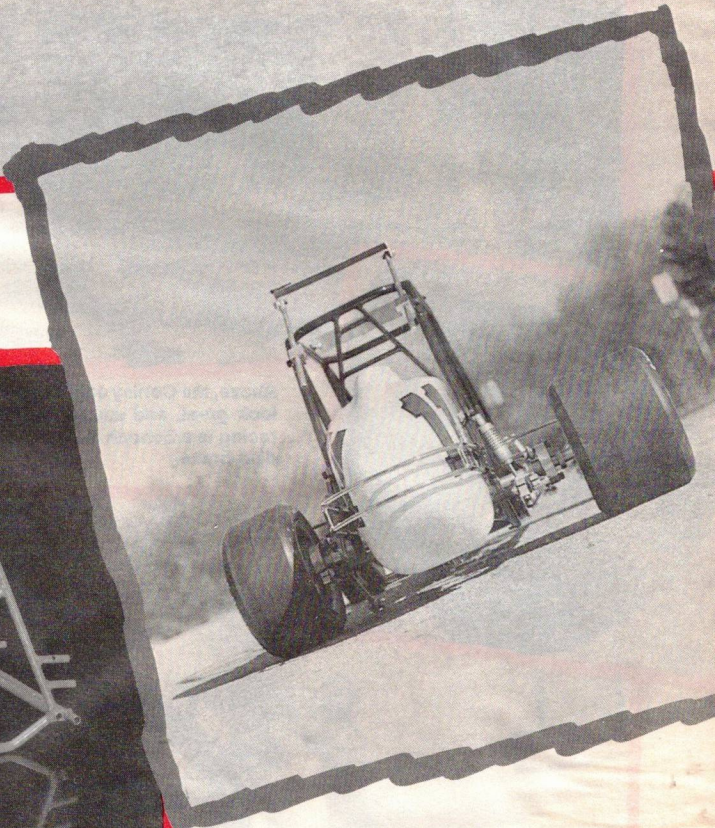
The four shock absorbers are held in place with a ball joint and retainer. No tool or wrench is needed to change. Just snap the keeper off, install the new shock, and snap the retainer ball in place.

Power for this little Wen car comes from the Zenoah 1.3 23cc engine. The engine

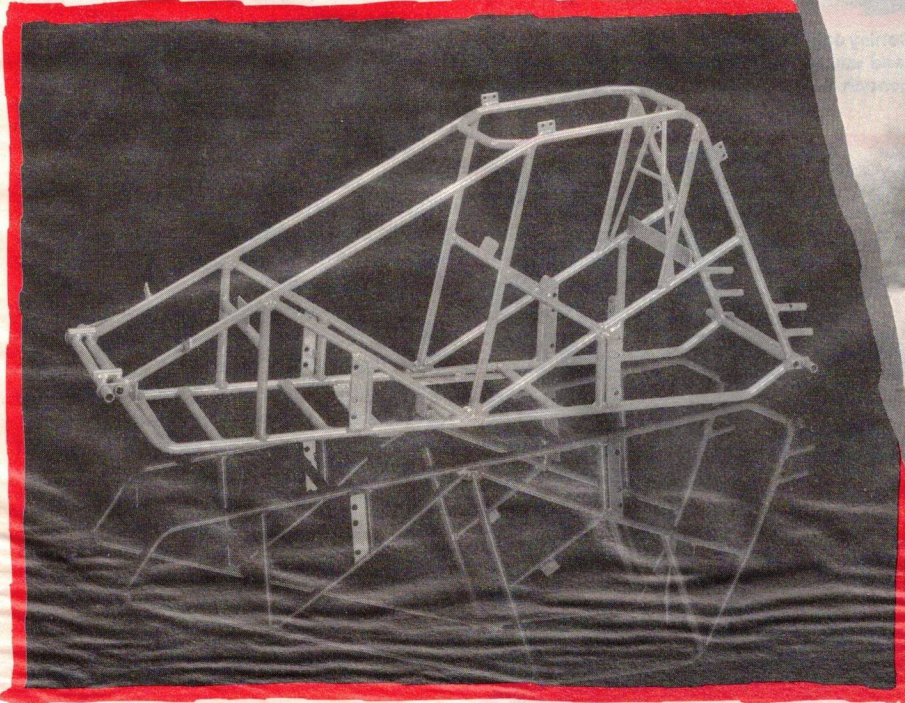




Above, the sprinter with a custom hood fabricated from .020 aluminum to resemble Steve Kinser's Maxim car. The author made this change as a personal choice to reflect his preference for the nearly unbeatable Kinser.



From the rear, the car has an unmistakable look of a left-turn only racing machine. The body is vacu-formed from plastic and comes trimmed. Join the two tail halves, paint it, and you're ready to roll.



The beautiful chassis uses down tubes, and doesn't need painting, as it comes powder-coated to a high luster. The elimination of an upper parallel frame rail makes engine installation simple.

# WEN CAR

features a centrifugal clutch assembly and a disk brake with a drive shaft. In competition the engine should have a tuned exhaust pipe installed (optional equipment). These pipes are custom made and if the car is being run under QSAC (Quarter Scale Auto Club) rules the pipe must be inside the car.

The body for the Wen car is vacuum-formed from a heavy plastic material. It comes to you all trimmed. The only work needed is to join the two tail halves together, sand, prime, and paint. The hood also must be painted. The hood is held in place with one quick-release fastener.

The wing is fastened to the brackets provided on the car and is easily adjustable with two screws.

Molded nylon wheels are stock equipment with the Wen Car, as are the "Tiger Paw" tires. The tires give excellent handling and are available separately from the Wen Car.

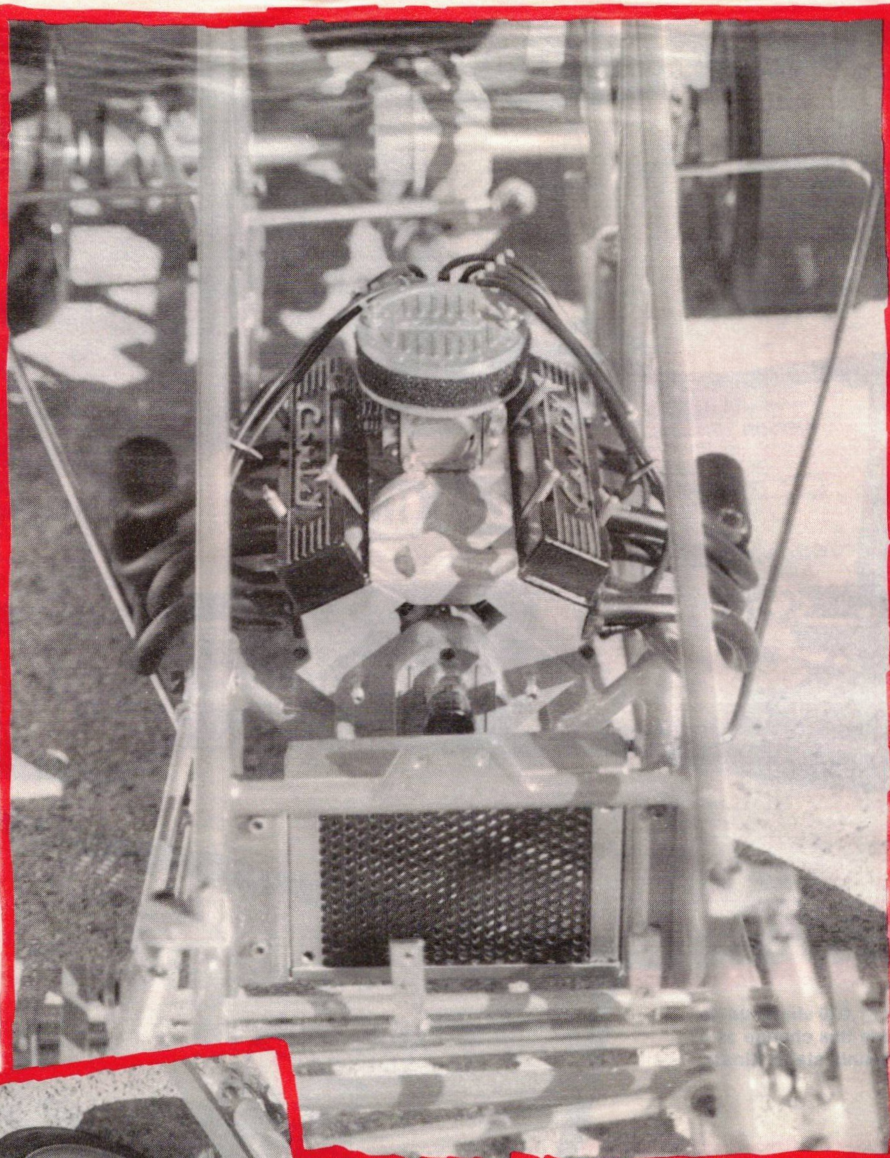
Under the hood fits all the power and brains of the racer. With the engine installed, the radio system consists of two servos, and the steering should be of a heavy-duty type. The throttle can be the conventional type, but the larger can be used here also. The battery pack is wrapped in foam and held in place with tie wraps. One other item that is part of the electrical system is the switch harness. This should be put either on the side of the chassis or in the cockpit area.

The throttle servo does two different things on one command; that is it advances and reduces the engine speed, and it also actuates the braking system when the throttle is pulled down into low-throttle position.

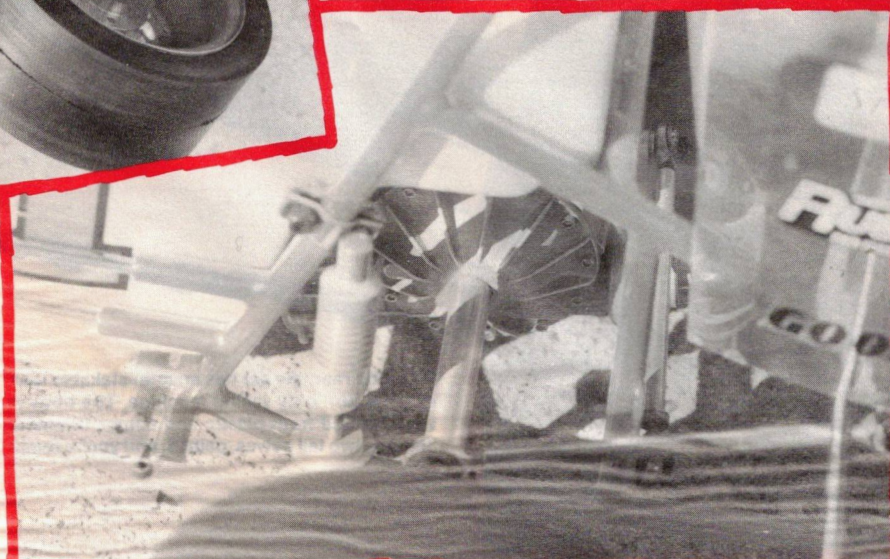
Finishing your car is a breeze, with the body components painted and wing if you choose to paint it. Decals and numbers can now be applied.

Now you're ready for the track. Check your local area for a track that sponsors 1/4-scale racing and while you're at it, also look into joining QSAC, the governing body for 1/4-scale racing.

Note: The car in these photos is a modified Wen Car. The only things changed have been the addition of a Conley 1/8 engine and a set of TecnaCraft wheels. Everything else is stock. Because I wanted my sprinter to look a little different, I fabricated my own hood from 0.020" aluminum to resemble the Kinser #11 Maxim car. The Wen Car is a highly competitive sprint car capable of putting you in the winner's circle. Take a good look at it and you will agree, it's designed for racing. ●

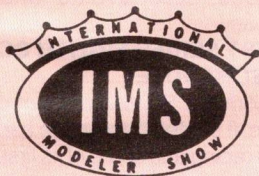


Above, the Conley engine is installed, which makes the car look great, and sound even better! Standard engine for racing is a Zenoah 1.3 cu. in., with centrifugal clutch and disc brake.



(Inset) Front wheel assembly and shock. Wheels are molded nylon, which along with the Tiger Paw tires, are standard equipment. Rear end is a Skellenger quick-change, which is a duplicate of that which is on a full-scale racer. Rear axle is made of 1/2-inch diameter 7075 aluminum alloy.

# SECOND ANNUAL



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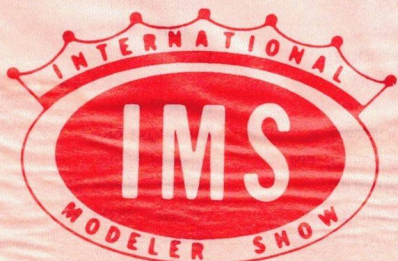
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actual idle speed. No engine will keep running if the idle rpms are set too low. You want an idle speed that is just low enough to disengage the clutch and high enough so the engine stays running. Error on the high side here. What you are trying to do is get the thing running well enough to get out on the track and set the high-speed needle.

After you complete the above adjustments, pick up the car, clean out the engine by giving the throttle a healthy blip or two, and set the car on the track. Let it sit there with the engine idling for about five seconds and open the throttle. The car should move out with the engine sounding pretty happy. If it doesn't, listen to how the engine sounds when it stalls and make the proper low speed adjustment as explained earlier.

Now you're ready to set the high-speed needle. Fill the tank to half full again and get ready for the fun part of this exercise. This can only be done with the car out on the track and the engine running under load. Listen for the same noises we spoke of earlier as the engine tries to go to full song. If the engine begins to scream but then dies quickly, it's too lean. If it doesn't respond quickly but sort of stumbles when the throttle is opened, it's too rich. Again, make the corresponding adjustment to correct the symptom. Now you're getting close to the right settings; real close.

There's a couple things to remember when you get to this point and start fine-tuning the carb. First, the low- and high-speed needles tend to interact slightly with each other so keep listening to what your engine is trying to tell you and make small adjustments. Second, give your car a couple of laps each time you make a needle change. This is necessary because lots of fuel gathers in the crankcase while the car is idling and it takes a while to clean it out. And third, most guys make the mistake of setting either or both needles too lean. And that's bad. A little too rich on a full tank is just what you want.

Fill the tank completely and run the car until it's out of fuel, making any adjustments necessary if the engine stalls. If it does stall, this is probably caused by the changes in fuel level as the tank empties. Most often, this will require a slightly richer high end setting.

When you finish this procedure you will have a car that responds quickly to all throttle commands and empties the tank completely. Only slight adjustments will then be necessary from week to week unless you change fuels. You can now go to the track confident that you have a plan that will work. Now go work your plan.

#### QUARTER SCALE ACTIVITIES

Lots of news that you can use this month. The big guys of R/C car racing have been busy arranging the race schedule for Midwest quarter-scale events that begin about the time you read this column. Included below is a schedule listing lots of races. I'll try to explain how to navigate through the rather

complicated list of events. The races marked as Great Lakes #X are Great Lakes Quarter Scale Series races. The QSAC #X events are QSAC sanctioned regional races. The races in Troy and Royal Oak, Michigan that are noted as Grand Nat'l dates will be special races sponsored by these two cities and will have formats much like the last two year's races held in Royal Oak. The QSAC Nat'l race in Knoxville, Iowa and the Super Nats in Las Vegas, Nevada need little additional explanation. The Midwest quarter scale racing will culminate on September 28 in Lansing, Michigan with the QSAC Regional Championship race. You can call John Druskinis (313) 282-6410, for more details about any of these events.

All this planning doesn't just happen without the hard work of volunteers. For the Great Lakes group, the volunteers who stepped forward to help are as follows: John Druskinis (President), Roger Martin (Vice-President and Treasurer), Marv Thomson (Tech-Director), and Tom Gonzalez (Points Keeper). One of the helpful things this group has provided is a list of the tech inspection objectives. I'm listing them in hopes that other Series officers might consider helping their racers by publishing similar objectives so there are fewer "surprises" on race days.

#### TECH INSPECTION OBJECTIVES

Conformance to rules so racing is fair to everyone.

Concentrate on performance oriented rules:

- Stock engine
- Weight
- Wheelbase
- Track
- Wings & spoilers: length, width, height, dams, and placement

Expect all dimensional and weight checks each race.

Expect more frequent engine tear downs

- After race
- After Qualifying
- Car seems significantly more powerful

Fuel—We'll do our absolute best to insure correct fuel is used.

In an effort to keep costs down and attract

as many racers as possible, the Great Lakes Quarter Scale races for 1991 will have a lower entry fee. Racers will pay \$12.00 for the first car they enter and \$8.00 for any additional classes entered. Last year the entry fees were \$18.00 and \$12.00 respectively.

#### MIDWEST SERIES EIGHTH SCALE RACE SCHEDULE

The Midwest Series is one of our oldest alliances. It started back in the early days of R/C car racing and some of its first competitors were the founders of our sport. This series is still going strong. Here are the 1991 race dates and locations:

|               |                       |
|---------------|-----------------------|
| May 18/19     | Detroit, Michigan     |
| June 22/23    | Chicago, Illinois     |
| July 20/21    | Windsor, Ontario      |
| August 17/18  | Cincinnati, Ohio      |
| Sept 14/15    | Toledo, Ohio          |
| October 12/13 | Indianapolis, Indiana |

Call new Series Prez. Bob Ciolino (513) 451-3323, for details. As I mentioned in an earlier column, Windsor has been added as a race site and St. Louis was dropped. There are a couple of other eighth-scale events in the Midwest you should also know about. The ROAR Nationals will be from August 23 through September 1st in Cincinnati and that's just a week after a Midwest Series race at the same site. What an opportunity to dial your car in just before the Nats! The ROAR Region III championship race will be held in Detroit on the weekend of September 29, 1991. Contact Bob Snayko (313) 773-6781, for any Detroit race details.

The biggest eighth-scale race in the world will be held in the USA this year. The WORLD CHAMPIONSHIPS will be in Austin, Texas from June 30 through July 7th, co-sponsored by R/C Model Cars. It'll be quite a while before this race is held in the United States again so try to make the event. You'll see the very best drivers and equipment that money can buy. You just can't compare eighth-scale gas racing to any other scale in our hobby. The only word that describes these cars is AWESOME! They look fast just sitting on the pit tables.

#### SCHEDULE OF MIDWESTERN QUARTER SCALE RACES FOR 1991

| DAY       | DATE        | LOCATION      | EVENT          |
|-----------|-------------|---------------|----------------|
| Saturday  | April 20    | Plymouth, IN  | Great Lakes #1 |
| Saturday  | May 4       | Toledo, OH    | QSAC #1        |
| Saturday  | May 18      | Lansing, MI   | Great Lakes #2 |
| Saturday  | June 1      | Troy, MI      | Grand Nat'l    |
| Saturday  | June 8      | Toledo        | Great Lakes #3 |
| Saturday  | June 22     | Plymouth      | QSAC #2        |
| Saturday  | July 6      | Toledo        | Great Lakes #4 |
| Saturday  | July 27     | Lansing       | QSAC #3        |
| Sat & Sun | Aug 10 & 11 | Rockford, IL  | Midwest Nat'l  |
| Wed-Fri   | Aug 14-16   | Knoxville, TN | QSAC Nat'l     |
| Saturday  | Aug 24      | Plymouth      | Great Lakes #5 |
| Saturday  | Sept 7      | Lansing       | Great Lakes #6 |
| Saturday  | Sept 14     | Royal Oak, MI | Grand Nat'l    |
| Saturday  | Sept 28     | Lansing       | QSAC Reg Champ |
| Thur-Sun  | Oct 10-13   | Las Vegas, NV | Super Nats     |

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Sub-compact, feather-weight, switching POWER SUPPLY delivers up to 12 Amps of clean regulated 14VDC power. Great for ANY CHARGER. Can mount piggy-back on HI-IQ (optional hardware is needed).

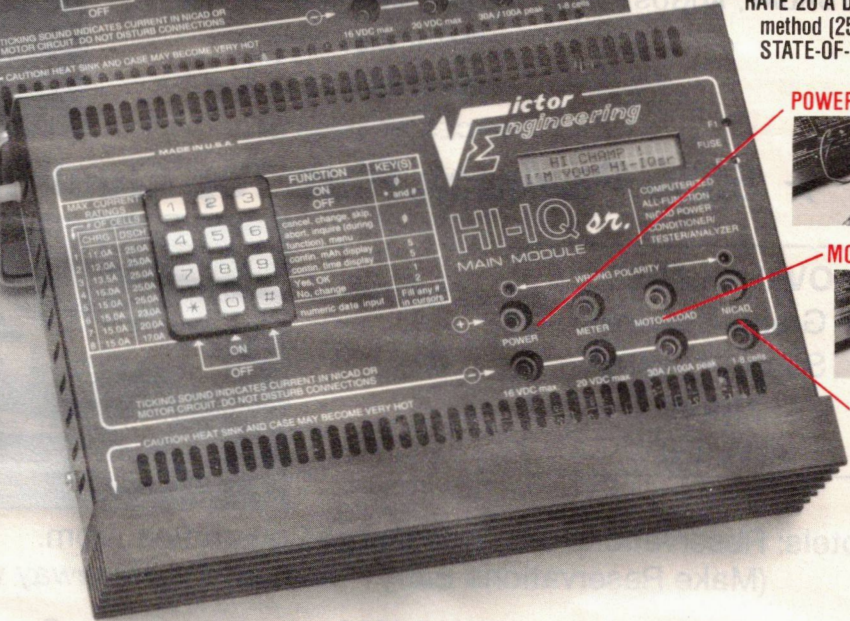


## HI-IQ STANDARD

9 std. functions. Charge up to 15 A. Discharge in excess of 15 A (20 A max.). Ideal for std. 10 A Discharge method.

## HI-IQ "SENIOR"

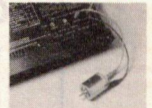
16 functions + carrying case. Specifically designed for HI-RATE 20 A DISCHARGE method (25 A max.) STATE-OF-THE-ART



### POWER HOOKUP



### MOTOR HOOKUP



### NI-CAD HOOKUP



## STANDARD FEATURES

### A) NI-CAD CONDITIONING FUNCTIONS

Amp and other rates default to factory values but can be changed by user in fine increments.

| • PEAK CHARGE<br>15 A max.           | • DISCHARGE<br>20 A max.            | • CYCLING<br>99 C. max.             | • GRADING<br>(MATCHING)<br>consists of Disch., Cool-off, 5sec 30A Punch test.<br>Final Disch., ends by: |
|--------------------------------------|-------------------------------------|-------------------------------------|---|
| CHARGING @10.00A<br>00:03:31 10.76V  | DISCHRGNG@20.00A<br>00:02:56 7.35V  | DISCHRGNG@10.00A<br>ON CYCL# 1 OF 6 | TEST ENDED<br>10.49V @ 20A LOAD   |
| CHARGING @11.00A<br>591MAH 10.76V    | DISCHRGNG@20.00A<br>1002MAH 7.35V   | AFTER-DS COOLOFF<br>ON CYCL# 1 OF 6 | FINL DSCH 4M23S<br>SUPPLIED 1415MAH   |
| PEAKED AT 12.45V<br>OFF CHRG 10.31V  | DSCH ENDED@5.60V<br>PRESENTLY 8.53V | CHARGING @ 3.80A<br>ON CYCL# 1 OF 6 | last cycle ends same as<br>Discharge  |
| CHRG TIME 10M57S<br>ACCEPTED 1827MAH | DSCH TIME 4M28S<br>SUPPLIED 1482MAH | DISCHRGNG@10.00A<br>ON CYCL# 1 OF 6 | FINL DS AUR 7.36V<br>PK CHGR 1684MAH  |
| TRICKL CHRG@ 08A<br>00:08:42 9.42V   | AVERAGE 7.45V                       |                                     |   |

Other NI-CAD functions: • TIMED CHRG • TRICKLE CHRG

### B) UTILITY FUNCTIONS: • DIG. VOLTMETER • QUICK BAT. TEST • MOTOR CURRENT TEST

Phone or write for more info

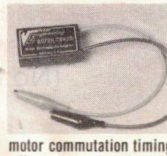
## OPTIONAL FEATURES

\*\*\* means — standard feature for "SENIOR" model

### CARRYING CASE\*

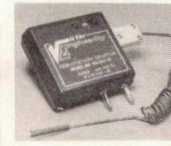


### SUPER TUNER



motor commutation timing adjustment + com/brush check

### THERMAL PROBE



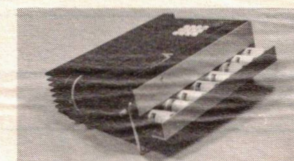
for • Thermal Push Charge\*, • Thermal Cycling\*, • Thermometer\*

### PC/PRINTER INTERFACE



a) direct printer hook-up for • Graph print-out  
b) PC hook-up for • data-basing

- Special Funct. Keys (Enhanced Main Software)\*
- Negative Slope Push Chrg.
- LIN-R-FLEX Chrg.
- 25A Discharge\*
- 50A Discharge
- Motor Break-in\*
- Speed Control Test
- Peak Maintaining
- Shocker/Revival\*
- Stopwatch\*
- Secret Access Code
- Personalizing
- Tachometer
- Dyno
- Multiple Unit PC Interface
- Lap Counting & More



## COMING SOON!

8 CHANNEL MULTIPLEXER! Piggy-Back option performs NI-CAD functions for up to 8 single cells simultaneously or up to 8 packs sequentially. Allows direct printer hook-up for labels or PC hook-up for data-basing or both. Superior to other Multiplexers yet more cost effective.

NOTE: HI-IQsr comes with all Thermal Software Functions, but Thermal Probe must be purchased separately.



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AUGUST 9TH & 10TH, 1991



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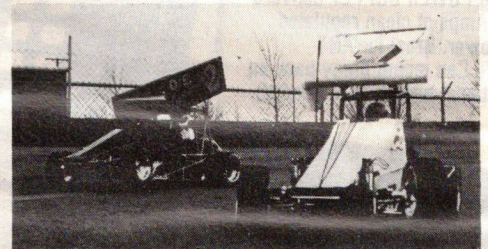
FRIDAY, AUGUST 9TH - PRACTICE 12 NOON TO 9 P.M.

SATURDAY, AUGUST 10TH - REGISTRATION 8 - 11 A.M.

PRACTICE 8 - 11 A.M.

QUALIFYING 11:30 A.M.

RACES AT 1:30 P.M.



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Super Modified  
Sprint  
ASA, INDY

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ADMISSION



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(Make Reservations Early - Mention the Raceway when making reservations)

★ Fairfield Inn - 815-397-8000

★ Super 8 - 815-365-8680

★ Exel Inn - 815-332-4915

★ Plantation Inn - 608-365-2501

Please send Registration Fee of \$40.00 per class to:  
Machesney Park Raceway, 1220 Shappert Drive, Machesney Park, Illinois 61111

(No refunds after Registration accepted)

Any questions call 815-282-1311

Frequency: Grand National \_\_\_\_\_ Modified \_\_\_\_\_ Sprint \_\_\_\_\_ ASA \_\_\_\_\_ Indy \_\_\_\_\_

Alt. Frequency 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ Amount Enclosed \$ \_\_\_\_\_

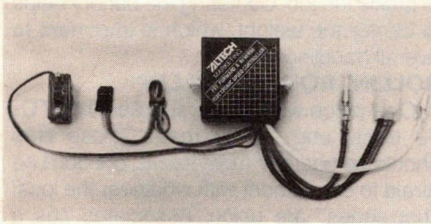
Name \_\_\_\_\_ QSAC# \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

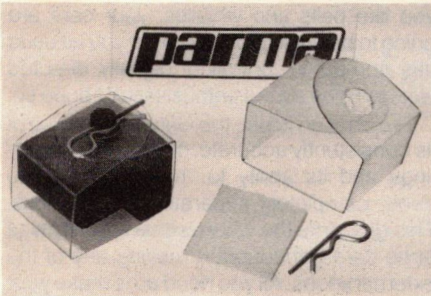
Phone \_\_\_\_\_

# What's New



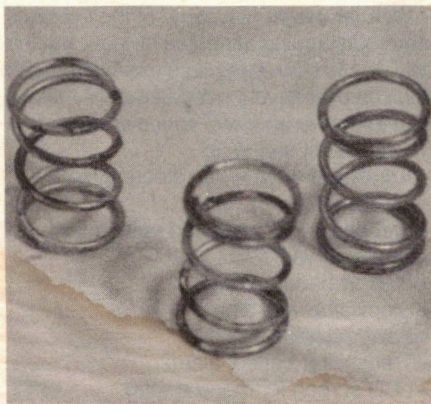
## ALTECH ESC

The new Altech PK170 electronic speed control delivers 120 amps of continuous current in forward, and 60 amps continuous in reverse, with peak currents of 320 and 160 amps respectively. The PK170 has BEC (battery-eliminating circuitry) so that the receiver battery and speed control servo can be eliminated. Nicad packs from 6 to 8.4 volts can be used with the PK170, and only two adjustments are necessary to setup the PK170 for use with MRC or Futaba radio systems. For more information, see your hobby dealer, or write: Altech Marketing, Box 391, Edison, NJ 08819-0391. Telephone: (908) 248-8738.



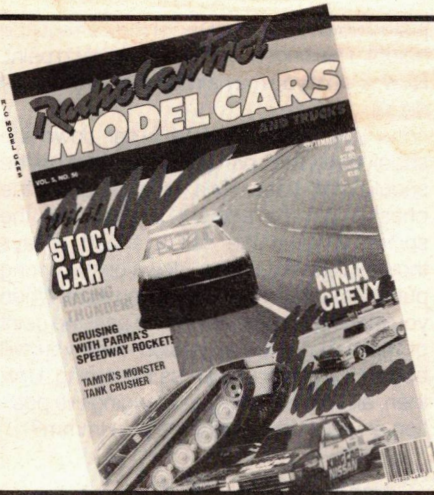
## LEXAN TRANSPONDER MOUNT

Here's a foolproof way to fasten transponders to your chassis without interfering with your servo or increasing weight. The new Parma lexan transponder mount is fast and easy to install, and comes with a clip and servo tape to make installation a snap.



## PRO SPRINGS

New front suspension springs are available from BoLink as a set or separately, in four different tensions. A pair of springs sells for only \$2.00, a set of four pair is only \$7.00. See your BoLink dealer.



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### **SIMPLY SHOCKING**

This shock design is new to the Associated lineup. It is smoother, more precisely machined and even more dependable than the old. There are now three types of shocks available—#6446-6449 Original Gold, #6420-6423 New and Improved (new body design), and #6431-6434 Hard Anodized, Teflon Coated (green).

Hard anodizing and teflon coating makes the entire shock body ultra-smooth and extremely resistant to wear. Thus, the shock piston moves effortlessly throughout its travel. Without getting into the gross anatomy of the shock, let me just say that the manufacturing process of the body has been changed and the result is a cleaner, more accurate, one-step process.

Installation of the washers and "O" rings is done from the inside of the shock body via a shock assembly tool. This tool makes both assembly and disassembly a simple process. Be sure to place a dab of shock oil on the "O" rings prior to insertion—this will prevent damage to the rings. You may not hear an actual "snap" when the retaining split washer seats, but you will feel it go in to place. For disassembly, simply use the tool from the bottom side of the shock body to push the split washer out of its seat.

As the instructions state, you may want to use Associated Silicone Shock Oil instead of the shock oil included in the kit. If so, buy some 20wt. and 30wt. I have been advised that these two will do for almost any offroad track. Be aware that you can also mix the two, resulting in weights between 20 and 30. Since the spring rate needed will vary with the degree of damping used, there are springs available in green (soft), silver, black and gold, gold being the firmest. Use this information wisely, my son or daughter.

Once the shocks are assembled and properly installed, the spring collars are ad-

justed down 3/8" to allow for the correct ride height. This brings me to an interesting point. Now, a lot of you may already know this, but I didn't!

As you move a spring collar down the shock body, the spring pushes down on the shock shaft base. This, in turn, raises the chassis, but the amount of weight on the spring remains the same. I had always thought that "tightening" down on the spring put more "tension" on the spring itself. When you move the collar down and past the point of maximum shaft extension, then you will begin to actually compress the spring. Until then, all you are doing is changing the position at which the chassis rests. Hmmm?

## **"What do I need to go really fast? 1400 SCR's and a Reedy 16-triple!"**

Well, as per Team Associated, front ride height of the fully equipped chassis should be 30% down from maximum shock travel. For the rear, the arms should be parallel to the ground. If you are rolling over, lower the ride height. If you are rolling over still, negative camber will give slightly less traction, but less rollover, too. Also, remember that softer springs will give more traction, stiffer springs, less traction.

### **POWER MOVE**

Fig. 121 shows the installation of the battery cup. It may or may not be necessary for you to change the position of the battery cup. Just for your information, the stock position is off center in order to make room for mechanical speed controls.

Since most of us who run this car will be

using electronic speed controls, move the holder position over by marking and drilling new mount holes. Be sure to use your longest battery pack when you measure the mark. These holes must be countersunk, so if you don't have the tool, you might not want to tackle the job. Centering the battery helps to center the weight, which is important to overall handling.

### **ROLLIN', ROLLIN', ROLLIN'**

One-piece wheels are supplied with TQ-72 fronts and TQ-22 rears. These tires should be good for most tracks, but don't be afraid to experiment with whatever the local "hot shoes" are using. Associated has a good selection of rubber and rims, so call Topper KlepC#\$/.\*) (just call him Captain Buckeroo) and he'll give you some sound advice.

### **X CALIBER**

Choosing radio gear for your car will be a difficult task, at best. There are some good companies out there that package a myriad of combinations to suit just about any pocket, no matter how shallow or deep. But, if you're looking for one of the best, look no further, for I have found the most technically advanced, feature-packed,—pistol grip radio known to modern man!

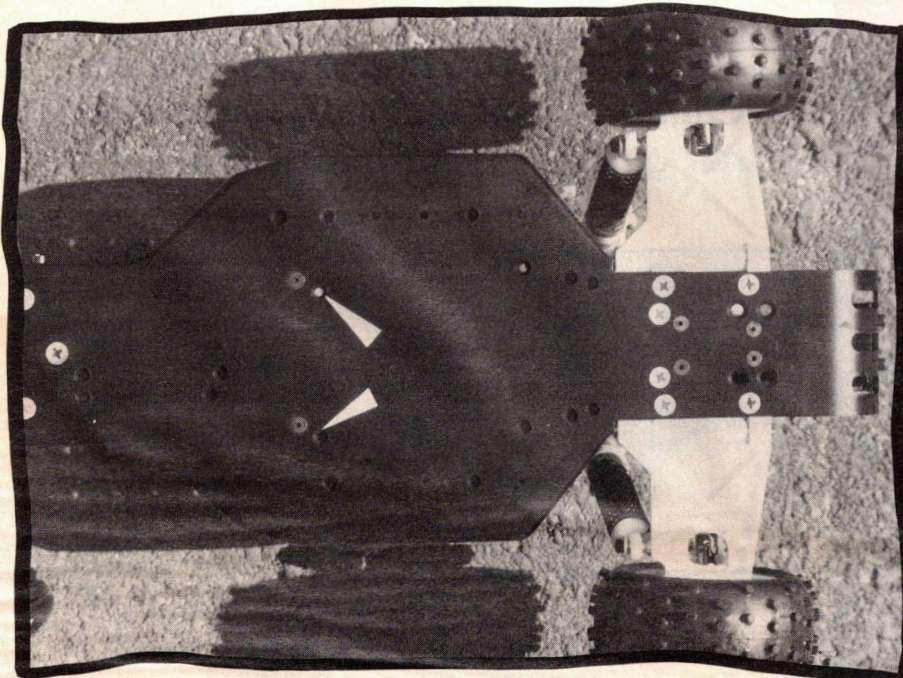
The Caliber 3P, recently introduced by Airtronics, has got to be one of the finest pistol grip radios produced for the R/C car fanatic. If you like bells and whistles, your ears are going to be ringing for days after you've used this computer controlled, digitally directed wonder! Do I sound enthusiastic? I hope so.

I've chosen to use the Caliber because of its consistently accurate, digitally stored settings and its ability to "remember" up to three, completely separate car programs. This gives me the wherewithal to run any of three cars without once moving any of the external knobs. All you need do is make your adjustments using digital percentages, set throttle and steering trims, then presto! Once this is done, I just store the information under "Model" #1, #2 or #3, to be recalled at a later date. I can do this for up to three individual cars. If you've got more than one car, you know exactly why I appreciate this particular function.

Well, let me just list some of the Caliber's more outstanding attributes for now, but the only way to truly appreciate this system is to truck on over to your nearest dealer—take it for a test drive and form your own opinion of R/C's hottest racing tip!

- Adjustable throttle and steering rate.
- Trim memory.
- Steering and throttle end point adjust.
- Direct servo control.
- Narrow band receiver.
- Stopwatch with alarm.
- Power voltage display.
- Transmitter battery alarm.
- LCD screen for menu display.
- Analog trimmers for on-the-line adjustments.
- Reversible handle for right or left handed drive.

Along with the Caliber transmitter, I am using the Airtronics 94737, Heavy Duty Con-



**Arrows point to mounting holes for mechanical speed controls. As most of us use electronic speed controls, new mounting holes must be drilled.**

test High-Speed Servo. This is an extremely high-speed servo for cars and boats. It has a coreless motor and metal geartrain, with 55 oz./in. of torque and a 60-degree transit time of 0.15 seconds. Is this quick and dirty, or what?

**CALLING DR. NOVAK  
CALLING DR. NOVAK.  
DO YOU RECEIVE?**

I have once again been given the pleasure of using Novak electronics, a long time favorite of Team Moo. The professional and helpful attitude of Novak's main representative, Tyree Phillips, only strengthens the confidence that its products have earned.

For a receiver, I am using the newly introduced NER-3FM. This is Novak 3-channel, narrow band, FM receiver that is compatible with all popular FM transmitters and it is approximately the same size and weight as the NER-2S AM receiver. Although Airtronics officially prefers that you use Airtronics accessories for compatibility, I did get the unofficial "nod" due to Novak's reputation of quality.

I was impressed by the 3FM's relatively small case and the fact that it operates at a low voltage, thereby eliminating glitches caused by acceleration. Just follow the instructions and you should have no problem. Take note that care must be taken when choosing a place to mount the 75-band version on a metal chassis. If you're using an Airtronics servo, just swap plugs with the plug-plastics provided and there will be no need for adapters.

Twice blessed am I, for in addition to the NER-3 FM, I am using the 410-Mic—a high-frequency, digital electronic speed control, made for electric cars, boats and airplanes. Its features include:

- recharging of the batteries. (Occurs at all on-throttle positions with the exception of full throttle.)
- Increased motor commutator life.
- MEGAFET transistor for lowest on-resistance.
- Linear acceleration for ultra-smooth driving.
- Fully adjustable current limiter to maximize run time or minimize tire slip.
- Thermal shutdown.
- MANUFACTURED 100% IN-HOUSE.

Quite a list, eh? Unfortunately, I wouldn't know a MEGA from a FET, so I'll just have to give you my seat-of-the-pants opinion of the 410-Mic, once I've had it on the track. My palms are sweatin' already!

Once again, the instructions all but do the work for you. Plug changes are via the "Novak Input Plug System (it must be neat to be able to name stuff after yourself!). On your motor, be sure to use the 0.1uF capacitors provided and buy an additional set for every motor you use. Heed all warnings and precautions and your installation will be a breeze.

Speed control adjustments are done with the red and green lights on the speed control itself, with the exception of the current limit adjustment, which will require a digital voltmeter. When you're at the track, you can

actually use the limiter to help you to tune out unnecessary wheel spin and prolong battery life. (Like I said—I can't wait!)

**REEDY, REEDY, REEDY FOR  
ROCK 'N' ROLL**

When it's time to talk about the power requirements for this team buggy—it's difficult to get by the fact that the coupling of Associated and Reedy has proven to be one of the winningest combinations in the world! So, who am I to question the scorekeeper?

Sitting in the motor compartment of this Team Car is Mr. R's 16-turn triple. This screamer is made for 2WD offroad and 1/12-scale onroad cars and just happens to be one the Team Associated's favorites

**Now you can own  
the same car raced  
by the Associated  
Team**

(ROAR, NORRCA/EFRA/IFMAR legal). Each motor is hand-wound, epoxied, precision-balanced and individually hand assembled. Each motor comes with installed capacitors and an extra pair of brushes and springs. Follow the maintenance instructions and you should get zounds of head-twisting, knuckle-crunching, bun-puckering speed!

In my book, nothing can compete with Reedy's new 1400mA SCR's—they're a deadly combination of quick-discharge and longer run time. Each cell, of the 7-cell pack is labeled with the 20amp discharge time, average voltage and energy released (in joules), so you can see exactly what you are getting. Like the 1200mA SCR's, the 1400s will take the abuses inherent in R/C car applications and they'll come out smelling like a rose. Charge and discharge as recommended and they should give you a lifetime of "A" Mains to talk about. If you're a backyard runner, why spend your hard-earned bucks on batteries that will go south after a handful of neighborhood race days?

With the car complete, the black chassis looks absolutely awesome. Orange Novak electronics add to the high-tech look that this Team car presents. But, looks will only get you so far, so let's get this show on the road!!

**ITS ALIVE ALIVE!!!**

Yes, Yes!! YYYesss!!!

This is the setup I've been waiting for! Box stock, spring collars adjusted as per the instructions, hours of painstaking attention to detail (I love to exaggerate) finally paid off. The car was awesome. It not only performed like a "Team" car should, it looked like a "Team" car should look. The black tub chassis gives the car an almost sinister look and only adds to the contrasting bright orange of the Novak electronics. With the olive-drab, anodized shocks, the entire rolling chassis takes on the purposeful look of a high-tech military machine, with a mission.

As with any new car, my very first lap was



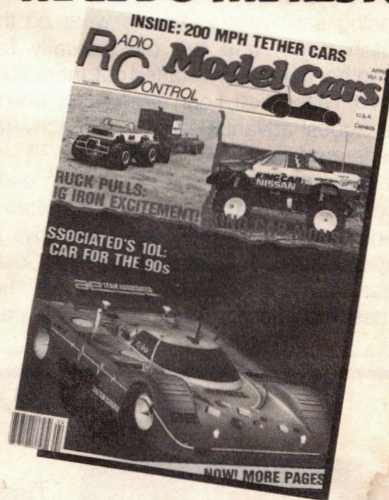
**HOT  
RACERS  
USE  
HOT  
IRONS**



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Ask your local shop for the 300S Super Race Station. Distributed through Horizon Hobby Distributors, Inc.

**SELL THE BEST...  
WE'LL DO THE REST!**



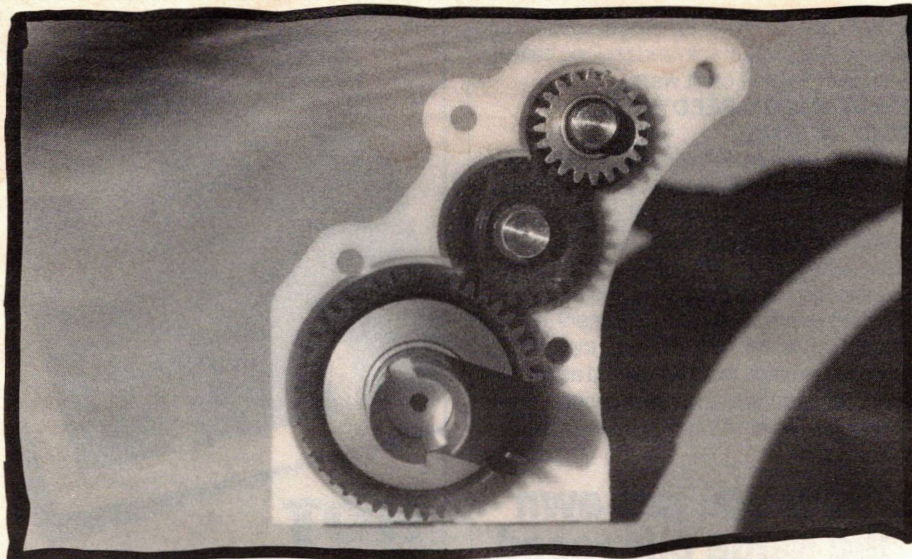
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**The Stealth Transmission is the smooth, virtually trouble-free heart of the Team Car.**

done with a gentle prodding of the throttle. Nine times out of ten, car instructions fail to mention this or that and your first hot lap turns into a limp back to the starting line. Fortunately for us, Associated has given us a "starting point" setup, which allows you to be relatively aggressive on your first trip to the track.

I ran the clutch a little loose to start with in order to allow the clutch disk to seat properly. After the first few minutes, the car appeared to stall on acceleration, which was my queue to stop and readjust the clutch nut. I have no words to describe how smoothly the clutch transfers power to the rest of the drive train, it's the smoothest I've ever felt or heard. And, because the diff and clutch are separate units, changing one setting does not automatically change the other. A day's worth of running saw no appreciable wear on the clutch plate, and the diff actually felt smoother than when I started out. Incredible, ain't it! To top it off, I can already see one of the biggest advantages of the Stealth—rebUILds are few and far between.

I used the green springs and an even mixture of 20wt and 30wt silicone oil as a starting point, simply because the boys at Radio Controlled Hobbies Raceway, in Costa Mesa, told me that that's what the "hot shoes" run. (Don't be afraid to ask the locals

for the right setup—it could save you hours of frustration.) Well, they were right. A slight case of understeer made the car predictable and a breeze to drive. By "predictable," I mean a little bit of push going into and coming out of a turn. I moved the rear shock collars down an 1/8", raising the rear ride height—that brought me as close to oversteer as my driving abilities could handle. 25-degree caster blocks for the front might have made the car even more forgiving, therefore easier to drive. At any rate, the few changes I did make to the car's setup were done one-at-a-time. This is the only way to effectively track your adjustments.

A thorough inspection after test day revealed that all was intact. Not a loose nut nor a cracked part was found. I couldn't even find a "booger" of silicone oil on the shock shafts. This is why the RC10 has remained on the top of the charts for as long as it has—performance and dependability.

The Caliber radio and Novak NER-3FM receiver performed without a glitch. Nothing can be more frustrating than to see your new car being launched into a wall at full speed—nothing can be more costly, too. Thanks to Novak for introducing a space-saving FM receiver with quality and reliability built in.

On my very first lap, I could tell that I was using a speed control with the "linear" accel-

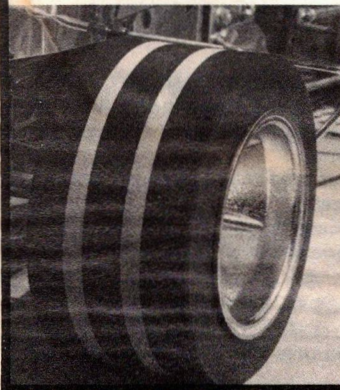
eration feature. The motor seemed to respond directly to the motion of my finger. This feature alone helped smooth out my driving—of course, the "current limiter" feature didn't hurt it much either. Did I have longer run times due to "recharging" and "current limiting"? I can't honestly say. I was having much too much fun to be watching the clock! I did, however, notice that the batteries' charge seemed to remain evenly "hot" throughout each discharge, rather than just having the typical hot, first lap. Considering that the first few packs I ran were comprised of other people's discarded cells, I have a sneaking suspicion that superior electronics had a lot to do with their "decent" performance.

The combination of Reedy 1400mA SCRs and a Reedy, 16-turn triple, was enough to turn my knuckles white and peel my eyelids back over my head! Fast, isn't the word. Ballistic is a little closer. With a 20-tooth pinion and an 81-tooth spur, it was all I could do to hold on to the radio! So, in order to spare the lives of innocent R/C cars and bystanders, I geared down a tooth. I was able to last well over five minutes and power was never a question. Bottom end torque was excellent and controllable via clutch and Novak's "current limiter." One of the most asked questions by newcomers to the hobby is, "What do I need to go really fast?" Well, now I know—1400 SCRs and a Reedy 16-triple rock 'n roller!

Put it all together and what do you have? A winning combination that's proving to be tough to beat on tracks throughout the world. The Associated Aluminum Team Car not only makes us the beneficiaries of years of research and development, it also has built in quality and a commitment to leading edge technology that promises to continue for years to come. Have you ever dreamed of having an R/C "wish list" all in one box? Well, the wishing is over and the dream has come true—the rest, my friend, is all up to you!

A great deal of thanks to Associated Electronics, Novak Electronics, and Reedy. Race with a clear mind and keep your eyes peeled for close looks at Associated's new 12LW and RC10 ST, Associated's long awaited, competition-proven, racing truck!

## TIGER PAWS & WEN CARS NEW "QUICK E"

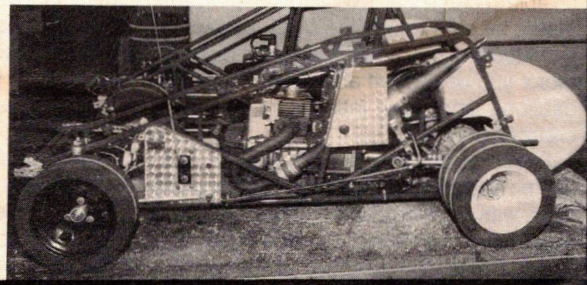


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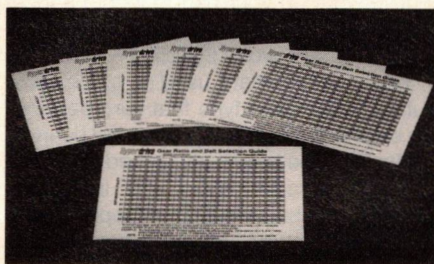


# What's New



## DYNO-VOLT CONVERTER

The Dual Dyno-Volt Converter is a new product that allows you to test your motor with repeatable voltages time after time. Convert any power supply into a dual output supply. Test motors under loads with no voltage loss. This unit allows you to charge batteries and test motors with one power supply. Converts any supply (including car batteries) into variable regulated supplies. It can handle the hottest motors with dyno loads. It can also be used as a break-in machine. From Thompson Power, 1950 W. Sprague Rd., Parma, Ohio 44134.

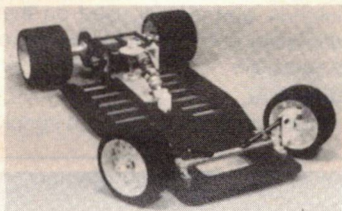


## GEAR RATIO AND BELT GUIDE

Hyperdrive Racing Systems has produced this handy guide for choosing your ratio and instantly recognizable diff, motor pulley and belt size for optimum racing performance. The chart has a sticky back for easy adhesion to your tool box or cabinet. Price, \$1.00. For more information, contact Hyperdrive Racing Systems, 3210 Howard Nickell Rd., Fayetteville, Arkansas 72703.

# CAMBER - CASTER - CAMBER

CAMBER - CASTER - CAMBER - CASTER - CAMBER



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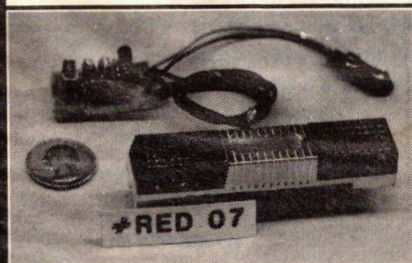


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CAMBER - CASTER - CAMBER

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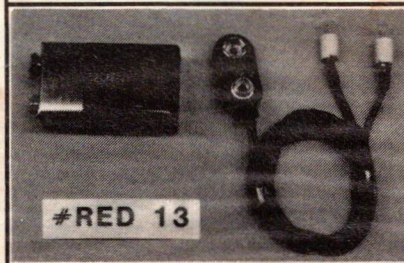
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(see template) and attach to the charger's sides with servo tape. Small computer heat-sinks can be bolted and/or epoxied to your motor plate to aid cooling.

### QUARTER-SCALE

Always shock-mount your car's radio receiver to protect it from hard impacts. With a vehicle weighing in at around thirty pounds, a sudden encounter with a wall or another car could scramble the receiver's insides. It can also damage the crystals or require sending the unit back to the manufacturer for retuning. While we're on the subject of wall-banging, using 3/8" round Delrin nylon rod for your steering and radius rods can mean the difference between a good finish and a DNF. Because this rod can be drilled and tapped just like metal, you can also use the larger 1/2" diameter Delrin rod for extra-

strong body mounts. It may take some detective work on your part to locate a local outlet for this nylon rod, but believe me, it's tough stuff, and worth the effort.

The drive belt that's used on some computers is the same type that runs between the engine and clutch drum on most quarter-scale cars. The before-mentioned computer repair shop, and maybe your local ball-bearing sales house may stock replacement belts to fit your brand of car. If you're running on dirt, cut some narrow, angled slots in your clutch shoes with a cutoff wheel in your trusty Dremel. This will help remove grit from the clutch area while it's running. The belts, clutches, and chains used on these cars *hate* water and dirt, so keep them as clean as possible.

### GENERAL

Your corner drugstore can supply a sim-

ple storage box for your spare sets of radio crystals. Seven-day pill dispensers have small bins that hold each pair of crystals perfectly, and the pop-top lids can be marked with each set's frequency. If any of you are like me, chances are you're an "old magazine junkie." Don't laugh, those large stacks of past issues can increase your smarts ratio. I've dug back through many magazines many times to just reread an article to help me understand and apply proper brush break-in procedure, battery charging rates, etc. Got a new body and need ideas for a color scheme? Most big race reports in old magazines usually include good color photos of the concours winners, which can aid in designing your own personal paint plan. And don't overlook the full-size car racing magazines such as *Open Wheel* and *Circle Track* for info to help you in your racing.

Many technical articles found in these publications deal with suspension and handling setups for dirt and pavement that you can apply to your own R/C race car. Use the shots of the full-size racers to your advantage to layout your paint work, and for placement of decals on your down-sized concours winner. Then when you've finished your paint and detailing that new body, take the time to shoot some photos of it before it becomes a target for your buddies at the local track.

Always take your pictures from as low an angle as you can. If you're shooting the car on a concrete or asphalt surface, wet the pavement with water, just like they do in the new car ads. This will reflect the car slightly in bright sunlight. Then mail the best picture to Del's Reader's Pages and maybe your work will gain you a free subscription to *R/C Model Cars*, and major bragging rights at your local track.

Special thanks to Dennis Cargal for his help with this article, and remember, everybody out there have fun—that's what it's all about, right?

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straight and true, with virtually no adjustment necessary. The most interesting characteristic was the degree of stability the car exhibited when I would drop down too low in the turns and get onto the flat blacktop apron. I wouldn't even have to back off the throttle, I just simply steered the car back onto the racing surface. And I don't mean I just got an inch or two down on the apron, I was far enough off the track to get the corner marshal's attention. Also, on more than one occasion I would come into contact with another car out on the track, usually while going through the high-banked turns. Invariably the other car would lose traction and go out of control, but the H10SC would just do a quick "twitch" and hold its line.

The next track I raced at was Sideways City's short, flat, cement oval. I tried off-setting the batteries but found out the car was more predictable with the batteries centered. I also tried running both the narrow rear hubs and the standard wide hubs. The car was easier to drive with the wide hubs on, with just a little push. Switching to the narrow hubs is a quick way to dial more steering into the car. I also found out how far out of adjustment you can get the H10SC. At one point I dialed in so much diagonal weight transfer that the left front tire looked like a World of Outlaw sprinter as it lifted a good inch off the ground coming off the turns. A quick adjustment of the small side shock springs had the car running flat on all four tires again. The H10SC's rear suspension is the key to the cars consistency. Once you become familiar with tuning the triple shock setup the rest is easy.

The Hyperdrive belt system and pro diff invite abuse. The axle pulleys are designed to not require any lube. That means you can clean it without disassembling it. I simply take a can of Dan's RC Stuff Motor Spray, put the little red tube in the nozzle, set the dial to high, and spray the diff rings at close range while rotating a tire. In 10 seconds you're done cleaning your diff. That kind of maintenance I can handle. On top of that, the combination of Hyper-rings, Hyperballs and Hyperdrive pulleys create an extremely smooth diff action.

By the time you read this, Hyperdrive racing is scheduled to come out with yet another new car, the H10SE. This will be one of the new "narrow" cars. The SE stands for Super-speedway Edition. The entire rear suspension will remain the same as the H10SC, the car will simply use the narrow rear hubs. Up front a narrower axle will have to be put in place. The H10SC is already a narrow car compared to some of those on the market, but Hyperdrive is trying to stay ahead of the customer demand for narrower cars.

Hyperdrive Racing is committed to providing the racer with as good a car as they can build. They are also trying to build up customer loyalty by not simply designing a new car, but by being sure the upgrades can be easily adapted to their old customers' cars. If you get a chance to try an H10SC you might be surprised how easy it can actually be to drive an R/C car.

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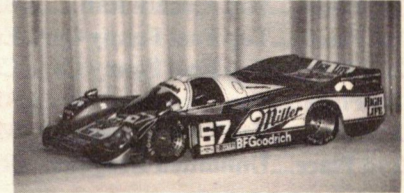
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Continued from page 46

While I'm discussing heat, let's cover a subject I overlooked in my first article: FIRE! Heat can damage more than just your finish in a race. Always wipe up any excess gas that spills on your car or you, during refueling.

Every racer should have a fire extinguisher (designed for fuel fires) in easy reach on race days. Sure, the chances of a flame-up are short, but which of the following would you rather do, clean up your car after a minor fire, or watch it melt down to a shapeless blob right in front of your eyes? Skin burns from a hot exhaust pipe can be averted by rotating the recoil starter housing so that the rope is pulling away from the exhaust during starting.

If you're running a race that requires fuel stops, be sure your pit crew wears gloves (burn protection) and has that fire extinguisher ready, *just in case*.

**RECOIL STARTER**

The recoil starter on the Zenoah engine is simple to repair—trust me. First remove the four metric screws holding the recoil housing to the engine, remembering the housing's angle for reassembly. If there's still tension on the starter rope, you must first "unload" the recoil spring. Pull the rope out 8 to 10 inches, and hold the white rope drum in place with your thumb. Push the starter rope back into the housing and hook the rope into the small notch found on the outside edge of the drum. Turn the drum clockwise, holding the rope until no tension can be felt. Remove the center screw, metal plate/ratchet arm, and the small arm spring from inside the drum. Lift the drum out slowly and the large spring inside the housing should stay in place. If the main spring must be replaced, use good needle-nosed pliers to remove and reinstall it. When replacing the nylon starter rope, melt its ends to ease threading of the rope through the drum and starter handle.

Reinstall the drum, small arm spring, plate/ratchet arm, and then put one drop of Loctite on the retaining screw and tighten lightly. Check that the drum and ratchet arm move freely as you assemble the unit. Now to "reload" the starter spring you must again hook the recoil rope into the small notch on the drum. Then wind it three to four full turns counterclockwise, allowing the rope to then feed back into the housing. Do not go overboard with spring tension, as this can lead to spring failure due to coil bind at full starter rope extension. If you have proper starter spring tension and the rope still won't return into the housing, check the ratchet wire loop under the metal plate. Dirt or grit can cause drag on the drum and hinder rope return. You can also lightly stretch the ratchet wire to ease friction and increase recoil rope return into the housing.

Next time I'll cover the ignition and clutch systems. Down the road look for an article on the Kawasaki/TK engine-carb combination used on some cars. 'Til then, remember, let's have fun out there!

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**National Speed Records**

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 Low E.T. Top Fuel Rail 1.981 Sec. Mike Ogle, Astro Top Fuel I Motor**

**Track Record Oct. 28, 1990**

**Low E.T. Unlimited Rail 1.820 Sec. Roger Rose, Astro Top Fuel II Motor**

**IEDA Nationals Winners**

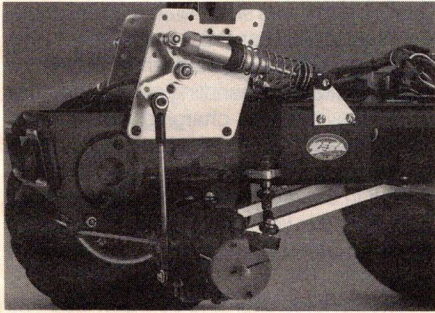
**1st Place.....Pro Comp .....Eric Wiems .....Astro Top Fuel I Motor  
 2nd Place....Pro Comp .....Roger Rose .....Astro Top Fuel I Motor  
 1st Place ....Top Alcohol Rail.....Brian Reeter ....Astro Top Fuel I Motor  
 1st Place ....Top Fuel Funny Car...Eric Wiems .....Astro Top Fuel I Motor  
 2nd Place ...Top Fuel Funny Car...Calvin Grant ...Astro Top Fuel I Motor  
 1st Place.....Top Fuel Dragster .....Mike Ogle .....Astro Top Fuel I Motor  
 2nd Place....Top Fuel Dragster .....Mike Russo .....Astro Top Fuel I Motor  
 2nd Place....Unlimited Dragster ....Roger Rose .....Astro Top Fuel II Motor**

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 2nd Place ... 2WD Modified .....Dutch Esgro ....Astro Pullmaster I Motor  
 3rd Place .... 2WD Modified.....David Hester ...Astro Pullmaster I Motor  
 1st Place.....2WD Open I .....Kyle Haynes.....Astro Pullmaster I Motor  
 3rd Place ....2WD Open I .....Marcia Arman Astro Pullmaster I Motor  
 1st Place.....2WD Open II.....Jim Bee.....Astro Pullmaster II Motor  
 2nd Place....2WD Open II.....Scott Weigel.....Astro Pullmaster III Motor  
 3rd Place ... 2WD Open II..... G. Kinsey .....Astro Pullmaster II Motor  
 1st Place..... 4WD Open I .....Sean Cullen .....Astro Pullmaster I Motor  
 2nd Place.... 4WD Open I .....Don Fisher.....Astro Pullmaster I Motor  
 2nd Place ... 4WD Open II.....Dale Arman .....Astro Pullmaster II Motor**

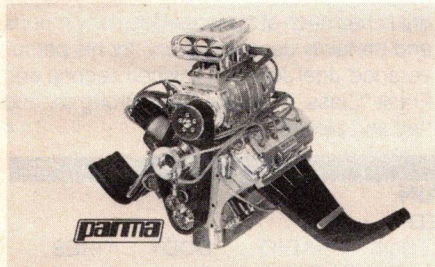
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# What's New



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## PARMA HEMI

The popular 1/10th Parma Hemi motor kit now has a super-detailed wiring kit available for even more realism. Stiff yellow wires are perfect for spark plug wires, and the braided wires will duplicate fuel lines for that special look in your R/C car. See your Parma dealer.

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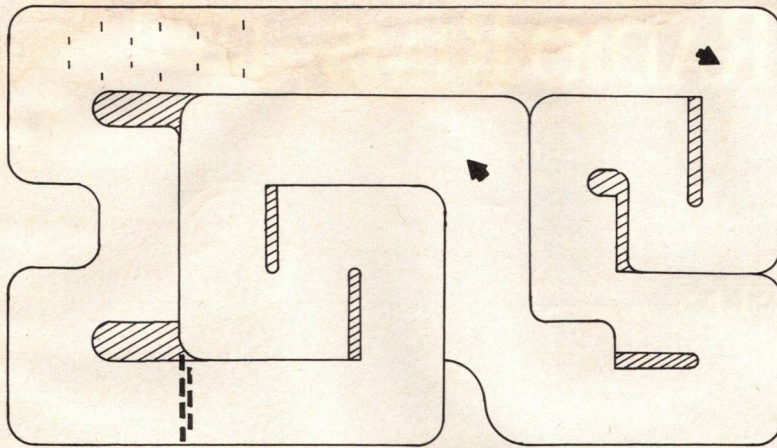
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on the drivers' stand. Scott's Corally SP-12 held on for the first ROAR Championship of the 1991 season. Although Williams had put racing on hold for the past year due to his class work, he had done his homework this weekend.

#### MODIFIED 1/12th NATIONAL CHAMPIONSHIP

It took all four qualifiers for the "big guns" to do more than shoot blanks. After the first day of qualifying, Dwight "Ironman" Smith was TQ with a 41 lapper, but day two and 43 laps were possible (maybe track conditions changed, who knows?). Joel Johnson TQ'ed with his Losi/Corally at 43/8:01 in his final run. Twister's Mike Seubert waited for the last round to make his move and bumped Aaron Treppa into the B-main. All the way up from the "E" qualifier was Bud's Racing Products entry, Dean Smith.

Also making the field of A-main feature

were Chris Doseck, Mike "Road Kill" Blackstock, Joe Lawrence, Bud Bartos, Canadian Tom Lamb Jr, hometown favorite Terry Rott, and Frank Calandra. The field included five drivers back from last year's Festival of Racing Classic and featured six Associated 12-Ls, three Corally SP-12s, and one X-Terminator.

John Thawley introduced the drivers and turned them loose down the chute and into the first corner melee! Chris Doseck's car was tossed out of the dogfight and straight-up about five stories. Bartos bounded past the mess and into the clear. After the event Doseck and Johnson discussed the incident and decided that both of their cars cancelled each other out at the apex of the first corner (with a little help from the angry pack of bees on their bumper).

The Flyin' Fossil Mr. Bartos made haste from the scene of the accident. Road Kill

Mike had locked second spot until he turned into the wall rather than the corner and Bartos' teammate Dean Smith scampered past. Dean had started at the tail of the pack and slashed past his mentor Bartos in a heartbeat! His lead was short-lived as radio gremlins attacked his car at the finish line on each lap. Dean made a valiant effort during the race despite his ill-handling car but soon had to give way to a hard-charging Joel Johnson. Magic man was in a major hurry to catch the green-machine! All of the preceding occurred in the first two minutes of wide-eyed action. By this time the field had spread itself thin and individual two-on-two skirmishes broke out.

Two minutes later and Johnson was four seconds behind Bartos with Smith still working it hard in third. Tom Lamb, Mike Blackstock, and Mike Seubert had initially strong runs but very rough second half. Joel Johnson then found the first of three walls he elected to crash-test (they held!). With two minutes remaining, Lawrence and Bartos caromed and Johnson got his break. With a two-second separation, Johnson was wheeling and dealing for an opportunity to pound on the Budman. It became only a trivial pursuit as Joel tripped on another corner, was booted by a marshal and Bartos became a shoe-in for the title. Bud Bartos, one of the best-known and personable of racers, was delighted with the ROAR championship ring he was awarded. The thirty-seven year old driver has been at the wheel for many moons and certainly deserves credit for his perseverance. Joel Johnson finished second and Frank "Class" Calandra had a strong second half and picked up third.

#### 1/12th STOCK ROAR NATIONALS 1991 A-MAIN

| F  | Q  | LAPS    | NAME            | HOMETOWN          | CAR           | BATTERIES     | SPEED     |            |       |             |
|----|----|---------|-----------------|-------------------|---------------|---------------|-----------|------------|-------|-------------|
|    |    |         |                 |                   |               |               | CONTROL   | RADIO      | BODY  | TIRES       |
| 1  | 10 | 39/8:00 | Scott Williams  | Warren, MI        | Corally SP-12 | Leading Edge  | Corally   | KO         | Bud's | PK          |
| 2  | 3  | 39/8:02 | Chuck Loneragan | Muskegon, MI      | Assoc. 12L    | Advantage     | Tekin 411 | KO         | Bud's | TRC         |
| 3  | 6  | 39/8:06 | Steve Boice     | Roseville, MI     | Corally SP-12 | Leading Edge  | Novak     | Futaba     | BBR   | Minitech    |
| 4  | 2  | 39/8:07 | Sean Cochran    | Duquoin, IL       | Delta Pro     | Andy's Select | Tekin 411 | KO         | Bud's | Delta Green |
| 5  | 4  | 39/8:09 | Willy Decker    | Vernon, NY        | Corally SP-12 | Bullett       | Corally   | KO         | BBR   | Du-Mor      |
| 6  | 5  | 38/8:02 | Anthony Lewis   | Bowie, MD         | Corally SP-12 | Max-Cell      | Novak M1C | Airtronics | Bud's | TRC         |
| 7  | 1  | 38/8:09 | Jimmy Piersol   | Duquoin, IL       | Delta Pro     | Andy's Select | Tekin 411 | KO         | Bud's | Delta Green |
| 8  | 8  | 38/8:10 | Greg K          | Lorton, VA        | Assoc. 12L    | Bullett       | Novak MSC | Airtronics | BBR   | Associated  |
| 9  | 9  | 38/8:11 | Everett Pietras | Deerfield, NY     | Corally SP-12 | Bullett       | Novak T4  | KO         | BBR   | Du-Mor      |
| 10 | 7  | 38/8:13 | Wayne Penfold   | St. Charles, ONT. | Assoc. 12L    | HRS           | Novak     | Futaba     | BBR   | Trinity     |

#### 1/12th MODIFIED ROAR NATIONALS 1991 A-MAIN

| F  | Q  | LAPS    | NAME            | HOMETOWN             | CAR                | MOTOR                | BATTERIES      | SPEED     |        |        |            |
|----|----|---------|-----------------|----------------------|--------------------|----------------------|----------------|-----------|--------|--------|------------|
|    |    |         |                 |                      |                    |                      |                | CONTROL   | RADIO  | BODY   | TIRES      |
| 1  | 5  | 43/8:10 | Bud Bartos      | Amherst, OH          | "Worlds" 12L       | Bud's 15T            | Power Push     | Novak T1  | KO     | Bud's  | Du-Mor     |
| 2  | 1  | 42/8:04 | Joel Johnson    | Campbell, CA         | Losi/Corally       | Trinity 13T          | Trinity Pushed | Tekin 411 | KO     | BBR    | Magic      |
| 3  | 6  | 42/8:12 | Frank Calandra  | Rome, NY             | Corally SP-12      | Cam 13T              | Bullett        | Tekin 411 | KO     | BBR    | Du-Mor     |
| 4  | 3  | 42/8:14 | Terry Rott      | Grand Rapids, MI     | "Worlds" 12L       | East Coast 13T       | PTI            | Novak MSC | KO     | BoLink | Associated |
| 5  | 10 | 41/8:04 | Dean Smith      | Avon Lake, OH        | Assoc. 12L         | Bud's 15T            | Power Push     | Novak T1  | KO     | Bud's  | Du-Mor     |
| 6  | 7  | 41/8:05 | Joe Lawrence    | Sterling Heights, MI | Woods X-Terminator | Peak Performance 14T | Advantage      | Tekin 411 | KO     | BBR    | Paragon    |
| 7  | 8  | 41/8:06 | Mike Seubert    | Dayton, OH           | Corally SP-12      | Twister 13T          | Team Smooth    | Tekin 411 | KO     | Bud's  | Dk Green   |
| 8  | 4  | 41/8:09 | Mike Blackstock | Sterling Heights, MI | "Worlds" 12L       | Reedy Mr. E 13T      | Reedy          | Novak MXC | Futaba | BBR    | Yokomo     |
| 9  | 9  | 40/8:06 | Tom Lamb, Jr.   | Thorold, ONT.        | Assoc. 12L         | Reedy Mr. E 13T      | HRS            | Novak MXC | Futaba | BBR    | Associated |
| 10 | 2  | 38/7:33 | Chris Doseck    | Troy, OH             | "Worlds" 12L       | CAM 16T              | Ace Pilot      | Novak M1C | KO     | MRP    | Yokomo     |

The relative inverse armature resistance (resistance to current flow inherent to the wire windings on the armature) is then measured by the voltmeter (set on the 2V range). A typical reading for a stock motor is .750V or below. If the test reading is higher, then the motor may be suspect or possibly an "exceptional" motor. This does not mean that motors with readings above this level are guaranteed to have been tampered with or manufactured outside specifications. The Cop is simply a screening device and a teardown would be the only way to determine absolute legality.

If, however, the intent of stock class racing is to "keep the motor out of the equation" and rely on driving skills, then might it not be reasonable to expect that "exceptional" motors should also be eliminated from competition (keeping the hand-select stocker out of contention)?

For a track or club initiating the use of the Stock Cop, a "threshold" value for stockers that can be used at your event should be selected. The .750V value may be a good starting point but I would suggest testing off the shelf stock motors to get your own range of acceptability. Then screen all motors to be used for your event and simply indicate that motors falling-out of the process, with high readings, will not be permitted in competition. Make no claims to the driver that they have tampered with their motors, simply inform them that the motor may indeed be "legal" but it is not useable at your event. As readings for an individual motor are not generally reproducible with any reliability on the Cop and can change as the motor is used, it is advisable that after screening each "approved" motor it should be marked for the event (placing a specific color of nail polish on the tabs securing the endbell is an excellent method). Motor claiming rules and teardown techs may not be eliminated by the Stock Cop, but its 90% effectiveness will make teching in stock classes much easier.

Can this Cop be fooled? You bet it can! I had a "ringer" motor wound, a 27-turn, 21-gauge (larger gauge than ROAR specified) armature that was epoxied, trued and balanced and placed into a stock can. Unless torn down, this motor would be virtually indistinguishable from a "legal" motor. This "ringer" tested below the .750V threshold and "cheated" the system, but all that work fooled me too, as this special motor's on-track performance was much poorer than many of the OTC (over the counter stockers) I've used!

When the Stock Cop was introduced to weekly club racers at Rider's Superspeedway for the B.Y.O.M. class, the drivers were required to line up for inspection with their stock motor for the evening. A mad scramble ensued as racers made for the parts counter and new stockers! Drivers purchased brand new motors rather than submit their existing "stock" motors to the test. Perhaps it's time for your track or club to utilize a Stock Cop. . . to keep 'em honest! •

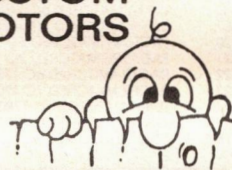


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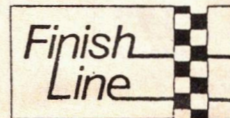
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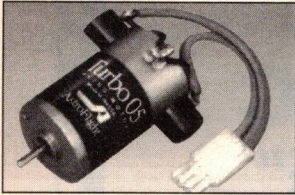
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| CAM1066 | 15T TPL 1/10 ON ROAD MOTOR   | 44 96 |
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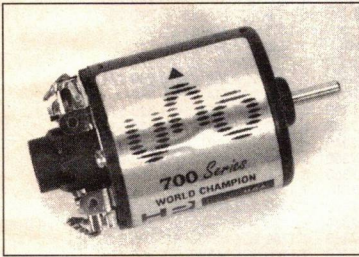
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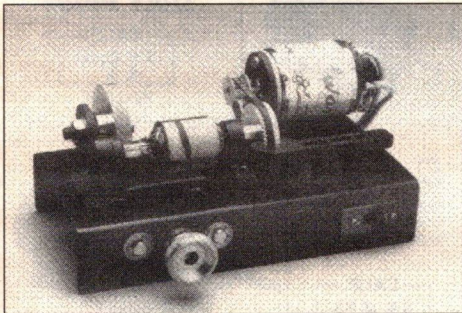


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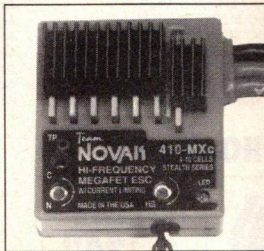
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NOV1720

## High Frequency Speed Controls

| SPECIFICATIONS        | 410-M1c        | 410-MXc        |
|-----------------------|----------------|----------------|
| Case Size (in.)       | 1.58x1.39x0.62 | 1.58x1.78x0.62 |
| Weight w/plugs (oz.)  | 1.76 oz.       | 2.29 oz.       |
| Voltage Input (cells) | 4-10 cells     | 4-10 cells     |
| ON Resistance (Ω)     | 0.0030         | 0.0015         |
| PWM Frequency (Hz)    | 2500 nominal   | 2500 nominal   |
| Rated Current (A)     | 70 to 250      | 70 to 600      |

| SPECIFICATIONS        | 410-M5         |
|-----------------------|----------------|
| Case Size (in.)       | 1.58x1.40x0.62 |
| Weight w/plugs (oz.)  | 1.79 oz.       |
| Voltage Input (cells) | 4-10 cells     |
| ON Resistance (Ω)     | 0.0030         |
| Rated Current (A)     | 250            |
| Braking Current       | 50             |
| Current Efficiency    | Over 99%       |
| BEC Voltage           | 5.7 volts      |
| Overload Protection   | Thermal        |

|         |                                |        |
|---------|--------------------------------|--------|
| NOV1415 | T4 ESC FUTABA G PLUG           | 64.96  |
| NOV1425 | T4 ESC J.AIR,KO,KYO & JR       | 64.96  |
| NOV1920 | 410-M5 HIGH FREQUENCY ESC      | 74.96  |
| NOV1620 | 410-MIC ESC J.AIR,KO,KYO & JR  | 109.96 |
| NOV1720 | 410-MXc ESC J.AIR,KO,KYO & JR  | 119.96 |
| NOV1820 | 610 REVERSING ESC              | 99.96  |
| NOV1520 | 828HV HD ESC 8-28 CELLS        | 129.96 |
| NOV4200 | NEC-2 12V PEAK DETECTIONCHGR   | 59.96  |
| NOV4300 | NEC-3 12V DLX PEAK CHGR W/DVM  | 114.96 |
| NOV3027 | NER-2S RX "27MHZ" AIRTRONICS   | 39.96  |
| NOV3075 | NER-2S RX "75MHZ" AIRTRONICS   | 39.96  |
| NOV3127 | NER-2S RX "27MHZ" FUTABA -G-   | 39.96  |
| NOV3175 | NER-2S RX "75MHZ" FUTABA -G-   | 39.96  |
| NOV3227 | NER-2S RX "27MHZ" FUTABA -J-   | 39.96  |
| NOV3275 | NER-2S RX "75MHZ" FUTABA -J-   | 39.96  |
| NOV9027 | NER2X MICRO 27MHZ RX AIR       | 44.96  |
| NOV9075 | NER2X MICRO 75MHZ RX AIR       | 44.96  |
| NOV9127 | NER2X MICRO 27MHZ RX FUT -G-   | 44.96  |
| NOV9175 | NER2X MICRO 75MHZ RX FUT -G-   | 44.96  |
| NOV9227 | NER2X MICRO 27MHZ RX FUT -J-   | 44.96  |
| NOV9275 | NER2X MICRO 75MHZ RX FUT -J-   | 44.96  |
| NOV8227 | FM RECEIVER FUT J & AIR 27 MHZ | 59.96  |
| NOV8275 | FM RECEIVER FUT J & AIR 75 MHZ | 59.96  |

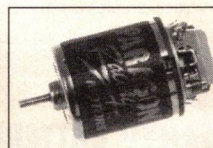
## PARAGON

**PRO STOCK MOTOR**

SALE  
**\$19<sup>96</sup>**

PAP10000

|          |                            |       |
|----------|----------------------------|-------|
| PAP10000 | PRO STOCK MOTOR            | 19.96 |
| PAP10162 | 16T 1/10 ON ROAD MOTOR     | 44.96 |
| PAP10172 | 17T 1/10 ON ROAD MOTOR     | 44.96 |
| PAP50143 | 14T TRP PARAGON OVAL MOTOR | 44.96 |
| PAP60093 | 9T TRP PARAGON DRAG MOTOR  | 44.96 |

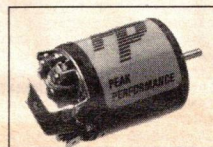


## PEAK PERFORMANCE

**MONSTER TRUCK MOTOR**

SALE  
**\$44<sup>96</sup>**

• 19T QUAD • 40,000 RPM • 60ZS OF TORQUE



|        |                                 |       |
|--------|---------------------------------|-------|
| PKPP10 | STOCK YOKOMO RACING MOTOR       | 19.96 |
| PKPP13 | PSYCHO STOCK 37 DEG.            | 19.96 |
| PKPP15 | 22T DBL OFF ROAD MOTOR          | 44.96 |
| PKPP20 | 20T DBL 2WD OFF ROAD MOTOR      | 44.96 |
| PKPP25 | 19T QUAD MONSTER TRK MOTOR      | 44.96 |
| PKPP27 | 21T DBL MONSTER TRK MOTOR       | 44.96 |
| PKPP30 | 18T DBL 4WD OFF ROAD MOTOR      | 44.96 |
| PKPP35 | 17T DBL SPRINT MOTOR            | 44.96 |
| PKPP40 | 16T DBL DIRT OVAL MOTOR         | 44.96 |
| PKPP45 | 16T QUAD ANIMAL 2WD/MONSTER     | 44.96 |
| PKPP50 | 14T DBL SUPER OVAL MOTOR        | 44.96 |
| PKP55  | 14T DBL WILD THING MOTOR        | 44.96 |
| PKP60  | 12T DBL BEAST MOTOR             | 44.96 |
| PKP80  | 17T DBL SHORT ROAD COURSE MOTOR | 44.96 |
| PKP81  | 16T DBL LONG ROAD COURSE MOTOR  | 44.96 |
| PKP85  | 15T DBL SHORT TRACK OVAL MOTOR  | 44.96 |
| PKP86  | 14T DBL SUPER SPEED OVAL MOTOR  | 44.96 |
| PKP90  | 13T TPL RICKS PICK MOTOR        | 44.96 |
| PKP99  | 13T DBL HI TORQUE               | 44.96 |

## PROTECH

**707 CHARGER**

SALE  
**\$79<sup>96</sup>**

PRT707



|        |                                |       |
|--------|--------------------------------|-------|
| PRT700 | AC/DC 4-8C DIGITAL CHARGER     | 74.96 |
| PRT701 | AC/DC 4-8C ADJ CURRENT CHARGER | 54.96 |
| PRT702 | AC/DC CHARGER 6-7 CELL         | 45.96 |
| PRT703 | DC 12V CHARGER 6-7 CELL        | 29.96 |
| PRT706 | AC/DC LCD AUTO PEAK CHARGER    | 94.96 |
| PRT707 | AC/DC PEAK DETECTION CHARGER   | 79.96 |

## PROGRESSIVE TECHNOLOGIES

|         |                                 |       |
|---------|---------------------------------|-------|
| PTI100  | 6 CELL 1300 MAH FLAT SPORT PACK | 19.96 |
| PTI1101 | 6 1700 MAH SCE MATCHED CELLS    | 34.96 |
| PTI1102 | 7 1700 MAH SCE MATCHED CELLS    | 39.96 |
| PTI1201 | 6 1200 MAH SCR MATCHED CELLS    | 28.96 |
| PTI1202 | 7 1200 MAH SCR MATCHED CELLS    | 33.96 |
| PTI1404 | SUPER 6 CELL 1700 SCE II        | 44.96 |
| PTI1405 | SUPER 7 CELL 1700 SCE II        | 49.96 |
| PTI1407 | SUPER GOLD 6 CELL 1700 SCE III  | 67.96 |
| PTI1408 | SUPER GOLD 7 CELL 1700 SCE III  | 79.96 |
| PTI1504 | SUPER 6 CELL 1200 SCR II        | 34.96 |
| PTI1505 | SUPER 7 CELL 1200 SCR II        | 39.96 |
| PTI1507 | SUPER GOLD 6 CELL 1200 SCR III  | 59.96 |
| PTI1508 | SUPER GOLD 7 CELL 1200 SCR III  | 68.96 |
| PTI1717 | SANYO 1700 MAH SCE CELL         | 5.96  |
| PTI1740 | 1400 MAH SCR SINGLE CELL        | 3.89  |
| PTI400  | 6C FLAT 1700 SCE MATCHED PACK   | 37.96 |
| PTI402  | 6C SPLIT 1700 SCE MATCHED PACK  | 39.96 |
| PTI403  | 7C FLAT 1700 SCE MATCHED PACK   | 44.96 |
| PTI405  | 7C SPLIT 1700 SCE MATCHED PACK  | 44.96 |
| PTI600  | 6C 1400 MAH SCR PACK            | 28.96 |
| PTI602  | 6C 1400 MAH SCR SADDLE PACK     | 31.96 |
| PTI603  | 7C 1400 SCR FLAT MATCHED PACK   | 34.96 |
| PTI605  | 7C 1400 SCR SPLIT MATCHED PACK  | 34.96 |

## RACE PREP

**ZAPPED STOCK MOTOR**

SALE  
**\$19<sup>96</sup>**

RAP903Z



The new release for those who run 4wd stock class or 1/10 and 1/12 on road, little less timing advance to produce more torque. An excellent choice in stock motors.

|            |                                  |       |
|------------|----------------------------------|-------|
| RAP903Z    | "ZAPPED" STOCK MOTOR             | 19.96 |
| RAP90512D  | 12T DBL PRO SERIES MOTOR         | 44.96 |
| RAP90513D  | 13T DBL PRO SERIES MOTOR         | 44.96 |
| RAP90514D  | 14T DBL PRO SERIES MOTOR         | 44.96 |
| RAP90514S  | 14T SGL PRO SERIES MOTOR         | 44.96 |
| RAP90515D  | 15T DBL PRO SERIES MOTOR         | 44.96 |
| RAP90515S  | 15T SGL PRO SERIES MOTOR         | 44.96 |
| RAP90516D  | 16T DBL PRO SERIES MOTOR         | 44.96 |
| RAP90516S  | 16T SGL PRO SERIES MOTOR         | 44.96 |
| RAP90517D  | 17T DBL PRO SERIES MOTOR         | 44.96 |
| RAP90517S  | 17T SGL PRO SERIES MOTOR         | 44.96 |
| RAP90518D  | 18T DBL PRO SERIES MOTOR         | 44.96 |
| RAP90518S  | 18T SGL PRO SERIES MOTOR         | 44.96 |
| RAP90519D  | 19T DBL PRO SERIES MOTOR         | 44.96 |
| RAP90520S  | 20T SGL PRO SERIES MOTOR         | 44.96 |
| RAP90520SR | 20T SGL REVERSE PRO SERIES MOTOR | 44.96 |
| RAP90521D  | 21T DBL PRO SERIES MOTOR         | 44.96 |
| RAP91114D  | 14 DBL FOUR WHEELIN BB           | 28.96 |
| RAP91117S  | 17T SGL TWO WHEELIN BB           | 28.96 |

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SALE BROCHURE**

## TEAM LOSI

### STOCK MOTOR

SALE  
**\$19<sup>96</sup>**

RPS6060



### JR'S CHOICE MOTOR

SALE  
**\$44<sup>96</sup>**

RPS6103



Wind-6TDbl • RPM-37,000, Use- 2wd Off Road

|         |                                 |       |
|---------|---------------------------------|-------|
| RPS6046 | 19T DBL 4WD MOTOR               | 44.96 |
| RPS6054 | 16T TRP OVAL MOTOR              | 44.96 |
| RPS6056 | 15T DBL REVOLUTION INSANE MOTOR | 44.96 |
| RPS6057 | 16T TRP REVOLUTION BRUTUS MOTOR | 44.96 |
| RPS6058 | 14T DBL REVOLUTION KILLER MOTOR | 44.96 |
| RPS6060 | LOSI SUPER STOCK MOTOR          | 19.96 |
| RPS6070 | 11T TRP LIGHTNING DRAG MOTOR    | 44.96 |
| RPS6072 | 6 PRIME TIME SCR MATCHED CELLS  | 34.96 |
| RPS6073 | 7 PRIME TIME SCR MATCHED CELLS  | 39.96 |
| RPS6075 | 6 PRIME TIME SCE MATCHED CELLS  | 42.96 |
| RPS6076 | 7 PRIME TIME SCE MATCHED CELLS  | 47.96 |
| RPS6101 | 18T TRP REVOLUTION II MOTOR     | 44.96 |
| RPS6102 | 16T QUAD REVOLUTION IV 1/12 SC  | 44.96 |
| RPS6103 | 17T DBL JR'S CHOICE MOTOR       | 44.96 |
| RPS6104 | 19T DBL MONSTER TRUCK MOTOR     | 44.96 |
| RPS6105 | 11T TRP DAYTONA OVAL MOTOR      | 44.96 |
| RPS6106 | 12T SGL MOTOWN MISSILE MOTOR    | 44.96 |
| RPS6107 | 13T QUAD 1/10 ON ROAD MOTOR     | 44.96 |
| RPS6108 | 15T QUAD BIG ED MOTOR           | 44.96 |
| RPS6109 | 11T SUPER INSANE MOTOR          | 44.96 |

## JRX-T MONSTER TRUCK



|          |                                  |        |
|----------|----------------------------------|--------|
| RPSA0001 | JRX2 OFF ROAD W/O MOTOR OR ELECT | 159.96 |
| RPSA0020 | JRX PRO 2WD OFF ROAD RACER       | 169.96 |
| RPSA0030 | JUNIOR TWO 2WD OFF ROAD          | 119.96 |
| RPSA0050 | JRX1 MONSTER TRUCK KIT           | 179.96 |
| RPSA0901 | JRX2 PERFORMANCE PACKAGE         | 99.96  |

## JRX2



## REVTECH

### 14T SCORCHER

SALE  
**\$44<sup>96</sup>**

REV31214

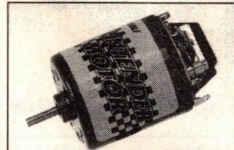


Wind-14TDbl • RPM-43,000, Use-2wd/4wd Off Road

|          |                             |       |
|----------|-----------------------------|-------|
| RV121300 | TURBOCHARGER TRUTH DETECTOR | 59.96 |
| RV124100 | LINE CHARGER WO/BATTERIES   | 39.96 |
| RV131109 | 9T SGL ACCELERATOR MOTOR    | 44.96 |
| RV131116 | 16T SGL EXPRESS MOTOR       | 44.96 |
| RV131120 | 20T SGL CONTEST MOTOR       | 44.96 |
| RV131122 | 22T SGL ENDURO MOTOR        | 44.96 |
| RV131123 | 23T SGL ENDURO II MOTOR     | 44.96 |
| RV131210 | 10T DBL MANIAC MOTOR        | 44.96 |
| RV131214 | 14T DBL SCORCHER MOTOR      | 44.96 |
| RV131218 | 18T DBL SPRINT MOTOR        | 44.96 |

|          |                              |       |
|----------|------------------------------|-------|
| RV131221 | 21T DBL TURBO ENDURO MOTOR   | 44.96 |
| RV131311 | 11T TPL TURBO SIZZLER MOTOR  | 44.96 |
| RV131313 | 13T TPL TURBO SCORCHER MOTOR | 44.96 |
| RV131317 | 17T TPL TURBO SPRINT MOTOR   | 44.96 |
| RV131319 | 19T TPL CONTEST GOLD MOTOR   | 44.96 |
| RV131412 | 12T QUAD SIZZLER MOTOR       | 44.96 |
| RV131415 | 15T QUAD TURBO EXPRESS MOTOR | 44.96 |

## SHELDON'S HOBBIES



SALE  
**\$24<sup>96</sup>**

SHSDC13

### 13T DOUBLE CONTENDER

- Diamond trued commutator
- Dynamically balanced and epoxied armature
- Adjustable timing
- Heavy shunted competition brushes
- Tweaked brush springs



SALE  
**\$16<sup>96</sup>**

SHSBS34

### BALISTIC STOCK 34

- Strongest wet magnets available
- High temperature composite end bell
- Heavy shunted competition brushes
- Tweaked motor springs
- Heat sink brush hoods

|         |                   |       |
|---------|-------------------|-------|
| SHSDC13 | 13T DBL CONTENDER | 24.96 |
| SHSDC15 | 15T DBL CONTENDER | 24.96 |
| SHSDC17 | 17T DBL CONTENDER | 24.96 |
| SHSDC19 | 19T DBL CONTENDER | 24.96 |



SALE  
**\$39<sup>96</sup>**

SHSTA13

### 13T TRIPLE ASSASSIN MOTOR

- Black chrome ported can
- Adjustable timing
- Heavy shunted competition brushes
- Tweaked motor springs
- Precision aluminum endbell

|         |                  |       |
|---------|------------------|-------|
| SHSTA13 | 13T TPL ASSASSIN | 39.96 |
| SHSTA15 | 15T TPL ASSASSIN | 39.96 |
| SHSTA17 | 17T TPL ASSASSIN | 39.96 |
| SHSSC13 | 13T SGL CYCLOPS  | 39.96 |
| SHSSC15 | 15T SGL CYCLOPS  | 39.96 |

## SANYO BATTERIES

All Sanyo cell packs are tested, multi-cycled and then precision matched. Number indicates seconds of discharge at a 20 amp rate.

|            |                               |       |
|------------|-------------------------------|-------|
| SANPF61200 | 6C 1200 SCR MATCHED FLAT PACK | 22.96 |
| SAN6C1400  | 6C 1400 SCR MATCHED FLAT PACK | 24.96 |
| SANPF61700 | 6C 1700 SCE MATCHED FLAT PACK | 28.96 |
| SANPF71400 | 7C 1400 SCR MATCHED FLAT PACK | 31.96 |
| SANPF71700 | 7C 1700 SCE MATCHED FLAT PACK | 34.96 |
| SANPH71400 | 7C 1400 SCR MATCHED HUMP PACK | 31.96 |
| SANPH71700 | 7C 1700 SCE MATCHED HUMP PACK | 34.96 |
| SAN6C1200  | 6 1200 SCR MATCHED CELLS      | 21.96 |
| SAN6C12250 | 6 1200 SCR MATCHED 250-259    | 27.96 |
| SAN6C12260 | 6 1200 SCR MATCHED 260-269    | 35.96 |
| SAN6C12270 | 6 1200 SCR MATCHED 270-279    | 39.96 |
| SAN6C12280 | 6 1200 SCR MATCHED 280++      | 43.96 |
| SAN7C1200  | 7 1200 SCR MATCHED CELLS      | 25.96 |
| SAN7C12250 | 7 1200 SCR MATCHED 250-259    | 31.96 |
| SAN7C12260 | 7 1200 SCR MATCHED 260-269    | 37.96 |
| SAN7C12270 | 7 1200 SCR MATCHED 270-279    | 44.96 |
| SAN7C12280 | 7 1200 SCR MATCHED 280++      | 52.96 |

|            |                            |       |
|------------|----------------------------|-------|
| SAN6C1400  | 6 1400 SCR MATCHED CELLS   | 24.96 |
| SAN6C14280 | 6 1400 SCR MATCHED 280-289 | 29.96 |
| SAN6C14290 | 6 1400 SCR MATCHED 290-298 | 37.96 |
| SAN6C14299 | 6 1400 SCR MATCHED 299++   | 44.96 |
| SAN7C1400  | 7 1400 SCR MATCHED CELLS   | 28.96 |
| SAN7C14280 | 7 1400 SCR MATCHED 280-289 | 34.96 |
| SAN7C14290 | 7 1400 SCR MATCHED 290-298 | 42.96 |
| SAN7C14299 | 7 1400 SCR MATCHED 299++   | 52.96 |
| SAN6C17320 | 6 1700 SCE MATCHED 320-329 | 33.96 |
| SAN6C17330 | 6 1700 SCE MATCHED 330-339 | 38.96 |
| SAN6C17340 | 6 1700 SCE MATCHED 340-349 | 42.96 |
| SAN6C17350 | 6 1700 SCE MATCHED 350-359 | 46.96 |
| SAN6C17360 | 6 1700 SCE MATCHED 360++   | 51.96 |
| SAN7C1700  | 7 1700 SCE MATCHED CELLS   | 33.96 |
| SAN7C17320 | 7 1700 SCE MATCHED 320-329 | 39.96 |
| SAN7C17330 | 7 1700 SCE MATCHED 330-339 | 44.96 |
| SAN7C17340 | 7 1700 SCE MATCHED 340-349 | 49.96 |
| SAN7C17350 | 7 1700 SCE MATCHED 350-359 | 54.96 |
| SAN7C17360 | 7 1700 SCE MATCHED 360++   | 64.96 |

## TRINITY



### TONY NEISINGER MOTOR

SALE  
**\$24<sup>96</sup>**

TRIO555

Wind-14T QUAD • RPM-40,000, Use- 2wd.4wd Off Road



### JOEL JOHNSON STOCK MOTOR

SALE  
**\$19<sup>96</sup>**

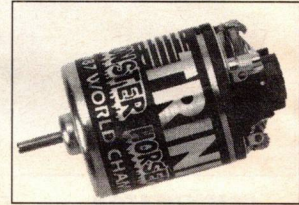
TRIO444

Wind-27T Sgl • RPM-25,000, Use- 2wd/4wd Off Road

- 27T
- RPM: 23,000
- Run Time: 6-8 Min.
- Use: 1/10, 1/12

SALE  
**\$16<sup>96</sup>**

TRIO2000



### MONSTER STOCK MOTOR

The ever popular Monster horsepower stock motor for use with 6 or 7 cell battery packs. If you want to win, here it is!

|         |                                  |       |
|---------|----------------------------------|-------|
| TRIO001 | 20T DBL BUGGY MASTER MOTOR       | 19.96 |
| TRIO002 | 16T DBL BB 427 4WD MOTOR         | 24.96 |
| TRIO003 | 18T DBL BB 350 2WD MOTOR         | 24.96 |
| TRIO004 | DIRT OVAL STOCK MOTOR            | 19.96 |
| TRIO005 | SUPER SPEEDWAY STOCK MOTOR       | 19.96 |
| TRIO007 | 15T DBL BB POLE POSITION MOTOR   | 24.96 |
| TRIO008 | 16T SGL BB MONSTER MASH MOTOR    | 24.96 |
| TRIO009 | 16T SGL BB REVERSE MONSTER MOTOR | 24.96 |
| TRIO012 | 20T TRP BB ROAD BEAST MOTOR      | 24.96 |
| TRIO444 | JOEL JOHNSON SIGNATURE STOCK MTR | 19.96 |
| TRIO446 | 13T TPL CHRIS DOSECK MOTOR       | 24.96 |
| TRIO555 | 14T QUAD BB NEISINGER MOTOR      | 24.96 |
| TR11700 | 9T DBL NUCLEAR ASSAULT MOTOR     | 44.96 |
| TR11701 | 10T DBL BIG DADDY II MOTOR       | 44.96 |
| TR11702 | 11T DBL TOP FUEL II MOTOR        | 44.96 |
| TR11703 | 12T DBL GODZILLA II MOTOR        | 44.96 |
| TR11704 | 13T DBL KING KONG MOTOR          | 44.96 |
| TR11705 | 14T DBL MAXIMUM OVERDRIVE MOTOR  | 44.96 |
| TR11706 | 15T DBL BEHEMOTH MOTOR           | 44.96 |
| TR11707 | 16T DBL GARGANTUA MOTOR          | 44.96 |
| TR11708 | 17T TRP MAGIC SPEED MOTOR        | 44.96 |
| TR11709 | 18T DBL HEAVY METAL MOTOR        | 44.96 |
| TR11710 | 19T DBL TYRANOSAURUS REX MOTOR   | 44.96 |
| TR11711 | 20T DBL KILLER FORCE MOTOR       | 44.96 |
| TR11712 | 13T SGL TORKZILLA OVAL           | 44.96 |
| TR11713 | 10T TPL HAMMER TYME              | 44.96 |
| TR11714 | 11T SGL CHRIS DOSECK SIGNATURE   | 44.96 |
| TR11715 | 14T DBL BAD BOY MOTOR            | 44.96 |
| TR11720 | 17T DBL BALLISTICATED MOTOR      | 34.96 |
| TR12000 | MONSTER STOCK "NEW" MOTOR        | 16.96 |
| TR12030 | 16T DBL DUAL MADNESS MOTORS      | 59.96 |
| TR12040 | EQUALIZER 27T-24 DEG STOCK       | 15.96 |



### 6 CELL BATTERY PACK

|         |                               |       |
|---------|-------------------------------|-------|
| TRIS054 | 6 CELL 1400 MAH MAXZILLA PACK | 24.96 |
| TRIS059 | 6 CELL 1700 MAH AMPASAURUS    | 29.96 |

**SHIPPING & HANDLING:** UPS Ground Continental U.S. \$4.95 (Free on Total of \$100+), UPS Air \$4.95 plus 10% of Subtotal, UPS Next Day Air \$14.00 plus \$1.00 per lb. of Shipment total, C.O.D. add \$4.95, U.S. Mail \$4.95 plus 10% of Subtotal.

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## TRINITY



### TRIAD HAND WOUND MODIFIED MOTORS

SALE  
**\$34<sup>96</sup>**

Mfg. List \$59.99

**NOW YOU  
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TO SPEND  
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TO FINISH ON  
TOP!**

- Hand wound modified armature
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- Composite, Hi-temp endbell material
- Brush heat sinks
- Precision ball bearings
- 2-stage wet magnets 4.0
- ROAR LEGAL

|                          |                           |                           |                           |                           |
|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 60,000<br>rpm<br>9 Turns | 49,000<br>rpm<br>10 Turns | 46,000<br>rpm<br>11 Turns | 43,000<br>rpm<br>12 Turns | 41,000<br>rpm<br>13 Turns |
|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|

### Top Winds To Choose From

|         |                                 |       |
|---------|---------------------------------|-------|
| TRIO666 | 9T DBL TRIAD MOTOR              | 34.96 |
| TRIO667 | 10T DBL TRIAD MOTOR             | 34.96 |
| TRIO668 | 11T DBL TRIAD MOTOR             | 34.96 |
| TRIO669 | 12T DBL TRIAD MOTOR             | 34.96 |
| TRIO670 | 13T DBL TRIAD MOTOR             | 34.96 |
| TRIO675 | 17T SGLL TRIAD WAVE RYDER MOTOR | 34.96 |



Now everybody can have factory-team quality batteries with these new Trinity very special processed and graded Sanyos.

|          |                                |       |
|----------|--------------------------------|-------|
| TRIO1010 | 6C 1500 MAH SC SPORT PACK      | 19.96 |
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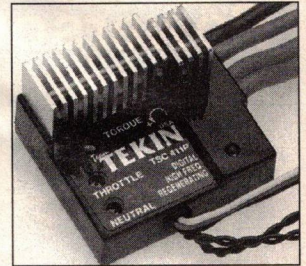


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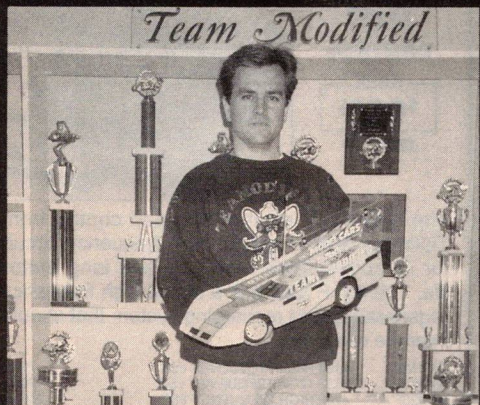


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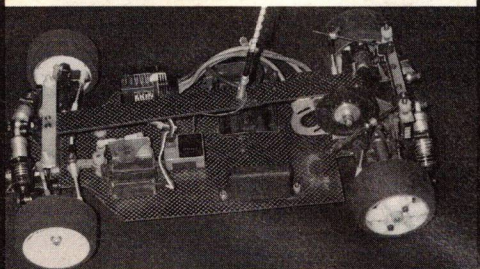
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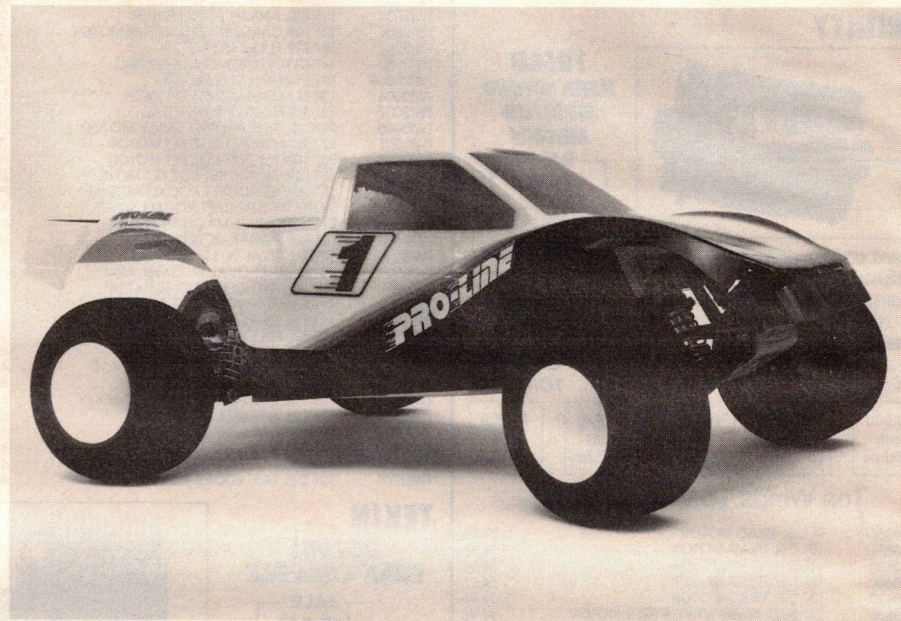
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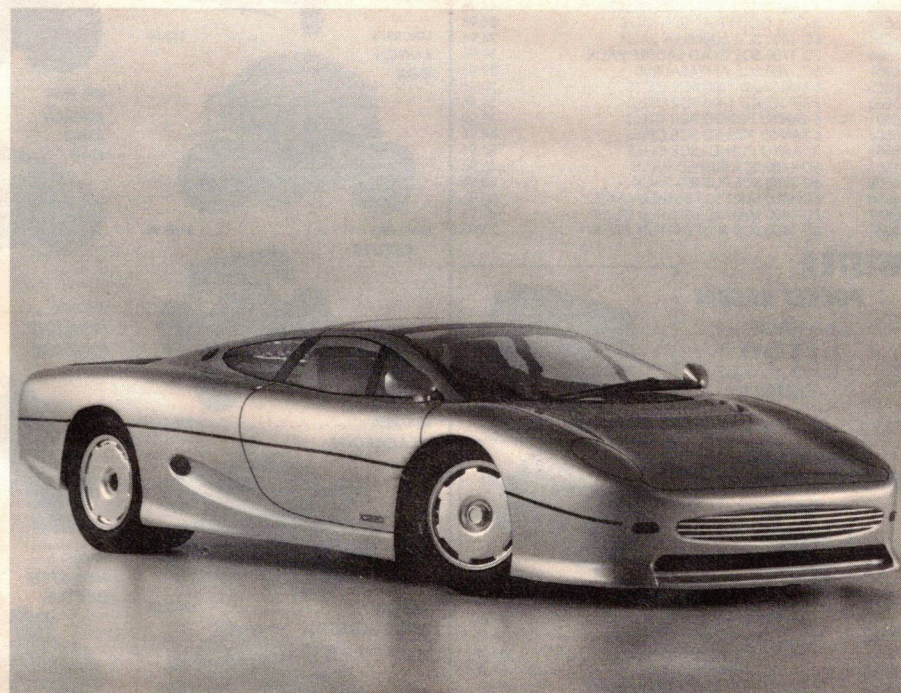
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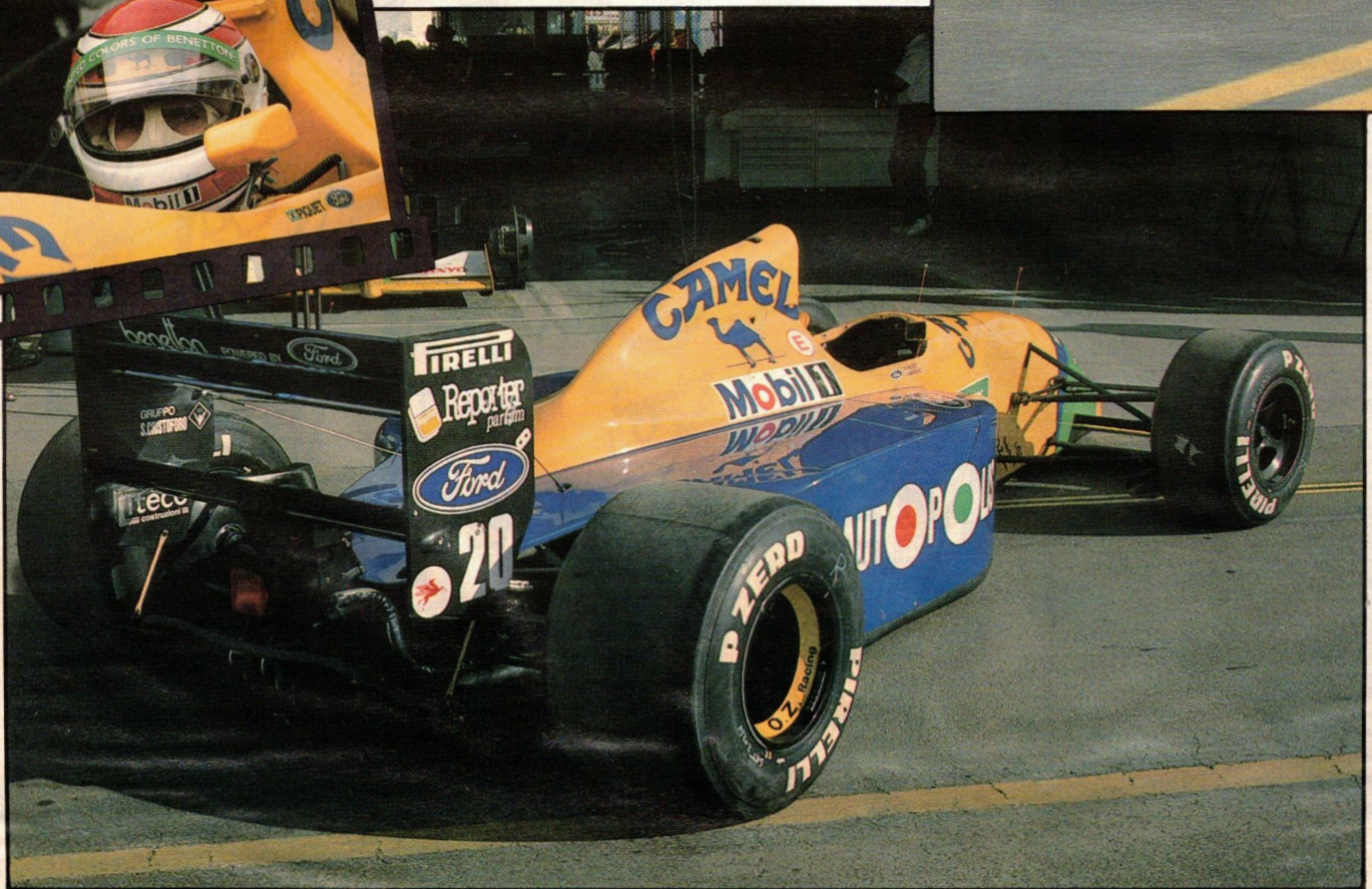
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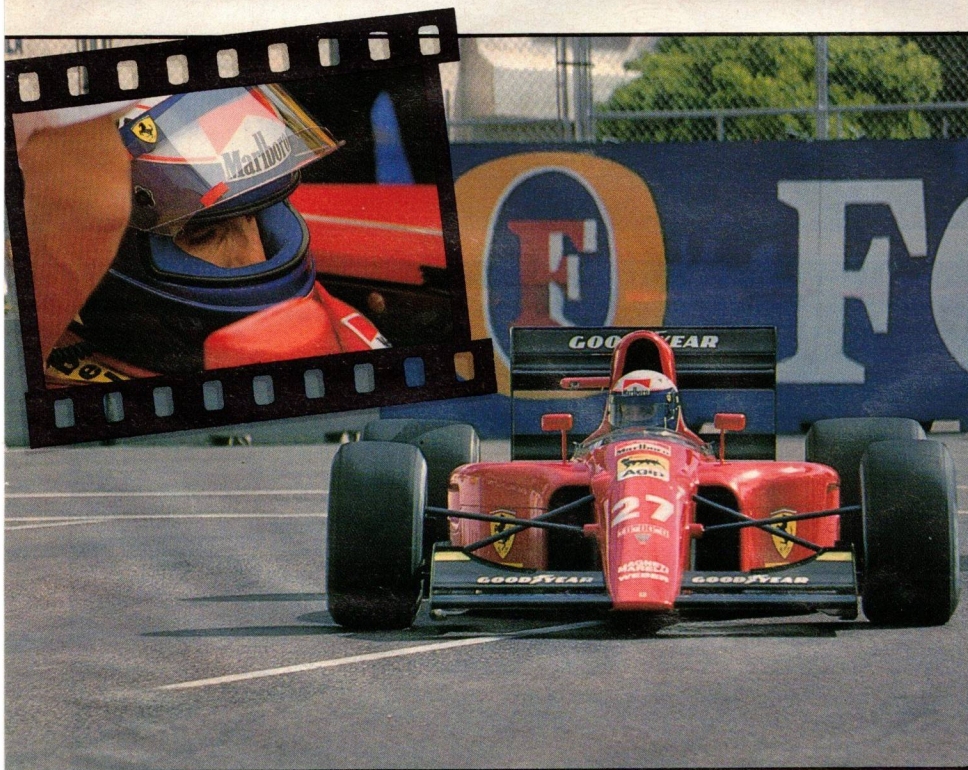
# FORMULA ONE REVIEW

Phoenix, Arizona hosted its third U.S. Grand Prix, the most successful yet, with a redesigned course that boosted speeds and offered slightly better viewing areas for spectators. The race itself may foreshadow a certain amount of gloom for those teams that have grown used to seeing Ayrton Senna's tailpipes, as the World Champion put his car on the pole in typical last-minute, record-breaking style, then led the entire race for his first win of the season. He followed up with a victory on the Interlagos track in his hometown of Sao Paulo, Brazil, and again at Imola in the San Marino Grand Prix. With a new V12 Honda engine powering his McLaren racer, Senna is a formidable force that the other teams must dread facing. The bright spot is that many of those teams have improved their engines, with Tyrrell getting V10 Hondas, Minardi gaining the V12 Ferrari, and Leyton House the Ilmore V10. How successful these teams will be can be judged at this early date only by the results of the first contests: three races, three victories and three poles for Senna and McLaren. It may be a long season (for everyone else)!

Nelson Piquet, three-time world champion, ended the 1990 season with two victories, in Japan and Australia, and put his Benetton in the points at Phoenix and Brazil in the first two races of 1991. His Ford-powered Benetton racer can usually be found among the front runners. With a bonus of \$100,000 paid to him for every point gained, you can bet Nelson Piquet will be fighting for position throughout the '91 season.



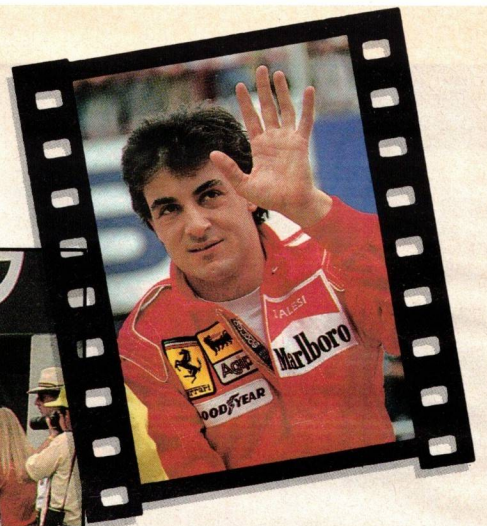
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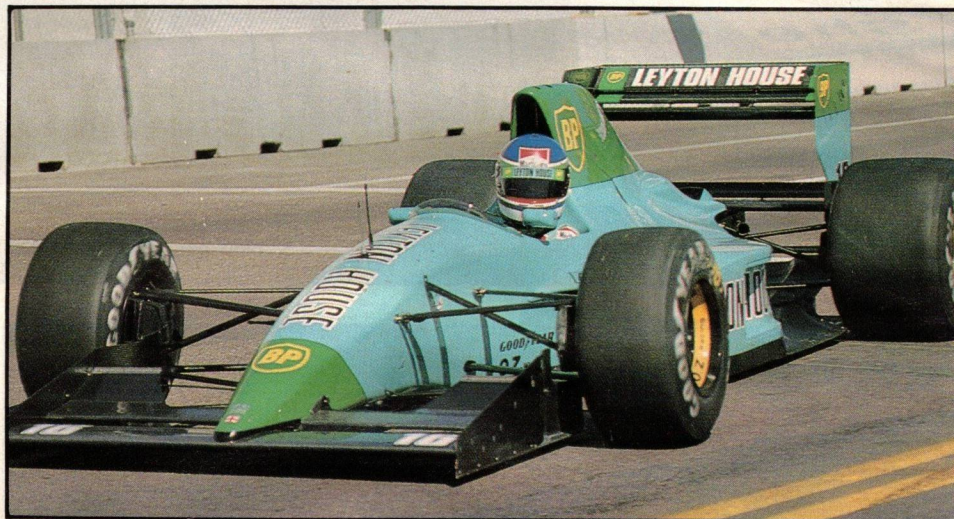
Ayrton Senna (above), current World Champion, has begun the 1991 season with back-to-back pole positions and wins at the U.S. Grand Prix in Phoenix, his home track in Brazil and the San Marino GP in Italy. The controversial Senna, who was involved in a first-lap crash with arch-rival Alain Prost in last year's Japanese Grand Prix, is arguably the best driver to ever get into an F1 car. Senna and his 12-cylinder McLaren-Honda threaten to dominate the standings again this year.

Alain Prost (left) another three-time world champion, finished as runner-up to Senna last year for the championship, and then in the first race of 1991 he again followed Senna across the finish line in Phoenix. Prost's goal is to bring another world championship title to Ferrari, a formidable task considering the near-dominance of the McLaren-Honda team which has matched Ferrari's 12-cylinder racer with a Honda 12-cylinder machine this year.

# F1 REVIEW

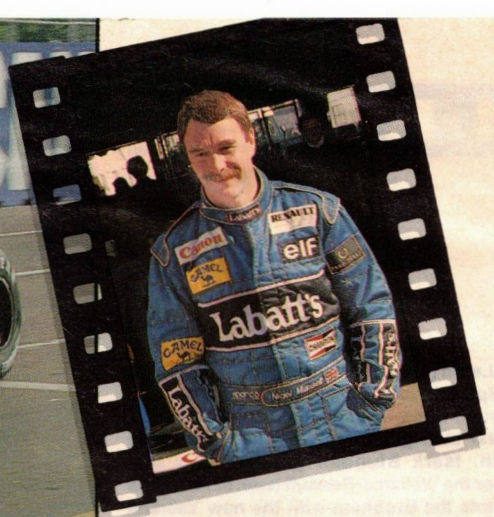


Jean Alesi (above) showed great promise in '90 driving his Tyrrell-Ford at the extreme limit that belied its 8-cylinder disadvantage in the face of V10 and V12 competition. His talent and fire cannot be denied, plus his signing with Ferrari as Prost's teammate gives him the power to lead a few races this year. Ferrari reliability, rarely a question mark, could hinder Alesi in his quest for greatness. Ivan Capelli (below), has an Ilmor 10-cylinder engine in his Leyton House racer, which should improve his chances, although the Leyton House chassis has been inconsistent—superb on smooth race courses, but less than perfect on rough tracks.



Ricardo Patrese, mainstay of the Williams-Renault team and holder of the record for most F1 starts (211 so far), won in San Marino in 1990 and finished second in Brazil this year. The Williams-Renault FW14, with a new semi-automatic gearbox, should press McLaren and Ferrari closely this season.





Nigel Mansell, who announced his retirement in mid-season while driving for Ferrari, reconsidered and rejoined his old Williams-Renault team as number one driver. Mansell, tenacious and talented, often takes breathtaking chances that chill the blood, but it can't be denied that when he's on the track, anything can happen. Willing to go beyond the ragged edge, Mansell should win at least one grand prix this year for his new/old team.



Thierry Boutsen (left) joined the Ligier team after a stint with Williams-Renault that saw him take three wins in two years. The Ligier car, powered by a 12-cylinder Lamborghini, will get the Renault V10 in 1992, and should do well with the engine in place. 1991 may be no more than a transitional year for the team.

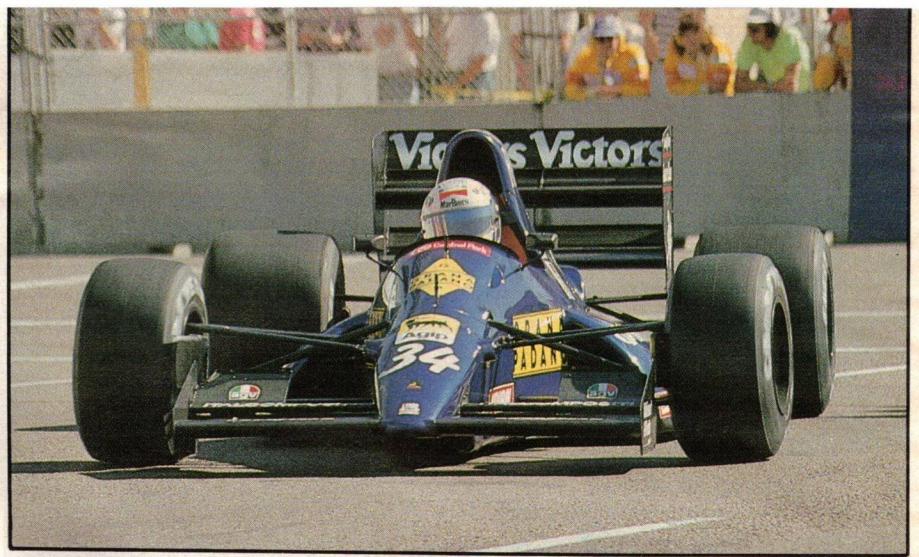


J.J. Lehto (left) in the Dallara, has a V10 Judd engine, which powered him to third place in the San Marino GP. Below, Eric Bernard in the Larrousse Lola, will have to struggle without the 12-cylinder Lamborghini engine that powered the team last year.



# F1 REVIEW

Nicola Larini (right) came from Ligier to Modena Team SpA this year, driving the new Lambo 1, a 12-cylinder car with potential. In Phoenix, the car's first outing, Larini finished a respectable seventh. Mark Blundell (below), was test driver for the Williams-Renault team in 1990, and now pilots the Brabham with the new Yamaha V12. Blundell joins countryman Martin Brundle in the Brabham stable.



Stefano Modena (below), replaces Jean Alesi in the Tyrrell, which now has Honda's V10, the engine that powered Senna's McLaren to the World Championship last year. Modena is talented, and he and teammate Satoru Nakajima placed fourth and fifth respectively at the U.S. Grand Prix this year.





Bertrand Gachot (above), gained a position with the promising Jordan F1 team, alongside veteran Andrea de Cesaris. The Jordan, a completely new car powered by the reliable Ford-Cosworth HB engine developed for Benetton, has a radically designed profile and high dollar sponsorship, which could mean success on the track.



Julian Bailey (above), is substituting for the injured Martin Donnelly in the Lotus 102B, a team hurting from the loss of the Lamborghini V12 engine and Camel sponsorship. Co-driver Mika Hakkinen from Finland is a bright spot, as is sponsorship from Tamiya, who promises a new Wizard-style 1/10th version of the F1 Lotus soon. Unfortunately, the team is struggling with the outmoded Judd V8.



Michele Alboreto (above), hopes for a better season with Footwork, now that Porsche has abandoned Indycars for F1. The 12-cylinder Porsche engine hasn't fulfilled its promise so far; Alboreto qualified poorly and went out with gear-box problems in Phoenix, and both he and teammate Alex Caffi failed to qualify for Brazil.



Gianni Morbidelli (left) was Ferrari's factory test driver last year, covering thousands of miles in the 642 car before being picked to drive for Minardi this season. The Minardi team has the distinction of being the first private team to have the use of the works Ferrari engine; V12 power that should strengthen this team considerably. Joining Pierluigi Martini as second driver, Morbidelli finished eighth in Brazil.

# WINGING IT

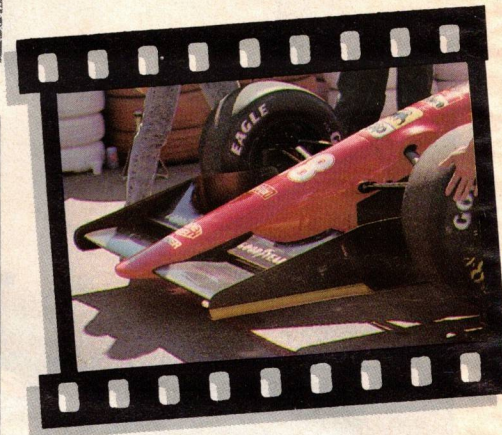


Jordan 191

Formula One cars, like most sophisticated racing machines, rely on advanced aerodynamics and ground effects to keep them hugging the track. Wind tunnel testing of new designs is an ongoing process, carried out with the goal of improved downforce as the end result.

The most important design aspect of an F1 car is the bottom side, which contributes most of the downward "suction" that keeps the car glued to the pavement. Disturb this airflow and the results can be disastrous.

Integral parts of this aerodynamic strategy are the wing surfaces of the car. It is interesting to see how designers approach this design problem. Some of their solutions can be seen here, in this look at the front wing styles on prominent F1 contenders.



Ferrari 642



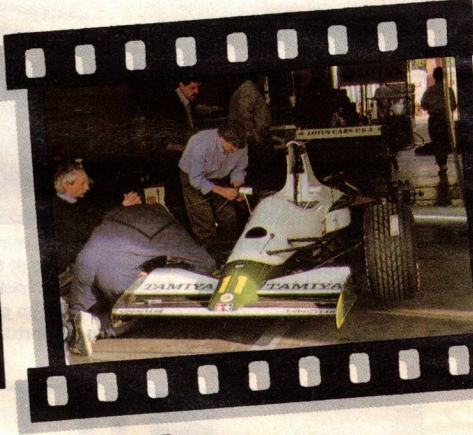
McLaren MP4-6



BMS Dallara



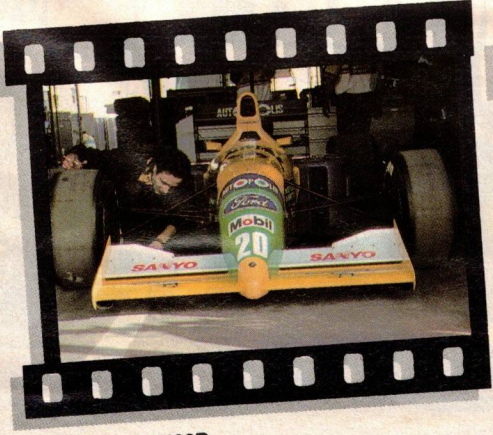
Footwork Porsche



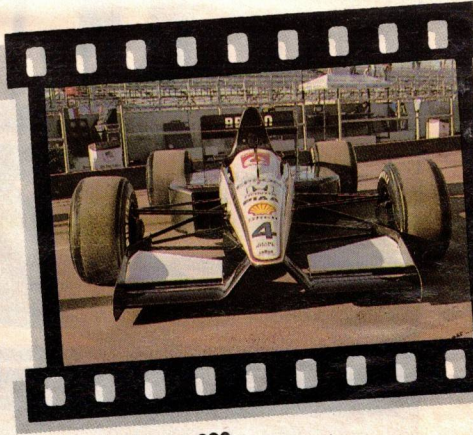
Lotus 102B



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| FX-10                            | 64.95  |
| Hornet                           | 94.95  |
| Fox                              | 125.95 |
| Falcon                           | 114.95 |
| Monster Beetle                   | 139.95 |
| Thunder Dragon                   | 136.95 |
| Grasshopper Super "G"            | 79.95  |
| Mud Blaster                      | 124.95 |
| Mad Cap                          | 109.95 |
| Astute                           |        |
| Lunch Box                        |        |
| Midnite Pumpkin                  | 109.95 |

## 4WD OFFROAD CARS

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|--------------|--------|
| Yokomo YZ 10 | 229.95 |
| Boomerang    | 148.95 |
| Hot Shot II  | 179.95 |
| Thundershot  | 148.95 |
| Vanquish     | 249.95 |

## TRUCK CONVERSIONS

|                     |       |
|---------------------|-------|
| Andy's RC-10 w/body | 46.97 |
| Pro Line RC-10      | 49.50 |
| JG RC-10            | 29.97 |

## CHARGERS

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|----------------------|----------|
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| 400SC                | \$119.95 |
| 114 AC/DC            | 38.95    |
| 115 AC/DC adjustable | 45.95    |
| 111 Peak             | 76.95    |
| <b>Tekin</b>         |          |
| BC 100L              | 65.95    |
| BC 250S              | 109.95   |

## RADIOS

|                        |          |
|------------------------|----------|
| <b>Airtronics</b>      |          |
| CS2P FM w/2 632 servos | \$149.95 |
| XL2P w/2 102 servos    | 79.95    |
| VT2P w/2 201 servos    | 52.95    |
| VT2R w/2 201 servos    | 56.95    |

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|---------------------------------|--------|
| <b>Futaba</b>                   |        |
| Sport 2PB w/2 S148 servos       | 54.95  |
| Sport w/1 S148 servo & 112b SC  | 89.95  |
| 2PD AM w/2 S9301 servos         | 179.95 |
| 2PD AM w/2 S9601 servos         | 179.95 |
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| NESC-T1 universal     | 89.95  |
| NESC-T4 universal     | 64.95  |
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| Futaba Mag Jr.        | ADD 20.00   |
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# Revenge of the Novak



Our February issue carried an article entitled "Inside Novak," by Larry Fletcher, which took us behind the scenes at this well-known company. Most readers were highly impressed. However, some doubts were raised by those who believed that Novak speed controls, receivers and chargers were all assembled by Bob Novak, working alone in his garage. To remove all doubts, we sneaked back for another look, and this is what we found. Now the question arises: Would You Buy a Speed Control From These People?!!

**READERS:** If one of you is the lucky contestant, you won't **have** to buy a Novak speed control! Here's why: we're having a contest to see if you can identify which of these nefarious individuals is indeed the elusive Bob Novak. Those with the correct answer will go into our contest barrel (all others go straight to the dumpster) and we'll draw one lucky card with the winning I.D. He or she will then get a brand new, state-of-the-art Novak Electronic Speed Control!! If you'd like to enter, just send your answer along with your name and address to Novak Contest, R/C Model Cars, 898 W. 16th Street, Newport Beach, California 92663. Void where prohibited, of course. Send your guess today and you may be a winner tomorrow! Contest closes July 15, 1991, so send yours now.

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# KID POWER



These USA-built cars are powered by a six-volt motorcycle battery, and speed along at a 2-1/2 mile per hour rate. Kids from two to six have a great time racing these small cars.

The bodies on these cars are made of an almost unbreakable plastic. Quarter-scale decals work well in decorating the racers.

It began at Watkins Glen Raceway four years ago when six cars were built to run a pre-race promotion for kids between two and six years old, prior to the start of the NASCAR 500. The electric cars were a big success, and thousands of cars have now been produced, making them the kind of car kids who like racing want to drive.

More than 20,000 pre-schoolers have competed in the tiny electric cars that race at speeds up to 2-1/2 mph (about walking speed). The kids have been racing wheel-to-wheel at Pocono, Charlotte, Meadowlands, and autoramas and auto shows across the country.

Children as young as two are able to operate the cars, and four- and five-year-old youngsters have even won races. There are thousands of smiles for every mile raced,

that's for sure.

The cars are made in the USA, and weigh about 20 pounds. They are powered by a Mabuchi motor and feature a simple tube-frame chassis, which is covered by an almost unbreakable plastic vacu-formed body. Power is spulled by a six-volt gel cell motorcycle battery, which allows the cars to run up to four hours on a single overnight charge. The cars come ready to race and include battery charger, a 90-day warranty, with parts available factory-direct. The cars can be shipped via UPS.

The retail price of the cars is \$159-169, and stock car, Indycar, and Sports GTP-type bodies are available.

Using quarter-scale decals, the cars are easy to decorate (undecorated cars are available factory-direct, and if ordered in

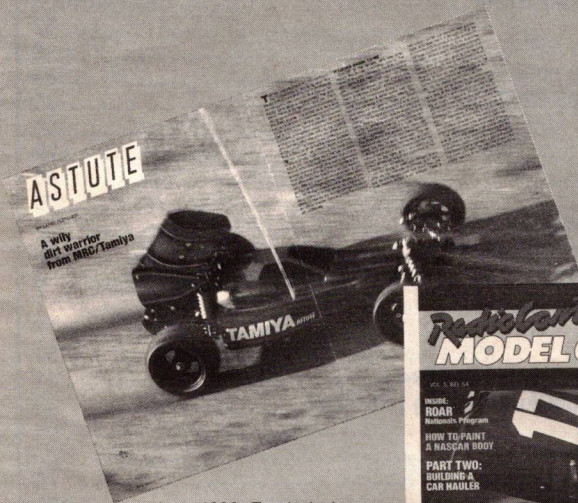
quantities of 50 or more, the cars can be decaled as you desire. They will run on any smooth, flat surface (blacktop, concrete, carpet, indoors or out), and will hold drivers up to 70 pounds in weight.

The track can be any size, from 20 x 40 feet to 40 x 60, and while races have been run for up to 20 cars, 10 to 12 seems to be about the most desirable number unless you have wizards to do the scoring. Generally the races are run in four- or five-lap heats, with feature races going five to seven laps. The young drivers need very little instruction, as they seem to get the hang of it in just a few laps.

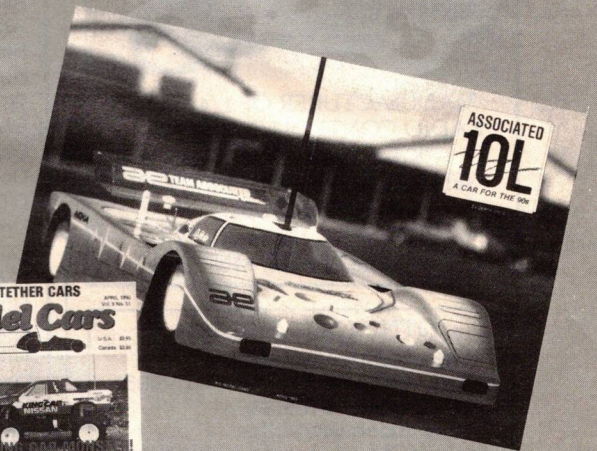
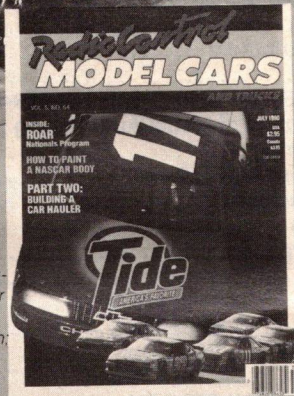
For more information, send \$1.00 to Cars for Kids Promotions, Auto World, Box 961, Scranton, Pennsylvania 18501.

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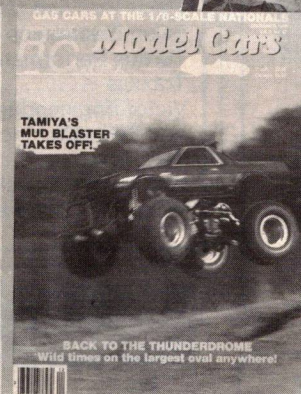
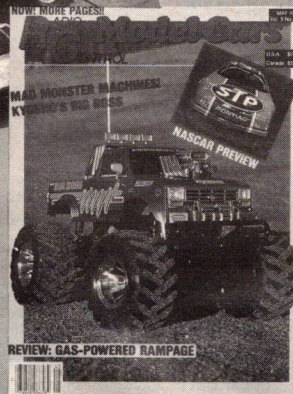
April, 1990: Associated's 10L; Tamiya's Nissan King Cab Truck; High-Speed Tether Racing; How To Paint Your Car Body; Quarter-Scale Front Axle; Indoor Dirt Nationals; Track of the Month; All About Truck Pulling; Wire Chart; Upgrading the RC10.

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December, 1989: Tamiya's Mud Blaster Review; Back to the Thunderdrome; Competition Electronics' Turbocharger; 1/8th Gas Nationals; Northwest's Summer Sizzler; Scale Model Bugatti Type 35; NASCAR Hall of Fame; Electronics Glossary; The Importance of Tweak.



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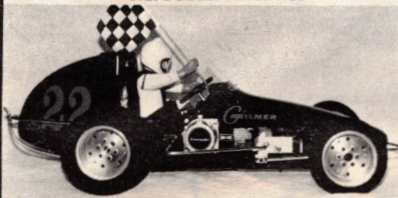
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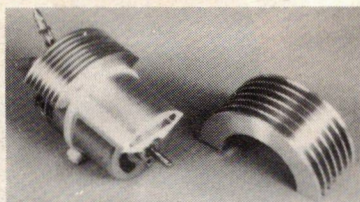
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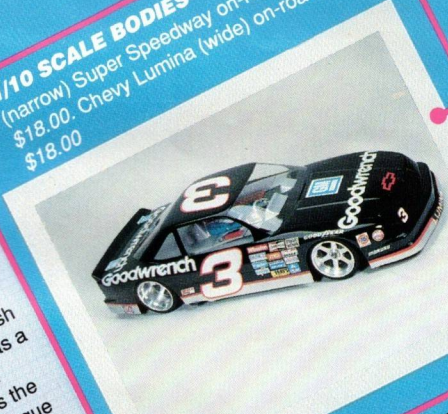
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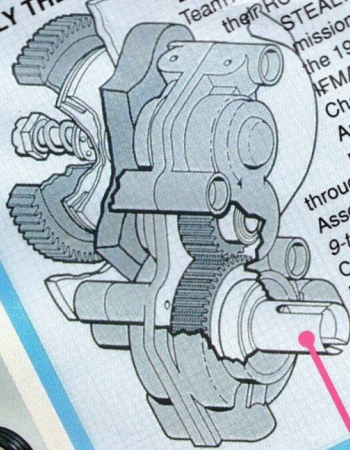


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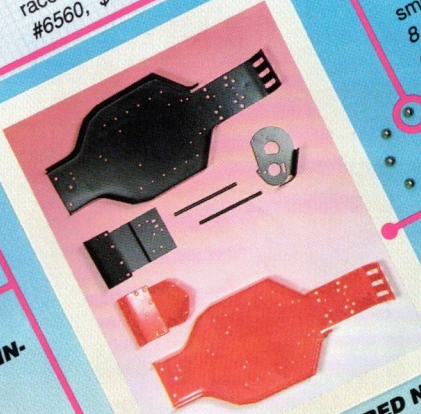
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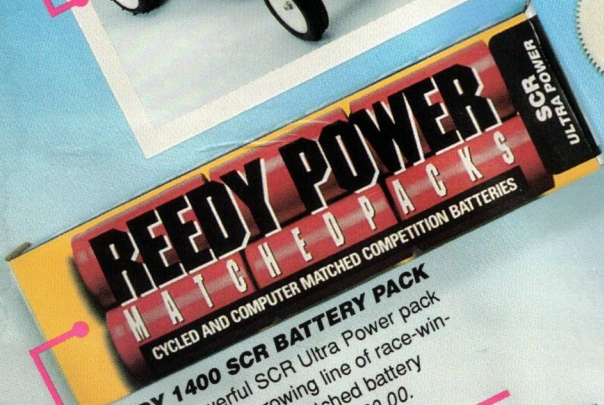
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