

WHAT KIND OF RACER ARE YOU?

APRIL 1989

Vol. 4, No. 39

RADIO CONTROL Model Cars

CD 08658

U.S.A. \$2.95
Canada \$3.95

HOW TO PAINT:
A Step-By-Step
Series Begins

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UNDERSTANDING YOUR BATTERIES
INSIDE: A GUIDE TO R/C RACE TRACKS



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Increase the response time of your R/C model with Airtronics' top quality electronic speed controllers.

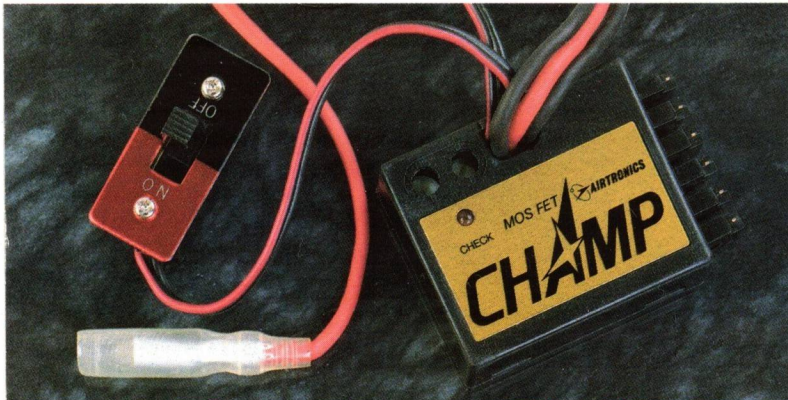
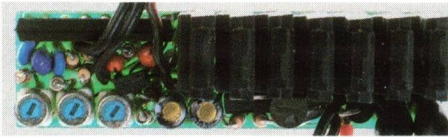
Airtronics speed controllers enable you to proportionally control the electric motor speed of your R/C car without the use of an extra servo.

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Our complete line of electronic speed controllers are fully compatible with all Airtronics high quality radio control systems and accessories.

When you think about electronic speed controllers, think fast. Think Airtronics.



96309 CHAMP SPEED CONTROLLER

Designed for the performance-minded R/C enthusiast, Champ allows modelers to economically replace outmoded throttle servo and mechanical speed controller functions with the advantages of a superior electronic speed controller system.

This affordable, non-reversing electronic speed controller is intended for use with stock motors utilizing 6 cell battery packs.

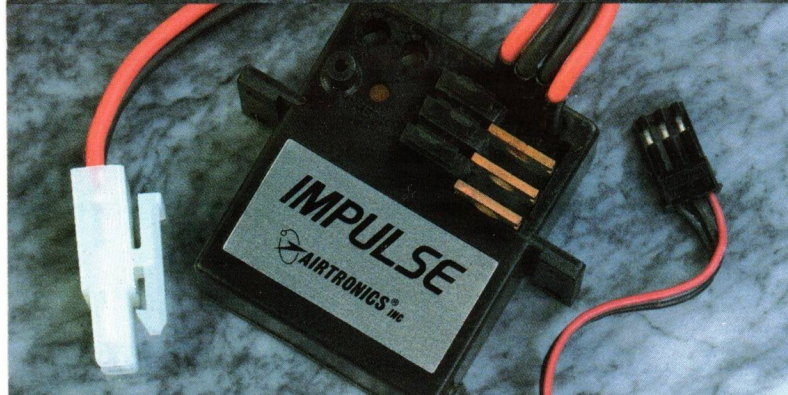
Specifications:

Voltage Loss: 0.010 Volts Per Amp

Dimensions: 1.26" x 1.69" x 0.63"

Current Rating: Surge - 300 Amps / Continuous - 90 Amps

Weight: 0.78 oz.



96310 IMPULSE SPEED CONTROLLER

Ideally suited for on or off-road use, Impulse offers the convenience of reverse throttle at an affordable price. Responsive reverse and proportional forward control functions gives modelers all the performance advantages of advanced electronic speed controller technology.

The economical Impulse speed controller is specially designed for use with stock motors utilizing 6 cell battery packs.

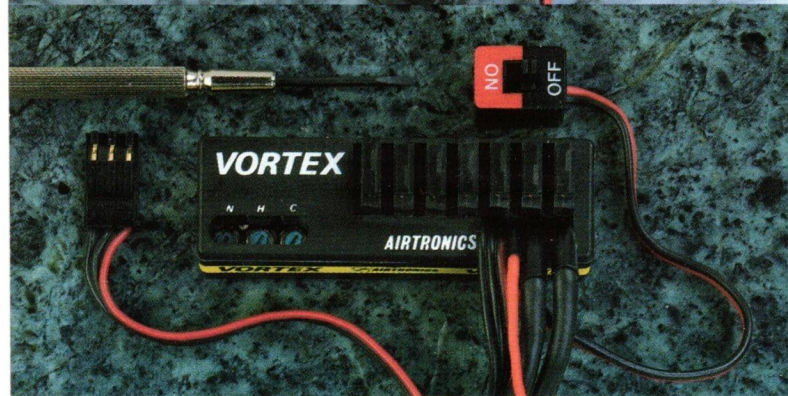
Specifications:

Voltage Loss: 0.010 Volts Per Amp

Dimensions: 1.81" x 1.54" x 0.63"

Current Rating: Surge - 350 Amps / Continuous - 90 Amps

Weight: 2.2 oz.



96311 VORTEX SPEED CONTROLLER

Engineered for the advanced competition driver, Vortex is suitable for on-road cars or competition oval racer application. Vortex features the fast performance response of electronic speed controller technology that helps give racers the competitive edge.

This highly efficient speed controller is intended for use with stock or modified motors utilizing 6 or 7 cell battery packs.

Specifications:

Voltage Loss: 0.0052 Volts Per Amp

Dimensions: 0.67" x 2.2" x 0.57"

Current Rating: Surge - 420 Amps / Continuous - 105 Amps

Weight: 1.13 oz.

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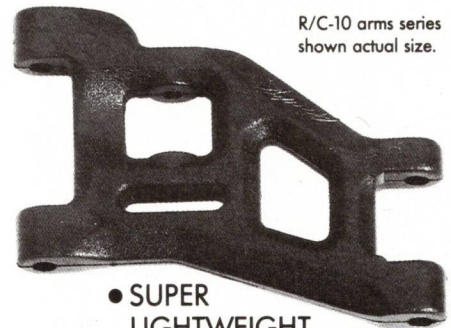
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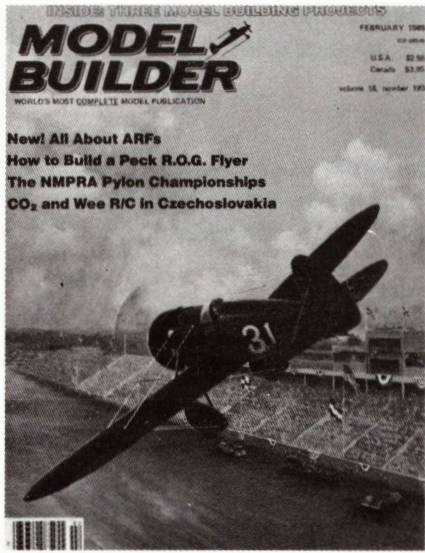
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- NYLON TOUGH
- RIGID
- PRECISION ALIGNMENT
- SLEEK DESIGN



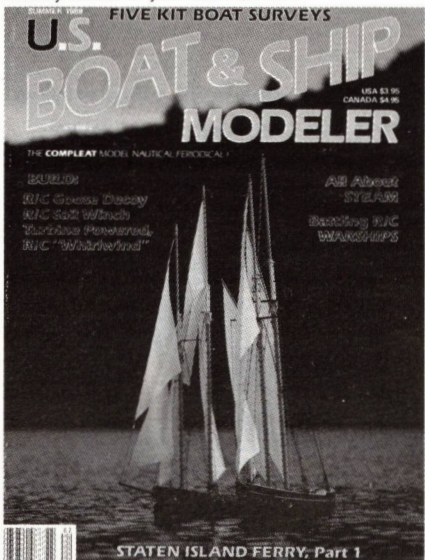
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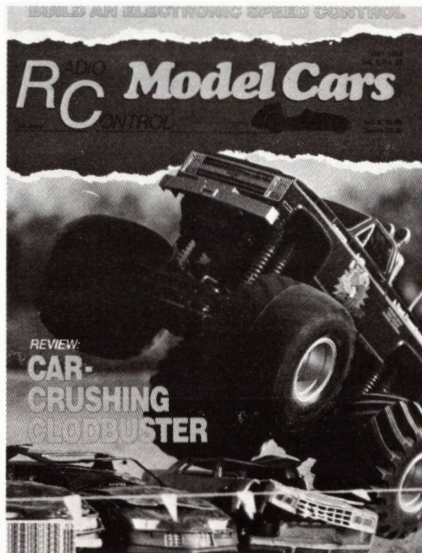
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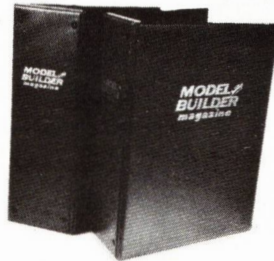
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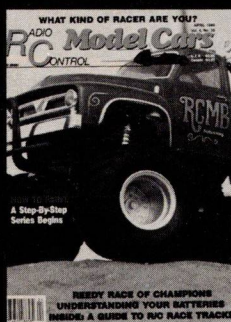
RADIO CONTROL Model Cars



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COVER:

Monstro, the office Monster Truck, is in reality an MRC/Tamiya Midnight Pumpkin. Mike Ogle did the painting, and begins a multi-part feature on how to paint, beginning on page 58.



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RCH Hobbies hosted the '89 Reedy Race of Champions.

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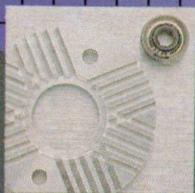
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- #0001 The Buggy Master, 20 Turns, 30,000 RPM
- #0002 427 4WD, 16 Turns, 36,000 RPM
- #0003 350 2WD, 18 Turns, 34,000 RPM
- #0004 Dirt Oval Stock, 2WD or 4WD
- #0005 Super Speedway Stock, On-Road
- #0012 The Road Beast, 20 Turns, 30,000 RPM



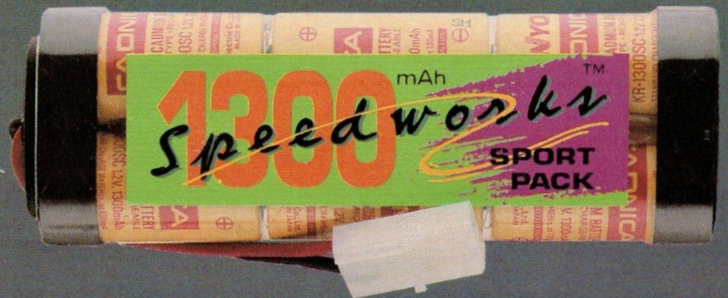
#4028, #4032 Lite
and #4033 Heavy
Replacement Springs.

Tomorrows Technology

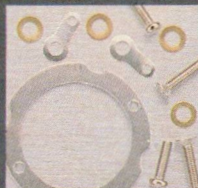


#4043 Motor Spacer,
#4031 Motor Bearing.

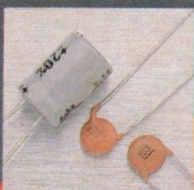
#0011 Sport Pack,
6 Cell Sanyo KR-1300SC



#4044 Motor Rebuild Kit.



#4011 Capacitor Kit.



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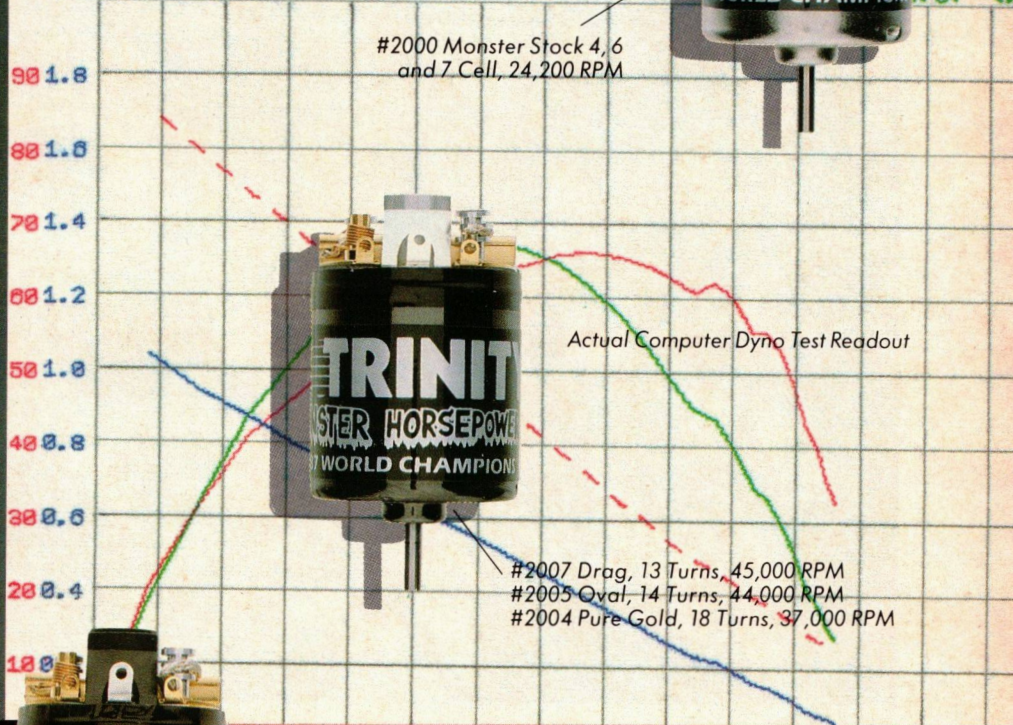
#5050 SCR 6 Cell Racing Pack
#5051 SCE 6 Cell Racing Pack



#5043 Matched SCE 4 Cell Set
#5044 Matched SCE 6 Cell Set
#5045 Matched SCE 7 Cell Set



OVERALL EFFICIENCY (%)
TORQUE (kg.cm.)



TODAY



#4005 Brushes/Springs,
#4006 Cut Brushes,
#4007 Timed Brushes and
#4035 Off Road Brushes.

- #1012 Big Daddy, 10 Turns, 49,500 RPM
- #2014 Top Fuel, 11 Turns, 47,000 RPM
- #2015 Godzilla, 12 Turns, 46,200 RPM
- #2002 Sprint, 15 Turns, 41,000 RPM
- #1010 4 Cell Single, 15 Turns, 40,000 RPM
- #2008 Whippoorwill, 16 Turns, 39,500 RPM
- #1004 4 Cell Double, 16 Turns, 39,200 RPM
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- #1005 4 Cell Triple, 17 Turns, 38,000 RPM
- #1006 4 Cell Quad, 18 Turns, 36,000 RPM
- #2003 Enduro, 19 Turns, 35,000 RPM
- #1011 6 Cell Single, 19 Turns, 32,000 RPM
- #1007 6 Cell Double, 20 Turns, 29,000 RPM
- #1008 6 Cell Triple, 21 Turns, 28,000 RPM
- #1009 6 Cell Quad, 22 Turns, 27,000 RPM

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SHOWTIME!



There isn't much time left to make your plans to attend the 1989 International Modeler Show which returns to Atlanta's World Congress Center May 13 and 14.

This year's show promises to be bigger and better than last year's, which is saying a lot! With acres of exhibits by manufacturers and distributors, as well as several demonstration areas that include a large boat pond, and a 60x110-foot car track that'll be taken over by gas-powered quarter-scale cars when the electric racers aren't using it, and daily flight demonstrations by members of the Blacksheep Squadron, there will be plenty to see and do at the '89 IMS show.

For those coming from a great distance to Atlanta, Delta Airlines is again offering its personalized services for the IMS show.

Provisions have been made to allow a 40 percent discount off of Delta's domestic full round trip day-night coach fares, including Alaska, Hawaii, and Puerto Rico. In addition, a 35 percent discount off of Delta's full round trip day/night coach fares will be offered for Canadian travel. For all of these discounts, reservations and ticketing must be made a minimum of seven days in advance. Any changes to the outbound reservations must be made with seven days advance notice of the new flight. Changes to the return flight may be made at any time. There are no penalties for changes or cancellations when using these discount fares.

A 5 percent discount is also available to you on Delta's domestic published excursion fares, including instant savers. If you elect to use the 5 percent discount off any

excursion or instant saver fare, all rules and conditions of the fare will apply.

Remember, seats are limited, so you are advised to confirm reservations as soon as possible. To take advantage of these fares, follow these simple rules:

1. Contact Delta or have your travel agent call (800) 221-1212 and ask to speak with Delta's Special Meetings Network.

2. Refer to Reference File Number K14090. That's important!

Valid dates of travel are May 7 to May 19, 1989.

Remember the dates: May 12, trade-only day, for dealers; May 13 and May 14, Saturday and Sunday, for everyone. The show opens at 10:00 a.m. each day, and closes at 6:00 p.m. Saturday, 5:00 p.m. on Sunday.

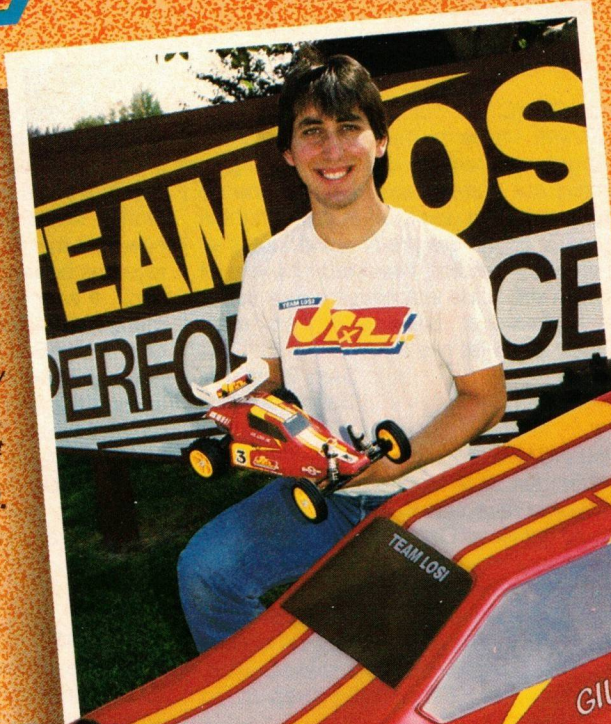


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WHY JR-X2?

The JR-X2 is the product of my many years of R/C car racing experience. It incorporates the many little things that helped me win 4 World Championships and numerous major titles around the world. The highly tested and developed design will help you be successful against the toughest competition.

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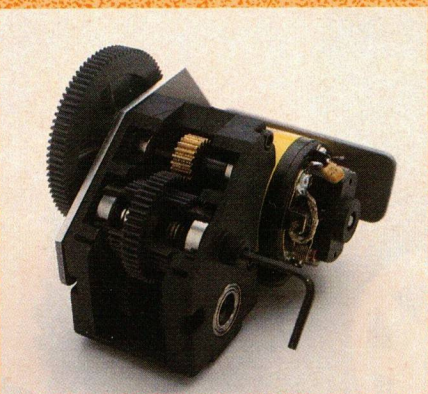


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Patents Pending

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Dear RCMC,

Your March cover really caught my eye! How could I help but see it with that hot paint job on the cover! You're going to cost me some money, because I am going to go get myself an airbrush and see if I can do the things that Mike Ogle did to the cars in the story about his painting. I'll be watching every month now to learn the tricks that will help make me a body painter. I love the magazine, keep up the great work.

Elston Lammeraux
Baton Rouge, Louisiana

Dear RCMC,

I was really knocked out by your feature, *Air Power*, in the March issue. I would like to learn to paint like that, but I know it isn't so easy as it looks. I'm looking forward to reading about the professional painter's secrets. But in the meantime, I have a body that needs painting, so I guess I'll just spray it and race, and get a new body for some serious detailing when your series comes out. Keep up the good work.

Pete Dorn
San Luis Obispo, California

Dear RCMC,

Allright, I have my clear Lexan body, my airbrush, my paint, and I'm ready to start turning out painted cars like the one on your cover. That was killer stuff, and I think my early efforts are pretty good, but after seeing your photos, I realized I have a lot to learn still. I'll be watching for your series on professional painting secrets each month. Don't let me down!

Sam Torgerson
Salina, Kansas

Dear RCMC,

Your incredible feature on the RC Thunderdrome race was awesome! I think you should get Reed Deanfield to do more writing for your magazine. I have never won a race either, but I sure do have fun trying! I know where Reed is coming from, and I think you should give him his own column on racing tips and how not to make the mistakes he does. He's a classic! Keep up the great stuff.

Terry Garcia
Scottsdale, Arizona

Dear RCMC,

In the past several months we have been

treated to many new 1/10 road racing car reviews, and I am not sure about which one to buy. I've heard that there are still more new 1/10-scale road racers coming onto the market, so I'm waiting. I have an RC10 right now, but the dirt track where we used to race has been converted to an asphalt oval track. It seems as though there aren't as many dirt tracks around anymore, like the one at the S.D. Stadium. What has happened to them? Is everyone switching over to road racing now? I'm still happy to be racing offroad, but if all the tracks are for road racing, then I'll get a road car and compete. You watch; as soon as I get a new road racer, they'll plow up all the asphalt pavement and put in offroad tracks again!

Barry Tyrell
Escondido, California

Dear RCMC,

I have to agree with what Gene Husting said in your February issue about Cliff Lett. Anyone who can win so many big races in different disciplines has to be considered Driver of the Year. Not only did Cliff win the 4WD Dirt Champs, but also several dirt oval races, a 1/8-scale gas race, as well as several onroad races. This looks like it is going



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fun go off.

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to be Cliff's year to shine. I say, go get 'em, Cliff!

Barton Chiat
Phoenix, Arizona

Dear *RCMC*,

Your racing coverage continues to get better. In your February issue you had reports on the ROAR 1/10 Road Racing Regionals, as well as the 4WD Dirt Champs. I never miss reading these articles because they let me know who is winning and what they are using to win. The pictures of the cars is very helpful in setting up my own car. Tell your writer Mr. Hustung that his efforts are very much appreciated up this way.

Colin Flaherty
Toronto, Canada

Dear *RCMC*,

I am fairly new to radio control models, and I have been following your magazine since I got into the sport. I specially like writer Eloy Marez's columns on radio electronics, as I am not too knowledgeable in this area. I know that if you press the trigger, the car will go; let go and it stops. I know that the battery power is controlled

by the ESC, which limits the amount of current traveling to the motor, which turns the gears that drive the car. All of the things I know I have picked up at our racetrack from other drivers, or from reading *R/C Model Cars* magazine. I want to thank you for making my introduction and initiation into R/C fun so painless. Without you, I couldn't have been having the fun I have had so far. Now, how about an article on batteries?

Larry Norton
Coeur d'alene, Idaho

Larry: One of our ace correspondents is at this moment at work on a feature on battery care and use in R/C model cars. It isn't an easy task, so you will have to join with us in being patient until it arrives.—Ed.

Dear *RCMC*,

Mike Liem's superb article on the Delta 1/10-scale Villain barely whetted my appetite! I want to know more about this car, and how it performs on the track. When will we learn the details on handling, setup, etc.? I'm ready to go buy a new 1/10 road racer, but I haven't made up my mind about which car to buy. Thanks for your informa-

tive articles on 1/10-scale road cars.

Dave Martiel
Providence, Rhode Island

Dave: Part Two of the Delta Villain is coming as soon as the weather clears in Washington State so that Mike can get the car out on the track for evaluation.—Ed.

Dear *RCMC*,

I sent in a caption for the cartoon contest for a subscription. When are you going to tell who won the contest? If I haven't heard from you yet does that mean I didn't win? It figures, I never win anything.

Sandy Vaughn
Harveysburg, Ohio

Sandy: The winners in the cartoon caption contest are announced this issue, and no, you didn't win! Sorry, try again!—Ed.

Dear *RCMC*,

As an owner of an RC12L racer, I was very interested in your report on the 1/12 U.S. Indoor Championships in Cleveland. It is doubly great to read about a race and find you have the same car the winner drove.

Kevin Day
Denver, Colorado



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Jim Williams, of Alameda, California, scores a big win this month with his two outstanding cars. First is his Kyosho Turbo Optima with a Parma Eagle body. Inside is a Revolution IV motor driving a Kyosho belt drive through Option House Universal Swing Axles. Also, Novak speed control and receiver units are under the body as well. The colorful Benetton livery on the Tamiya Road Wizard was hand painted with Kyosho, Pactra, and Tamiya paints. The car is stock except for a Novak speed control. Jim, here's a free, one-year subscription for your efforts.



An action photo of a BoLink Round Tracker with an '88 Pontiac Grand Prix body comes from John Keller, of Charleston, South Carolina. He uses a BoLink speed control, a Trinity stock motor, and a Bud's bi-level super wing. John recommends R/C racing for anyone with a little patience.



Chuck Kronenberg, of Oak Forest, Illinois says you don't have to be a mechanical ace to make a Blackfoot look good. It's completely stock, and looks great on the track. Nice photo, Chuck.

Because there's a difference
between being ready to race and just
showing up at the starting line...

...THERE'S
NOVAK

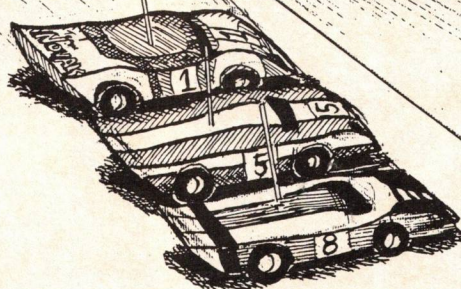


Novak products are designed with the racer in mind. With over 10 years dedication to the RC industry & over 35 years in active modeling & racing, it's easy to understand why performance parts from Novak were used by fifteen out of seventeen 1/10 & 1/12 Scale National Champions in 1988.

Team Novak is as serious about racing performance as they are about the quality & reliability of their products.

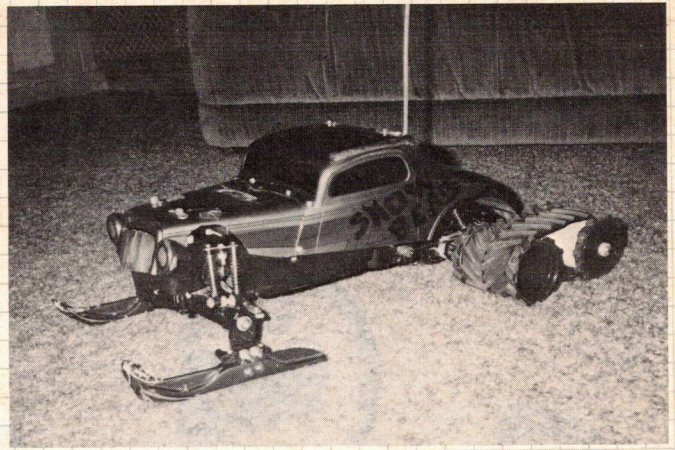
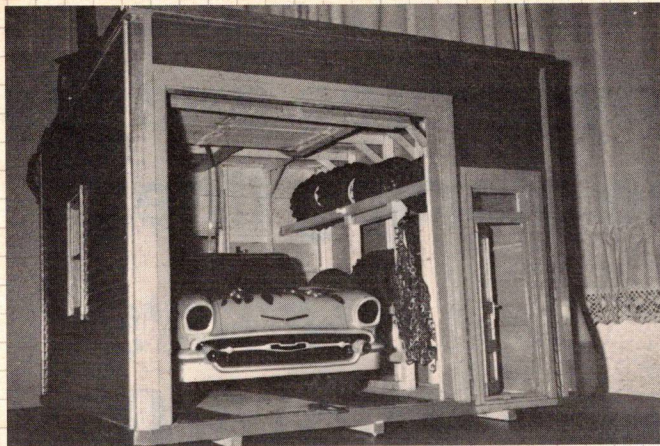
If you're serious about racing, show up to the starting line prepared...
...with **Novak**.

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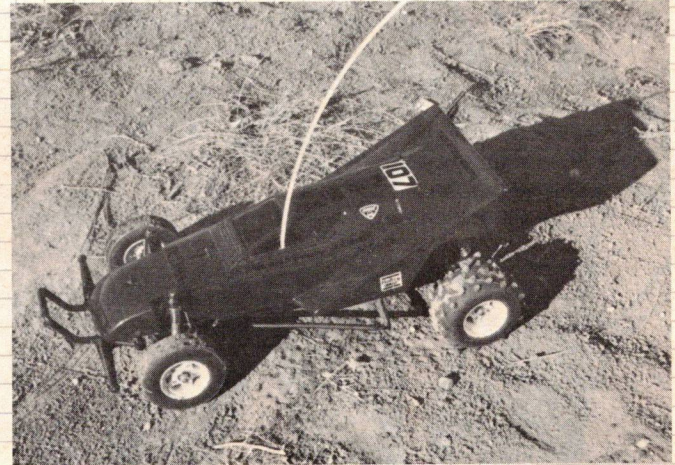
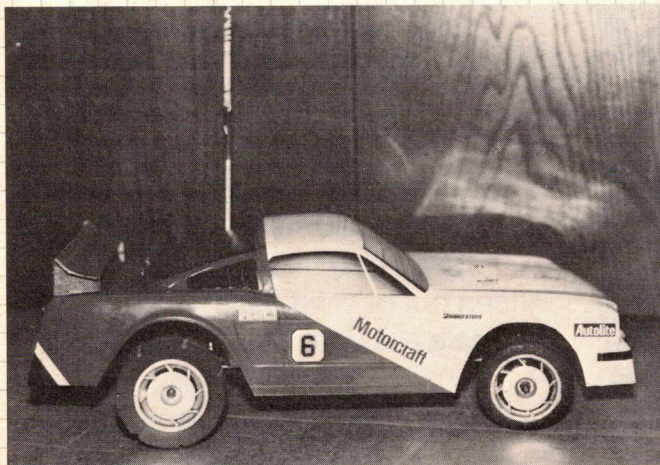


NOVAK
ELECTRONICS

1988 Cleveland 4-Cell Race Results:
Shawn Ireland: Modified Class Winner and
Dwight Smith: Stock Class Winner using
NOVAK Speed Controls & Receivers.

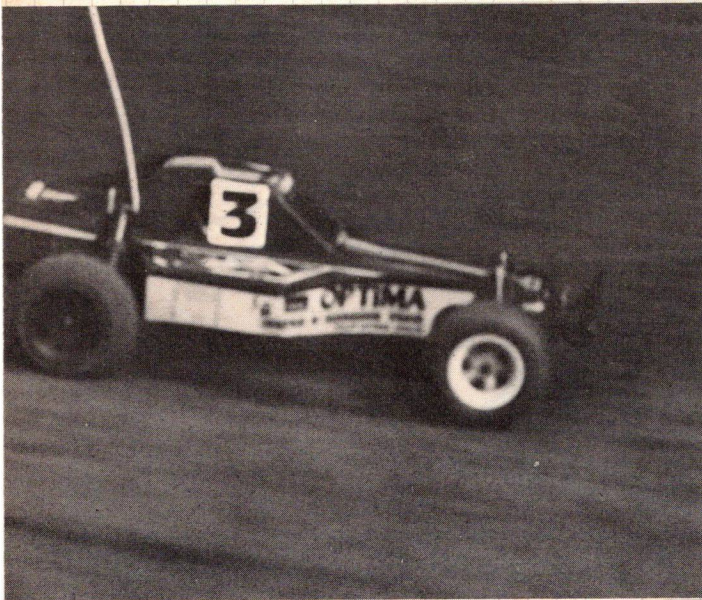


These two photos come from Ronald Laugavitz, of Mt. Pleasant, Michigan, who writes to say that the garage housing his '57 Chevy was made of balsawood, and has working lights, windows, and a sliding overhead main door. The top is used as a work area, and there's room inside for tires and snow chain storage. At right, Ron's Snow Beast, a Hornet chassis, with carved wood skis with metal runners, and heavy-duty suspension. Ron says it is a real performer in the Michigan powder. How about a free subscription to R/C Model Cars, Ron, it's yours!



Also from Michigan is Willy Loh, who lives in Ann Arbor. He took a Kyosho Ultima and added a '66 BoLink Mustang body, a 480S motor, and NMP bearings. Willy says it is really fast now.

Here's a modified Hornet from Doug Gardner, of Albuquerque, New Mexico. Doug put in a LeMans 240 SB motor, Pro-Line tires, a Parma Stinger body, and a custom paint job. Performance is outstanding.



This speeding Optima is from Charles Colton, of LaSalle, Illinois, who says it has a KO speed control, platinum shocks, Checkpoint motor, and CRP tires. Nice shot, Charles!



Erin Clancy, of Stanfordville, NY, writes: "I was taking a picture of the house across the street and I was attacked by a Fox! Honest!!"

25 YEARS OF WINNING SERVICE TO THE HOBBY INDUSTRY



Parma's 1/10 Ford F-150 body (#10244, \$19.00) is a direct replacement for the popular Tamiya Blackfoot. Enjoy the impact resistance and easy painting characteristics of a Parma lexan body. Fits other 1/10 cars with the use of a Parma #10450 (\$6.50) universal body mount kit.



Parma announces three new additions to its extensive selection of mylar decals. Pictured at left is the new large (9" x 12") oval racing decal sheet (#1352, 5 color, \$6.50), great for 1/4, 1/8, or 1/10 use. Center is the new Hershey's in reg. (6" x 8") size (#10630, 4 color, \$3.50) and at right is the new Snap-on Tools sheet (#10654, 6 color, \$4.50).



Fans of NASCAR racing will enjoy Parma's new 1/10 1988 Buick Regal (#10265, \$19.00). Molded in clear lexan with Parma's usual attention to detail, it fits all 1/10 on-road chassis with the use of a Parma #10453 (\$6.50) sedan body mounting kit.



The classic '49 Mercury is available in 1/10 scale from Parma (#10249, \$19.00). This "Boulevard Blaster" arrives clear with excellent detail. Fits most 1/10 cars with the use of a Parma #10450 (\$6.50) body mount kit.

parma NEW PRODUCTS

No. III



New from Parma is the direct replacement body and undertray for the Yokomo C-4 1/10 off road car (#10282, \$29.50). Available in clear lexan, a wing, mounts, and wing wire are included to give Yokomo owners a completely new look.



New from Parma are replacement wheels and tires for Tamiya Grasshopper, Grasshopper II, Hornet and others. Great for budget-minded enthusiasts, each set contains gold-plated wheels, molded rubber tires, and necessary hardware. Fronts (#12114, \$10.00) and rears (#12115, \$10.00) are available at your favorite Parma dealer.



Parma is proud to release its' newest electric r/c aircraft, the Aero Sprint (#25500, \$149.95). This ARF (almost ready to fly) arrives pre-built and covered. Also included is motor, folding prop, spinner, wheels and all necessary hardware. All that's required is assembly of major components, a 2 or 3 channel aircraft radio and 6 cell battery pack. Total time from kit to flying field is less than 6 hours! Enjoy quiet, clean electric flight with a Parma Aero Sprint.



Parma introduces a new 7 cell hump pack constructed with quality Sanyo SCR cells (#11264, \$43.00). Computer matched cells, hand soldered connections and a Tamiya connector combine to offer the quality that Parma's battery packs are famous for. Fits associated, Tamiya, and other 1/10 cars.



Parma's latest product for electric r/c boating is the lexan Ski Tiger basic kit (#20016, \$39.50). Containing the hull, deck, radio/motor compartment and deck cover, a boater is able to use his choice of motor, running hardware, and accessories. The crash resistance of lexan, along with the ease of painting (from the inside!) afford the modeler a way to build a "custom" fast electric boat.

PARMA'S MOTOR SERVICE FOR ANY MAKE MOTOR

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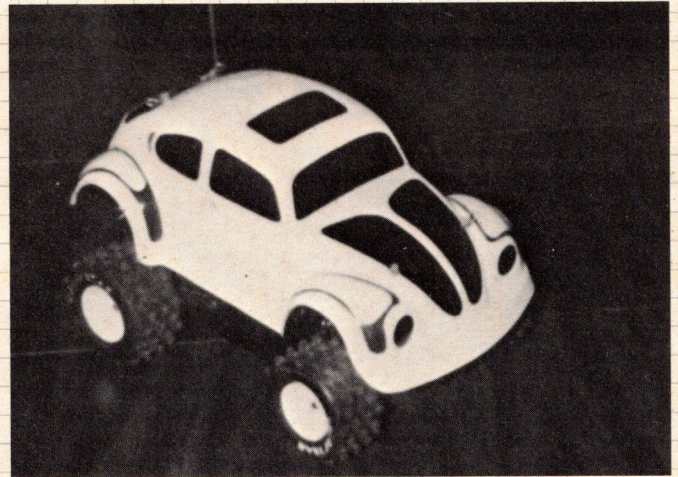
* Parma Regrets that we cannot supply individual orders on a retail basis. For parts and information, contact your local Parma dealer.



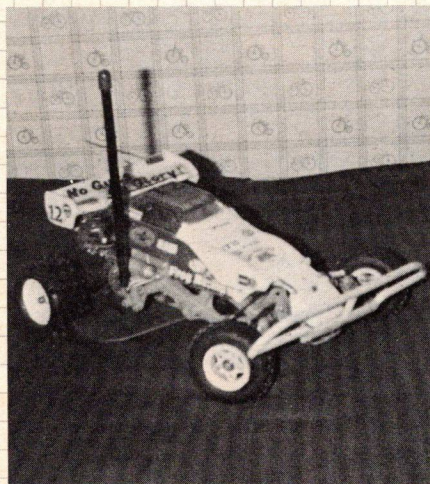
"Dear Sir or Madam: I am 13 years old and this is a picture of my Monster Beetle with a Subaru Brat body on it. My Subaru has a Twister motor. I bought it at Pit Stop Hobbies in Belmore. Yours truly, George Haines." How about a free subscription for old George; it's yours!



This '67 Stingray on a Jeep CJ7 chassis is by Scott Seader, of Radcliff, Kentucky, who says he had to modify the chassis greatly to accept the body. Scott intends to enter it in Perry's R/C Hobbies Pretty Car contest.



From Grove City, Ohio comes these two photos of a "father & son & close friend team" made up of Rick Giffin and James & Jimmy Bowman. On the left is Rick's '33 Ford 3-window coupe with BoLink chrome mags with BoLink racing tires. Under the body is an RC10 with bearings. On the right is Jimmy Bowman's Big Bear with a Super Beetle body that's set up for stunts and wheelies. It's handpainted, and fast!



Jeremy Von Ruden, of Reno, Nevada says his Frog is controlled by a Futaba Magnum Sport with a Race Prep stock motor installed, ball bearings, Pro-Line tires, and a fancy bumper. It's speed is about 20 mph, says Jeremy.

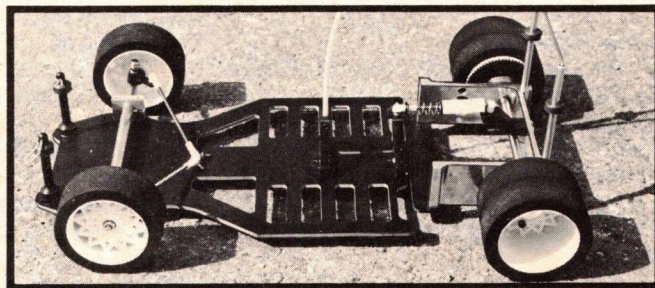
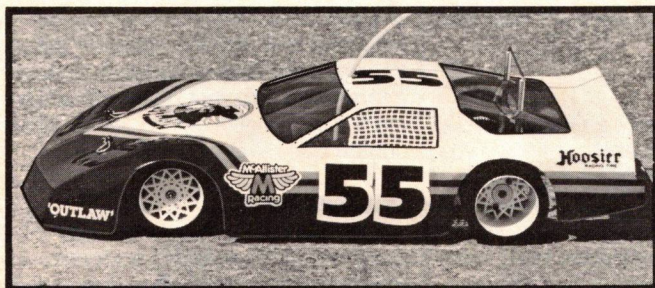


From Dave Dykstra comes this photo of his Tamiya Super Shot with a Technigold motor and a modified Trinity wing. "It's fast, and handles great," says Dave.

THE OUTLAW



1/10 SCALE STOCK CAR FOR PAVEMENT RACING



All of the thunder and excitement of the sleek, mean looking short track outlaw stockers comes to you in 1/10 scale from McAllister Racing.

"THE OUTLAW" comes complete with body, decals, instructions & the MX-1 rolling chassis.

The MX-1 chassis was designed with years of scale road racing experience. It features a beam front suspension with

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The MX-1 chassis has great handling characteristics for oval or road racing on pavement or carpet.

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I AM A RADIO-CONTROL RACER

Dear Answerman,

I am a radio-control racer and I race street cars. I am writing you to ask for some information about the Corally SP-2 you wrote about in the December issue of RCMC. I would like to know where and how you got the price, 'cause I'm intrested in buying one. If you can send me any extra information I might need on the Corally. Thank you for taking the time to read this.

Tom Newlon
St. Louis, MO

A. Tom, the importer/distributor for the Corally product line is DuMar RC of New Jersey. The SP-2 should be available at many hobby suppliers at this time. As far as the price is concerned, the SP-2 is no bargain-basement 1/12 scale car—it's an all-out race car designed with only competition in mind. Except a price of well over \$200.00.

Dear Answerman,

I'm a beginner in model cars and I've just gotten a car. Its name is the Kyosho Shadow. I'm wondering if you could get a new motor for it like the Trinity Oval Blast motor that's rated at 35,000 rpm, but I'm wondering if the car could handle the motor or if I would have to get new parts for my car.

Travis Shaw
Milwaukee, WI

A. Like its name suggests, the Oval Blast is intended for high-speed oval racing. Even if the Shadow's drivetrain could handle the extra rpm, the Oval Blast is just not suitable for a beginning driver like yourself. If you want to try a hotter motor, look into a stock-type motor. It's faster than the one that came with your car but costs a lot less than a modified motor. Invest the money you'll save in a set of ball bearings for your Shadow and you'll have a car that's fast and reliable.

Dear Answerman,

I've got a question. I would like to know what the difference is between a Trinity "Pure Gold" motor with a wet magnet and a Trinity "Drag" motor. Also the difference between lite and hard springs. One more question, could you give me some advice on buying an electronic speed controller. Thanks!

Nick O'Connor
No Address Given

A. The "Pure Gold" is Trinity's 2WD offroad motor. Its armature is specially wound to

produce a smooth powerband to keep the tail-happy 2WD offroad cars under control during acceleration. The drag motor, also known as the "Big Daddy" motor, is an extremely fast motor intended only for drag racing.

I'm going to assume that the springs you are referring to are the motor brush springs. The heavier springs are designed to increase the tension on the commutator brushes, thus improving the current transfer and preventing the brushes from "hanging up."

As far as buying an electronic speed controller is concerned, it's difficult to determine the one that's best for you without knowing what your specific needs are. Most ESC manufacturers, like Novak and Tekin, offer more than one model of speed controller. Your best bet is to consult other racers or your hobby dealer. They should be able to help you choose an ESC that will fit the bill.

Dear Answerman,

I have just purchased a Golden Arrow, made by Radio Shack. I'd like to know if you can give me your opinion on this car. Also, I would like to know if I can put in another motor on there by myself. Not a "Radio Shack" kind. The people there don't know nothing about anything.

Confused
Vince Ducato
Downer's Grove, IL

PS. Do you think it can beat the competition, such as a Blackfoot, with a Trinity Monster Hosre under the hood? Your magazine is great!

A. Vince, your problem is why we advise beginning RC car enthusiasts to consider buying their cars and radios from a hobby dealer who specializes in RC cars. The folks at Radio Shack aren't into R/C racing, and their limited knowledge of R/C cars is understandable. I'm afraid it's impossible to install a competition-type electric motor in your car, and before you spend any more on the car, you should think about getting an entry-level R/C car that you can afford to race, as the Golden Arrow was never intended for competitive racing.

Dear Answerman,

I own a Javelin that's really modified. It has a Peak Performance 14-oval motor and it flies. Also, I have a beltdrive and two ball diffs. I have lots of little things like an Andy's Corvette body for aerodynamics. I race on

a roller rink converted into a oval track. There are so many people at our track it's incredible.

Some cars I race against are Optima Mids and Dominators. The Dominators scare me. It just about has direct drive. I'm not saying I can't beat these cars, but they can almost beat me. Is there anyway to get rid of some of the gears in the rear of my car?

I love your magazine!

Eric Williams
No Address Given

A. Listen, kid, if you're holding your own against a purpose-built oval car like the Dominator, what are you complaining about? Considering the fact that you are racing a converted offroad car against cars that are better suited for oval tracks, your track record sounds like a winner! From what you've told me, there isn't a whole lot you can do to further improve your Javelin. There are only four gears in the Jav's transmission, so getting rid of a couple of gears won't help that much. What's missing is a mid-engine design, which all of the competitive 4WD cars now have.

Dear Answerman,

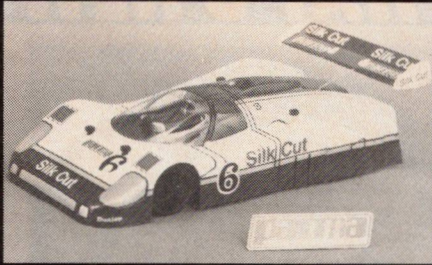
I was wondering if you could interview the Big Brute. After watching a Monster Truck race I was impressed with their speed. Also, can the Big Brute and the Raider handle a 7-cell battery pack increase or will it burn out the motor? Thanks for publishing this letter and keep up the good work.

Jason Brown
Orlando, FL

A. Jason, I've tried to interview the Big Brute, but you know these strong, silent types; they won't say anything! Just kidding. Yes, we will have an article on the Big Brute and other monster trucks, as this type of racing seems to be growing in popularity. Yes, the Kyosho Raider and the Big Brute will be able to handle a 7-cell pack, but unless the cars are equipped with ball-bearings, you won't notice a considerable improvement in speed and running time.

Do you have a question about some aspect of your radio-control equipment, or are you just wondering what car to buy? No matter what the question is, if it has to do with R/C cars, the Answerman has the answer. To have your question answered, write: Answerman, 898 W. 16th Street, Newport Beach, California 92663.

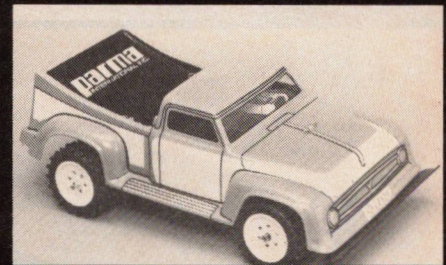
25 YEARS OF WINNING SERVICE TO THE HOBBY INDUSTRY



Parma's latest body for 1/10 on road racing is the Jaguar XJR-8 (#10273, \$19.00). Available in clear lexan and including the rear wing, this body is a scale replica of the 1988 group C championship winning race car. Fits most 1/10 on-road chassis with the use of a #10450 body mounting kit (\$6.50).



Parma announces the release of new large 9" x 12" decal sheets. Useable for 1/4, 1/8 and 1/10 scale, these mylar sheets are perfect for use where a "regular" 6" x 8" decal just isn't large enough. Initial releases include Hardee's (#1350, \$5.50), Folgers (#1351, \$6.00) and NASCAR (#1353, \$6.50).



Parma's latest pickup truck body is the 1/10 Outlaw '66 Ford (#10258, \$19.00). Molded in clear lexan, this body features a combination of "classic" looks and wild Aerodynamics. Fits most 1/10 chassis with the use of a #10450 (\$6.50) body mounting kit.



New off road tires from Parma! Shown are new "small spike" tires for the Schumacher Cat, and others using 2.1" rims. Fronts (#12036, \$12.00/pr.) and rears (#12037, \$12.00/pr.) are available at your local Parma dealer.

parma NEW PRODUCTS No. IV



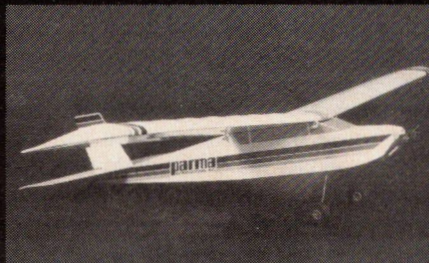
Parma's Jeep Honcho (#10250, \$19.00) is popular with owners of 1/10 monster trucks. Available in clear, with excellent detail and realism molded in. Fits most 1/10 cars with the use of a Parma #10450 (\$6.50) body mounting kit.



Parma announces the arrival of new flexible transmitter antennas! Designed to fit Futaba Magnum Jr. and Magnum Sport series transmitters, they're available on 27 mhz (#11803-A, \$20.00) and 75 mhz (#11803-B, \$20.00). These antennas offer excellent range, and keeps your antenna out of other driver's way.



Parma introduces new pin-spiked monster truck tires and wheels for Blackfoot, Monster Beetle, and others. Available as wheels and tires: front (#12040, \$25.75/pr.), rear (#12041, \$25.75/pr.), tires only (#12042, \$18.00/pr.) and wheels only front (#12043, \$8.00/pr.) and rear (#12044, \$8.00/pr.).



Parma is proud to release it's new electric r/c aircraft kit, the Aero Tiger. This sport/trainer kit features machine cut and sanded balsa and ply parts, full size plans and instructions. Stable flying characteristics make it an ideal first aircraft. Designed for 2-3 channel aircraft radios, the Aero Tiger is available in basic (#25000, \$59.95) and deluxe (#25100, \$149.95) kit versions.



For an "awesome" looking monster truck, try Parma's new Lunchbox/Midnight Pumpkin dual wheel adaptors (#12846, \$10.00/pr.) available at your local Parma dealer.

PARMA'S MOTOR SERVICE FOR ANY MAKE MOTOR

ONLY \$12.00

Parma motor technicians will give you *More Kick In Your Can.*

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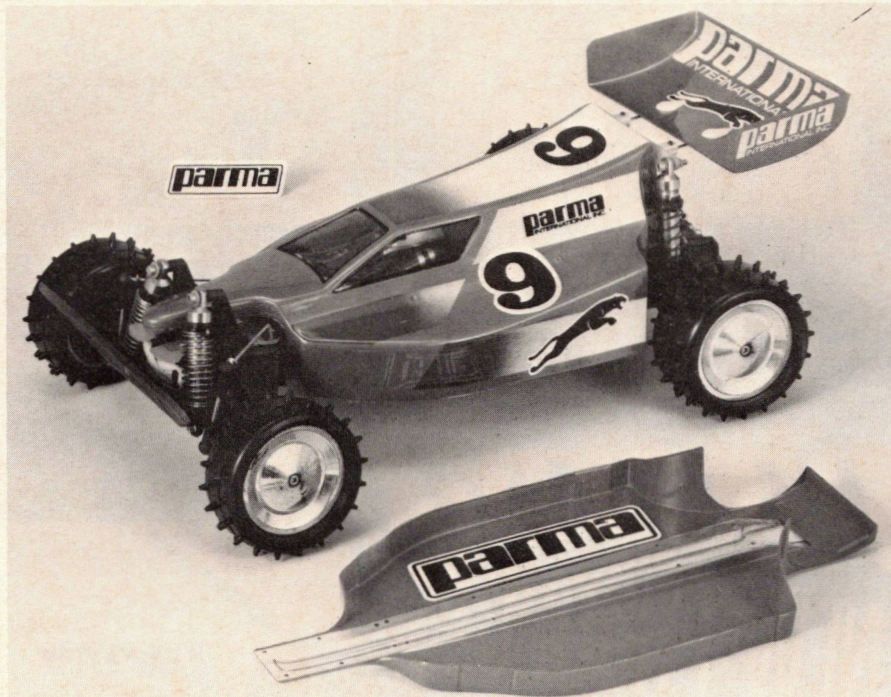
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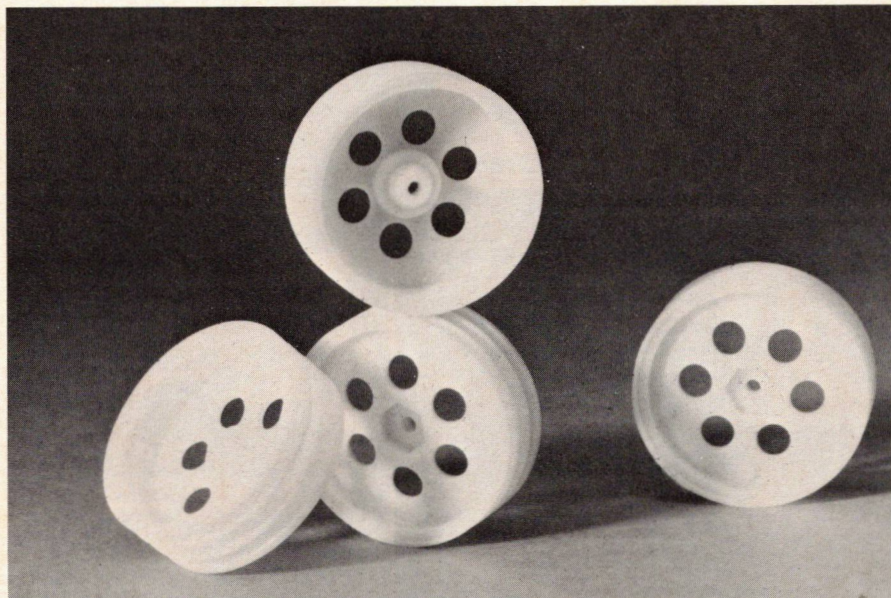
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CAT BODY

Parma's newest offroad body is this clear Lexan body for the Schumacher Cat. It comes in three different versions, one con-

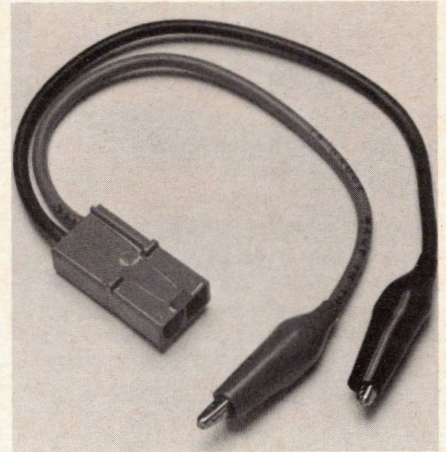
taining body, undertray, wing, wing wire, and wing mounts; or body only, or the undertray only. See your Parma dealer.



NYLON FRONT WHEELS

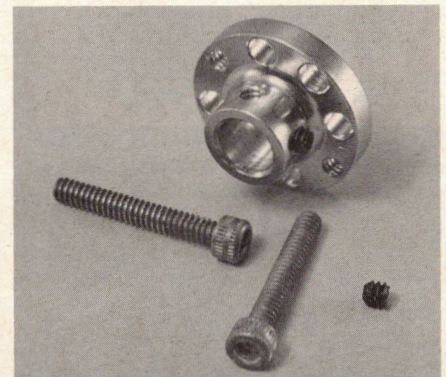
These premium-grade nylon wheels from Pro-Line will fit Kyosho and Tamiya 4WD

vehicles. The wheels are light, tough, and designed for maximum performance and durability.



TAMIYA ADAPTER PLUG

By using this Tamiya/Alligator clip plug you can convert from Tamiya connectors to alligator clips to hook up your charger for increased equipment versatility. Look for these adapter plugs at your Custom Racing Products dealer.



1/12-SCALE WHEEL HUBS

Bud's Racing Products' new 1/12-scale Super Light Wheel Hub will work with any Associated- or TRC-type wheel. The aluminum wheel mounting screws and drilled hub give you lighter rotating weight for better performance. See your Bud's Racing Products dealer for a closer look.

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WANTED: EDITORIAL ASSISTANCE

RCMB Publications is looking for someone to assist in the production of three magazines. The successful applicant will have a command of the English language, a knowledge of magazine production, including layout, paste-up, ad production, proofing, and typing. This position offers the opportunity for the individual to grow with the company in an atmosphere of cooperation with a rewarding future. A knowledge of model building is a plus. Please address your application and resume to: Editorial Department, RCMB Publications, 898 W. 16th St., Newport Beach, California 92663. RCMB is a non-smoking office.

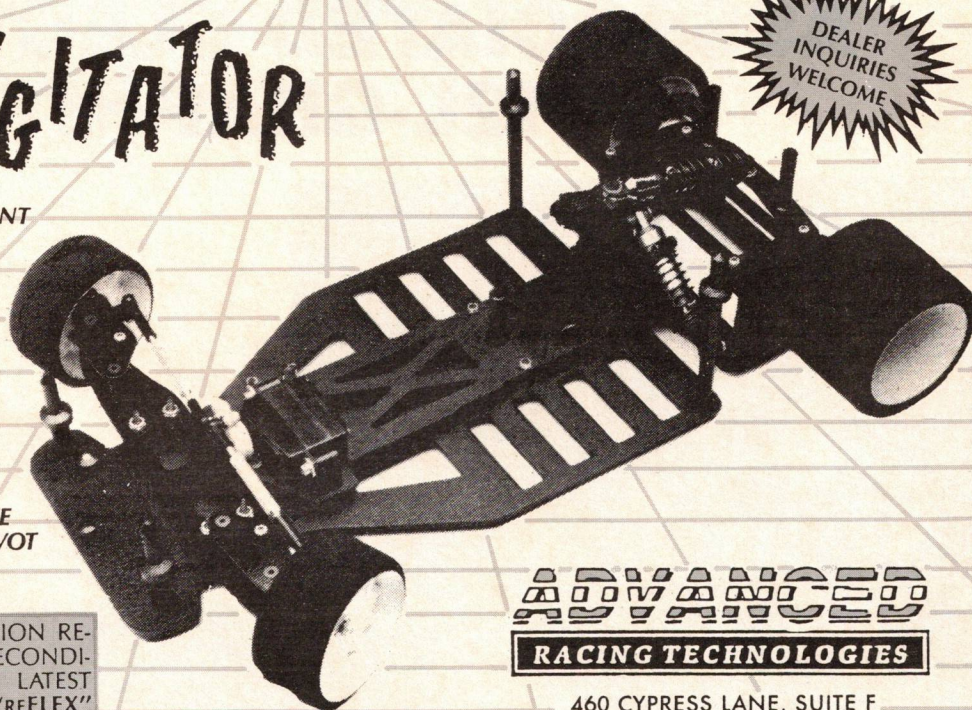
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INDY GOES 1/4-SCALE!

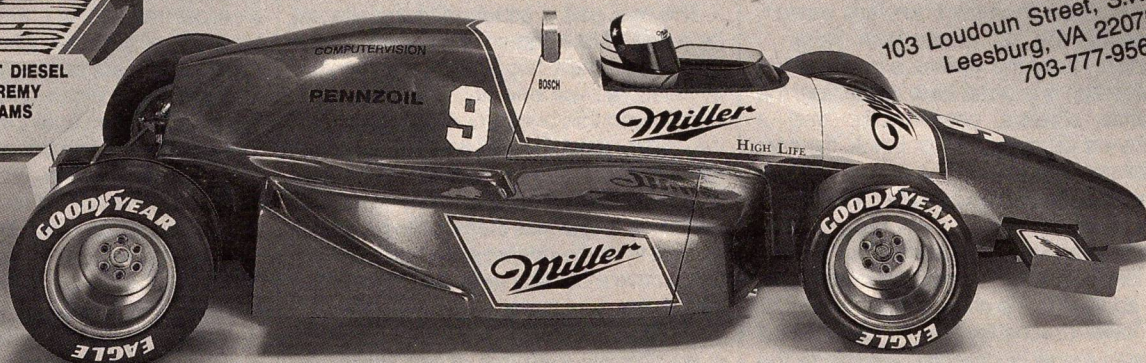
Experience all the excitement of Indy Car racing in quarter scale with Race-tech's all new *Defiant*. The only 1/4-scale Indy racer available, the *Defiant* features fully adjustable, 4-wheel independent suspension, multi-gear quick change rear end, authentic body style with adjustable front and rear wings, and much more.

The *Defiant* stands 10" high, 46" long, 18 1/2" wide and reaches

1/4-scale speeds well over 200 mph. These beautiful, handbuilt cars come fully assembled, with our own high quality Servo Saver included. All that's required is your steering servo, a radio control, and the desire to win!

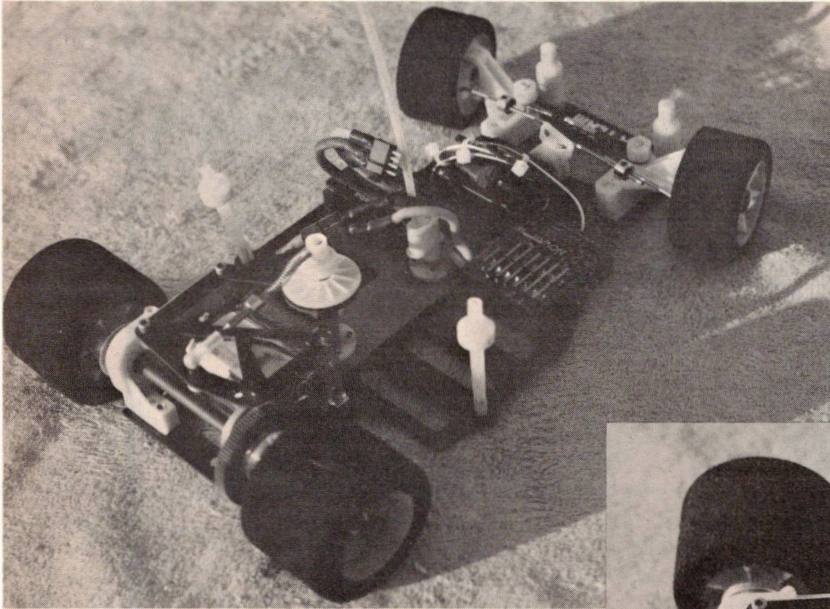
Race-tech also offers a full line of options and accessories for the *Defiant*. The *Defiant* is available through your local RC dealer or from Race-tech for only \$1,695. To order direct, telephone 1-703-777-9565, or write to: Race-tech, 103 Loudoun St., SW, Leesburg, VA 22075. VISA, MasterCard or C.O.D. payment available.

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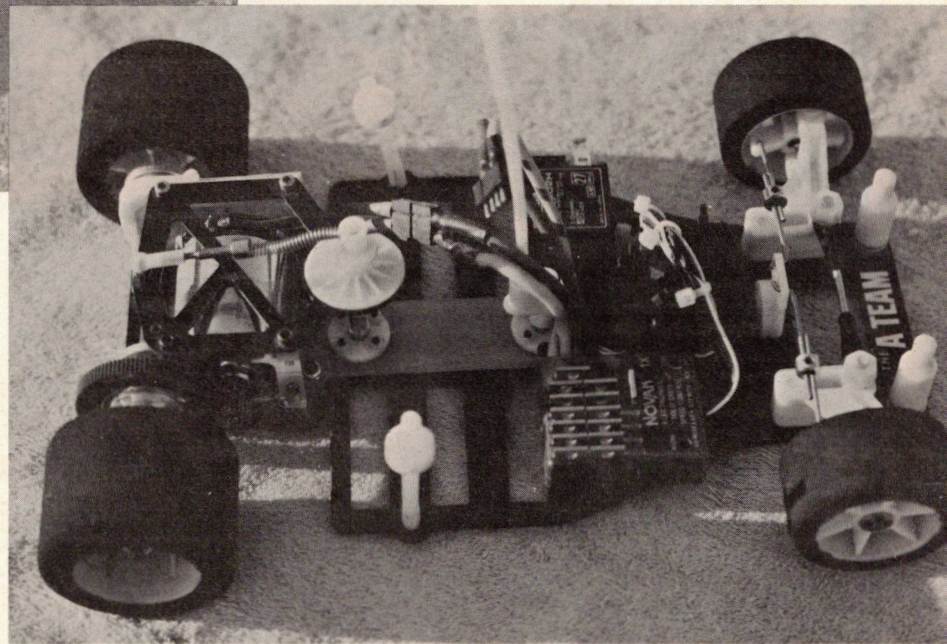


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ASSOCIATED ELECTRICS RC12L-GRAPHITE



The near-invincible RC 12L with a graphite chassis; our author found the 12L to be as effective on the track as the fiberglass version. The graphite chassis is stronger, but more expensive than the 'glass.



About a year ago, I reviewed Associated's RC12L 1/12 scale racer. That particular car was the fiberglass-chassis version of the 12L, which is sort of an economy version of the car. The car's handling, however, was definitely first class, and there isn't another 1/12 car that's easier to build and setup than the 12L.

So why this review on the graphite 12L? Well, you see, 1/12 scale racing is once again on the upswing here in the Northwest, and since the fiberglass 12L is no longer in my possession (I sold it after last year's dismal 1/12 indoor season), I was in need of a weapon to contest the carpet wars. I'd already decided on another 12L, but I also wanted to see if the graphite 12L is really better than the fiberglass version, as most of the 12L racers here claim.

Before I pass the verdict, a review of the 12L's design is in order here. Aside from the graphite chassis components and a machined aluminum motor block, the cars are basically identical. The main chassis is a single-plane design intended for saddle-pack batteries. The inherent properties of graphite translate to a chassis that's stiffer and less susceptible to twisting under load.

In addition to the chassis plate, the upper and lower braces for the rear power pod are also made of graphite. Adding to the improved overall strength is the aluminum

motor block. This unit is a lot stronger than the nylon motor block of the fiberglass car, and won't warp or melt from the effects of motor heat.

The rear pod is attached to the chassis by a pair of ball-and-socket mounts and a fiberglass T-plate. Two T-plates are supplied in the kit; a thick one and the more commonly used thin plate. For 4-cell racing, the thin plate works best as it allows for more rear end control. The thick plate will give you a quicker steering response but also an overall feel of less-than-stable handling, at least from my driving standpoint. I don't like to drive a car with even the slightest tendency to break away at the rear end.

On the track, the graphite 12L's handling is no different than that of the 'glass car. Once it's set up properly, the car will track

as if it's on rails. The standard Associated Green rubber treated with Paragon's Ground Effects tire conditioner will give you all the traction you'll need to get around on a carpet track. In fact, the car sticks to the track so well that I find it hard to believe that Associated team drivers had to go to stickier tires at the World Championship race last year. But then again, they were running 6-cell batteries and no wings. . . .

So, is the graphite 12L better than the fiberglass version? As far as strength and reliability is concerned, the graphite car is definitely superior to the 'glass car. But the fiberglass 12L is not without virtues of its own. For the amount of money invested, you cannot buy a better-handling car. In the end, regardless of which version of the 12L you choose, you'll come out a winner. ●

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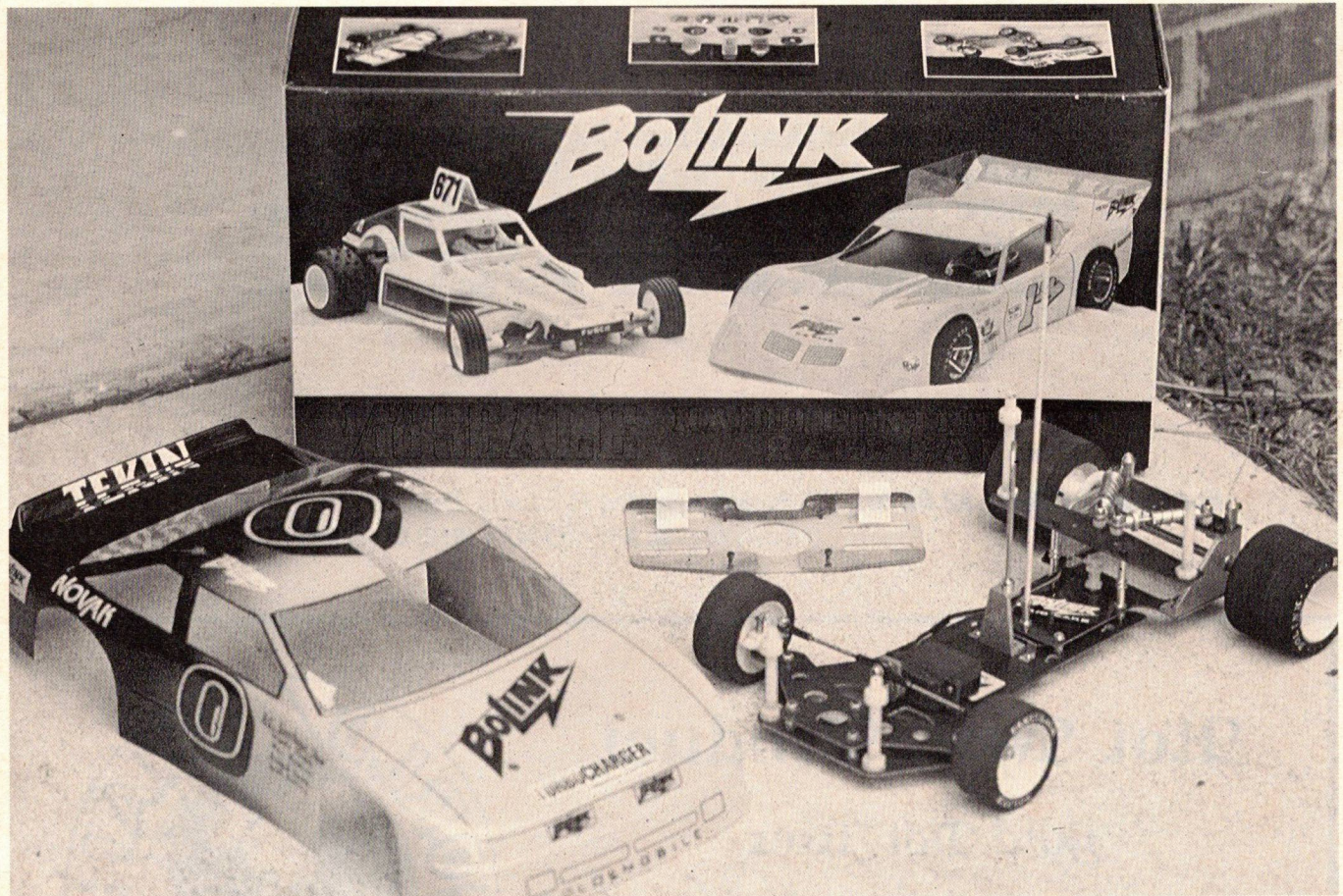


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ENDURO RACING AND THE ELIMINATOR



The world of car racing takes in all kinds of cars and runs on all types of tracks. However, NASCAR Winston Cup stock car racing draws more spectators than any other form of competition. There are several reasons usually given for this and they range from the closeness of the racing to the tightness of the series points at the end of the year. It is hard to fault this type of racing for excitement. Where else do you see anywhere from 10 to 15 lead changes among several different cars and sometimes two or three lead changes in one lap. The qualifying speeds are usually not more than 5 mph different from the fastest to the slowest. Although the Winston Cup cars are pure race cars and only resemble stock cars in their basic appearance, the old saying of win on Sunday and sell on Monday is still true today, which is another reason for this type of racing's tremendous success—fans can identify with the cars.

The introduction of the 1/10 scale asphalt

cars have put this same type of racing into the hands of the R/C racer. We already had it with 1/12 scale cars but most people had to race a Can Am body style which I understand is no longer very popular and might not even be in the real world of racing. However, there are asphalt and concrete oval tracks springing up all over the country. I believe most tracks are in the Southeast, as is where the real world of stock car racing is.

The only aspect of full scale NASCAR racing that so far has not been captured by the world of R/C is the pit stops which allow the race length to be increased. Both of these aspects of racing add to the strategy required to compete in and win in a race. You need a full team output to be competitive. The pit members are just as important as the driver of the car. In one particular race this year, the Mr. Goodwrench pit crew changed four tires and filled the gas tank quick enough to put their

driver from the 14th position to first.

Well, the world of BoLink has introduced a car that allows the R/C racer to now have all these aspects in their racing: The BoLink Eliminator Enduro. This car is a derivative of their very successful Eliminator 10. There are several other manufacturers that are now also starting to produce enduro cars. This car allows the team to make 3- to 5-second pit stops to change batteries. To change tires or motors will take a little longer, but welcome to the real world of racing.

The Enduro uses many of the same components as the Eliminator 10. The front and rear ends of the car are the same as the Eliminator 10. The most noticeable difference is the chassis and battery tray. The chassis is a trimmed down version of the Eliminator 10 chassis that holds the battery tray by four small socket head screws and a lock rod. With this new setup the battery tray is now removable. The car comes com-

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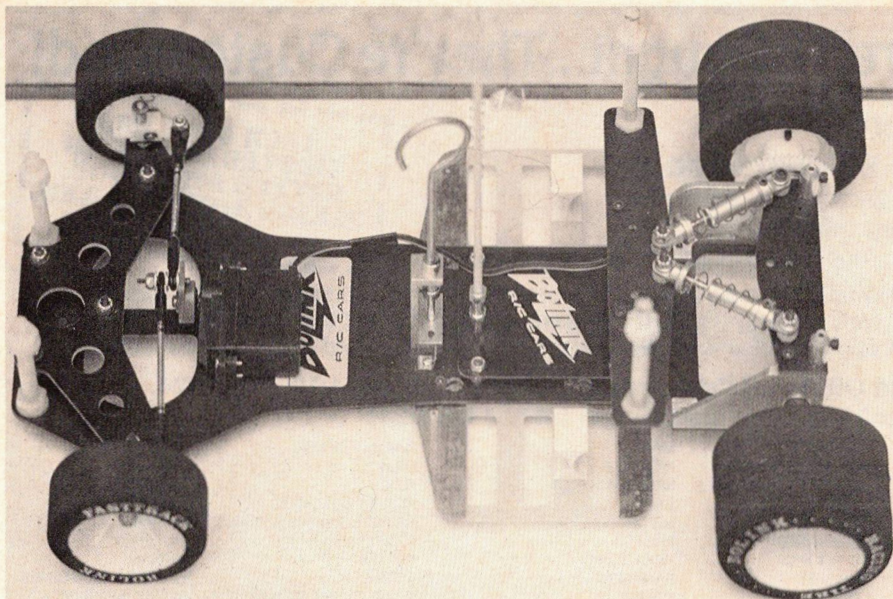
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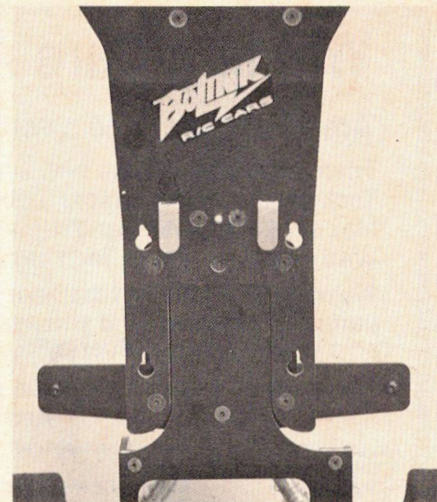


BoLink's Eliminator Enduro 1/10-scale racer uses a battery tray with batteries permanently attached to it for quick-change during an endurance race.

plete with the standard ball-type differential, aluminum motor mount pod, and a set of BoLink racing tires. The assembly of the car is easy and the BoLink people provide a very thorough instruction book. This book covers the basic assembly as well as some car setup procedures.

The battery tray has the batteries permanently fastened to it. A portion of the wiring is no longer required as the wiring is soldered to the tray. You need to be careful while assembling the battery trays as they all need to be assembled in the same manner to prevent blowing out your speed control and/or radio. There are two brass

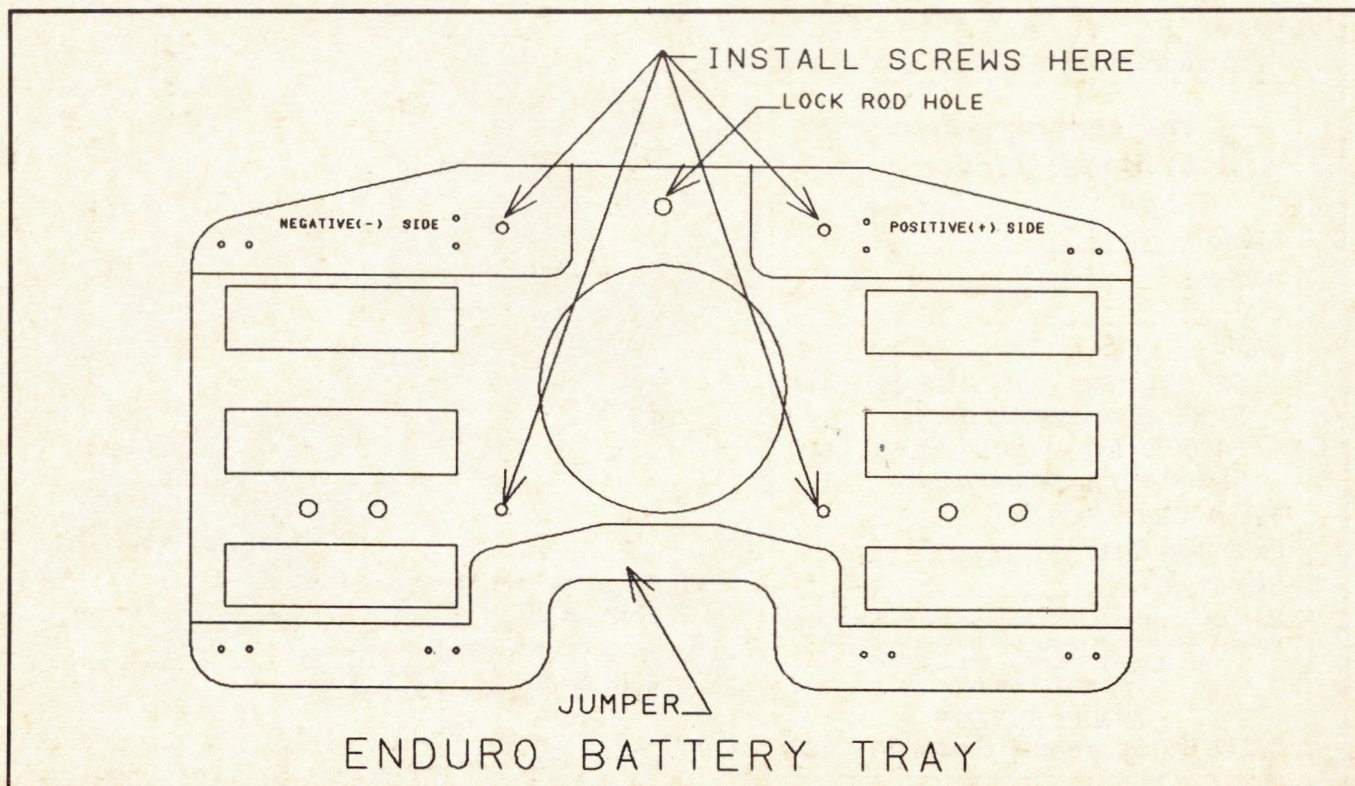
contacts on the bottom of the chassis that complete the circuit. The four mounting screws are also attached to the tray. The lock rod goes through a hole in the front of the tray. These mounting screws and the lock rod are the heart of the system. The mounting screws are inserted through four holes in the chassis and then slide slightly forward to lock the tray to the chassis. The lock rod is then released and goes through the hole in the battery tray locking the tray to the chassis. The chassis contacts are therefore pressed against the battery tray with one on the negative side and one on the positive side to complete the electrical circuit.



Author found no problems with the use of the quick-change battery tray; at a 500-lap race recently the cars were posting speeds that were matching those of the modified cars. Enduro car comes with two battery trays in the kit. It performs as well as a normally set up car, and could be used in normal race activities.

The performance of the car is just as good as the Eliminator 10. I watched the 500-lap enduro race at the Atlanta Peach Bowl this past summer and the enduro cars were posting lap times that were at least as fast (if not faster) than was accomplished in the modified class. There were no problems with the car at all. Last month's article showed the results of the Peach Bowl 500. In fact this car could be used as your normal race car. It would sure make changing batteries between qualifying rounds a snap.

An enduro race requires a little more preparation than a normal race. The first thing that you will need is a lot of

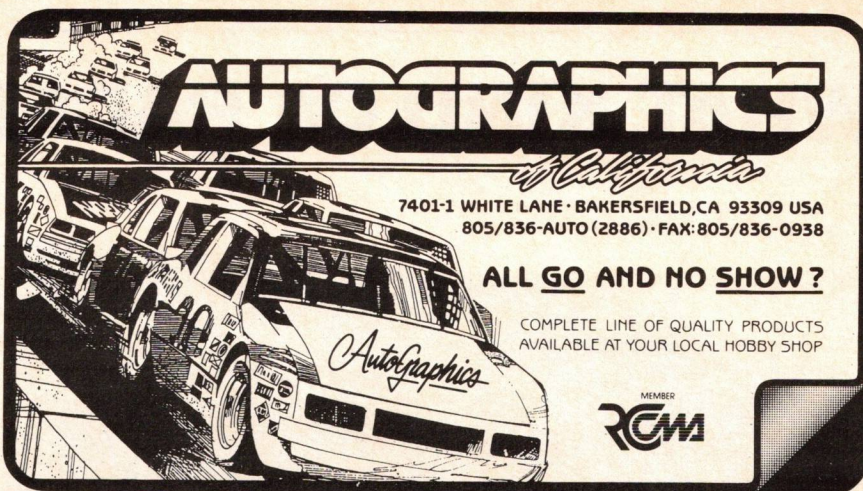


precharged batteries depending on the length of the race. The Enduro comes with two battery trays. Most of the participants at the Peach Bowl 500 had at least 20 sets of batteries charged and ready in the pits. The layout of the pit area has to be so that the pit crew knows where everything is at an instant. The pit crew is just as important as pit crews in real racing. It took 27 minutes to get to the 270-lap point in the Peach Bowl 500. That figures out to an average of 10 laps per minute and that includes changing batteries about every two minutes. Every second counts. Thus, a slow pit stop by either the driver or pit crew can lose you a lap. Team coordination is something that must be practiced. You won't be making any world record pit stops without practice. The driver has to get the car through traffic in order to position the car for the pit man to pick it up. While he is picking it up he is also lifting up on the lock rod releasing the battery tray. The second tray is positioned, the lock rod released, and the car is returned to the track, all in 3 to 5 seconds. The driver must then exit the pits without hitting an incoming car or being run over by a car as he gets into the racing groove. The cars in the racing groove also have a responsibility to avoid cars that are slowing down to enter the pits. The battery change is similar to the gas stop in NASCAR racing. Again at the Peach Bowl 500, one of the cars that was in contention to win the race had to stop for a front tire change and while the pit crew changed the tire in remarkable time, he dropped to a third-place finish.

The Eliminator Enduro car is basically set up the same as any other asphalt race car. To gain the maximum tire wear and performance from your Enduro, follow the hints in the instruction book. A sample of the hints from the BoLink people on how to setup your Enduro car are:

1. If the differential is too tight the car will tend to push/understeer.
2. More caster will make your car push/understeer. Caster adjustments are made by turning the three lock nuts on the three screws on the front axle.
3. Camber adjustments can be made by bending the kingpin slightly. This will help tire wear on banked oval tracks.
4. Tweak (pressure on the rear wheels) is adjusted by the coilover shocks. Tightening the left will increase pressure on the left rear tire and vice versa.
5. Rear traction should increase if the rear shock springs are set softer by taking tension off of both of them.
6. A wing will help keep the car stable during high speed turns. The position of the wing also effects the amount of steering as well as rear traction.

Enduro racing reaches the truest aspects of real car racing and that is what we are imitating with our hobby/sport. BoLink has put this type of racing in your grasp with a car that can put you in the winner's circle in either the world of enduro racing or your normal R/C racing. Check it out.



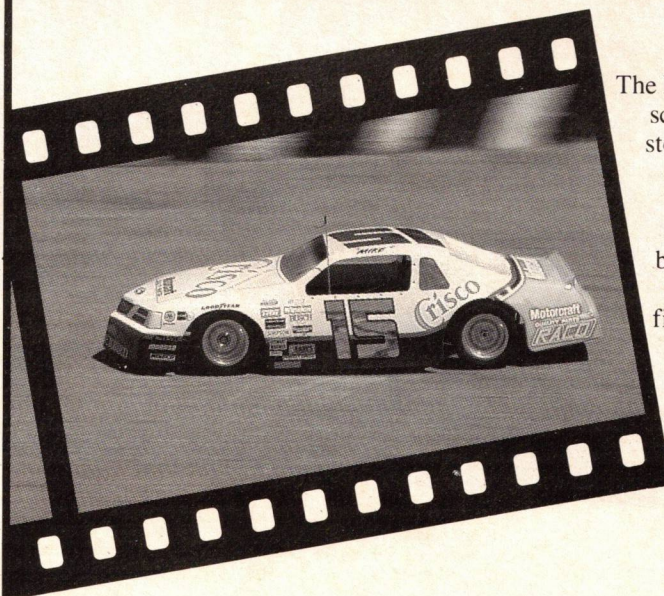
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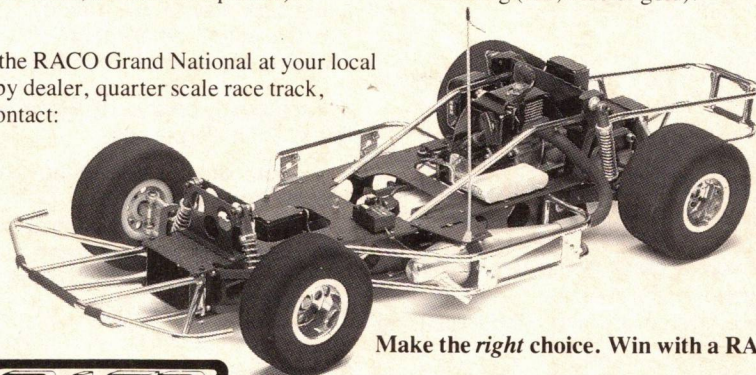
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WHAT KIND OF RACER ARE YOU?



BY MIKE LIEM

What kind of a racer are you? Before you answer that question, We'd like you to take a sort of self-analysis test, if you will, that will help you to determine the type of racer you really are. The test is quite simple; you need only to answer the multiple-choice questions below. There are no trick questions, and your result will be known only to you. Fair 'nuff?

1. The main reason for your involvement in racing R/C cars is:
 - a. your desire to win.
 - b. the fun you have in the hobby/sport.
 - c. the need to get even with the drivers who intentionally took you out the last race.
2. For you, a good racing day is when:
 - a. you win the A-main.
 - b. you finish every race without breaking down.
 - c. everyone's charger, except yours, blows up.
3. After you've finished your race, you usually:
 - a. are ready to marshal by the time the next heat is on the line.
 - b. are ready to marshal even before the next heat is called to the line.
 - c. go out to marshal only after the announcer threatens to disqualify you.
4. How do you feel about drivers who cheat to win?
 - a. Lousy way to win a race.
 - b. Cheating? What's that?
 - c. Hey, my kind of dudes!
5. If somebody calls you a "Hammer," you'd like to think it's because:
 - a. you drive pedal-to-the-metal, but cleanly and controllable.
 - b. most of your car repairs are done using a Stanley ball-and-peen.
 - c. you do such a great job of nailing other people's cars to the wall.
6. If the guy who's pitting next to you is going faster than you, you would:
 - a. find out as much as you can about his

setup.

b. pat him on the back and compliment him on his driving.

c. wait till he's not looking and drop some Hot Stuff in his motor.

7. You're racing wheel-to-wheel with another car and approaching a tight corner where two don't pass, you would:

a. get in the best possible position to enable you to pass cleanly.

b. move over and let him by.

c. center-punch the other car and yell "Glitch!"

8. If a kid comes up to you and asks you to help him out with a problem he's having with his Grasshopper, you would:

a. give him some pointers and encourage him to fix his own car.

b. help him out as much as you can.

c. tell him you'd like to help, but you're allergic to insects.

9. R/C racing is a family hobby/sport because:

a. Dad does the wrenching while you do the racing.

b. the whole family can participate in the fun.

c. your motors and trick parts come out of the kids' college nest egg.

OK, if you've finished the test, let's go over the results and see what type of racer you are.

If your answers consist of "a's" or mostly "a's," you are a very competitive racer. You like to win and will give every race nothing less than a full effort. Other racers who share your desire to win include Joel Johnson, Tony Neisinger, and Kent Clausen.

If you answered with "b's" or mostly "b's," you belong to the largest group of R/C racers: those who race for the fun of it. You like to win, but getting together with other racers and having a good time is much more important to you. You're the type of racer that can go to a race, finish dead last in every heat, and still have fun.

If you answered the questions with "c's," you are just out to ruin everyone's day, including yours. There's at least one of your type in every bunch. You complain about everything, but do nothing to help. You cry foul when you get beat, but you won't hesitate to cheat if you think you can get away with it. Your involvement in this hobby/sport is not in the best interest of others, and unless you change your attitude and behavior, what you need is another pastime. May we suggest chain saw juggling? ●

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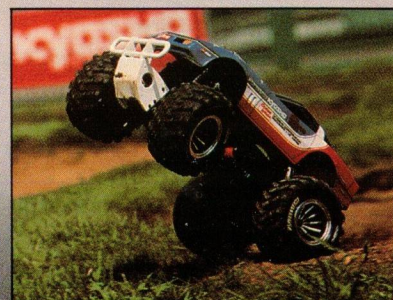
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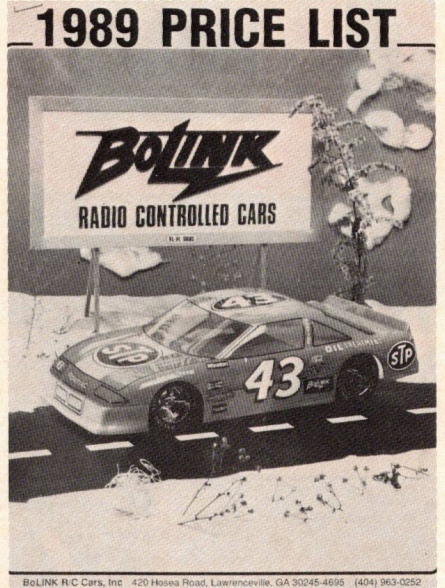
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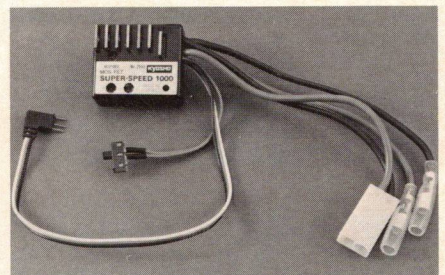
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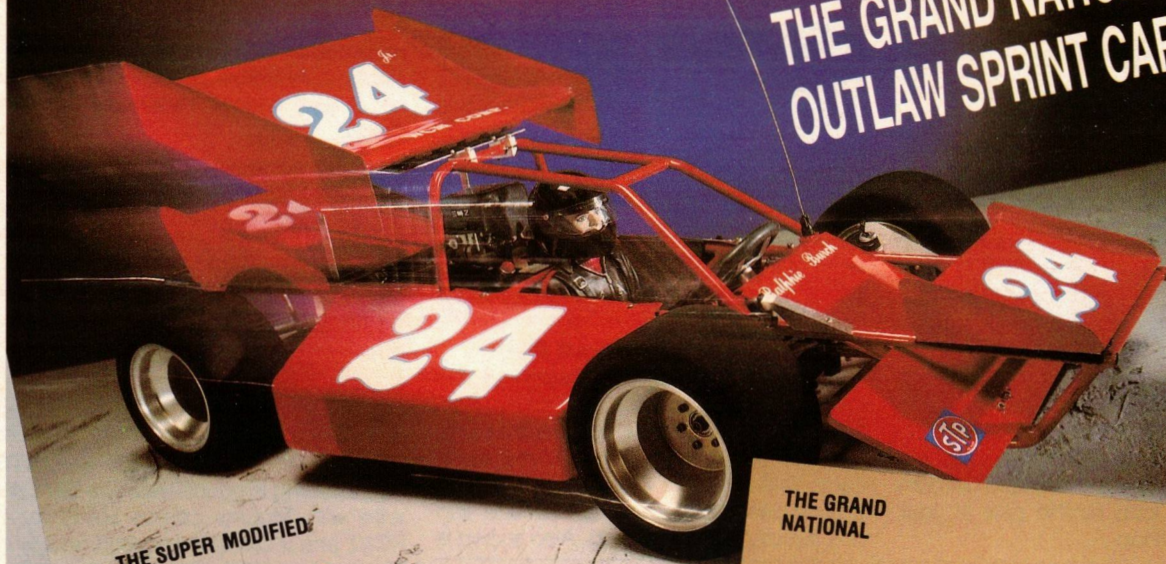
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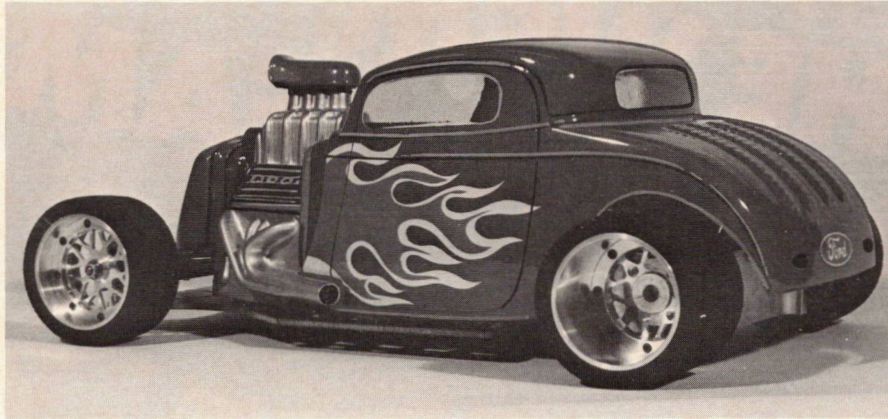


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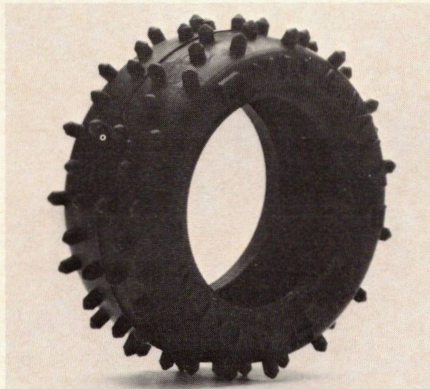
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'34 FORD STREET ROD

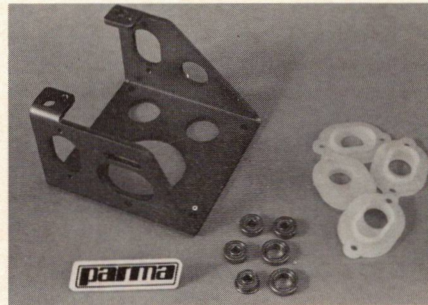
Here's a street rod with a little style! A 1934 Ford three-window coupe, fenderless with a molded-in blown hemi with separately

formed injector scoop and header pipes. It's new, and it's from McAllister Racing, 2205 First St., Unit 107, Simi Valley, California 93065.



DYNAMITE REAR SPIKES

CRP's new Dynamite tall spike tires are great for running in soft or medium dirt conditions. They're sold by the pair, at your nearest hobby shop.



PRO PANTHER REAR POD

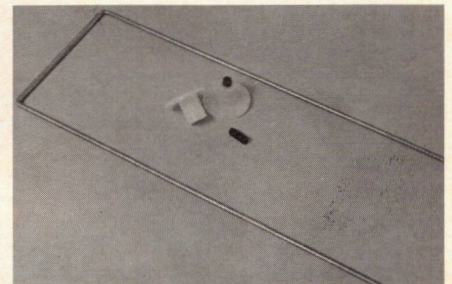
The aluminum heat sink design of the Parma Rear Pod for the 1/10-scale Pro Panther features adjustable ride height using the rear ride height cams. These nylon cams feature three positions for setting ground clearance for any track surface, and bolt directly to the rear pod. Also shown is

the new Onroad Bearing Pack that contains four front and two rear bearings. It is useable on most 1/10 and 1/12 onroad cars. Look for these new accessories at your nearest Parma dealer.



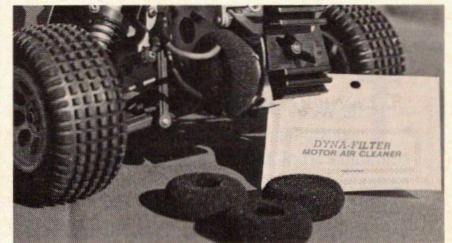
KYOSHO 7-CELL PACKS

These new matched Sanyo 1700 SCE packs mean you'll get about two minutes additional running time from your car. Ideal for 1/12-scale or modified racing, or whenever longer run times are required. The pack comes with your choice of Kyosho or Tamiya connectors. You'll find these batteries at your nearest Kyosho/Great Planes dealer.



BUD'S WING WIRE AND MOUNTS

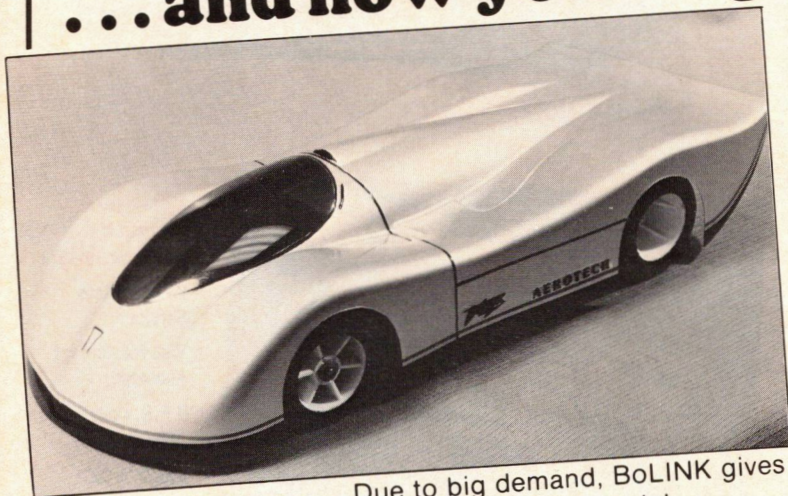
Bud's Racing Products' new Pre-Bent Wing Wire with Mounts comes ready for the RC10, and it can also be used on any car. The package includes instructions. For a catalog, send \$1.00 and a SASE to: Bud's Racing Products, Box 601, Amherst, Ohio 44001.



DYNA-FILTERS

These foam filters from Neron Associates fit snugly over the endbell of stock or modified motors, and are designed with a small opening that stretches to create a retaining ring effect to secure the filter to the motor. The small size fits any motor, and can be installed easily on cars with motor guards, like the RC10 and the Optima, without having to remove the motor. Dyna-Filters are easily removed for quick motor inspection and lubrication between races. Dyna-Filters come four to a pack, and can be found at your favorite hobby shop.

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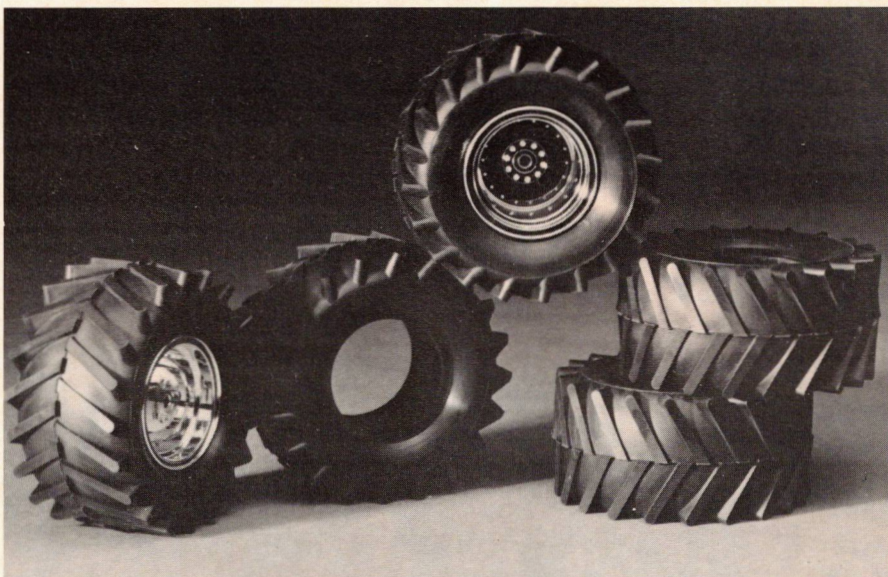
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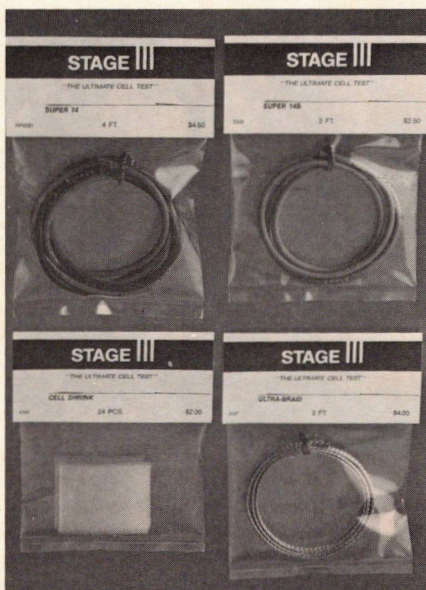
WHAT'S NEW



MASHER MONSTER TIRES

The Masher is the first in a new series of monster truck tires from Pro-Line. The Masher is a front or rear all-terrain tire that

fits 2.2 size wheels. The V-pattern tread design will give added traction in loose dirt and sand. Look for more tires in the Pro-Line Monster Truck series soon.



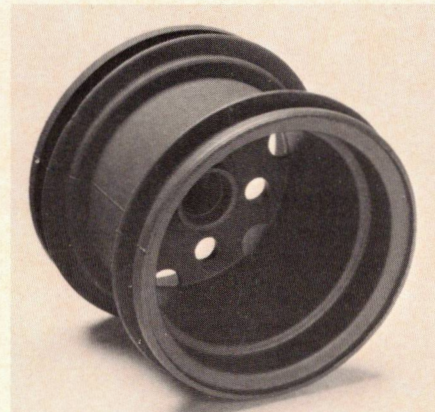
STAGE III PRODUCTS

Here's an assortment of new R/C products from Stage III, including Cell Shrink, a clear, super-strong shrink wrap for individual sub-cells which allows the use of cyanoacrylate glue without destroying the original cell shrink. Ultra-Braid is a 12-gauge ultra fine copper braid, pre-tinned for corrosion resistance and easy soldering. It is used as a shunt between cells in the pack to allow maximum current flow within the pack. Super 14 and Super 14B are 14-gauge silicone-coated wire for connecting your pack to your motor and speed control. The silicone coating won't burn or get stiff, and the electronic grade fine copper stranding is pre-tinned for fast and easy soldering. Look for Stage III products at your favorite hobby shop.



PARMA ACCESSORIES

New accessories from Parma International include 64-pitch spur gears, machined-steel 64-pitch pinion gears, a small parts container, and new tires for the Schumacher Cat. Look for them at your Parma dealer.



FRONT AND REAR WHEELS

New front and rear wheels for the Black-foot and Monster Beetle are direct replacement wheels for the big vehicles. They are dyeable so you can give your truck or car a custom look. Available at your CRP dealer.

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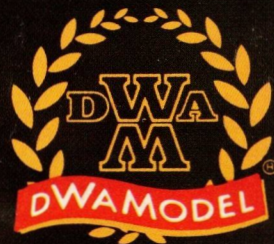
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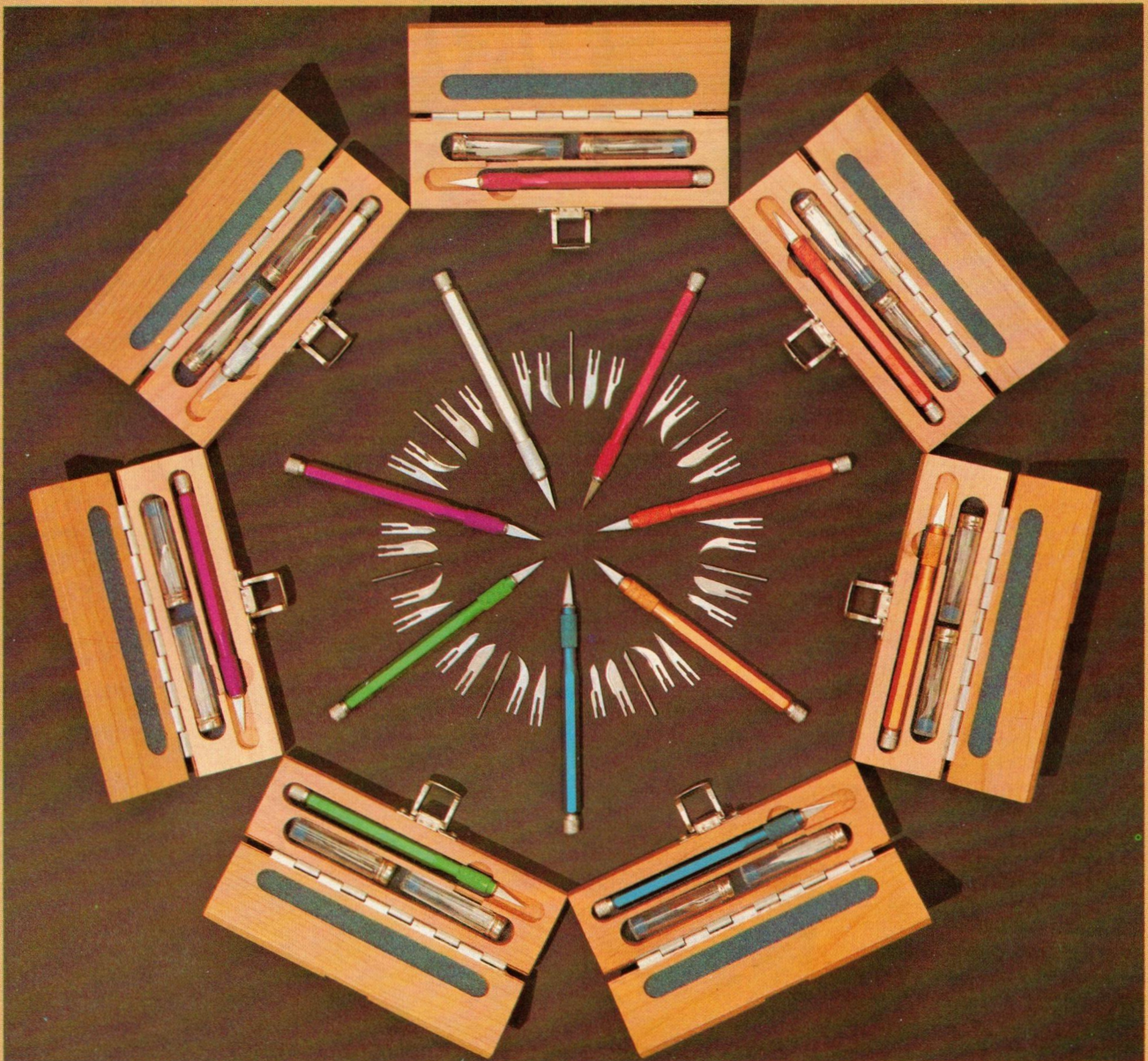
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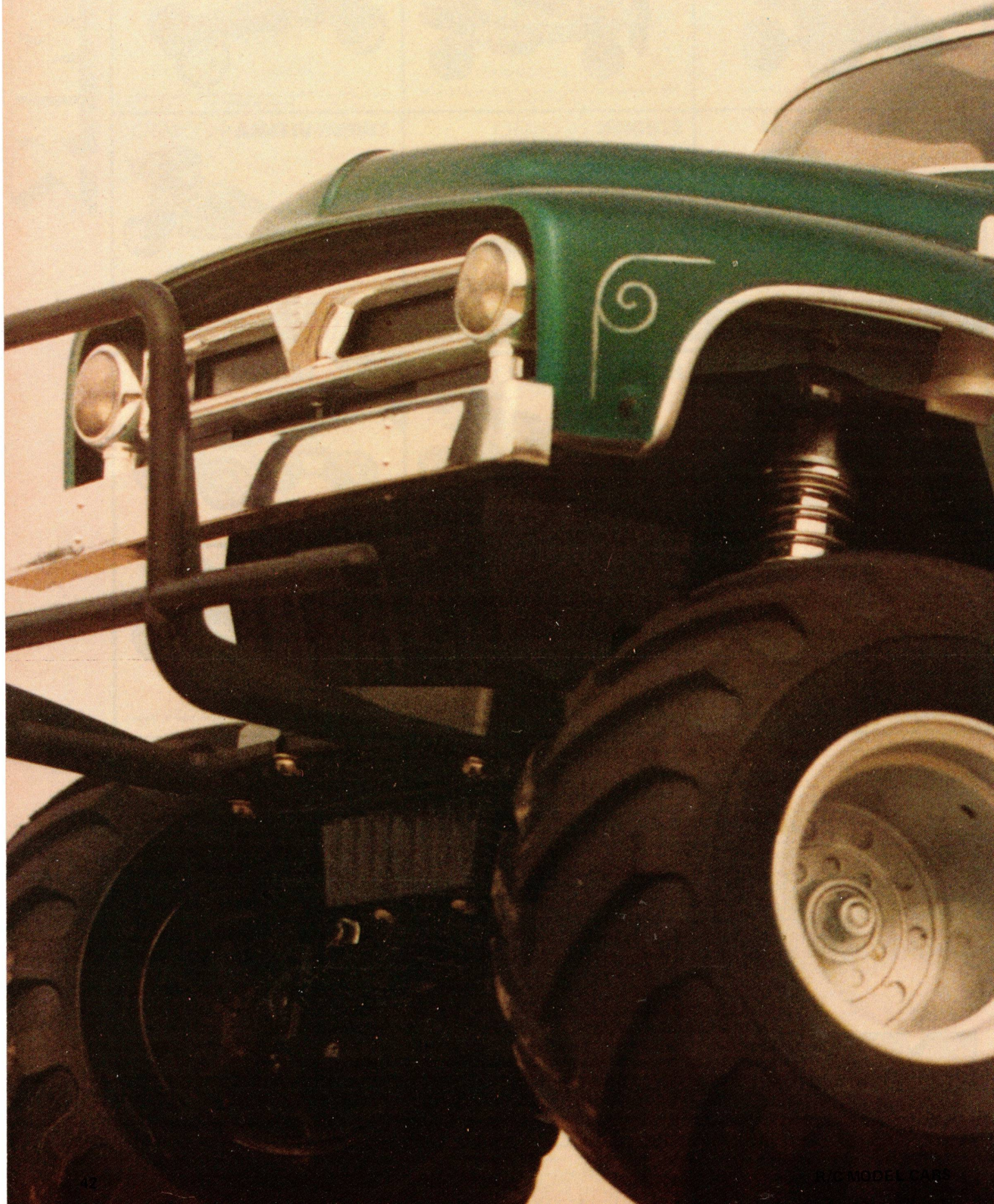


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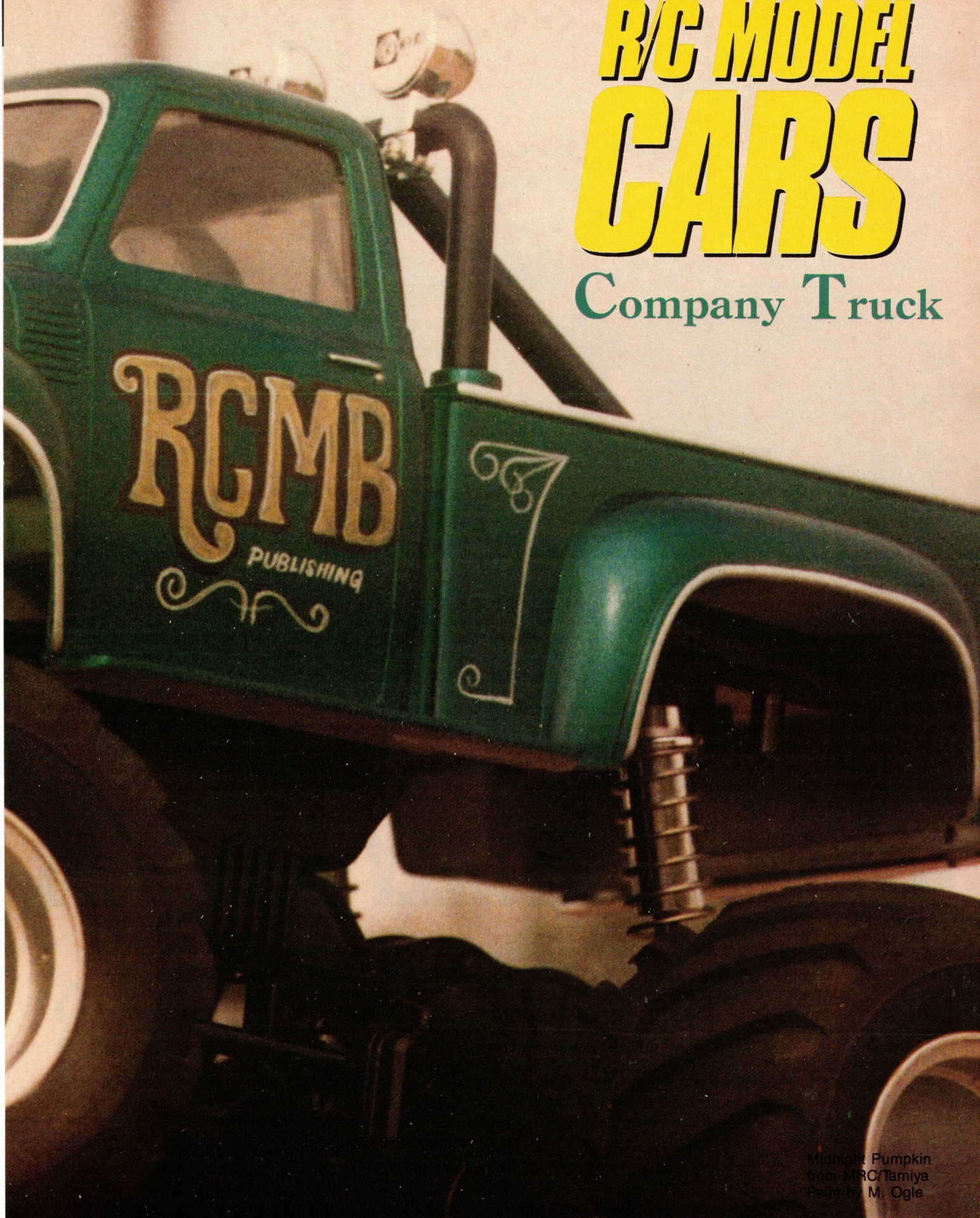
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Company Truck



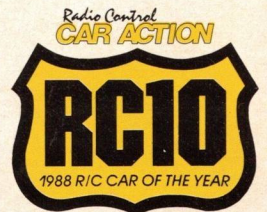
Midnight Pumpkin
from MRC/Tamiya
Paint by M. Ogle



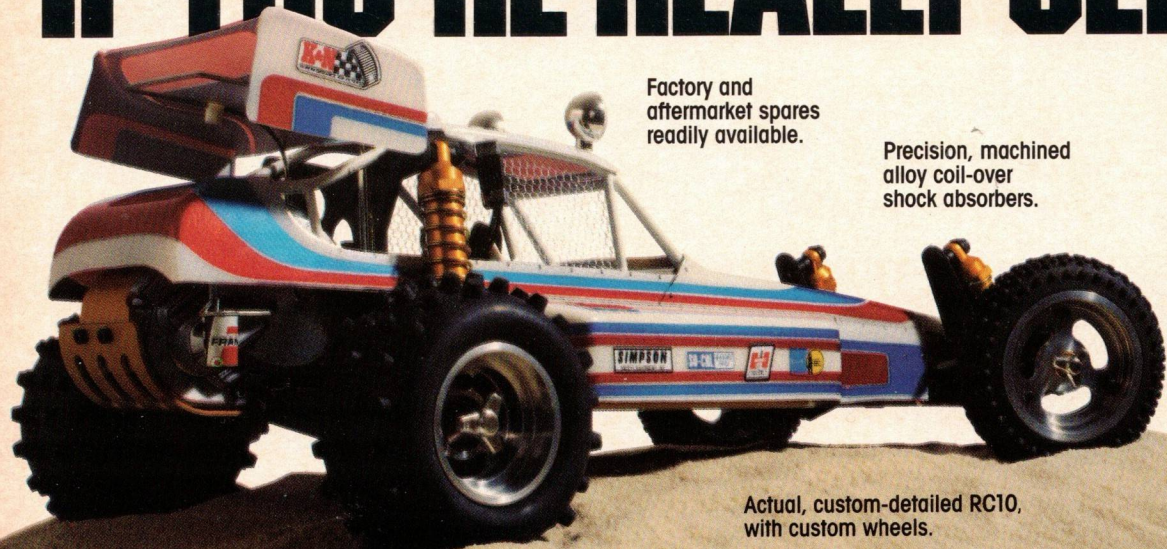
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Fully adjustable,
four wheel independent
suspension.



Actual, custom-detailed RC10,
with custom wheels.



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

Like *World Championships*. Team Associated cars and drivers have won an unparalleled six, 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

REEDY RACE OF CHAMPIONS

When you have the fastest racers from all over the world competing, normally it's at a World Championships. This wasn't a World Championships, but it was the closest thing to it. The factory Kyosho team from Japan, headed by Katsunori Hondo, was here; as well as the factory Yokomo team from Japan, with Masami Hirosaka, plus the factory Schumacher team from England, with Phil Davies, Jamie Booth, and Rory Cull. And don't forget the team from France headed by Denis Blandin, and the German team with Christian Keil and Jurgen Lautenbach. All champions in their own countries.

The best drivers from the USA were present: Jay Halsey, Cliff Lett and Butch Kloeber from Team Associated; Chris Allec from A & L; Chris McElroy from Team Kyosho; Gil Losi Jr. and Ron Rossetti from Team Losi; Eustace Moore from MIP; Rick Hohwart representing Peak Performance; Mike Dunn from Race Prep; Jim Dieter and Kyle Reed from Trinity; and Kris Moore and Eric Soderquist from Team Twister. The only

driver missing was Joel Johnson, who was apparently busy registering for college.

All these drivers were racing in an Invitational Class, composed of the top 32 drivers from around the world. Each driver would also be racing in a 2WD class and a separate 4WD class. There would be six races in each class, with only the five best races counting. Then the combined 2WD and 4WD points would be totaled to determine the winner.

In addition, for all the other racers, there was an Open class, with a separate 2WD class, a 4WD class and a Monster Truck class. This format works out very well, because it places all the fastest drivers in one class, and then opens up three more classes for everyone else.

This race was sponsored by Mike Reedy, of Reedy Modifieds, who has been a worldwide goodwill ambassador of electric car racing for 12 years. Mike has done more to help promote international electric racing than anyone I know of. His enormous popularity with the drivers is why all these

The world's best drivers were invited to Costa Mesa's RCH Raceway for Mike Reedy's annual get-together.





COMPETITION

BY GENE HUSTING

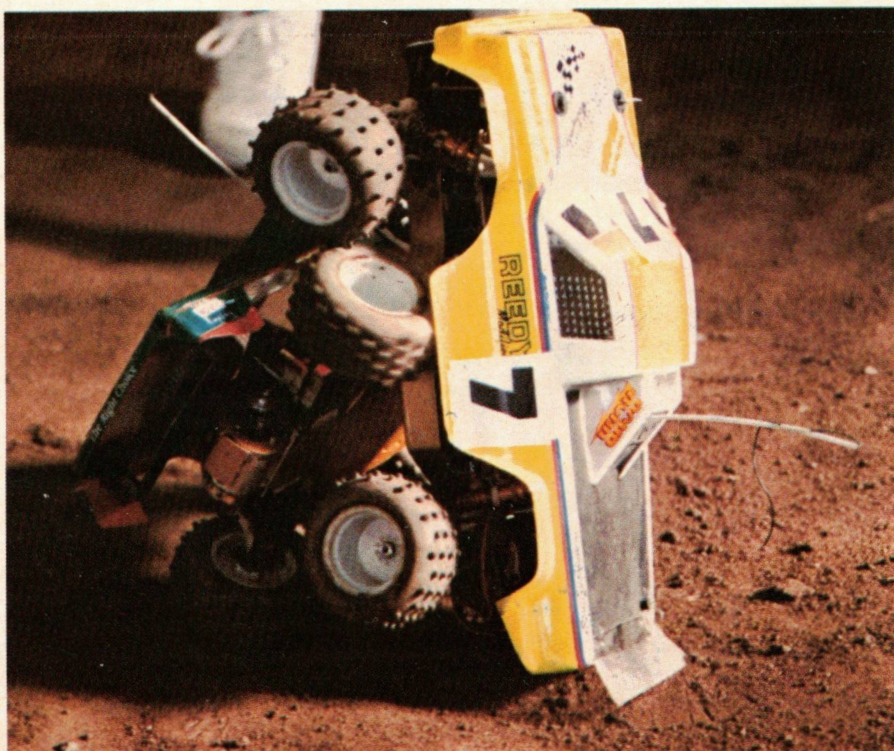
competitors showed up for this race.

The track Mike chose for the event was the very popular Radio Control Hobbies track in Costa Mesa, California, about 30 miles southeast of Los Angeles. Ron Williams, the track owner, was one of the original few pioneers in offroad racing. His was the first track in the country to have over 200 entries. That was an outdoor track near his first hobby shop. Since then, Ron has moved to a new indoor track with a large hobby store area, which stocks virtually everything made for offroad racing. Future plans call for 1/12 and 1/10 onroad racing. Ron's place is very popular with the racers, and he now has one of the best racing facilities in the country.

During the Friday practice session, I was talking with Phil Booth from England and I asked him how he liked the track. He said the track was quite different than what they were used to at home. This track had these high jumps that he'd never seen. I said, "You don't have any jumps on your track?" And he said, "No! Our cars never leave the



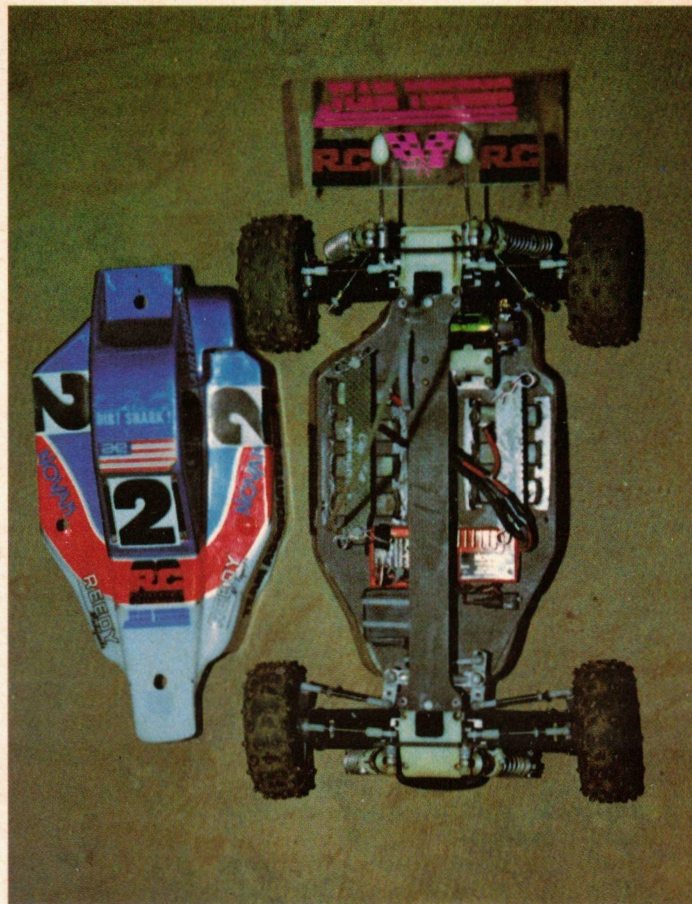
The Invitational was held at the popular RCH Hobbies indoor track in Costa Mesa.



Arthur Murray's got nothing on these two tango-ing trucks in the Monster Truck Class. The wild and wicked big trucks put on quite a show at the Reedy Invitational.



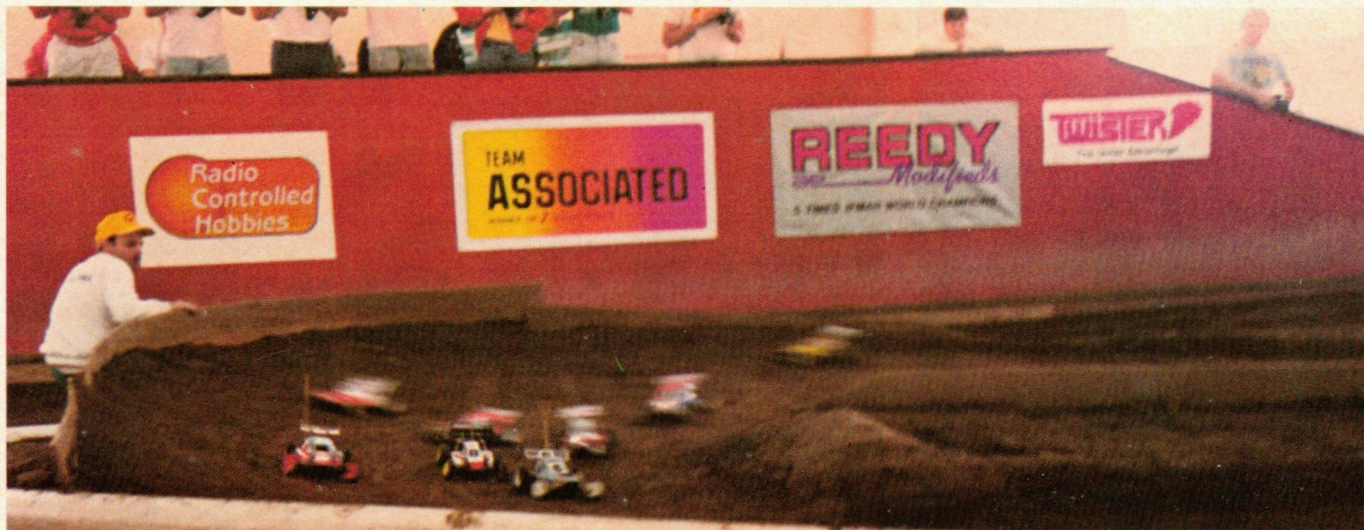
If Cliff Lett isn't driving, then he's making sure his car is ready for its next time on the track. Cliff's dedication paid off, as he won overall!



Above: Cliff's Yokomo YZ10 uses a Reedy motor, Reedy batteries, and a Novak speed control. Left: Cliff's RC10 with a Reedy motor and batteries, Airtronics radio, Novak speed control and Andy's front arms. Below: track conditions were super for the race.

ground." I said, "We wouldn't consider that offroad racing. That would simply be on road dirt racing, more like rally racing. You have to have jumps for true offroad racing. These cars originated as dune buggies, running out in the California sand dunes. Jumping was half of the fun." But I knew Phil wasn't convinced.

The next night Phil went to the Mickey Thompson offroad races held in the Anaheim Stadium. The following day he couldn't wait to tell me what he saw. He said, "Gene, you wouldn't believe what we saw. To begin with, there were 64,000 people there! The cars went over jumps and



flew 15 feet in the air, and the motorcycles went over 30 feet in the air!" His eyes lit up even bigger as he said, "It was unbelievable!" So I asked Phil, "How big do the jumps look on this track now?" He said, "They really don't look that big now." And so, we have a new believer. Phil will now be the expert on real offroad racing in England.

INVITATIONAL 2WD CLASS

The Invitational drivers ran all the 2WD races on Saturday, and then all the 4WD races on Sunday. This makes it much easier for them to concentrate and maintain one type of car at a time. The 32 drivers were split up into four heats of eight drivers each for the 4-minute races.

Gil Losi Jr. started things off by winning the first heat in round one, with Masami Hirosaka, Cliff Lett and Jay Halsey, also winning their heats, so these four drivers were all tied after the first round.

In the next round, Joe Schmitz, Lett, Halsey and Chris Allec all won their heats. Masami Hirosaka, one of the pre-race favorites had a problem and finished seventh in his heat. Masami was trying a new type of front end on his RC10, and as usual when you try something different, it's easier to have problems. But every driver has one throw out, so Masami was still O.K.

Round 3: Lett, Jack Johnson, Rick Hohwart and Chris McElroy all win their heats. This gives Cliff Lett an edge in the points, with Jay Halsey second and Chris McElroy in third.

Round 4: Lett wins four in a row. Jamie Booth, Masami and Kris Moore also win their heats. So now Lett is leading, Halsey second and Chris McElroy and Jamie Booth going for third spot.

Round 5: Lett wins five in a row! Masami, Halsey, Booth all win another one. Cliff is stretching his lead out, but the race for second and third is really getting close.

Round 6: Unbelievable!! Cliff Lett wins six in a row. Do you have any idea how hard this is to do against this caliber of racers? It takes a little bit of luck, but it takes mostly great car preparation and super driving,

which cuts luck to a minimum. Hohwart, Booth, and Kris Moore all won another heat.

So after the throw outs, Cliff Lett ran away with first place, with Jay Halsey and Jamie Booth tied for second place, Kris Moore and Chris McElroy tied for fourth spot.

2WD OPEN CLASS

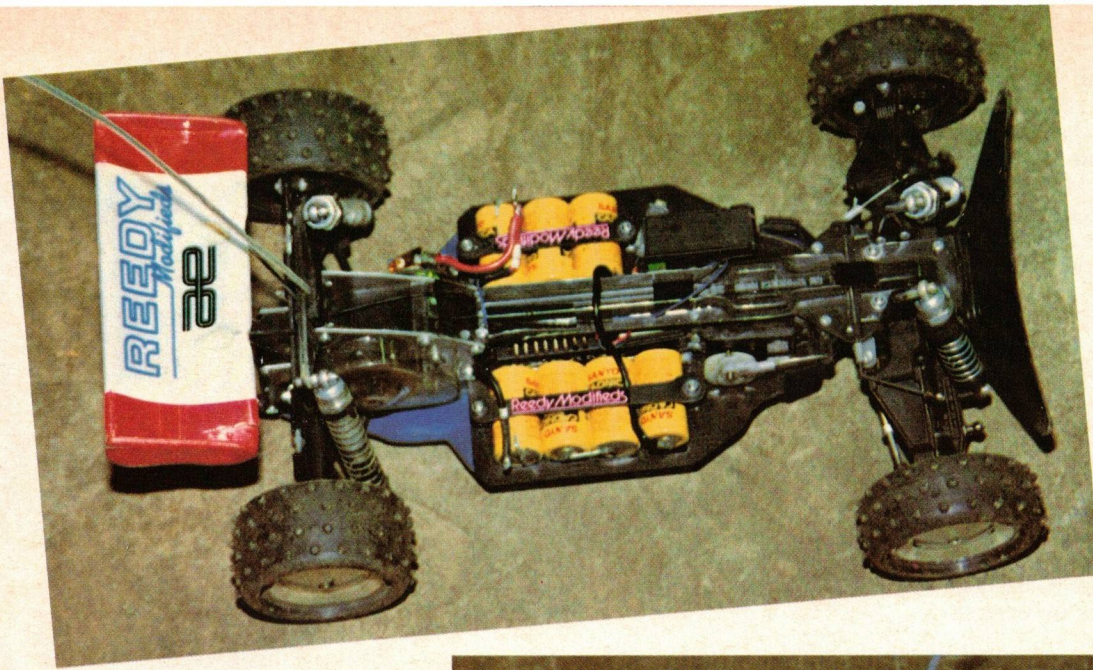
The invitational class brought the entry



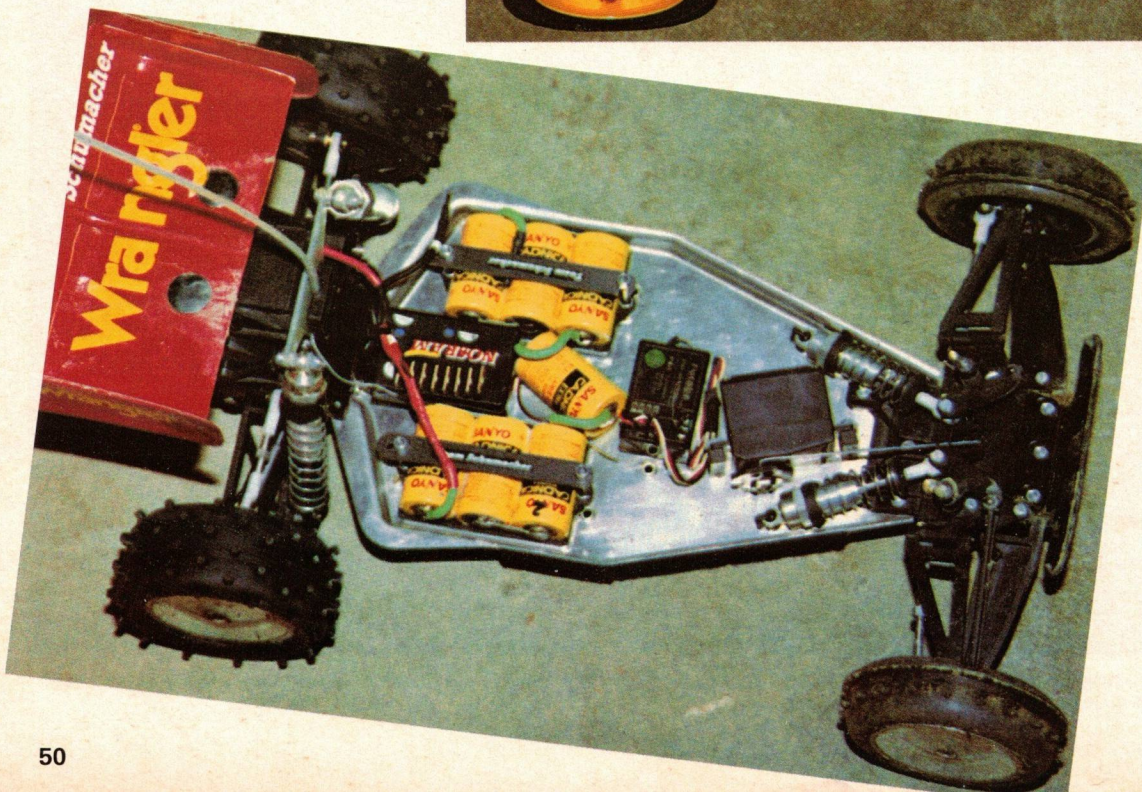
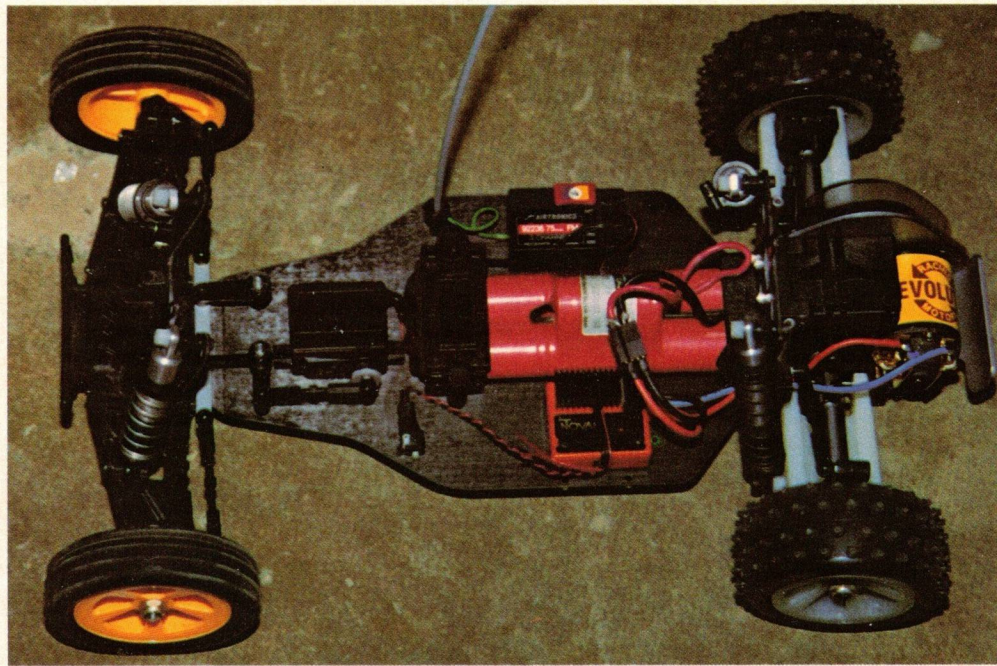
Mark Pavadis was TQ and won the 2WD Open Class with his Associated racer. Lisa Curtis presents the cup to Mark.



Cliff Lett, left, won an incredible six out of six(!) races to win the 2WD Class, with Jay Halsey(center) taking a close second. Jamie Booth, from England, finished third. All three drove RC10s with Reedy motors.



Some of the hotshots from the Reedy Invitational: at top, Rory Cull's very fast 4WD Schumacher car from England; Gary Kyes JRX2 with a prototype 'A'-arm rear end is at right; and below, the new Schumacher 2WD racer of Phil Booth. Notice the lay-down front shocks. The Schumacher didn't like the jumps too well.



total to over 200. The entries had to be limited to 200, because that's simply all the pit area there was. The open class had drivers from all around the USA, plus Canada, England, Germany and Japan. The most popular class, as usual, was the 2WD class.

Mark Pavadis was Top Qualifier in this class and the only driver to turn 14 laps. In the Main event, Mark took off in the lead, never made any mistakes, and won flag to flag. Gary Demory kept Mark in sight, but he just couldn't quite catch him and had to settle for second spot. J. D. Beckwith followed close behind in third.

2WD MONSTER TRUCK CLASS

This is one of the fastest-growing new offroad classes. All of the monster trucks that ran in this race were conversion kits by JG, Andy's, etc., and based on popular 2WD cars, like RC10s, JRX2s and Ultimas.

It's really easy to see that these racers are really having a lot of fun. The way most of these guys drive, you know they have the feeling that they can simply just drive over anything or any other car on the track. Watching open practice with 2WD, 4WD and monster trucks all on the track together, they were simply driving over everything that got in their way. And they weren't going slow. They turned 13 laps in qualifying, which is only one lap behind the normal 2WD cars. That's fast.

While I was watching the monster trucks qualifying, I was talking to Eric Meyers, of Horizon Hobbies Distributors, and I told him that I thought these guys were having the most fun. He said, "Gene, haven't you driven one of these yet?" I said, "No, I hadn't had the chance." A couple days after the race I received this big box from UPS. When I opened it, Eric had sent me his RC10 monster truck, with a note that said, "Everything's charged up. Simply turn on the two switches and have a ball." So I did. And it was as much fun as I thought! I returned the car to him with a big thank you note.

For the "B" Main the announcer was playing up a big monster truck shop owner race, between Ron Williams, the owner of the track and Gil Losi Sr., the owner of the Ranch Pit Shop. It was a great race. More of a fender-basher affair. Gil claimed the victory, finishing second in the "A" to Ron's third spot. I don't think Gil intends Ron to ever hear the end of it.

In the "A" Main, Top Qualifier Gary Guest was shown no respect and got punted all the way back to sixth spot. Gary Kortz got the lead, with the second spot changing four different times. Meanwhile Gary Guest was moving up one place at a time, eventually sitting on Gary Kortz's rear bumper looking for a place to pass. The spot came and Guest took the lead and the win.

4WD OPEN CLASS

The Radio Control Hobbies shop received the new Yokomo YZIO cars one week before this race, and a lot of them found their way into the "A" Main.

Top Qualifier Randy Locken got smacked



Gary Guest receives his cup for winning the Monster Truck Class with his Peak Performance-powered RC10.

in the first corner of this race and dropped to last place. Darrin Stump, from Tampa, Florida, grabbed the lead, opened it up to a big lead and looked like a sure winner.

But sitting in third place was Christian Keil. Christian finished in third place at the 1/12 World Championships, and now he was over here trying to learn as much as possible. When I talked to him earlier in the week, he said he was having a little trouble in learning the jumps. But Christian learns fast. He was looking like he had been doing this a long time. He took over second place and then started closing in on Darrin. Then, on the last lap, on the last corner, he passed Darrin to take the lead and the win. He learns very fast!

4WD INVITATIONAL CLASS

The Invitational drivers now switched to their 4WD cars. This was another whole new race, except the points from this race would be added to their 2WD points, to determine the overall winner. I wish you could have seen some of the incredible

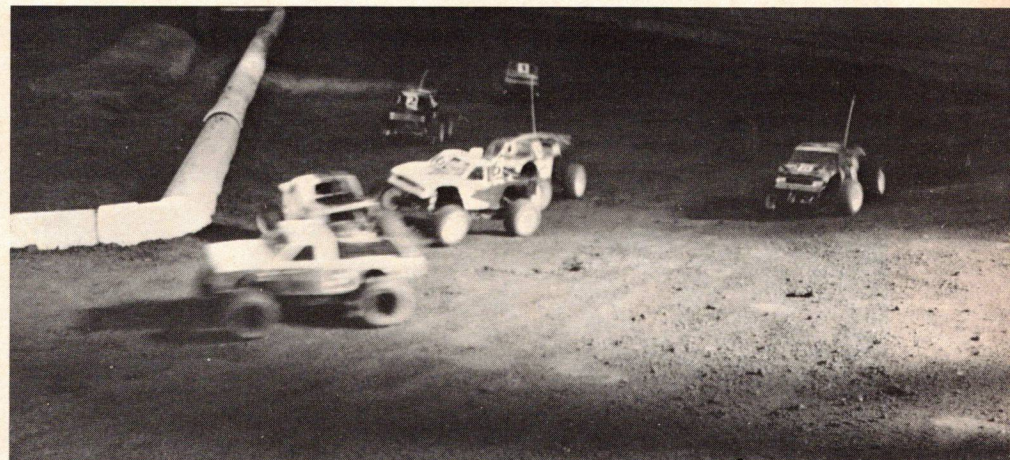
passing these drivers did. It was simply beautiful. Super close, tight passes, back and forth, without touching another car! Almost as close as can be done in 1/12 racing. The track was in great shape. Being an indoor track, it doesn't dry out so it has very good traction all the time.

Chris Allec started off with a win again in the first round, with Masami, Chris McElroy and Jay Katz also winning their heats.

Round 2: Masami won another one, with Rick Vehlow, Chris McElroy and Kurtis McElroy also winning. Halsey had two second-place finishes, but Cliff Lett was having problems, taking a third and sixth place. Maybe he's human after all.

Round 3: Chris McElroy took another win and moved into third place overall for the time being. Cliff and Jay finally won one, together with Steve Dunn.

Round 4: I'm going through these heats quite fast, because there's so many of them.



This is where the action is! Monster Truck racing is new, exciting, and fast! It's growing at a surprising rate, so check it out.



Christian Keil from Germany won the 4WD Open class with his Reedy-powered Yokomo. Check out the bottom of Christian's car. If you were a turn marshal and two cars rolled, would you pick this one up first?

But for every one of these heats, it was standing room only around the track. This was a chance to see race after race of the best racers in the world. And they were something special to see. Jay and Cliff both

won another one, as well as Jay Katz and Gil Losi Jr.

Round 5: We're getting close now. No contending driver can afford any bad runs. Cliff won his heat again. Also Kris Moore,

Jurgen Lautenbach, and Gil Losi Jr.

Round 6: Going into this last round, five people still had a mathematical chance of winning: Lett, Halsey, Masami, McElroy and Moore. It would be interesting. Halsey had it figured out that if he won his heat and Cliff finished fourth in his heat Halsey would win.

Well, Rick Vehlow won his heat, as did Butch Kloeber. Halsey was in the next heat. He took the lead, opened it up to a straight-away lead, and then went into cruise control. All he had to do was win. It didn't matter by how much. Then at the 2-1/2 minute mark, one of his front wheels came off! Incredible! He drove quite well on three wheels for a few laps, but then everyone caught and passed him. When it's your day, it's your day. If it's not your day, you're simply not going to win. Kris Moore won that heat.

The last run of the day. Masami and Cliff were both in this round, and both still had a chance to win. Masami got off in the lead and was gone. Cliff got hammered at the start and got caught behind Chris Allec, who wasn't about to let him by. It took Cliff about four laps to get by Chris and move into eighth place. He had to move up higher. So lap by lap, car by car he moved up to finish in fourth spot, with Masami winning.

Masami actually won the 4WD class with Lett, Halsey and McElroy tying for second. So with the combined 2WD and 4WD points Cliff Lett won the overall championships with Halsey second and Masami third. Champions all!!



The RCH Hobbies track thoughtfully provide a glass splatter shield to protect the spectators' pants from the flying dirt.

FINAL STANDINGS
Reedy Race of Champions

2WD INVITATIONAL CLASS

FINISH/DRIVER	CAR	MOTOR
1. CLIFF LETT	ASSOCIATED	REEDY
2. JAY HALSEY	ASSOCIATED	REEDY
2. JAMIE BOOTH	ASSOCIATED	REEDY
4. KRIS MOORE	ASSOCIATED	TWISTER
4. CHRIS MCELROY	KYOSHO	PEAK PERF
6. GIL LOSI JR.	JRX2	REVOLUTION
7. MASAMI HIROSAHA	ASSOCIATED	REEDY
7. JOE SCHMITZ	JRX2	TWISTER
9. JACK JOHNSON	JRX2	REVOLUTION
10. RICH HOHWART	JRX2	PEAK PERF

2WD OPEN "A" MAIN

FINISH/DRIVER	CAR	MOTOR
1. MARK PAVADIS	ASSOCIATED	REEDY
2. GARY DEMORY	ASSOCIATED	REEDY
3. J. D. BECKWITH	ASSOCIATED	REEDY
4. NICHELLE RIVERA	JRX2	PEAK PERF
5. RANDY LOCKEN	ASSOCIATED	REEDY
6. LEO BARANA	ASSOCIATED	REEDY
7. ERIC BEIER	ASSOCIATED	RACE PREP
8. TYM WELLS	JRX2	PEAK PERF
9. DENNIS TAYLOR	JRX2	LOSI
10. STEVE CHAMBERLAIN	JRX2	PEAK PERF

MONSTER TRUCK CLASS

FINISH/DRIVER	CAR	MOTOR
1. GARY GUEST	ASSOCIATED	PEAK PERF
2. GARY KORTZ	ASSOCIATED	TWISTER
3. GREG DEE	ASSOCIATED	TWISTER
4. JEREMY KORTZ	ASSOCIATED	TWISTER
5. JOHN BAGAKIS	ASSOCIATED	REEDY
6. LARRY GOLD	ASSOCIATED	PEAK PERF
7. AL BRIDGES	ASSOCIATED	PEAK PERF
8. ROB DUNLAP	JRX2	PEAK PERF

4WD OPEN "A" MAIN

FINISH/DRIVER	CAR	MOTOR
1. CHRISTIAN KEIL	YOKOMO	REEDY
2. DARRIN STUMP	YOKOMO	REEDY
3. BILL SHUMATE	OPTIMA	REV TECH
4. MIKE TAPP	SCHUMACHER	TWISTER
5. NICHELLE RIVERA	YOKOMO	PEAK PERF
6. NICK D'AMICO	SCHUMACHER	REEDY
7. TYM WELLS	YOKOMO	PEAK PERF
8. RANDY LOCKEN	YOKOMO	REEDY
9. MIKE DOLAN	OPTIMA	PEAK PERF
10. TAKESHI YAMAMOTO	YOKOMO	REEDY

4WD INVITATIONAL CLASS

FINISH/DRIVER	CAR	MOTOR
1. MASAMI HIROSAKA	YOKOMO	REEDY
2. CLIFF LETT	YOKOMO	REEDY
2. JAY HALSEY	YOKOMO	REEDY
4. CHRIS MCELROY	OPTIMA	PEAK PERF
5. BUTCH KLOEBER	YOKOMO	REEDY
6. JURGEN LAUTENBACH	SCHUMACHER	LRP
7. KRIS MOORE	YOKOMO	TWISTER
8. GIL LOSI JR.	OPTIMA	REVOLUTION
9. JACK JOHNSON	OPTIMA	REVOLUTION
10. CHRIS ALLEC	A & I	

OVERALL INVITATIONAL CLASS

FINISH/DRIVER	COUNTRY
1. CLIFF LETT	USA
2. JAY HALSEY	USA
3. MASAMI HIROSAKA	JAPAN
4. CHRIS MCELROY	USA
5. KRIS MOORE	USA
6. GIL LOSI JR.	USA
7. JAMIE BOOTH	ENGLAND
8. JACK JOHNSON	USA
9. JOE SCHMITZ	USA
10. CHRIS ALLEC	USA





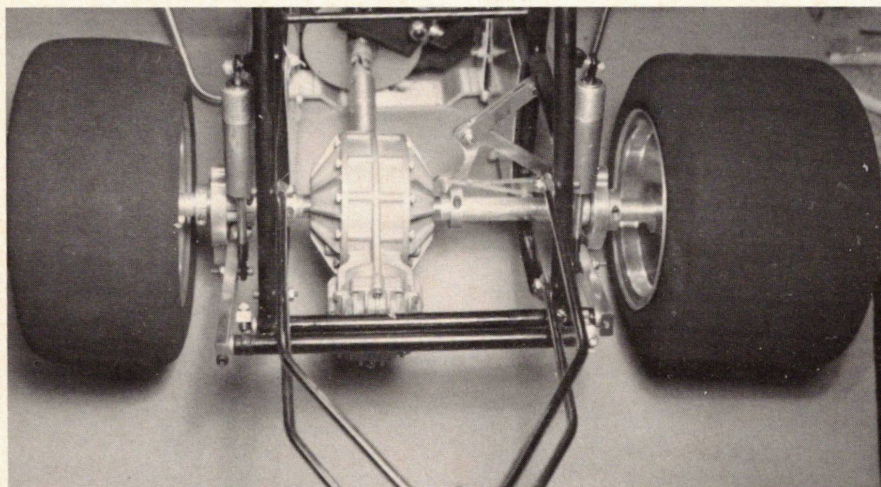
BY AL NOVOTNIK

When the W.C.M. Corporation of Buffalo, Texas introduced their sprinter a few years ago, the car came with a sprocket and chain drive. Later on down the road the drive was redesigned to use a V-belt system with V pulleys and belt. This type is

found on the current production kits. Now on the scene comes Steve Skellenger of Skellenger Engineering with his Quick Change Rear End. Steve, being a midget race car driver himself and owner of a full-scale midget, decided to make a scale

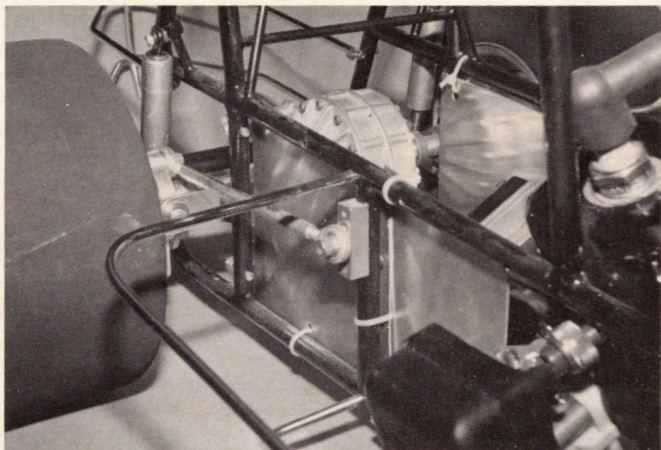
operating rear end. He had the facility, and the engineering know how, and here is the result, ready for installation. The Skellenger Quick Change is an exact duplicate of the famous Hallibrand rear so popular with the full-scale racer. The rear provides the flexibility of changing gear ratios in a matter of minutes. There are three different gear ratios available at the present time: 6.76, 6.07 and 5.46 to 1. The housing is machined from 356T6 heat-treated aluminum casting. The spiral bevel ring and pinion gears, a ratio of 3.64, are also heat-treated. The change gears are again a heat-treated pair of gears. High-speed sealed ball bearings are found throughout the housing. The axle is either ground one-half inch diameter steel or 2024T6 aluminum available in variable lengths and offsets. The driveshaft is 3/8 diameter steel, also in various lengths with plain or splined end. The complete weight of the quick change rear is 2 lbs, the dimensions are 4-3/4 long x 3-1/2 high x 2-1/2 wide.

Once you've installed the Quick Change Rear you will have a duplicate of the full-scale sprint car drive system. Located between the engine and quick change rear is a centrifugal clutch mounted in a rein-

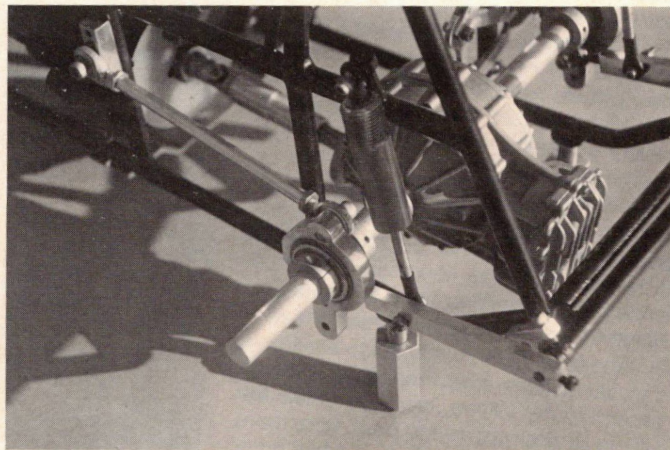


The SECO Quick-Change Rear End shown mounted in position. Also seen is driveshaft and clutch assembly.

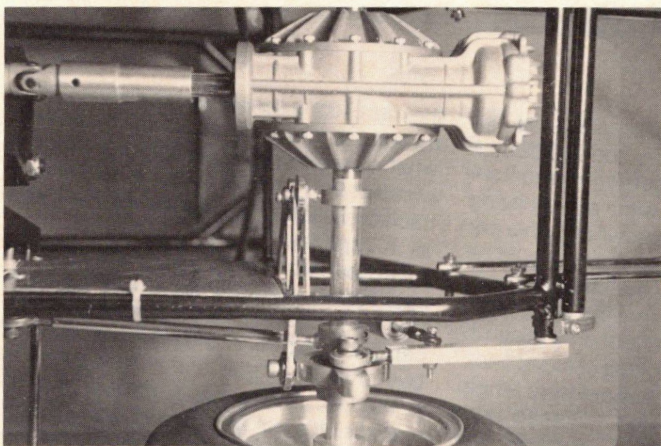
SECO's Quick-Change Rear for Quarter-Scale Cars



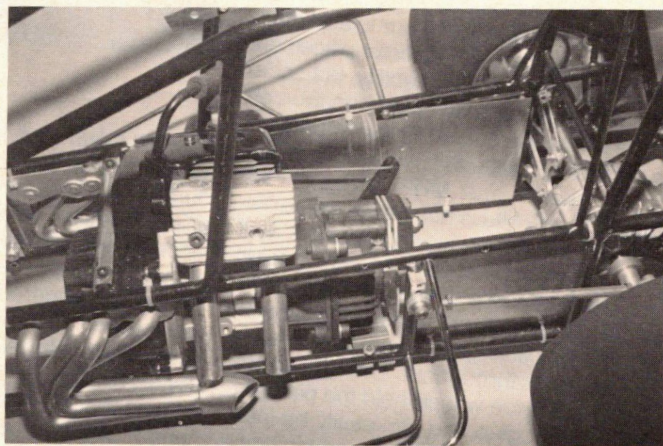
A look at the quick-change rear from the right side. Quality of the SECO assembly is superb.



Rear end during installation with wheels off of axle.



The birdcage with torsion bar hooked up.



New upper motor mount and exhaust manifold. The headers are for appearance only, available from WCM.

forced nylon housing that also houses the disc brake. Connected through the housing to the centrifugal clutch is a universal joint with a driveshaft that slips onto the splined shaft which fastens to the quick change. The shaft runs through the bottom of the aluminum housing through two bearings into a cavity in the rear of the housing that contains the two change gears. To get access to the quick change gears, you have to remove the screw in the rear cover and pull the gears off and slip on another set. One gear is fastened to the shaft that comes from the drive shaft, the other to the

pinion gear that drives the ring gear inside the housing. The ring gear is hard-mounted to the rear axle. And this is how the power is transmitted to the wheels. This type of rear end enables the two rear wheels to be connected on one common shaft. Quite different from the rear end found in the everyday pleasure auto.

The clutch housing is molded of reinforced nylon with the single disc brake and the popular Zenoah and other 23cc gas engines available with a standard or the performance-splined U joint.

The most popular quarter-scale car to

put the rear in is the sprint car, although it can be used in any quarter-scale, super modified, grand national car or even a midget racer.

I chose to install the rear in my W.C.M. Sprinter (*R/C Model Cars*, Dec. '88) that had the stock belt drive system installed. First, you'll have to do some parts removal work. The hood and tail must be taken off and put on the shelf for awhile. Then the motor with its mounts removed, and the entire rear end drive along with the belt.

Continued on page 84

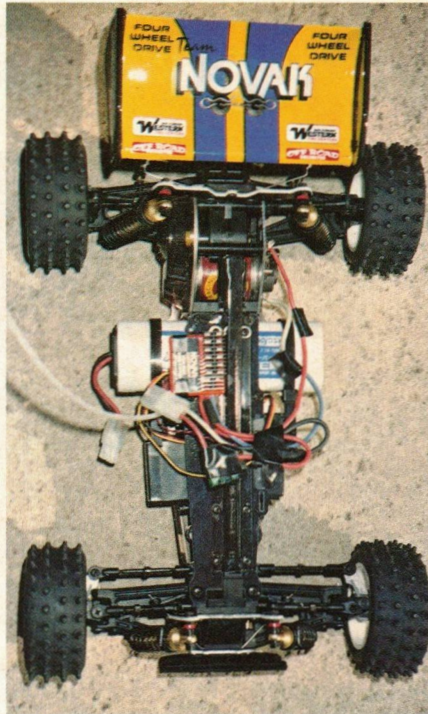
Last summer, while vacationing in my home country of Taiwan, I visited some hobby shops and by chance discovered Kyosho's Turbo Optima Mid. Knowing that if Great Planes was going to import this beauty it would probably take a while, I seized the opportunity to be one of the first in the U.S. to own one. The Turbo Optima Mid has all the features of the Optima Mid plus bearings. The car consists of special features such as a 2.3mm thick chassis, a full set of ball bearings, universal swing shafts for the front, stabilizer bars, Option House Gold shocks, mid-motor placement, belt-drive, and a graphite upper-plate and shock towers. To these goodies I added front and rear Kyosho differentials, since I knew I would want to add them sooner or later. Matter of fact, this car turned out to be very similar to the Turbo Optima SE sold in America.

Assembly went smoothly and easily. Like the Tamiya and Kyosho manuals in the past, they rely heavily on their detailed drawings. This was especially important since the instructions were in Japanese! However, even though the instructions were in Japanese, I still managed to assemble this car in less time than it took me to assemble my Ultima, because unlike the Ultima kit, the screws and parts were more logically organized in clearly marked numbered bags. The design of the car is based on the award-winning Optima Mid design with variations here and there to add durability or performance. Mid-motor placement added greater cornering ability, but occasionally created a nose-heavy condition on some jumps. Like most of the competition-quality cars, (with the exception of the Tamiya Avante and MRP Shotgun), the Turbo Optima Mid is belt driven with a single belt in a Lexan housing to prevent dust and dirt contamination. The transmission is a first for Kyosho; it uses 48-pitch gears for a much smoother transfer of power than normal 32-pitch gears. The transmission ball bearings throughout. The lightweight, one-piece nylon wheels hold the pin-spoke tires without glue and can easily be interchanged with the wheel/tire combinations you may have from an Ultima or Optima. And like the transmission, all four wheels also ride on ball bearings.

I was extremely pleased that the kit did not include a speed controller or motor, since most serious racers opt for a electronic speed controller and a motor more

suitable for their experience or racing class. Because of this feature, I installed a Novak Econo ESC (now replaced by their new Tempfet 4), and a Losi superstock motor along with Kyosho's Pulsar radio system.

After trimming and painting the body I was ready to run my tests. Unfortunately, I didn't have the time or transportation to



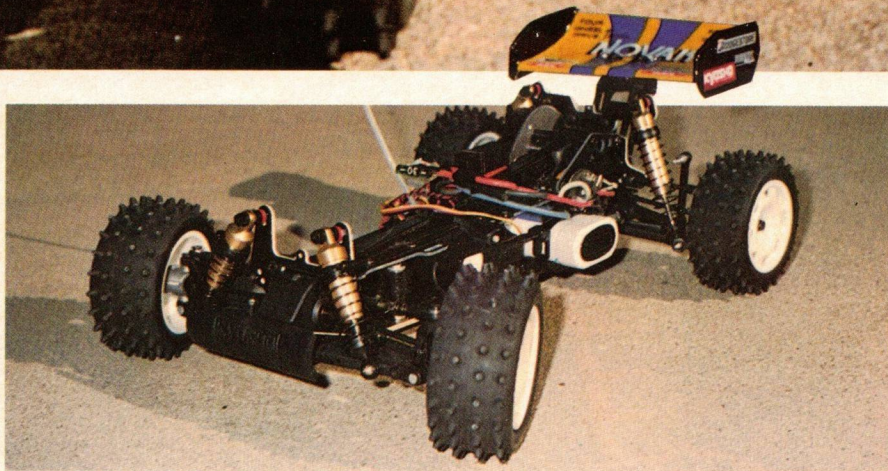
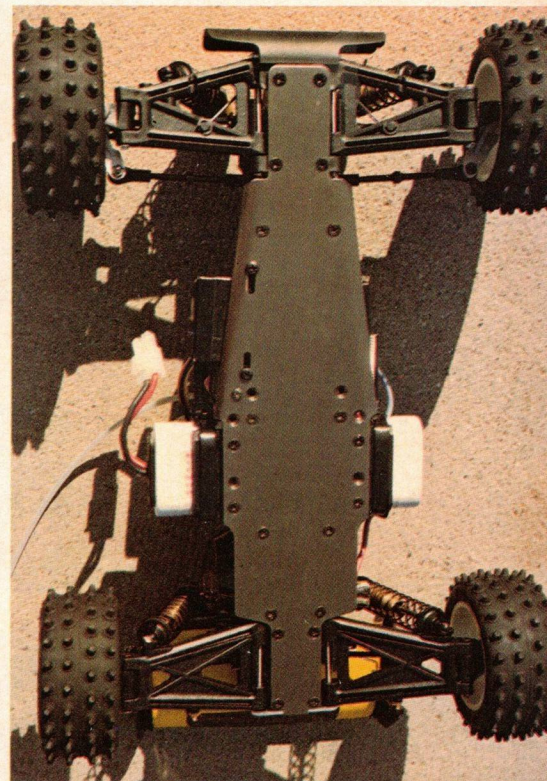
travel to a real track to fully test the car, but preliminary testing already showed that the Turbo Mid had superb cornering and handling abilities along with an amazing acceleration rate for a four-wheel drive car. At first, I thought the suspension would be somewhat hindered by the stabilizer bars, but I found that this was not the case. While giving the car the slalom test on a relatively flat dirt surface, similar to that of an oval track, I found that the stabilizer bars were a help when properly adjusted. Offroad was another story. The front stabilizer bar tended to hinder the suspension's performance by making it a little too stiff. Luckily, the rear ones were adjustable to the point that they wouldn't be effective so I just removed the front stabilizer bars and left the rear ones on. For novices and pros alike,

the instructions contained very helpful information on suspension setup. It showed what oil viscosity to use, and the amount of caster and camber to put on for varying track conditions. It's just too bad that it was all in Japanese!

The test information, along with a proven track record overseas, shows that the Turbo Optima Mid is definitely a competitive race car, but don't be in a rush to go out and buy one. The Turbo Mid is available only in the U.K., Hong Kong, Japan, and Taiwan, but it's not available in the U.S. And although it is pictured in some Kyosho promotions and catalogs, according to Great Planes, they currently have no intention of importing it. However, I wouldn't worry about being shortchanged. Great Planes has plans to import several new Kyosho

Kyosho's

TURBO OPTIMA



**Technical Specifications
TURBO OPTIMA MID**

Length: 350mm (13.8in)
 Width: 240mm (9.4in)
 Height: 130mm (5.1in)
 Wheelbase: 262 (10.3in)
 Ground clearance: 35mm (1.4in)
 Front Track: 200mm (7.9in)
 Rear Track: 202mm (7.9in)
 Tires: Low profile, semi-pneumatic
 Total weight: 1600g (56.4oz)
 Gear Ratio: 9.78:1

Items used for testing (not included):
 Pulsar radio system
 Novak Econo -4 ESC
 Team Losi Superstock motor
 Kyosho Option House ball differentials

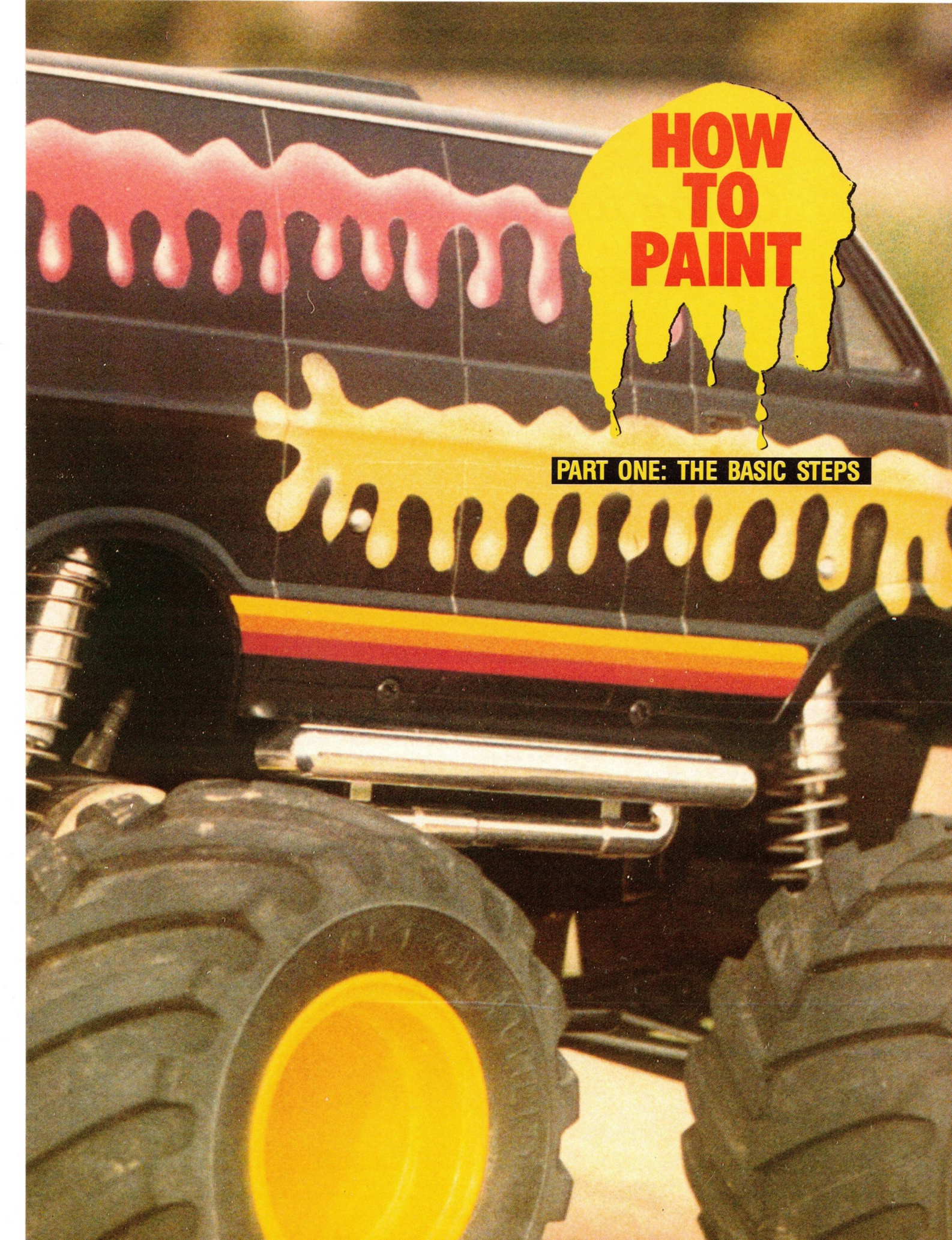
cars, and one, the Turbo Ultima Pro, will probably be out by the time you read this, while others like the Custom L.W.B. (long wheel base) Optima Mid, Custom Special L.W.B. Optima Mid, and front-wheel drive

Maxima FF may not be out until summer. (Can't wait to test these cars!) Until then, the Optima Mid and Turbo Optima Mid SE will be Kyosho's main flagship four-wheel drive cars. ●

W A M I D

**ANOTHER STEP IN THE
DEVELOPMENT OF A
WORLD-CLASS RACER**





HOW TO PAINT

PART ONE: THE BASIC STEPS

PART ONE:

Going for the killer finish



BY MIKE OGLE

I know that there are a lot of racers out there who would rather avoid having to paint their car's Lexan body altogether. It seems that a lot of experienced, talented hobbyists who can build, tune, and drive cars to perfection still dread that final body finishing step.

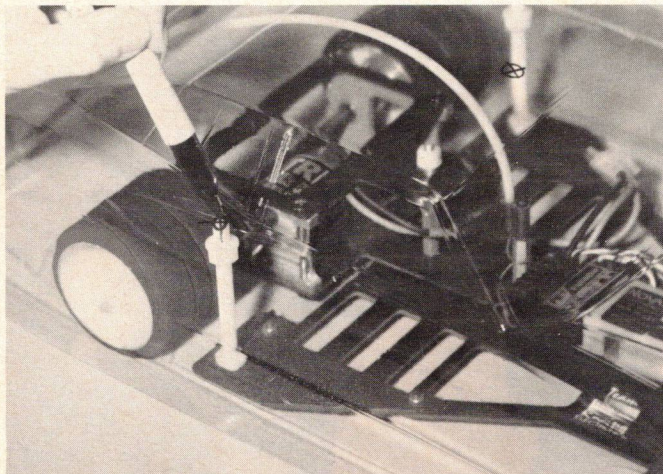
Well, there's no reason why your car can't look as good as it runs. There are just a few

basics that I'm going to cover in this installment before we get to the real trick stuff.

The first thing that you need to do with your car's body is mount it on the car's chassis. Believe me, I've done the body mounting step both before painting and after painting, and it's definitely easier to punch holes for body mounts and antenna masts before painting, because it's easy to

see through the shell to "sight up" the alignment of these parts. You really don't have to do all the final trimming at this point, like around the bottom edges and wheel wells, but do get the basic fit done first.

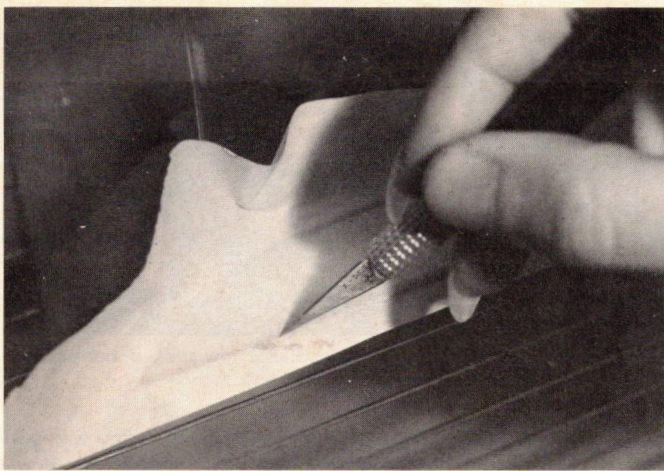
If you can't (or didn't) pre-fit the body to the car before painting, you can use a few different methods to locate your body post holes on the shell. One way, and a very



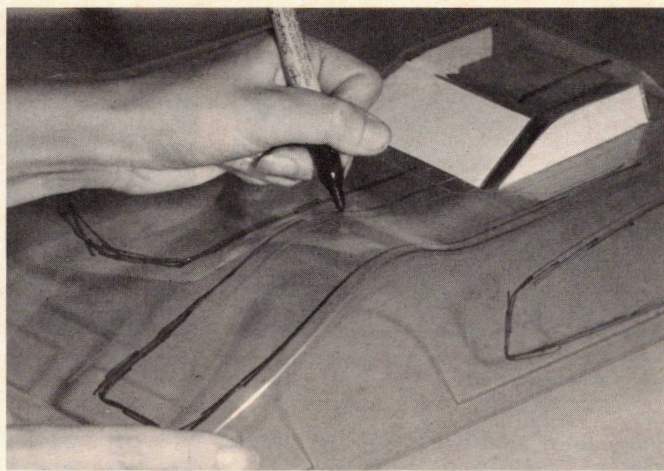
Mark the mounting holes before painting when it is a lot easier to see the mounting points through the clear Lexan plastic body.



Use denatured alcohol to thoroughly wipe clean the inside of the car body before taping or painting. Use a clean, dry cloth to wipe.



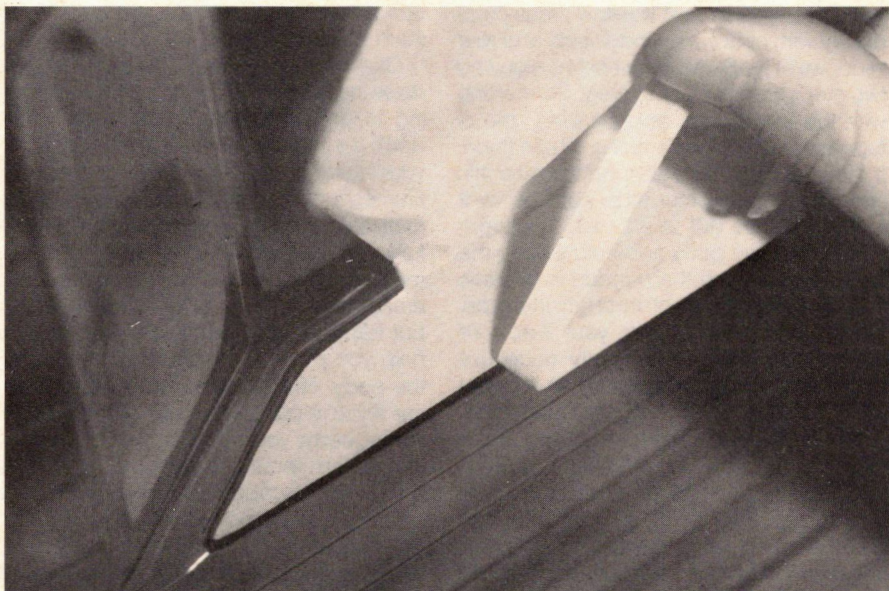
After taping the inside, use a No. 11 blade to cut around window lines through the masking tape. Don't cut too deep into plastic!



Use a Sharpie marker to plan your paint scheme on outside of the body--it'll wash off later.

easy one at that, is to turn the car over on its top and put the chassis into the shell upside down and mark with a pencil, or water soluble felt-tipped pen, around where the posts hit the body. If it's tight quarters in there and you can't even see where the posts hit the body, try putting a dot of whiteout, or Liquid Paper correction fluid on the top of the post to mark where it touches the inside of the car's body. Just press down the body while the whiteout is still wet (it dries fast, so be quick) and you should get a nice white dot to mark the spot for your body post mounting hole.

Okay, now we are on to the preparation of the body for painting. The first thing I do with any body is to take S-L-X denatured alcohol on a paper towel, or rag, and thoroughly wipe out the inside of the body. It may not look dirty but you must clean the shell as best you can first. After all, we're painting in reverse — that is — whatever is applied to the body first will show regardless of what happens afterward. If your "first layer" of decoration is dirt, it's not going to look good no matter how meticulous you are in subsequent steps. Some body manufacturers advise you to wash out the shell in warm, soapy water first in their painting instructions, and this would probably be a good idea, especially if your body was bought from one of these combination

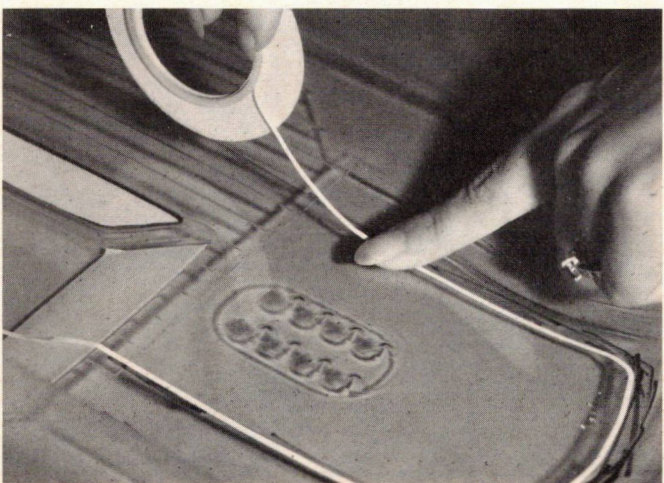


After spraying, peel off masking tape covering clear windows, being careful not to transfer paint from tape to fingers to clear windows.

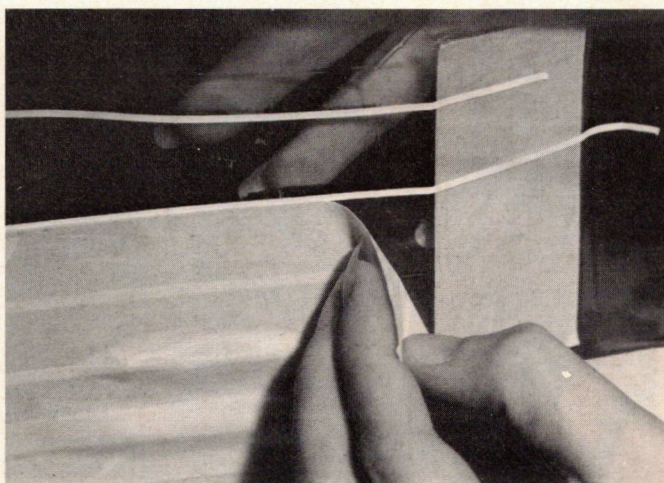
hobby shop/R/C tracks where the dirt and dust off the track gets into everything! I would still use a good wipe-down of denatured alcohol afterwards, though, as it seems to not only do a final cleansing, but helps the paint stick a little better. Don't throw that rag away yet, because these

alcohol rubdowns are going to happen more frequently than you think throughout the course of painting.

Okay, nice and clean and dry. Now, let's mask out the windows of the car. If you do this right, you're looking at using only four to six pieces of tape tops. Offroad bodies



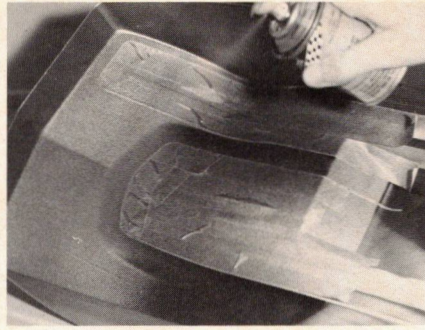
Put down thin pinstriping tape inside, following lines drawn on outside of body. It will bend easily around corners and contours.



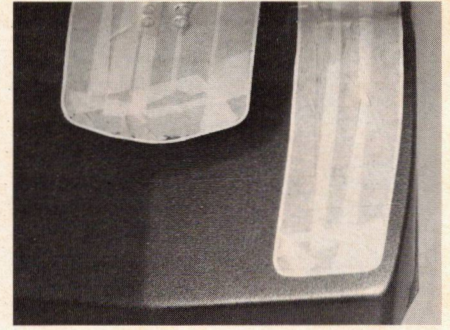
Fill in panels with masking tape, being careful not to totally cover up thin pinstriping tape that gives you a sharp edge when painted.



Wipe off your outside Sharpie guide lines now using denatured alcohol.



Once panels are masked, spray basic body color over entire inside of body.



Basic body color is now applied, but panels are still masked with tape.

may only need as few as three pieces. . . no kidding. Here's how.

Go to your hardware store and buy a roll of 2-inch wide masking tape. This is wide enough to cover most window areas completely with only front windshields and rear windows of NASCAR-type bodies requiring two strips to cover completely. So, starting with the windshield, apply a long strip of tape across the inside of the whole thing. If the tape's not wide enough to cover it in one strip, use another strip right below it with just a little (1/4 to 1/2-inch) overlap.

Now take the body and hold it up to the light. You can see the molded-in window outline's shadow right through the tape. This is your guide to take your X-Acto or other hobby knife and lightly trace this "line" while holding the car up to the light with your other hand. It doesn't take much pressure with the knife to cut through the paper tape, and you probably couldn't accidentally cut through the Lexan body even if you tried. It's tough stuff! Just take your time and follow the shadowed lines. If your car's window lines are very thin and difficult to see through the tape, you can take your felt-tipped pen and trace them on the outside of the body, then turn it back over and see if that helps. I use a black, fine point Sharpie marker. It's good for outlining, detailing and laying out your paint scheme because your denatured alcohol will take Sharpie pen marks right off if you make a mistake. Now mask your other win-

dows out the same way as the front window. If your car has a grille area, headlights, taillights, or any other detail areas that you want left clear or you don't want the same basic color as the body, you can mask them this way, too

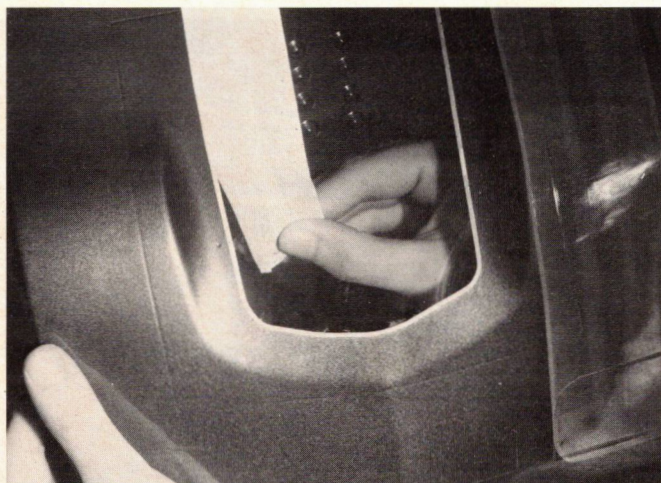
Okay, now you've got a car with all windows neatly masked and you're just itching to grab the spray paint, right? Well, don't! You have to take your time and plan your scheme now. What do you want to do? Flames, different stripes, bubbles, panels, multi-colors, etc.? Look over the body carefully. Study the existing lines that are molded into the car. In most cases you aren't going to want to ignore these lines, but rather accent them and use them to help you plan out a scheme that will "fit" the body. Not every scheme will fit every car. If you're painting a small offroad, single-seater body, you need to plan a paint job that doesn't require a large area of intricate paint work, because the body doesn't have any big, uninterrupted panels. Likewise, you shouldn't fit a straight-line striping job to a curvy car. It will never look straight if you do. This is the time to make your "artistic" decisions! Small cars, or cars with a lot of detail molded in (like the GTP Corvette and Jaguar bodies) will be more limiting in what you can do with them in terms of wild paint jobs, but the fine-detailing molded in can be used to make some of the finest, most realistic cars you've ever seen.

Once you know what you want, sketch

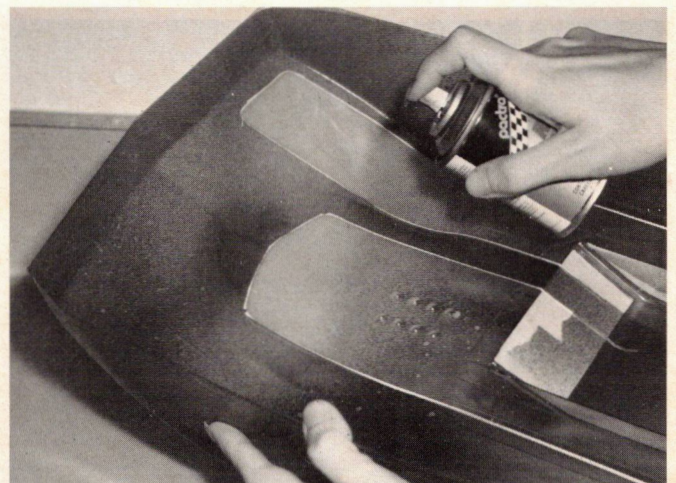
it out on the outside of the body with your Sharpie pen. As I said before, denatured alcohol will wipe these marks right off later! You don't have to be exact now, you're just giving yourself something to go by when you start masking the inside of the body.

Just a word on which materials you should use for masking your paint job's panels and stripes. Although regular masking tape is good for large areas, such as windows, smaller, intricate areas require a smaller, finer tape. I use 1/16 or 1/8-inch 3M Automotive Pinstriping Tape for outlining different panels of color because it is a flexible plastic tape that sticks well, bends easily around corners, and will slightly stretch to go around tight bends and bumps. Pactra is now carrying a line of tape that features several different widths of stripe on a single roll, and which also should work just as well. Tapes such as these pinstriping tapes will give you the sharpest, neatest lines with a minimum of fuzzy edges. Once you outline your color panel with the fine-line tape, you can fill in the panel with regular masking tape.

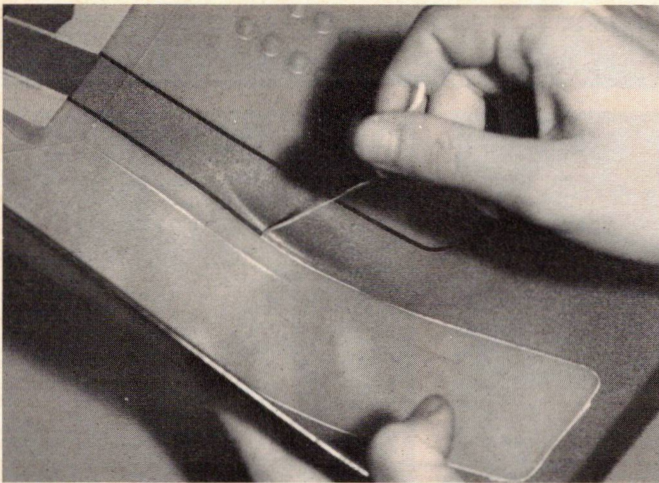
One good trick to know at this point is to keep the masking tape from totally covering over your thin-line tape so you can later peel your masking tape center-out, leaving the thin outline tape still stuck down. This allows you to paint the basic car's body color first, then take the masking tape out to paint a different color, then finally, take the pinstripe tape out and spray those thin,



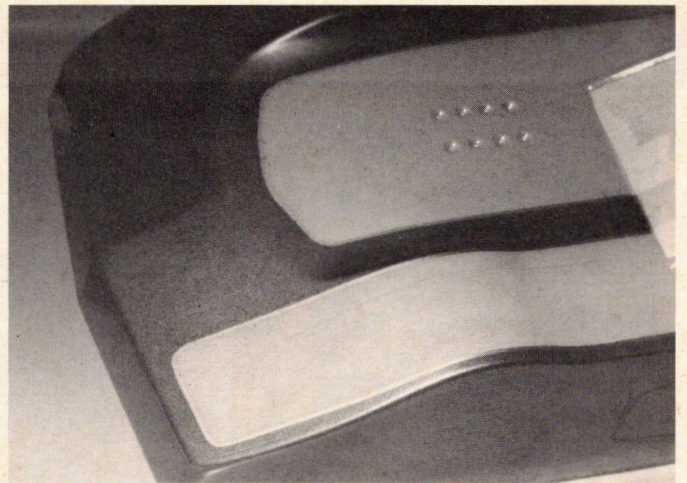
Peel out masking tape inside panels now, leaving thin pinstriping tape in place until later.



Spray exposed panels in contrasting color. Only areas that were left clear after initial spraying will be in this contrasting color.



Now peel thin pinstripe, leaving thin clear stripe that you can now paint white, silver, gold, or any color you desire.



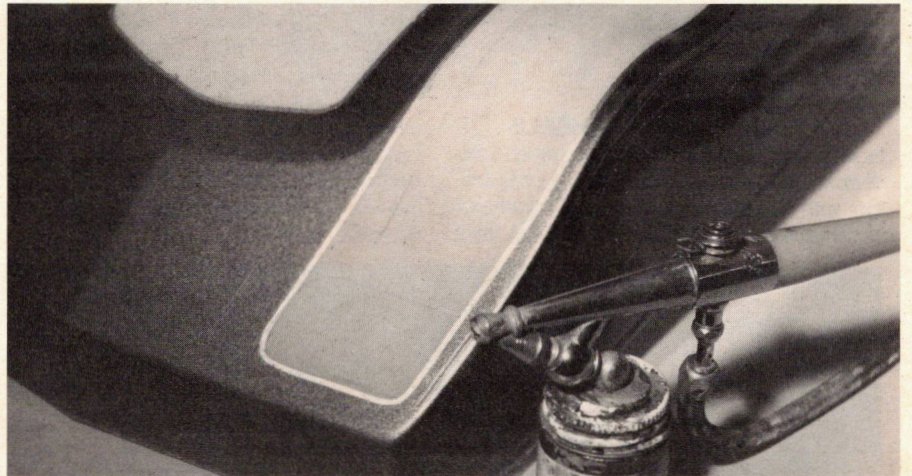
After spraying pinstripe, the body looks great, and it was all accomplished with spray cans!

clear lines that are left a different color. This looks especially sharp when the thin pinstripe is done in gold or silver (see the "REX" Camaro in the March issue).

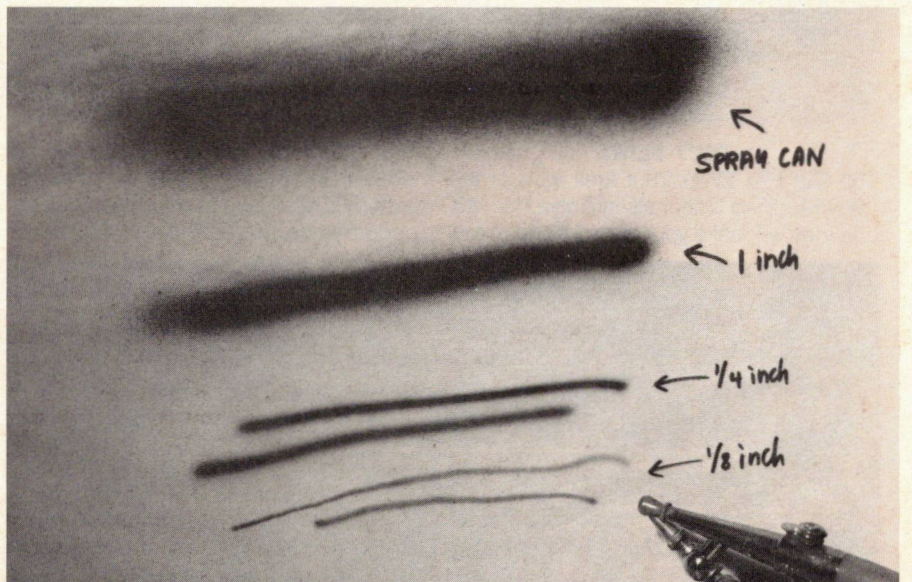
These basic steps will help you get the finish you want, and lay the groundwork for what comes next: the actual painting. If you are using spray cans to finish your car, all of these previous steps will be the basis for your paint scheme. If you have access to an airbrush, you have a lot more possibilities in what you can hope to accomplish.

The basic points which make airbrushes the favorite tool of body painting are: 1) the control you have over the size of the spray pattern; 2) the ability to mix your own spray colors, and 3) the fine spray given by an airbrush allows gentle, smooth color blending. With spray cans the paint sprays out in a coarse, larger pattern and there isn't anything you can really do about it (other than to back away or get closer) to vary the pattern. An airbrush, however, allows you to adjust the width of the spray down to a fine, thin line for gentle "fogging" techniques. An additional benefit is that an airbrush will lay a very thin coat of paint down as compared to a spray can, giving you a lighter finished body with less tendency for the heavy layers of paint to crack upon the inevitable impacts of racing. To be honest, I find the "airbrush vs. spray cans" controversy to be at best, a draw. No, you can't do extremely tricky small details with a spray can, but if you're only wanting solid color panels or a large area of the car to be a single color, you can do just as well with spray cans. I know one local racer who produces consistently beautiful cars just by being careful and meticulous with his masking and using spray cans. Personally, I use

Always test-fire your airbrush at a plain white pad of paper before aiming at your car. They can be temperamental and prone to doing things like spattering paint if you're not careful. The paint in your airbrush should be thinned with the appropriate thinner suggested by the paint's manufacturer. This gives the smooth, controllable spray pattern that you're going to need for some techniques. Make sure you can adjust your spray pattern fully from about 1/4-inch (or



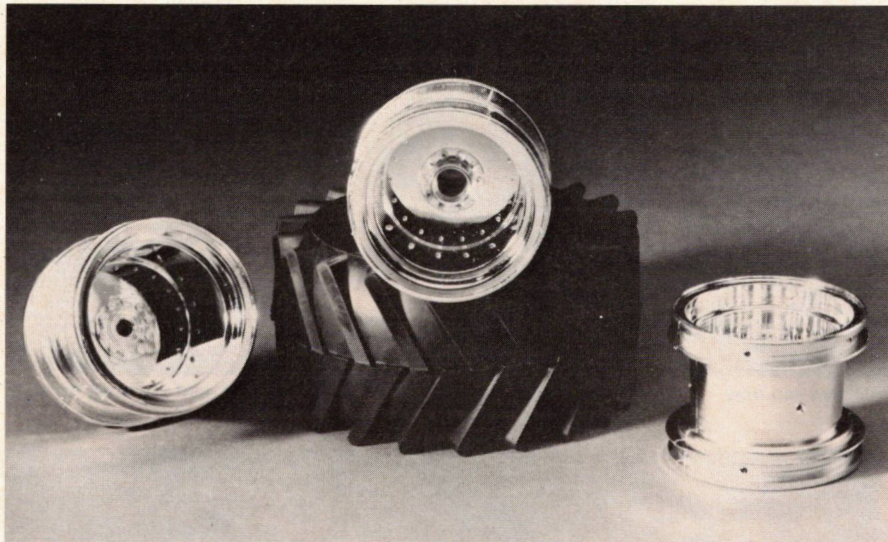
The finished panel job. If you had used an airbrush, you could do even more trick effects. We'll get into that phase of painting next month.



Compare spray can stripe with the airbrush-painted stripes. These patterns are what enable us to do the things next month's installment calls for.

smaller, depending on the exact model of airbrush you have) up to a 2- or 3-inch wide spray pattern for doing larger areas. The better you know your airbrush and how to use these adjustments, the trickier your paint jobs can get! I really am not an airbrush expert, but you really don't have to

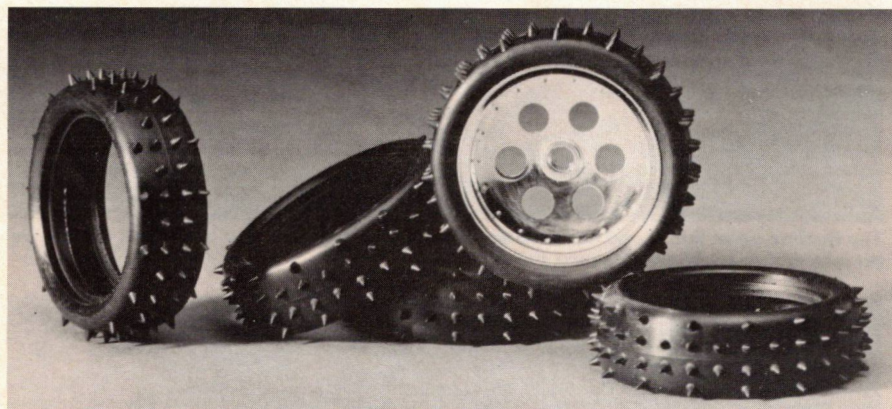
be to get great paint jobs. Just read the instructions that come with your airbrush thoroughly and practice your spraying patterns on a piece of paper first. Once you get that down pat, we'll get into some real tricks! Stay tuned and clear off some shelf space for a Concours trophy!



MONSTER TRUCK WHEELS

Now you can add the stunning good looks of chrome to your Monster Beetle or Black-foot with these awesome 2.2-inch diameter chrome wheels. They are available in front

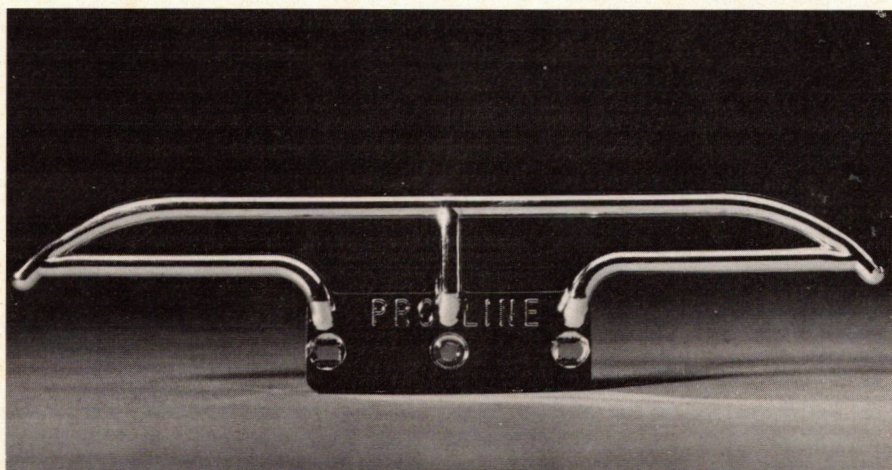
or rear, and are designed for maximum performance. You can add to your monster's performance with these new wheels and the Pro-Line Masher tire, available at your Pro-Line dealer.



DIRT FLIRT

The Dirt Flirt 2WD front tires won at the 2WD Modified Nationals in Antioch in '88, and they will make your buggy perform too.

The new front racing tire fits 2.1 front wheels, and the low-profile pin spike tread pattern is designed to maximize your car's performance on most dirt surfaces.



PRO-LINE CHROME BUMPER

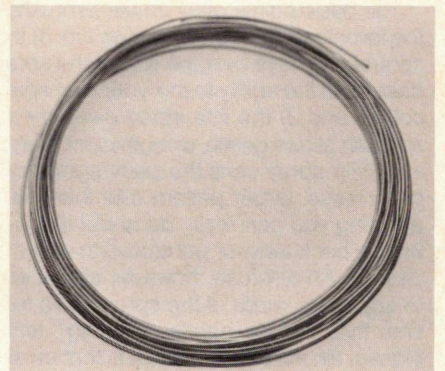
Pro-Line's newest chrome bumper is pre-drilled and ready to mount on your RC10 or Cox Scorpion to provide added crash

protection. It's easy to install, and durable, too. Look for it at your Pro-Line dealer, and watch for Pro-Line's new RC10 chrome nerf bars, coming soon!



SPONSOR DECALS

Choose Loctite, Permatex, Crisco and Drag #2 styles in brilliant colors from these new offerings from Parma International. Stickers are available at your nearest Parma dealer.



ROSIN CORE SOLDER

Here's the highest quality rosin core solder available on the market today. Made of 60% tin and 40% lead, the Du-Bro solder is available in three different diameters to match your needs to the soldering job at hand. Find this and other quality Du-Bro products at your nearest hobby shop.



1/10 TIRES AND WHEELS

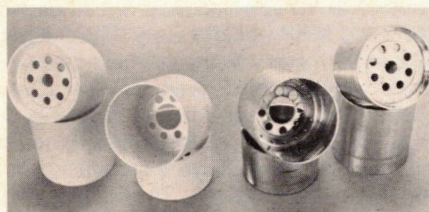
The front and rear spike tires give great traction on loose surfaces, and fit 2-1/8 Tamiya and Kyosho wheels. Also available from Parma are these front track adjust wheels with sponge tires that allow you to

turn nearly any 1/10-scale car into a road racer. Find them now at your Parma dealer.



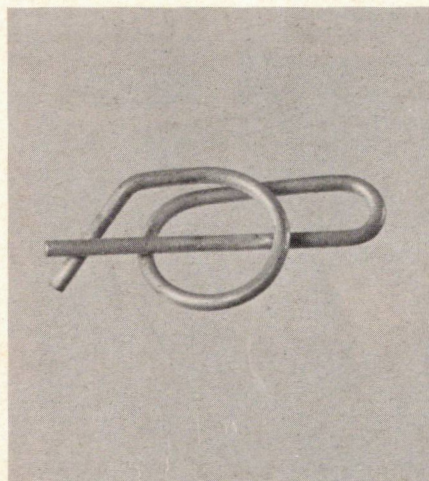
KYOSHO FIELD BAG

This large field bag is made of durable, red vinyl, measuring 22 inches wide, 13 inches deep, and 11 inches tall. It is more than large enough to hold even a monster R/C vehicle, with room for other essential equipment. Two outer pockets are provided for additional accessories, and a zippered top allows access to the inside compartment. The bag folds flat when not in use. Look for the Kyosho Field Bag at your nearest Kyosho/Great Planes dealer.



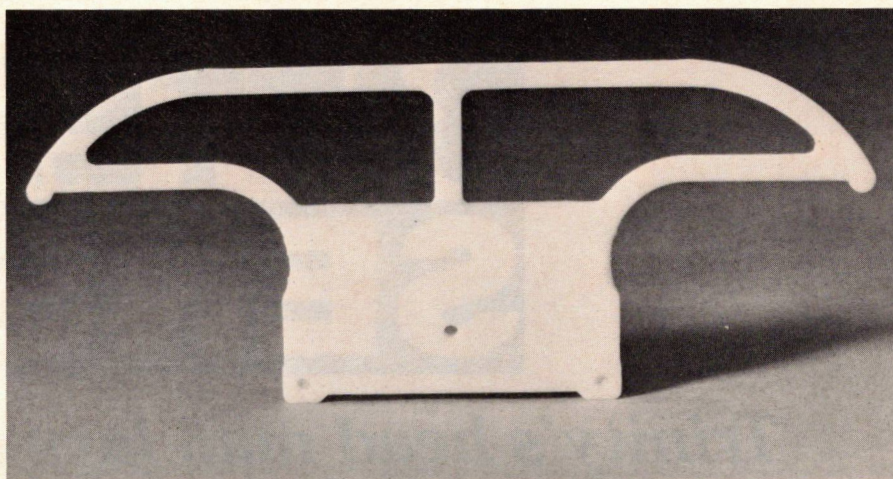
1/10-SCALE RACING WHEELS

New front and rear onroad racing wheels are molded of a durable nylon/plastic composite that results in extreme low weight and good looks. The front wheels are 1-1/4 inch wide, and the rears are 2 inches wide. Chrome-plated front and rear wheels are also available at your Parma dealer.



LOCKING BODY CLIPS

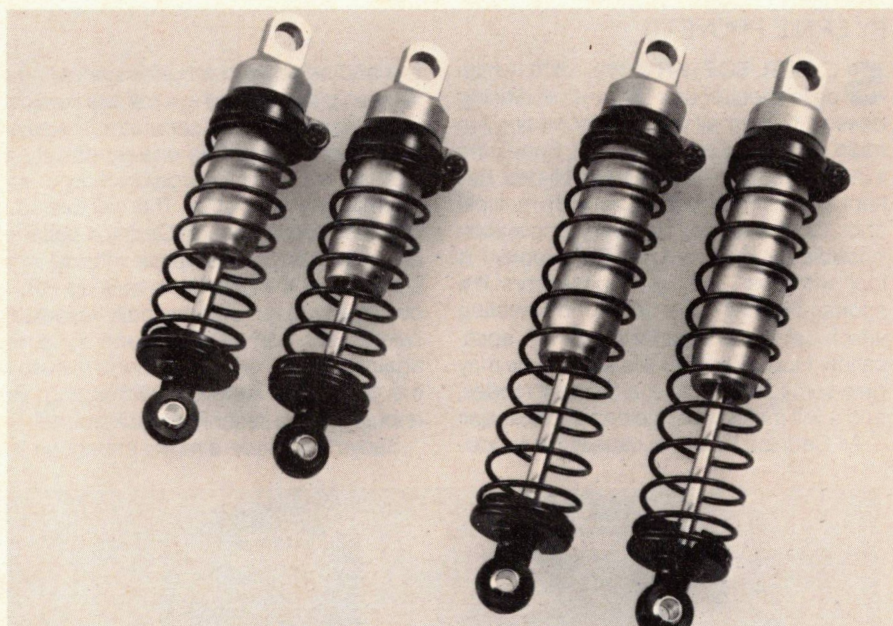
Everyone's lost his or her share of body clips, usually when you need them the most! Bud's Racing Products has a way to combat clip loss with the new Locking Body Clips, ones that will never come loose while they're on the car. Look for them at your nearest hobby shop.



BLACKFOOT BUMPER

Pro-Line's new Blackfoot Bumper gives your truck extra protection and an impres-

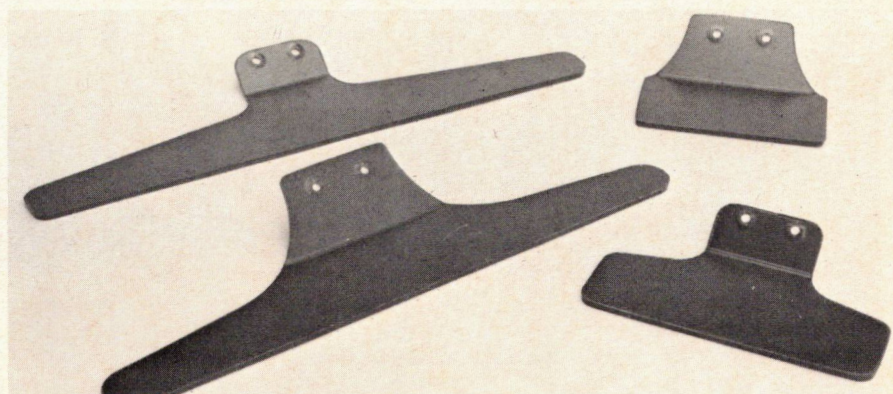
sive look. The bumper is molded from dye-able nylon, and is durable and lightweight. It is also available in chrome, from Pro-Line.



DURATRAX SHOCKS

These new DuraTrax Competition Long and Short Shocks are made in Japan and are designed to give good performance at an economical price. The shocks have a ball

end and a silicone O-ring with a non-stick guide to prevent leakage. The shocks come in three and four inch lengths for most car applications. Replacement parts are available at your Great Planes/Kyosho dealer.



KYDEX BUMPERS

These new Kydex bumpers are made for the Optima and the Optima-Mid cars. Full-

width bumpers and skid plate bumpers are to be found at your Parma International hobby dealer.

BATTERY SENSE

Trinity's head man lays down some plain truths about battery care

BY ERNIE PROVETTI

SC, SCR, SCE, KR, 1200, 1300, which cells should I use? Sounds confusing doesn't it? With all the new technology in radio control the past few years, Sanyo, the industry leader in rechargeable Ni-Cds, has kept pace by providing us with multiple choices of batteries for every application possible for R/C car use. The problem is that with this many to choose from the sportsman may have trouble in selecting which cell is the best for his or her application. Hopefully, after this article, you may gain some insight into the different modes, and it will make your choices a little easier.

All Cadnica batteries usually have posi-

tive and negative electrodes consisting of sintered plates wound in a roll and insulated from each other by a separator. The result is the highest possible energy density as well as excellent charge/discharge and thermal characteristics. The cell casing is made of steel. Although Cadnica batteries are designed for complete internal consumption of the gas that is built up during overcharging, an automatically resealable safety vent comes into place to guard against defects or abuse during misuse of the product or severe overcharging. But enough of the technical background!

Sanyo first made a major impact on the

Radio Control scene (as far as I remember it) in 1981 at the ROAR Nationals held in Boston at Rattey's Raceway. Spearheaded by head MRP honcho Gary "TBA" Kyes, Sanyo won every event — which was won mostly by the MRP team anyway (Gary Kyes, Joel Johnson, Jimmy Welch, etc.). Kent Clausen of Associated was rumored to have so many Sanyo 6-cell packs that he didn't need a charger. The running story goes that Kent charged all his batteries in California before he showed up and had enough packs for practice, every heat, and all the mains! In any event, a sport that was dominated by General Electric had made



a complete reversal and was now a one-battery sport: Sanyo! The reasons were many; more cell voltage, more presence by Sanyo in sponsoring races in this market, and finally, a dedication by Sanyo to give this small but growing audience not only a good product, but a good product for each application. So here we are!

The first cell I will deal with is the "Old Reliable," the 1200SC. This cell has a nominal voltage of 1.2 and a minimum capacity of 1200mAh with a typical capacity of 1350mAh. These cells can be used in any type of racing. They were the standard for 1/12-scale because of their mix of good voltage and run time. However, with the introduction of the new technology cells, the 1200SC is now primarily used in beginner-type "sportsman" racing where performance is not the real issue. If you want a reliable and safe product, then consider this replacement pack.

Another "sport" battery is the newly released KR-1300SC cell. This is a non-sintered cell, and is not as reliable as the 1200SC in terms of being charged at high temperatures, multiple charges, and so forth. It has a nominal voltage of 1.2 volts and the minimum capacity is 1300mAh with a typical capacity of 1450mAh. The good points of the cells are that they run just slightly longer than the 1200SC. Look for the new KR-1300SC because this should be the new "sport pack for the industry!"

The 1200SCR cell is easily distinguished by its red wrapping as opposed to the usual yellow shrink used on Sanyo cells. They are "the fast charge-cell." These particular cells put out more voltage than any of the current cells on the market, which means your motor will run faster with SCRs. The drawback in using the SCR is most definitely in "run-time" (capacity). They run shorter in time than any of the other cells and for this reason many people have trouble running them in modified racing. With the eight-minute 1/12th scale modified racing it is virtually impossible to use SCRs. Most people who use these cells in modified will run them in either four-minute 1/10th on-road or offroad racing.

Although there is a drawback in running SCRs in modified, they are fast becoming "the stock class battery." This reason is twofold: more voltage so the stock motors run faster, and because this SCR cell can stand up to the punishment of constant charging at high temperatures that other cells cannot endure. For example, the Tekin BC Hi-Amp charger was designed for these cells in mind. Some top experts who run stock will charge their batteries at a nine-amp rate constant. The reason behind this is more amperage you use in charging the



A new design and high-density plates have thrust the 1700SCE into the forefront of modified racing. The 1700s have a typical capacity of 2000 mAh, and an extended run time over 1200s.

more voltage the cell will retain! It's kind of like slot cars in the 60s. One sure way for your motor to run faster was to have the raceway owner turn the voltage up from 12 volts to 15 volts. Ouch! Also, in stock racing, which should(?) be run by amateurs, multiple battery packs are not a common thing. Most expert drivers have one battery pack per every charge they will race so that they have to use that particular pack only once that day. In stock class or with most beginners, they usually only have one pack. When they are finished with their five-minute charge, they want to go right back out. They do not use another pack. They do not give the pack any time to cool down. They just charge it right up again and again! Most batteries cannot take this type of abuse. The SCR can take almost everything you can dish out! I would strongly recommend the SCR for any stock enthusiast or sportsman driver who's commitment in the hobby will be long term. Naturally, the SCRs will be considered more expensive than the sports packs, but I feel

Although the 1700s provide the racer with more run time for his dollar, they do have some drawbacks. In order to make room for this extra capacity in the cell, Sanyo had to reduce the size of the negative plate. Since this plate is much thinner than the SCR cell, it is very sensitive to heat and charge rates. If you charge an SCE cell like an SCR with eight to ten amps of charge rate, this thin negative plate will sever, thus destroying the cell. It is with this in mind that most people charge 1700s between 2.5 and 3.5 amps. They are never charged at higher than 4 amps. The other thing about the new 1700 SCEs is that they should only be used one charge per day. Again, as stated, they cannot be used as much as the other cells. Trinity's testing has also shown the "match" on these cells tend to drift more so that SC and SCR cells. This is inherent in the construction of the cell. What this means is that you could have a perfectly matched SCE pack (this means the cells are matched for voltage output and cell capacity. All cells are equal so they

"I would recommend the SCR for any stock enthusiast who's commitment will be long term."

the extra price is more than worth it.

Finally we come to Sanyo's newest cell, the KR-1700SCE. The use of high-density plates and a revolutionary new battery design has enabled Sanyo to achieve up to 40% higher capacity (run time) than conventional Ni-Cd batteries of the same size. The nominal voltage of the cells is once again 1.2 volts. However, the minimum capacity is 1700mAh and the typical capacity is 2000mAh. Everyone is using 1700s for modified use. Whether it's 1/12th on-road, 1/10th offroad, hi-banked oval, you name it, people are using 1700s. The cell's characteristics show slightly lower voltage than the regular 1200s, but extended run time. These cells have become "the modified cells" for R/C car racing.

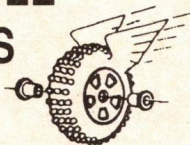
discharge at the same time) and after a few runs (usually three), the match is gone. Your cells have to be re-matched. For this procedure I would recommend the Lavco Cell-Mate, the current state-of-the-art re-matching equipment. The retail price is \$180.00 and the units are distributed by Trinity (201) 862-1705, RPS (714) 620-8670, and Horizon (217) 352-1913.

In closing I would like to leave you with a few tips which will help you in the care and feeding of any battery you purchase:

1. All rechargeable Ni-Cd batteries retain a memory. What this means is simply that if you discharge your pack in an offroad car several times at four minutes, it will start dumping at this time in any other



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"Old Reliable" is what Ernie calls the venerable 1200SC cells; ideal for sportsman racing, it is a reliable and safe battery to use, with a total capacity of 1350 mAh.

application. Many drivers have found this out the hard way in 1/12th-scale races. They took their four-minute offroad packs and tried to run them eight minutes. Even with their supposed "killer 730" packs, these batteries only lasted six and one-half minutes due to the memory. The only way to erase this memory is by discharging the battery overnight and letting it sit in an unused state for several days. Trinity has a resistor already connected with a Tamiya plug, so all you have to do is plug this resistor right into your pack after you race it.

2. Try to use your battery pack only once per day. If you race five times per day, it makes more sense to buy five battery packs and run them once a day and then place dropping resistors on to rejuvenate them for the next race than to completely ruin a pack every week by constantly recharging. If you take care of your five packs you can keep them for a long, long time!

3. Never overcharge your batteries! This method is only used by the experts who want the most out of a particular pack for that one day and are more than content with throwing the pack away after the race as long as they acquire their results

(more voltage). This does not make much sense on a local level.

4. Store your batteries in a dry place at low temperatures (refrigerator). It is estimated that storing your batteries in high temperatures could cause a loss in performance equal to one percent per month.

5. When assembling your batteries into a pack, be as clean and precise as possible. Never use acid flux for soldering. Use a hot iron that works (like an Ungar) so you do not have to leave the iron tip on the cell too long. Use braid instead of wire to connect cells. Despite what you've heard, the braid carries more amperage and is a much neater application. Finally, use a wire that is not so much the thickest, but one that has lots of strands of copper wire. Having a thick insulation does not mean anything. In a very short time, Speedworks will release a whole kit with diagrams and descriptions and how to do what I described here. So look for it at your local hobby shop.

Well that's all for now! I hope this did something to make things a little easier for you in your Ni-Cd selection. ●

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WHAT'S NEW



MRC TOP GUN

This new pistol grip radio system from MRC has adjustments for throttle trim, end point adjustments for both sides of the throttle servo travel, and servo reversing switches for both channels. The steering trim is located above the wheel and a charging

jack is provided in a recess in the grip. The receiver has BEC circuitry, and high-torque servos are included with the Top Gun radio system. For more information, contact MRC, 2500 Woodbridge Ave., Edison, New Jersey 08817.



CLOBBUSTER BODY

Get the impact-resistance of Lexan with the new Parma Clodbuster replacement body, a direct-replacement item for the MRC/Tamiya monster truck. The clear Lexan

body is ready for painting, and it can also be used on many other 1/10-scale cars with the use of the Parma Body Mounting Kit. Look for it at your Parma dealer.

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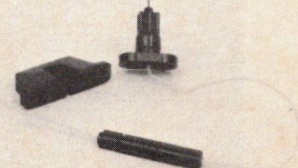
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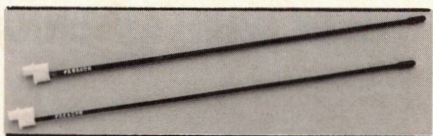


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STREET CAT RTR

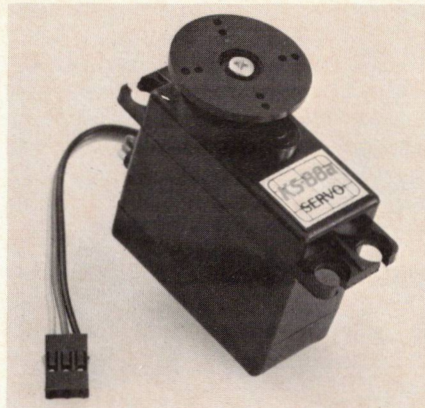
The new Traxxas Street Cat comes ready-to-run with a pistol-grip transmitter, an electronic forward/reverse speed control, and a 550 motor. The Cat comes with four oil-filled shocks with adjustable coil-over springs. A 7.2 volt 6-cell rechargeable Ni-Cd battery is all you need to buy to be race-ready with the Street Cat. Available from your local Traxxas/Horizon Hobby dealer.



PARAGON ANTENNAS

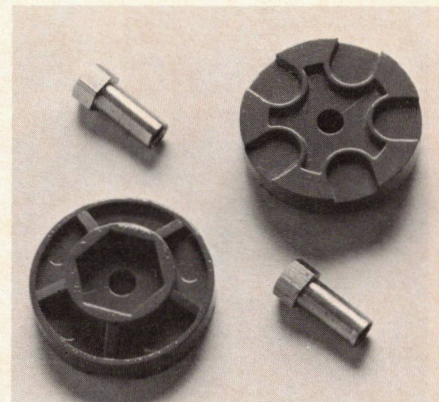
Here are two new roll-over antennas built

to take the punishment of racing. At top, the Paragon Pro Stick, a new composite antenna that's tough and lightweight. Another plus: it's hollow, so you can run your antenna up inside the antenna, thereby decreasing drag and preventing damage to your antenna. At bottom, the new Classic antenna from Paragon, for budget racing. For a catalog, send \$2.00 along with your name and address to: Paragon Racing, Dept. MC2, 8802 Knollwood Dr., Eden Prairie, Minnesota 55347.



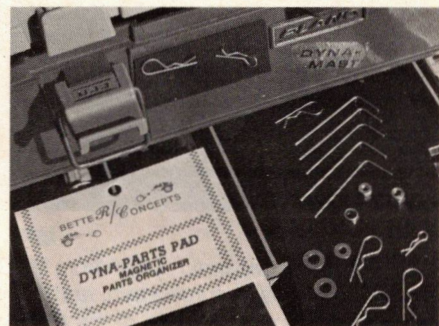
KYOSHO KS-88 SERVO

The compact dimensions of the KS-88 servo make installation in your R/C car a snap. The KS-88 is standard equipment with the Kyosho Pulsar Pro 2000 and the EXP 2001, and weighs a puny 1.6 ounces. Measurements are 1-9/16 inches by 1-7/16 inches by 3/4 inches. For a free Kyosho Mini Catalog, write to Great Planes Model Distributors, Box 4021, Champaign, Illinois 61820. Be sure to tell them you heard about their products in *R/C Model Cars* magazine.



FRONT STUB AXLES

These front stub axles are designed to mount stock Blackfoot/Monster Beetle tires on the Kyosho Ultima and Turbo ultima. They mount with standard 5x11 bearings. They're available from CRP.



DYNA PARTS PAD

Dyna Parts Pads are 3x6-inch magnetic sheets 1/16-inch thick with vinyl backing that you can use to hold small metallic parts while working on your car. When you put the small parts on the Dyna Parts Pad they will stay right there in front of you and won't get lost. A suggestion from the company for keeping your body clips handy is to cut a small piece of the Parts Pad and attach it to the front of your tool box. Every time you remove the body clips, just stick them on the small magnetic strip, and they'll be available to you when you need them, without searching frantically all over the lot as your heat is being called. You'll find even more uses for the Dyna Parts pad, so get yours now!



7-CELL HUMP PACK

Parma has introduced a new 7-cell hump pack using quality Sanyo SCR cells that have been computer matched for efficiency and consistent performance. The hand-

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soldered connections and a Tamiya connector mean you will have a hot performer on your hands. See the Parma packs at your local hobby shop.



CRP DIGITAL CHARGER

The new MOSFET Pulse Charger from CRP operates from an 11.0V to 13.5V DC battery supply and charges Ni-Cd battery packs from 4.8 to 8.4 volts, with capacities of 250 mAh to 4000 mAh. The charger uses pulsed charging current, and has a bi-color LED that flashes red when fast charging, and green when in trickle mode. The charger has a large liquid crystal display that clearly shows charging current in amps, fast and trickle; battery capacity; power source voltage and Ni-Cd pack voltage, even in bright sunlight. The battery's capacity is memorized even after the Ni-Cd has been disconnected from the charger. The new CRP digital charger sells for \$225.00, at your local hobby shop.

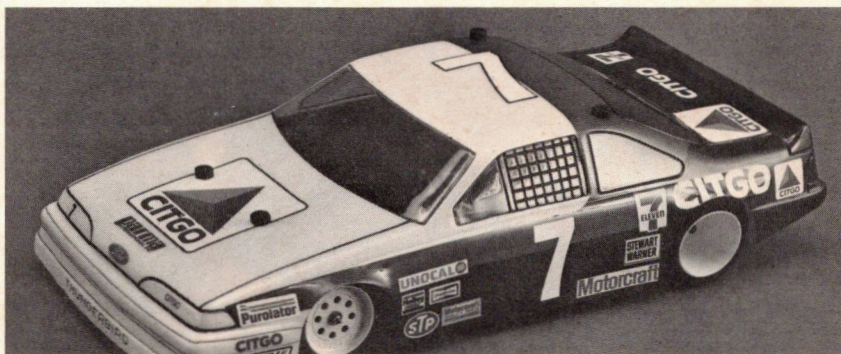


64-PITCH SPUR GEARS

Molded from tough nylon composite material, these new Parma gears are available in 98-tooth, 102-tooth, 106-tooth, and 110-tooth configurations. An exclusive drive ring carrier/grease pocket design allows smooth differential operation. Look for these new gears at your Parma dealer.

NASCAR BODY

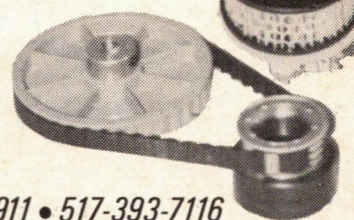
Parma's latest 1/10-scale NASCAR body is the new '89 Thunderbird. Available in clear Lexan, it captures the detail and realism of the full-size car. The body will fit most 1/10-scale cars with the use of the Parma Body Mounting Kit. Look for it at your Parma dealer.



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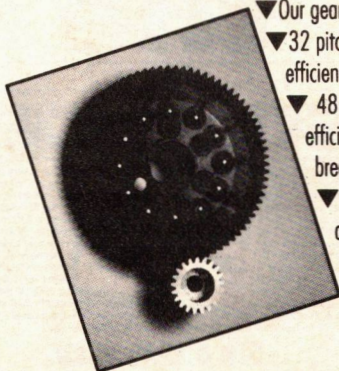
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Formula One Champ Likes R/C

Ayrton Senna, 28-year-old Brazilian and Formula One World Driving Champion shows how he relaxes after a race. Seen here in Australia following the Australian Grand Prix, Senna flies a radio-controlled airplane with friends. During the 1988 Grand Prix season, Senna sat on the pole with his McLaren racer a record 13 times out of 16 races, and won eight times. Maybe you R/C car racers should consider a little R & R at the flying field after a particularly tense main event. Just remember, your R/C car radio cannot be used on model aircraft frequencies!

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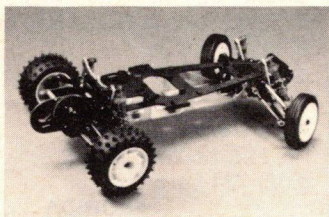


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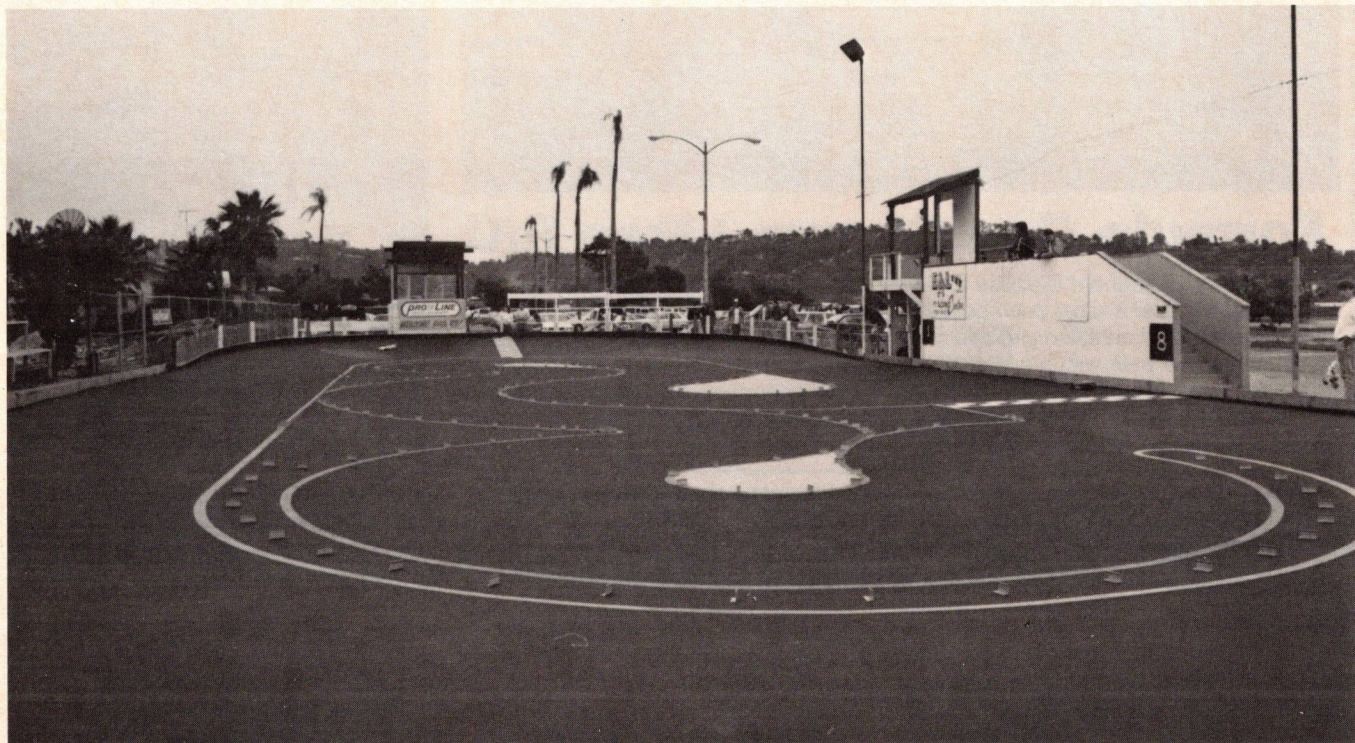
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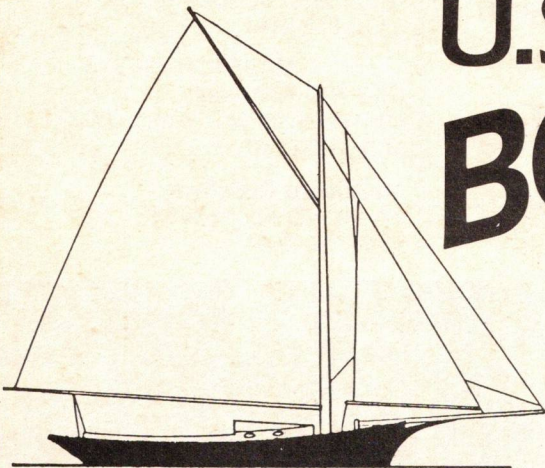
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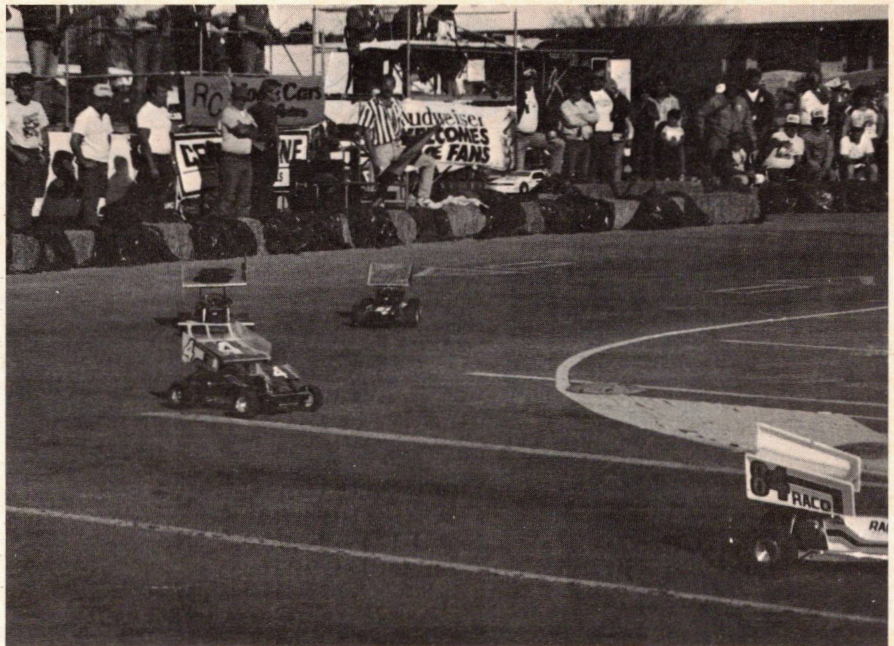
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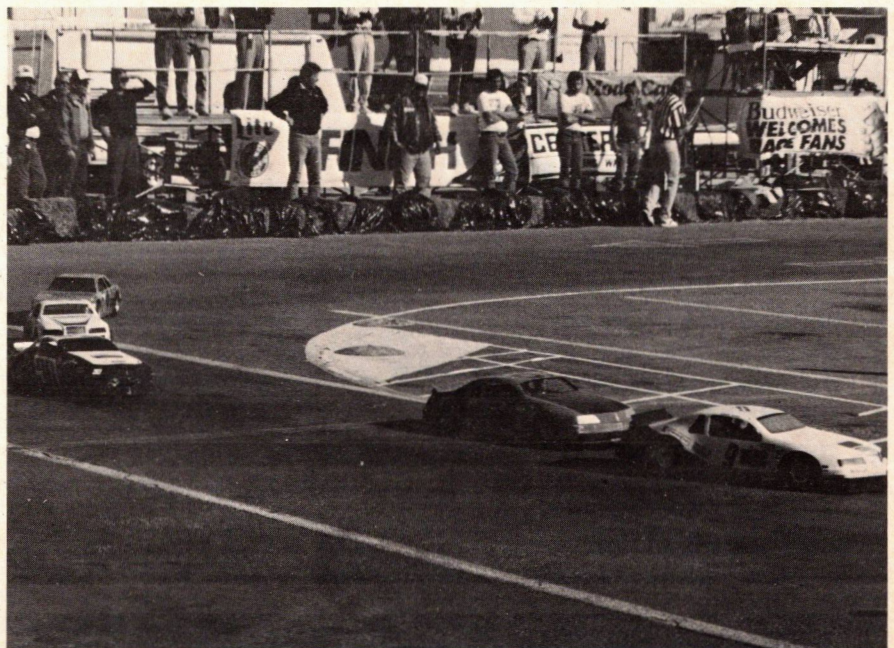
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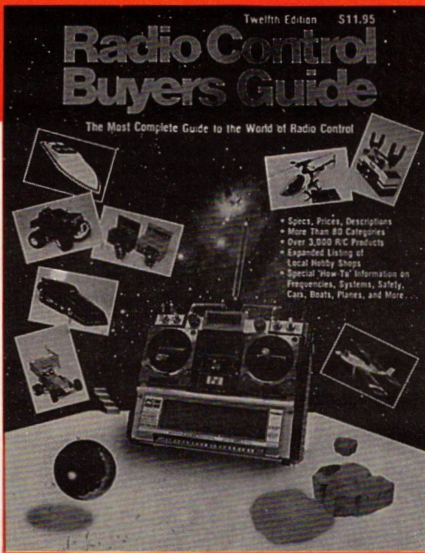
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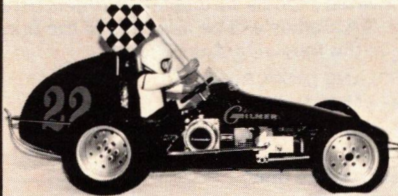
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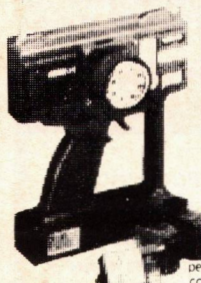
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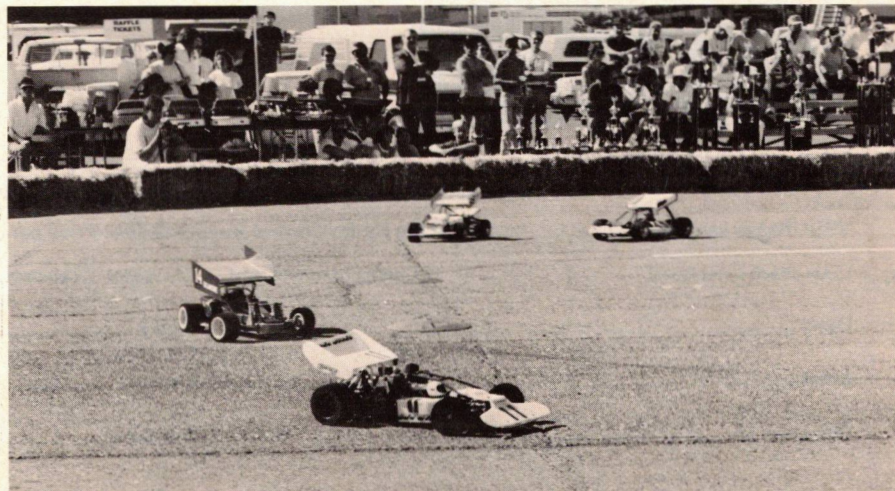
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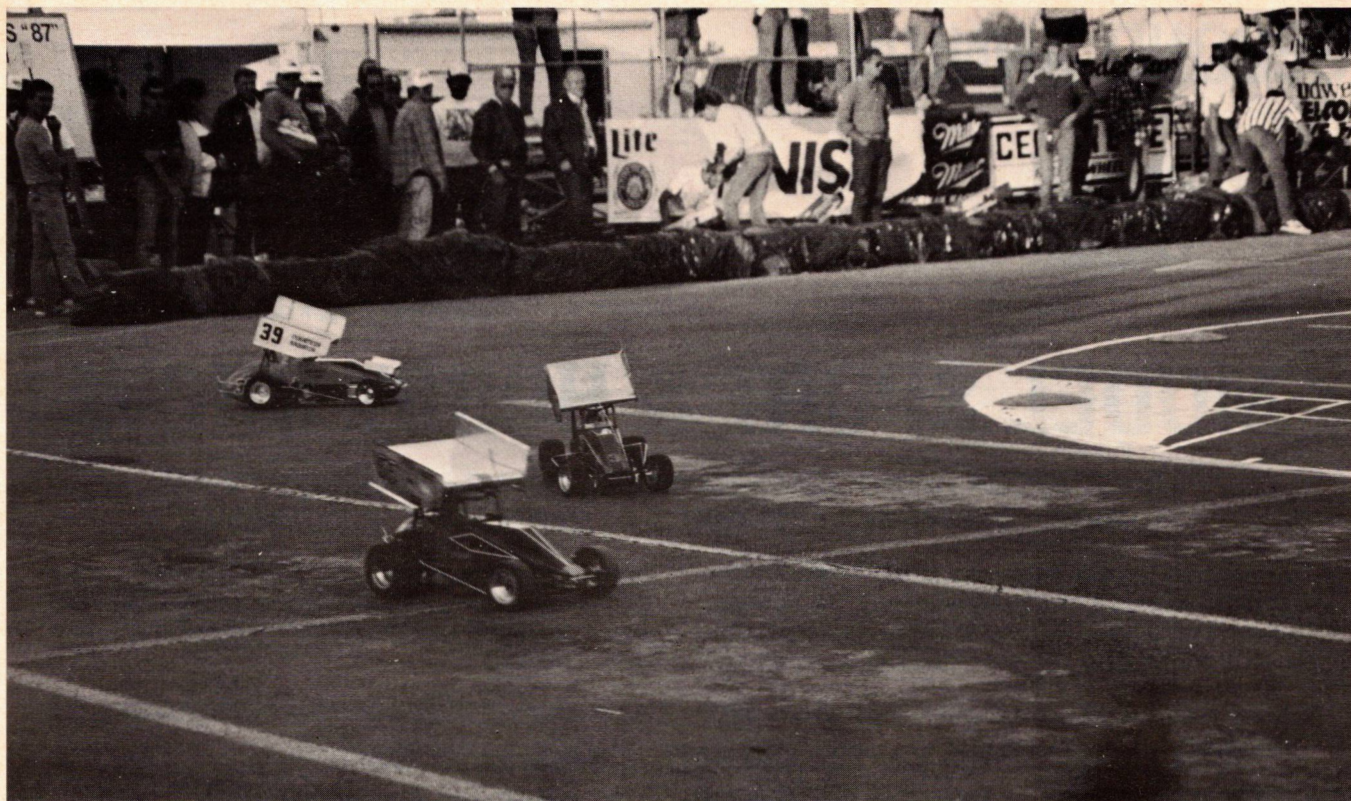
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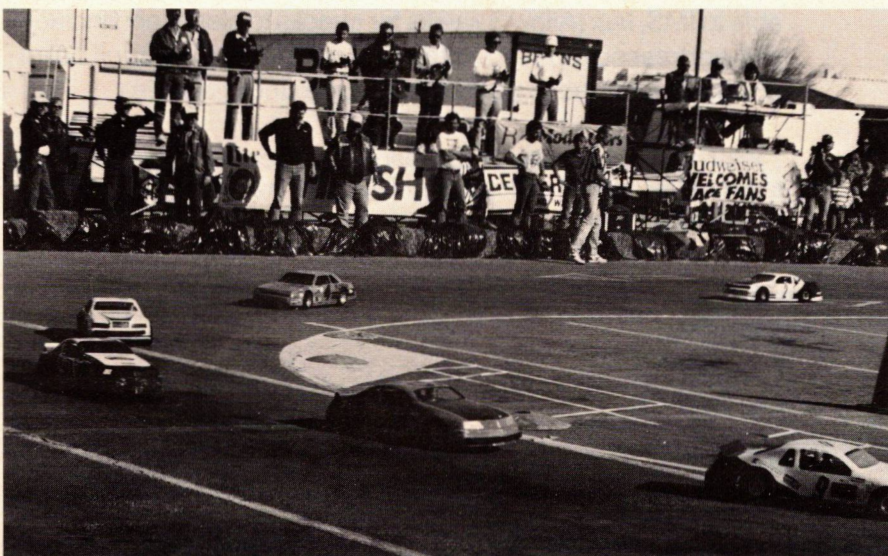
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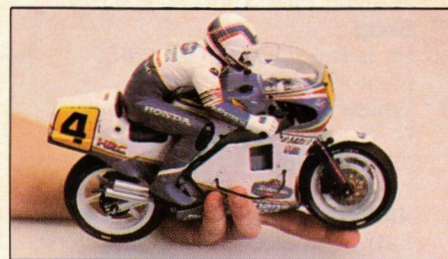
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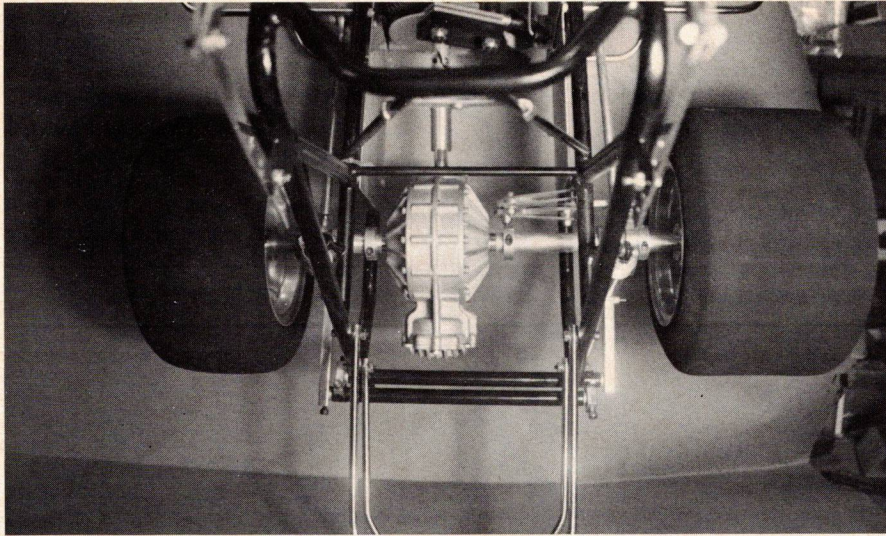
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Here's the WCM sprint car with the SECO Quick-Change Rear installed and ready to race.

The clutch housing on the engine will also be removed. Remove the wheels and tires from the rear of the car. These can go on the shelf with the body. Remove the bolts that hold the radius rod to the birdcages, the Jacobs ladder mount, the bird cage and the bolt that fastens the torsion bar mount. The shock mount must also be removed. With all that out of the way, drill new holes in the chassis for the new motor mounts two for top mount and two more for the lower mount. With the mounts bolted in place, trial-fit the engine and housing. You'll notice that the engine has now been rotated 90 degrees with the engine shaft facing the rear of the car. The engine is also tilted to the right. This allows the starter rope

to exit the side of the car and provides room for the exhaust manifold. There is a small metal part of the casting on the flywheel cover that will have to be removed for clearance. Remove the nylon housing from the engine and install the new clutch. With the new assembly bolted into place on the mounts in the rear quick change, take the quick change and install the axle shafts. Clamp on the collar provided on each side, over the pins.

The birdcage can now be positioned on the axle. Before installing the bird cage, slide on the collars that position the birdcage. These are the collars with the step in them. With the birdcage installed, slip the rear in place through the frame and slide

the splined shaft into the drive shaft. With this all in position, bolt the radius rods and Jacobs ladder back in place along with the torsion bar mount and shock absorber. The installation of the quick change housing is almost complete.

The throttle servo must be repositioned and some new linkage fabricated to actuate the new disc brake assembly.

The Skellenger knock-off (this is another accessory available from Skellenger Engineering) hubs were also installed. These slip on the axle and are held in place with a set screw. The knock offs provide a quick method of changing tires and wheels with one hex nut; the nut holds the rim in place instead of the five bolts found on each wheel.

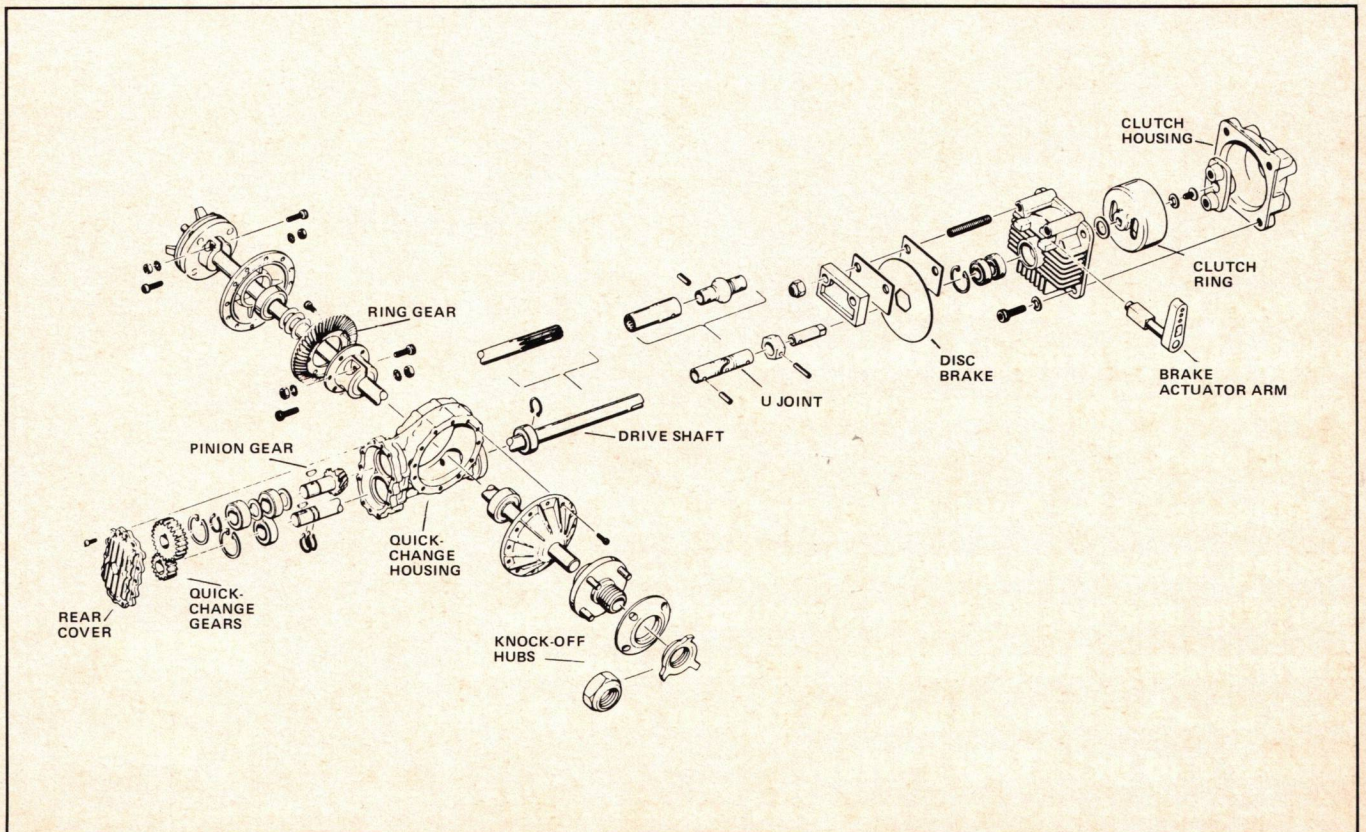
Before installing the tail you may have to cut a little clearance in the bottom of the tail for clearance of the quick change. Once this is done and the tail is installed you're ready for the races.

Before running the car, check the position of the torsion bars. A few adjustments may be in order with the new quick change rear.

The rear does make a difference. The car runs very stable, and the quick change rear gives you the flexibility of changing ratios very easy, without the worry of chains braking, belts jumping off hubs, or belts slipping due to glazing of the pulley and belt.

A great convenience both in performance and looks, and well worth the time and expense. Try one, you'll think it's great too!

Next month we'll look at the new Skellenger Front End Assembly for sport cars.

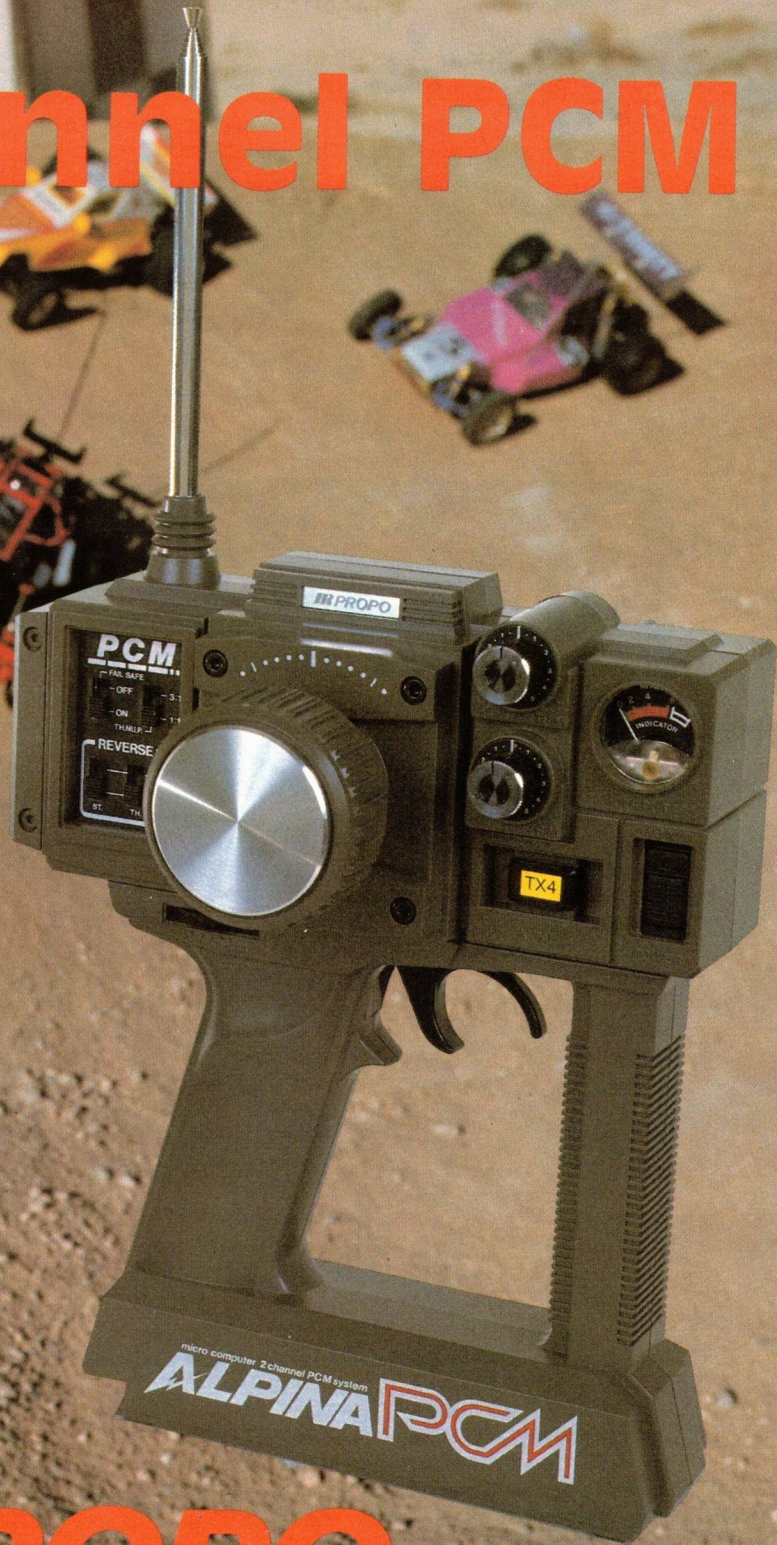


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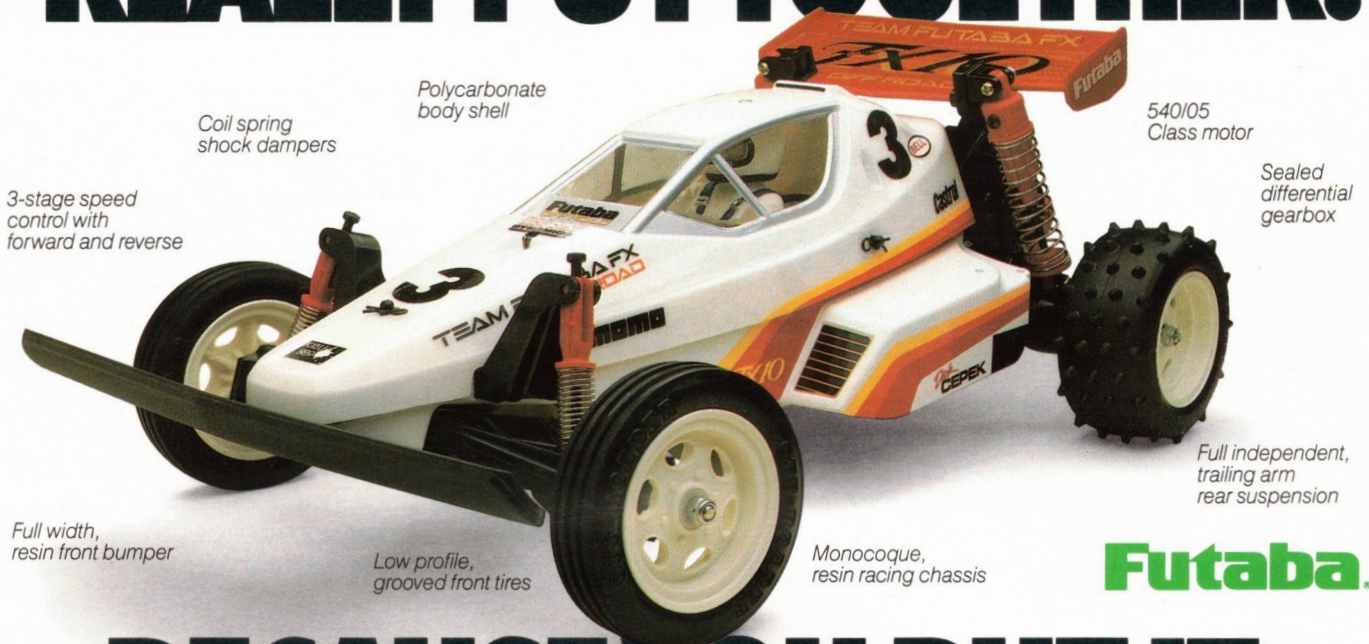
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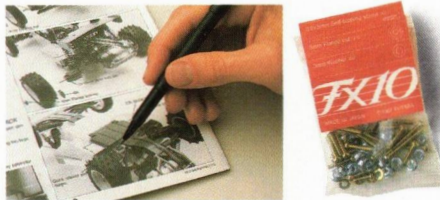
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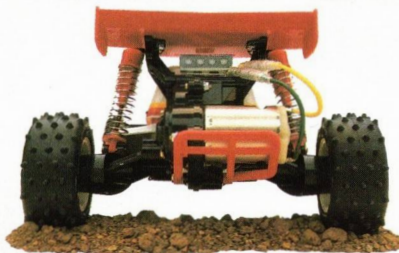
The FX10's step-by-step assembly



Detailed step-by-step instructions and coded parts make building fun.

instructions include over 60 detailed photographs. All the parts are packed in coded bags or precision molded on coded trees. Metric 4-way mini socket wrench, special grease, allen wrench and pre-wired resistor speed controller are all included.

The quick cure for building fear? It's the FX10.



Designed by pros, the FX10 comes with the largest engine legal for competition.

ALL TERRAIN RC.

When you've built your own FX10 you'll also be pleased to find out that its high speed performance isn't limited to the road or track.

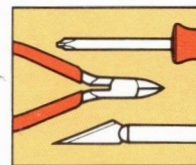
Four wheel, coil spring independent suspension and all terrain tires give the FX10 offroad capability. Trailing arm, full independent rear suspension provides optimum traction. And the FX10's sealed gearbox/differential delivers power to the wheels on all types of surfaces, from pavement to dirt and grass.



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