

1/12 U.S. INDOOR CHAMPIONSHIPS

MARCH 1989

Vol. 4, No. 38

RC ^{ADIO} CONTROL

Model Cars

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

CD 08658



FANTASTIC FINISHES:
PROFESSIONAL
PAINTING SECRETS



74820 08658

MORE NEW PRODUCT REVIEWS

Think fast.

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

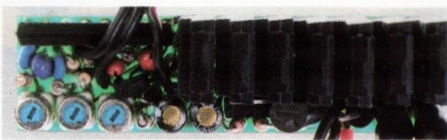
Airtronics speed controllers enable you to proportionally control the electric motor speed of your R/C car without the use of an extra servo.

State of the art componentry design and Airtronics' proven engineering technology assures you instant throttle control response and fast performance in less than 1/1000 of a second.

These compact, lightweight solid state units utilize MOS FET Transistors and feature Proportional Electronic Throttle Control and Battery Voltage Regulation.

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.

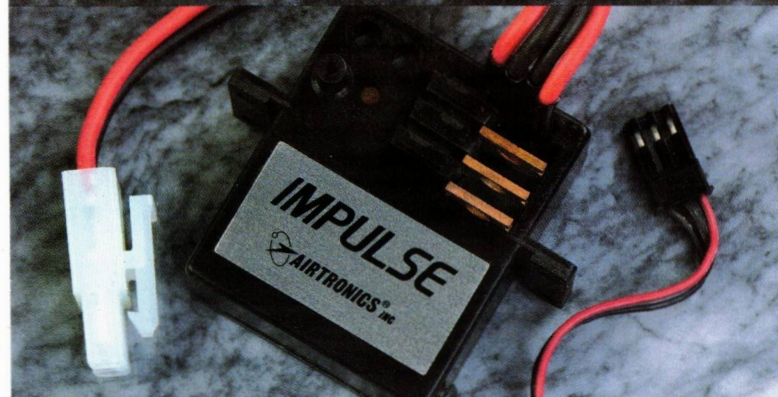
Specifications:

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.

At Airtronics, we want to be known as the best, not just the best known.



AIRTRONICS[®] INC

11 Autry, Irvine, CA 92718 (714) 830-8769

Airtronics' complete product catalog is available for \$2.00. Please send check or money order to Airtronics, Inc.

R/C PRODUCTS

Andy's®

The team at **ANDY'S® R.C. PRODUCTS** is dedicated to designing and manufacturing the highest quality, race tested performance products that are blowing away the competition.

The geometry of **ANDY'S®** arms is designed to extend the width of your car to meet the maximum legal R.O.A.R. requirements; wheel bases are also extended to maximize stability through rough areas and minimize "push" at high speeds.

NEW-ULTIMA WIDE TRACK FRONT ARMS

NEW-YOKOMO LIGHTWEIGHT FRONT & REAR ARMS

WINNING THE ARMS RACE

With the help and support of team associated and other top drivers throughout the world.

ANDY'S® arms have what it takes to win the race because quality and performance always count.

R/C-10 arms series shown actual size.

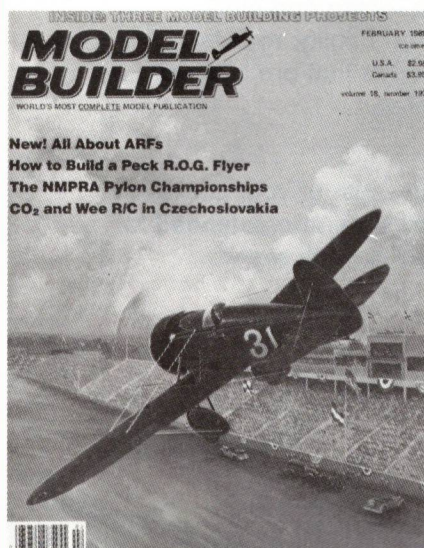
- SUPER LIGHTWEIGHT
- NYLON TOUGH
- RIGID
- PRECISION ALIGNMENT
- SLEEK DESIGN

Look for **ANDY'S®** signature on all **ANDY'S® R/C PRODUCTS!**

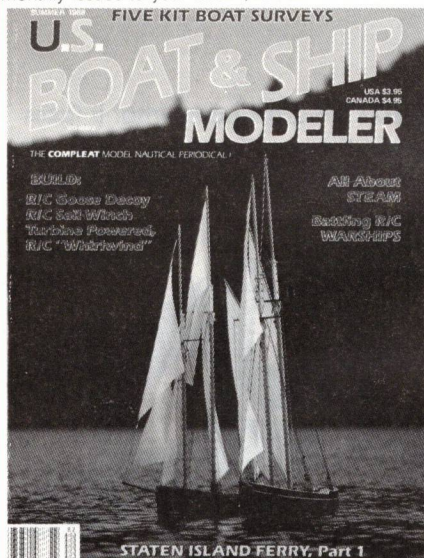
R/C PRODUCTS • 466 W. ARROW HWY., UNIT K • SAN DIMAS, CA 91773
(714) 592-4737

GIFTS FOR THE MODELER

Perfect Anytime of Year



MODEL BUILDER, the premier modeling magazine covering all types of aircraft modeling, from Peanut to Giant Scale R/C. A one-year subscription brings 12 monthly issues to your door. \$25.00.



U.S. BOAT & SHIP MODELER comes to you chock-full of construction features, interesting boat designs, the latest in product reviews, plus stimulating columns. Four quarterly issues, \$12.95.

- ☐ **MODEL BUILDER**, one year, 12 issues: \$25.00
- ☐ **R/C MODEL CARS**, one year, 12 issues: \$25.00
- ☐ **U.S. BOAT & SHIP MODELER**, 4 issues: \$12.95
- ☐ **UBER SKIVER SET**: \$16.95; individual knives, \$4.00 ea. Vial of 6 blades, \$4.00 ea. Minimum order, \$10.00
- ☐ **MODEL BUILDER BINDERS**, \$6.95 ea.; 3 for \$17.95, 5 for \$27.95. For shipping, add \$2.25 for one binder, each addl. binder, add \$1.00

NAME _____

ADDRESS _____

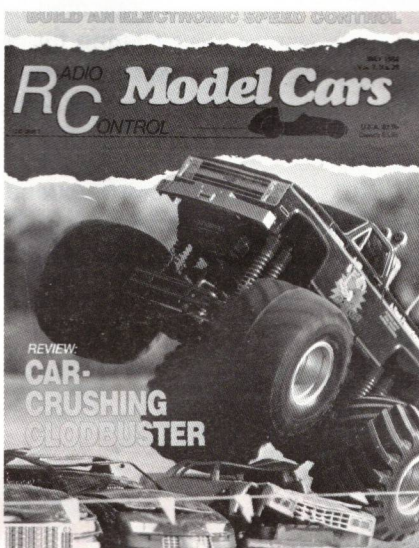
CITY _____ STATE _____ ZIP _____

Visa/MC No. _____ Exp. Date _____

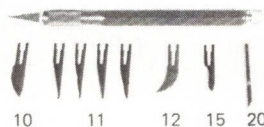
(Add 5% for credit card orders)

SIGNATURE _____ For foreign orders, write for details.

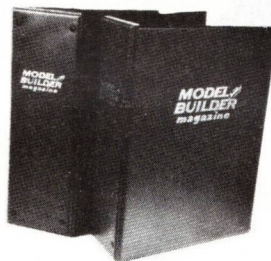
California residents add 6% sales tax. Mail to: RCMB, 898 W. 16th., Newport Beach, CA 92663



R/C MODEL CARS is the most popular radio-control car magazine, with feature reviews of new products, race reports, helpful hints, and Readers' Photos. Twelve monthly issues for only \$25.00.



UBER SKIVER KNIVES, the discriminating modeler's choice for the finest precision modeling knife with a variety of blades available. A complete set in a wood box, only \$16.95. Individual handles, only \$6.95 a vial of six blades is only \$4.00.



MODEL BUILDER BINDERS. Keep your precious copies of *Model Builder* safe and accessible with our exclusive binders. Each holds a year's volume of MB. One: \$6.95; three: \$17.95; six: \$27.95. Shipping and handling: one, add \$2.25, for each additional binder, add \$1.00

R/C MODEL CARS

STAFF

PUBLISHER
Wm. C. Northrop, Jr.

VICE PRESIDENT
GENERAL MANAGER
Anita Northrop

ASSISTANT GENERAL MANAGER
Dawn Johnson

EDITOR
Richard Dowdy

ACCOUNTING MANAGER
Robert Ruiz

SUBSCRIPTION MANAGER
Audrey Peterson

CONTRIBUTING EDITORS

STEPHEN BROWN

GENE HUSTING

GARY KYES

VERNON LEWIS

MIKE LIEM

ELOY MAREZ

WOODY TRIMBLE

ADVERTISING

Gordon Boudewyn
Advertising Accounts Manager
(619) 744-7337

Al Novotnik

4 Beverly Pl., Norwalk, CT 06850
Bus. Phone (203) 847-7478

Radio Control MODEL CARS (ISSN0887-4689) is published monthly by RCMB Inc., 898 W. 16th Street, Newport Beach, California 92663.

SECOND CLASS postage is paid at Newport Beach, California, and at additional offices. Subscriptions: \$25.00 per year, \$47.00 for two years. Single copies \$2.95. Subscriptions outside the US (except APO & FPO) \$38.00 for one year, two years \$68.00. All payments must be in US funds, drawn on a US bank. Copyright 1989 by RCMB Inc. All rights reserved. Reproduction without permission prohibited.

CHANGE OF ADDRESS notices must be received six weeks before date of issue that new address takes effect. Send old address with new, old label preferred. Duplicate issues cannot be sent. POSTMASTER: send address changes to R/C Model Cars, 898 W. 16th St., Newport Beach, California 92663.

RADIO Model Cars

CONTROL



CORPORATE OFFICE: 898 WEST SIXTEENTH ST., NEWPORT BEACH, CALIFORNIA 92663 (714) 645-8830

FEATURES

1/12 INDOOR CHAMPS 38

By Gene Husting
Shawn Ireland wins his first big race, indoors at Cleveland.

PARMA'S 1/10 PANTHER 46

By Woody Trimble
The 1/12 Panther's big brother is a credible road racer.

DESIGN FOR FUN 50

By Erich Heidemann
Architects get together for a convention and an IROC-style R/C race.

AIR POWER 54

Body painter Mike Ogle has created some eyepopping paint jobs, as this feature attests.

REGION II DIRT CHAMPIONSHIPS 62

By Gary Brande
The Southeast's big oval race attracted a big field of competitors.

A MAINTENANCE GUIDE FOR 1/10 ROAD CARS 64

By Stephen Brown
Things worth knowing if you want to be competitive in road racing today.

IMS RETURNS TO ATLANTA 66

The South's biggest model hobby show is back again, bigger and better.

OPTI-MYSTICAL 84

A reader's dramatic photo shows his 4WD racer in its best light.

DEPARTMENTS

AT THE WHEEL / Richard Dowdy 8

PITSTOP 10

READERS' PAGES 12

ANSWERMEN 20

RADIO 22

WORKSHOP / Eloy Marez 22

R/C 26

SPORTSMAN / Woody Trimble 26

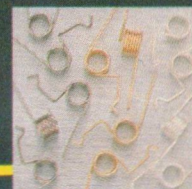
Cover: Artist Mike Ogle's fantastic R/C car paint jobs are featured this month in a portfolio of his best work. See page 54.





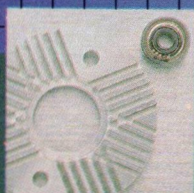
...On The Cutting Edge
Of Speed And Horsepower.

#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

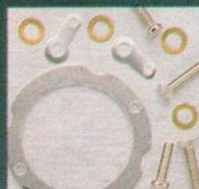


#4043 Motor Spacer,
#4031 Motor Bearing.

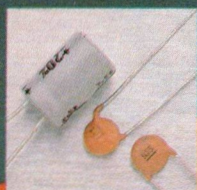
#0011 Sport Pack,
6 Cell Sanyo KR-1300SC



#4044 Motor Rebuild Kit.



#4011 Capacitor Kit.



Improvement. That's what it's all about. If you don't improve, you can't win. At Trinity we know this, we live for it! We have gone to the limits of state-of-the-art technology to design, manufacture and test products that can make you a winner. Motors, batteries and hundreds of other accessories that can give you that competitive edge. Stock or Modified, 2 WD or 4 WD, on road or off, novice or pro — let's face it, without the right equipment in your car, you might as well stay home.

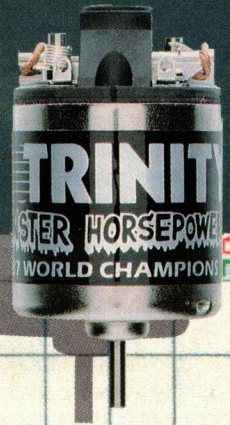
Nobody goes to the limit for you like Trinity. When you're looking to push back your limits, make improvements, and get your shot at winning, choose the high-tech leader in the world of R/C racing — choose Trinity!

MONSTER AND MONSTER HORSEPOWER ARE REGISTERED TRADEMARKS OF TRINITY PRODUCTS INC.

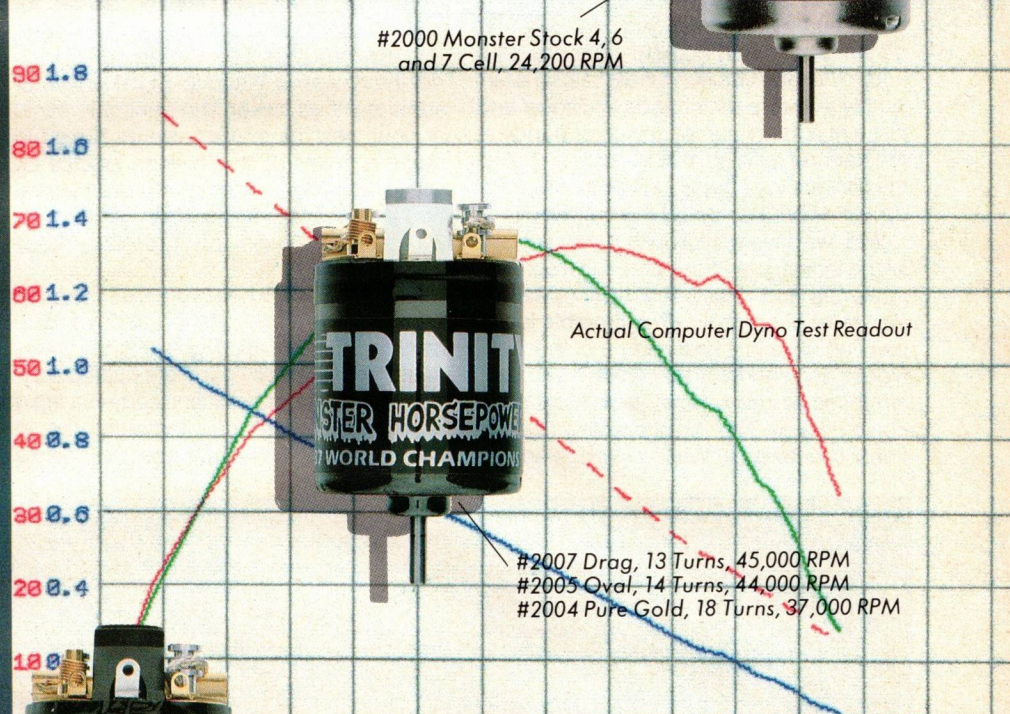
#5050 SCR 6 Cell Racing Pack
#5051 SCE 6 Cell Racing Pack



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



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



#2000 Monster Stock 4, 6
and 7 Cell, 24,200 RPM

Actual Computer Dyno Test Readout

#2007 Drag, 13 Turns, 45,000 RPM
#2005 Oval, 14 Turns, 44,000 RPM
#2004 Pure Gold, 18 Turns, 37,000 RPM

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
- #2011 Joel Johnson, 17 Turns, 39,000 RPM
- #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

TRINITYTM

WORLD CHAMPIONS

TRINITY PRODUCTS, INC.
1901 E. Linden Ave., #8, Linden, NJ 07036 • (201) 862-1705 • (201) 862-6875 FAX

© 1989 TRINITY PRODUCTS INCORPORATED

MAYBE IT'S COLD OUTSIDE

When you ask most R/C car enthusiasts what they enjoy least about building a new car, most will reply, "The painting!" It isn't hard to see why: laying thin slivers of tape down on convex curves on the underside of a Lexan body is a tedious operation at best. Is there anything more frustrating than to have spent an hour or so taping off a body till it looks like a mummy, then spraying it and pulling off the tape to find that the color has bled *under* the tape? It's no wonder many racers simply throw up their hands in disgust and just aim a spray can of any color handy at the car and let it go at that, hoping that all the stickers they apply to the top will cover up the shortcomings of the painter.

Well, we have a solution that may not take all the tedium out of painting, but it sure will make the end results much more satisfying. Most of us could do a credible job of painting if we just knew some of the techniques and shortcuts that artists use to create these stunning paint jobs. Most of us could do a credible job of painting if we just knew *how* to do it! While artistic talent will

carry the individual artist beyond most mortals' efforts, the novice can create a good-looking paint job if he or she is armed with the hot tips that can take the car body past the mundane to something to be proud of.

This month we present *Air Power*, the work of a professional body painter who isn't afraid to share his techniques. Artist Mike Ogle has been painting bodies for more than two years for major manufacturers, and now he's going to tell you how to do the things it takes to make your car stand out and sweep the concours event at your next race. Next month Mike will begin a series of step-by-step articles on how to recreate his special effects on Lexan. So this month enjoy his work; next month, we'll all get to work on mastering these tricks ourselves.

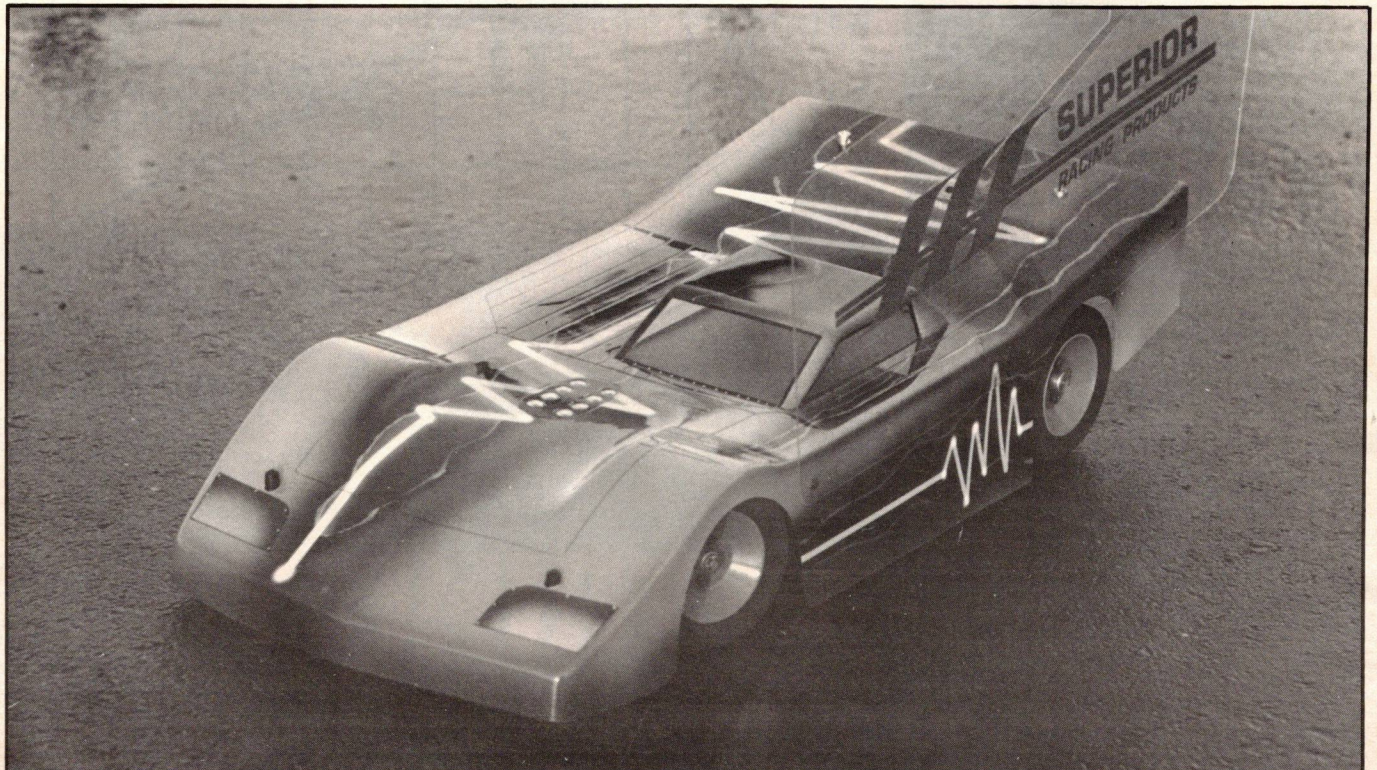
Is it still winter where you are? Even out here in (supposedly) sunny California we're having chilly days and nights that are downright cold, especially if you are outdoors trying to hold your transmitter steady in a frigid wind. Of course, our temperatures in California probably seem positively balmy

when compared to the ice-bound states back East and up North, but they still are cold enough to send most of us indoors.

Some of the hottest 1/12 racers in the country recently adjourned to an indoor track in Cleveland's Holiday Inn for the 1/12 U.S. Indoor Championships. When all the racing was over, a new champion emerged: first-time winner Shawn Ireland showed the way in the Modified class to take home the title and trophy for this prestigious event. Our Competition Editor Gene Husting was on hand to record the action.

Two other races are covered this month, a regional dirt oval race in North Carolina that was well-attended, and an interesting IROC-style race between identical MRC/Tamiya Hornets was put on during the Michigan Society of Architects' annual convention.

Also this month, we've expanded our coverage of new products; check out the What's New pages for the latest in R/C equipment available at your hobby store. Stretch out in front of a warm fire and take in this issue's bounty of goodies.



Fantastic Finishes, a new series on car painting, begins this issue on page 54.

JR-X2 TECHNOLOGY IS HERE!

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.

GIL LOSI JR.



BODY AND WING

Super tough and stylish Lexan® body shell form fits to chassis and covers the rear shocks for added protection from dirt.

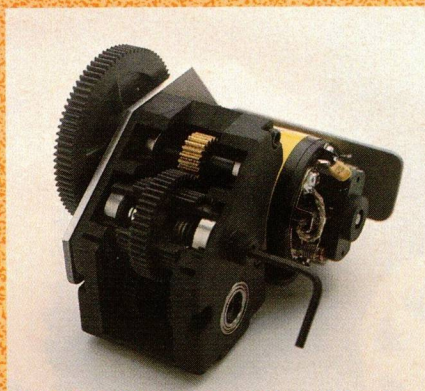


LOSI SHOCK ABSORBERS

Internally pressurized with hardened and microground shafts. Easy to replace pre-assembled cartridge and ultra smooth stainless steel springs.

LOSI 5 LINK SUSPENSION

The new LOSI 5-Link® rear suspension handles all types of track conditions ... features unique universal/slider drive shafts.



"ALL-NEW" JR-X2 TRANSMISSION

The JR-X2 is a dramatic winning edge. The L.R.M. (low rotating mass) gears are 48 pitch and molded from self lubricating materials specially formulated for low friction and durability. The 2.18 to 1 final drive ratio is lower than most others and allows selecting the correct gear ratios for the new breed of hot modified motors along with the proper ratios for stockers.

THE WINNING EDGE....!

A group of dedicated, performance minded, professionals working to develop quality products at a reasonable price. Team Losi supports their products with continuing testing, racing, and customer assistance. When you choose Team Losi you get years of World Championship experience and expertise. The JR-X2 is the new generation in 2 wheel drive performance. Team Losi has given you a kit that out of the box will give you the edge against other cars.



Patents Pending

TEAM LOSI 1655 E. MISSION BLVD., POMONA, CALIFORNIA (714) 620-0164

Dear RCMC,

This is my second letter to you. This one is totally different. The R/C track here is indoors at a local skating rink. It is used for a track only on Sundays, and they don't allow certain frequencies on your car. The rules are very strict. We don't mind but it seems as if your car is fast and is a winner they say your frequency is the wrong one. Also the more times you race the more money you pay them. They are raising the prices awfully high, almost too high for most kids to race. Now it is mostly grownups. I was wondering if you thought \$10.00 was too much for poor indoor racing. How could I build my own outdoor offroad track for 1/10 scale? This track would be for the kids who couldn't afford \$10.00 for a race. Please respond to this letter, it is very important. There once was an offroad track here but it closed. Your magazine is the best.

Shawn Smith
Springvale, Maine

Shawn: I think \$10.00 is too much for good indoor racing! If you want to build your own outdoor dirt track, get all those kids who can't afford \$10.00 to race and have them help you build a track. With some shovels, rakes, and hoes, you can do a

pretty good job of track making. Good luck, and send us some pictures of your track.—Ed.

Dear RCMC,

In your June, 1988 edition of *R/C Model Cars* you had a great article on the Tamiya Formula One cars. Well, I couldn't resist. I recently bought a Williams-Honda F.1 car and I am very pleased with its performance. Your helpful hints on front springs, tires, and lubrication of the gears was very helpful. I am sure that the information on the pinion gears will be tried out in the near future. But I have one problem! On page 52 the sidebar about the real racing wing made by Terra-Fire got my interest and I wrote a letter to Terra-Fire using the address in your article, and it was returned with "No Longer at this Address" stamped on it. Help! I am very interested in buying a couple of these wings. If you could supply me with a new address, or a phone number, I would greatly appreciate it. I would also like to know if the mounting hardware comes with the wing. I enjoyed the Formula One article very much, as I have many of your other articles. Please do a follow-up on this car. Here in the Southeast it is hard to find out

about anything other than dirt oval racing. Keep up the great work and keep these articles coming.

Steve White
Charlotte, North Carolina

Shawn: Terra-Fire Wings has a new owner, a new name, and a new address, but the wings are just as good as ever. Write to: Race Bros. Wing Company, 4521 Campus Drive, Suite 554, Irvine, California 92715. Phone: (714) 458-0808. We have a follow-up article on the F.1 cars in the works, with some new innovations for these Tamiya open-wheel cars, including a new aluminum heat sink/rear pod that will allow the use of a Hyperdrive or 1/12-scale ball differential in the car. Stay tuned for this and more hot tips for the F.1 car.—Ed.

Dear RCMC,

It was with great interest that I bought your December issue to read the report on the 1/12-scale Corally road racer. I was not disappointed by the writer's detailed and informative coverage of this outstanding racecar, which I have recently purchased, my choice based partially on the story I read in your magazine. Mr. Peters' helpful



CHOOSE YOUR WEAPON

You've dared to take the R/C challenge. Your mission is clear: Load your hottest car with high-powered Pro-Line tires.

Hit the trigger.

Now hold tight and watch the

fun go off.

See Pro-Line tires blast through racing's roughest battlefields; dirt, sand, asphalt, faster than a speeding you-know-what.

Their outer shell casing is

strong and tough, for dead-on durability.

And Pro-Line tires come in a range of styles, sizes, widths and tread patterns, each born to blow the other guy's doors off.

suggestions and insights made assembly much less a chore.

Malcolm McCassey
Tulsa, Oklahoma

Dear RCMC,

Roger Arndt saved my racing life! Let me explain: I bought a Kyosho Stinger, a 1/10-scale gas offroad car last summer, and I've really been impressed with it. Everyone who has seen it run comes up to me and wants to know what kind of car it is, and where to get one, and how much it costs. I really do like the car, but the only problem has been, who do I race against? I was even considering buying another one and then "loan" it to a friend so that I would have some competition! But in your January issue, Roger Arndt did a sprint car conversion article on the Stinger, and my mind was made up for me. I am going to get one of the Oval Racing kits and turn my gas-burning offroader into an oval zipper. You've given new life to my Stinger! I am definitely getting another one as soon as my conversion is done, then I'm going to go hunt up someone to drive the companion car against mine. I'll bet that as soon as the

other guys at the oval track get a load of a real gas sprint car, they'll line up for one too. Thanks, Roger!

Otis Pittman
Kansas City, Missouri

Dear RCMC,

You guys are really making it hard for me. I want to buy a new 1/10 racer for pavement racing, and I'm jettisoning my old RC10. Every month you have an article about another road racer, and I can't make up my mind what to get! Every time I think you've convinced me that the latest car you're reporting on is just right for me, I think that if I just wait one more month, there will be another car that might be just the thing I want. Tell me, what's coming? What should I do, buy now, or keep watching the magazine to see what is next, or just go buy a car?

Evan McConnell
Larkspur, California

Evan: Advising you to buy a car now or wait is kind of like what I used to hear every time I asked when we were going to get a color TV: "As soon as they've gotten the bugs out, then we'll buy one!" was the answer I got for years. So for years,

we didn't have a color TV! The same goes for a road racer. You can wait and wait, and undoubtedly there will always be something coming down the road that is tricked out and better than the previous car, but just think of all the great racing you're missing by not having a car at all! Coming up we have a review of the new Associated RC10L, the Checkpoint road car and who knows what else is just around the corner. Waiting may be wise to some degree, but you have to take the initiative and go for it sooner or later, so come on, join the fun!—Ed.

Dear RCMC,

Full-scale at Laguna Seca was great; I really liked the color pictures you had of the racecars. My suggestion is that you take some pictures of offroad cars, like the ones in the stadium races, or the Baja 1000 race. I have an Ultima, and I would like to see photos of cars like that so that I can make mine look more realistic. Keep up the good work.

Anand Pretta
Miami Beach, Florida



Likewise, Pro-Line accessories, from wheels to bumpers to bodies, have what it takes to zero in on the finish line.

So set your sights on surefire fun. Aim for your local Pro-Line dealer. Or shoot us a call for

more information. For our current catalog, send a check or money order for \$2.00 (U.S. Currency). If you would like more information on Pro-Line products designed to fit your favorite R/C car, include the make and model.

Pro-Line, P.O. Box 456,
Beaumont, CA 92223,
714/849-9781.

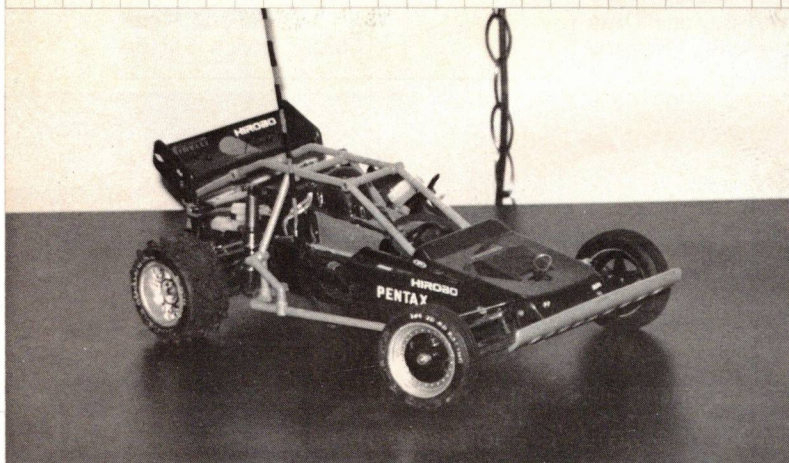
PRO-LINE
The Best Parts
Of Winning.

READERS!

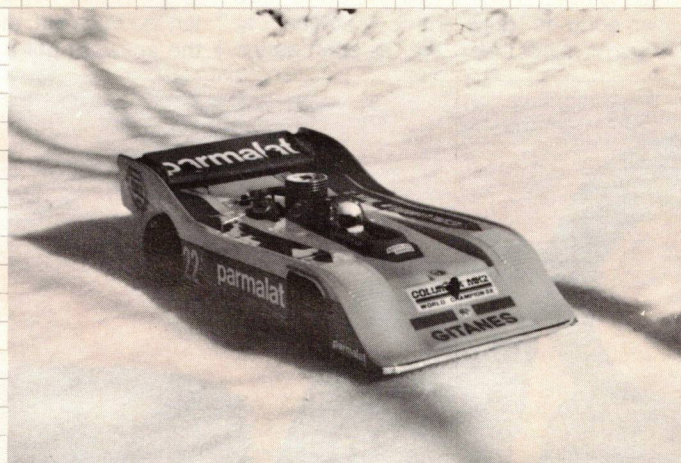
Here we go again with more photos from people just like you, except that they got off their couches and sent in a picture of their cars! You can do the same, just by sending a photo along with a little info on what is special about your R/C car or truck, to Readers' Photos, 898 W. 16th Street, Newport Beach, California 92663. Beware of imitations, void where prohibited. Each month you will have a chance to win a free subscription to R/C Model Cars, just by sending in a photograph of your car! Do it today!



Here's a winner--it began as a Cox Scorpion, but then Scott Rynard got ahold of it and now it's a replica of the Smith's Appliance super sportsman racer driven by Joey Kuhn at the Silver Springs Speedway. The car has an MRP body, a BoLink wing, and a Trinity stock motor. Scott says Joey was the '87 Silver Springs champ. Scott's a champ with us, and gets a free, one-year subscription to R/C Model Cars!



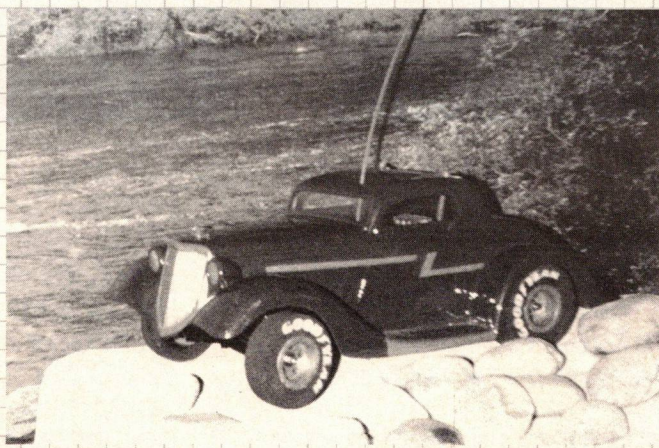
Mark Henning sends this shot of his Hirobo Tomcat. The 'cat uses a Magnum 480Z ball bearing motor with a belt drive that makes the car very quiet. Mark is from Kamloops, British Columbia.



This OPS gas-powered MKII sits snowbound in Toronto waiting for summer to arrive. Owner/driver R.J. Allen, of Toronto says his car has a body by Parma (Lola T530) and a Futaba radio system. Brrrr!

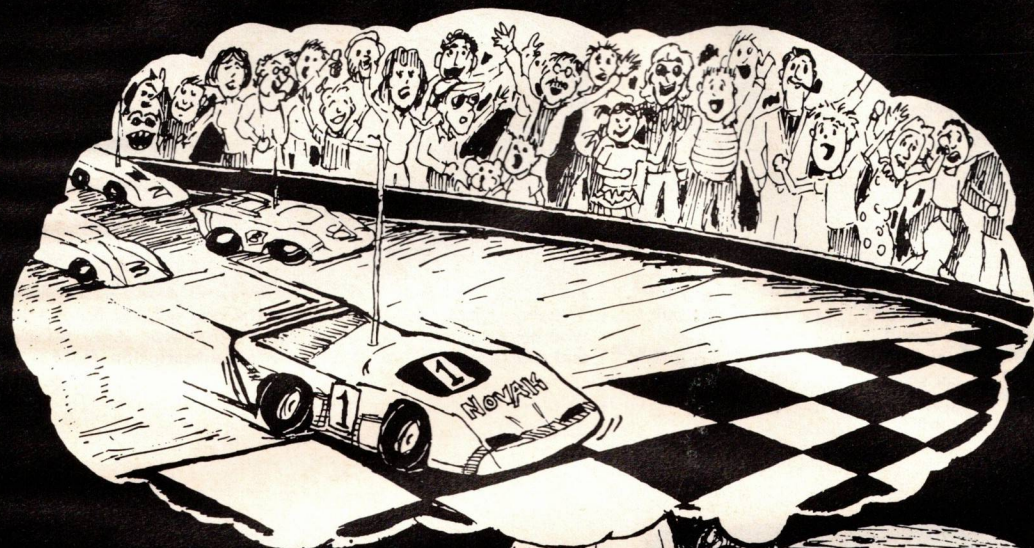


Dan Prutzal, of Punksutawney, Pennsylvania sends this chilly shot of his MRC Blackfoot with a Dodge Stepside body. Power is a stock 540 motor. Dan designed the rear bumper and driving lights, as well as dust conversion rims, bug shield, and side guards. Hot stuff!

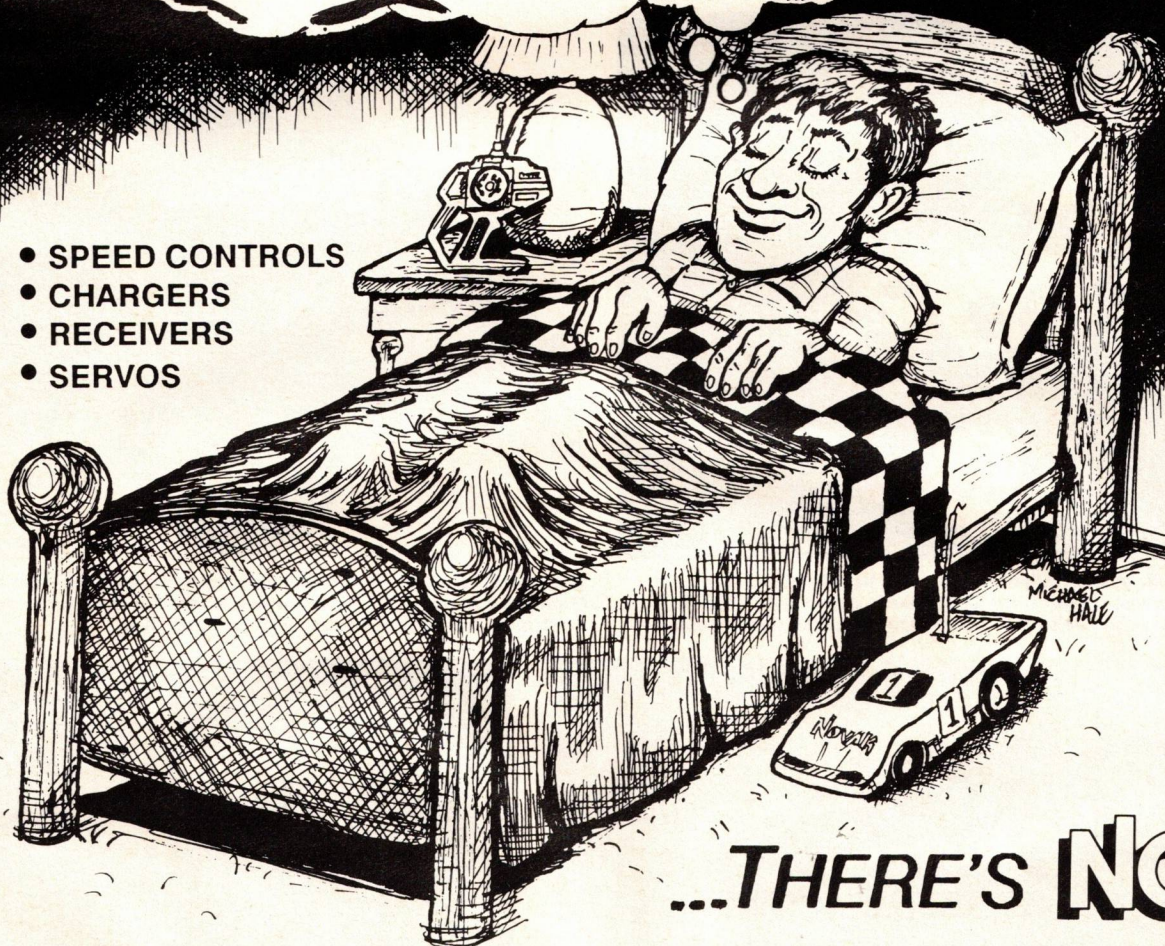


A fine '34 Ford Coupe body from Parma highlights this MRC/Tamiya Grasshopper from Jason Moore, of Danville, Kentucky. It has foam wheels, a 360ST motor. A beauty that's worth a free subscription!

*BECAUSE YOU'RE NOT THE ONLY
ONE WHO DREAMS ABOUT WINNING...*



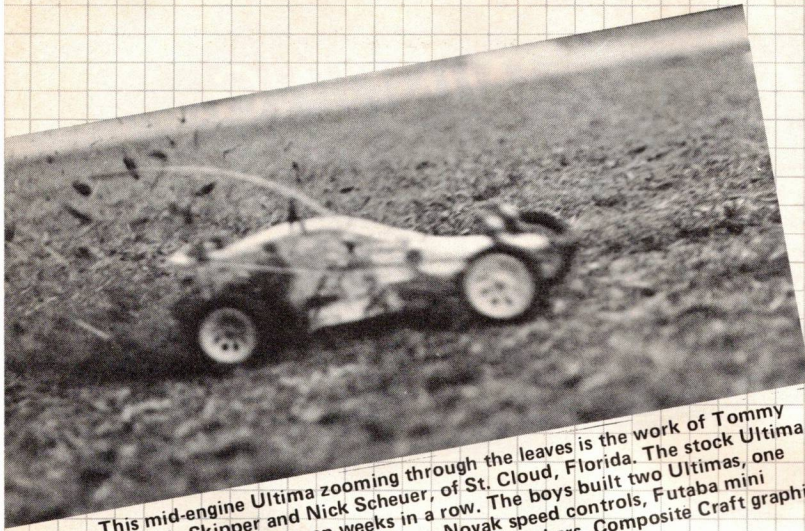
- SPEED CONTROLS
- CHARGERS
- RECEIVERS
- SERVOS



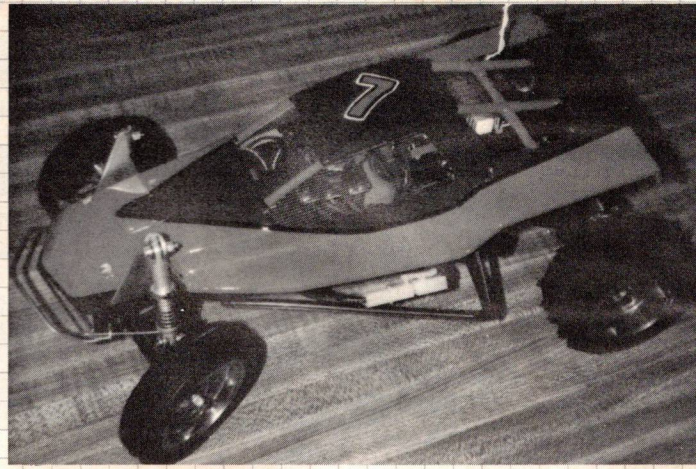
...THERE'S **NOVAK**

NOVAK
ELECTRONICS

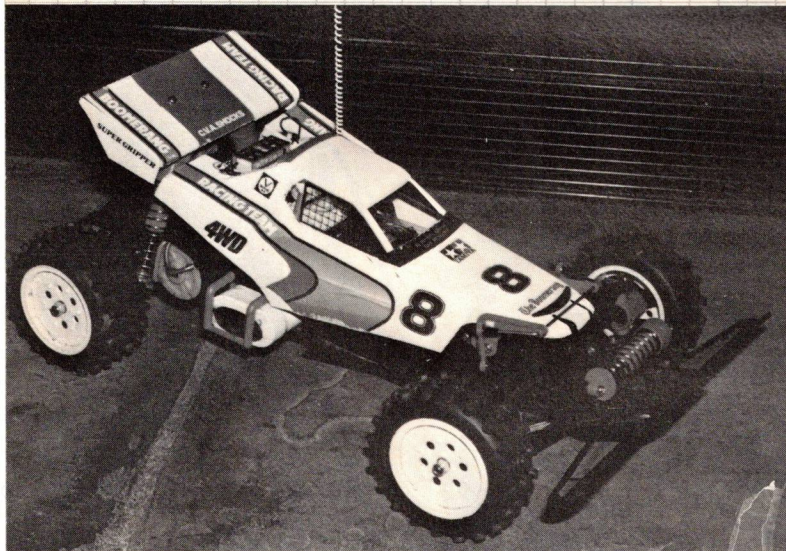
1988 Cleveland 4-Cell Race Results:
Shawn Ireland: Modified Class Winner and
Dwight Smith: Stock Class Winner using
NOVAK Speed Controls & Receivers.



This mid-engine Ultima zooming through the leaves is the work of Tommy and Dale Skipper and Nick Scheuer, of St. Cloud, Florida. The stock Ultima has won first place seven weeks in a row. The boys built two Ultimas, one stock, and one modified. Both have Novak speed controls, Futaba mini servos, Option House front and rear stabilizer bars, Composite Craft graphite chassis, and Revolution and Checkpoint motors.



The World Engines Rock Buster is the first R/C car for Bob Manning, who has modified it with bearings, a 540 motor, body modifications, and a custom paint job. You get a free subscription, Bob!



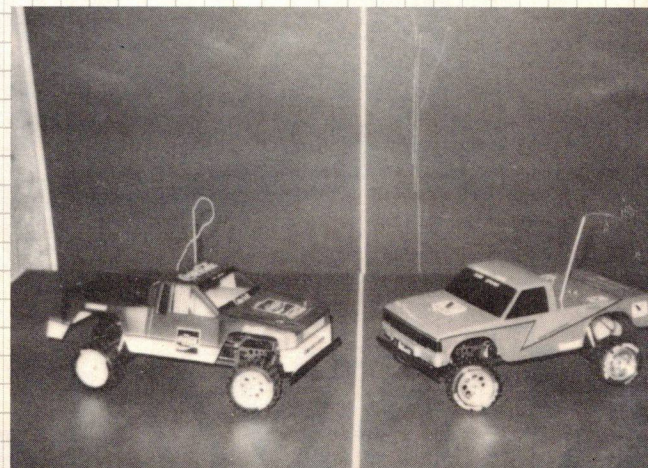
Dan Chripczuk, of Glen Ellyn, Illinois, says he calls his car the Cool White Boomerang. He got it for Christmas and says it's the fastest car on his block, and he's planning on racing it at the track. Do it!



Kevin McGuckin, of Taylor, Michigan, says his '53 Ford from the Midnight Pumpkin kit is mostly stock except for the custom paint, pinstripes, and chrome wheels. Run 'em over, Kev!



A free subscription to Robert S. Quiliza, of Artesia, California for this Monster Beetle with a McAllister SR5 body. It has a Revolution Super Stock motor, a Futaba speed control, and full bearings. Congratulations!



The blue and white Toyota with the Celebration chassis belongs to Ken Cope, and the blue and yellow car belongs to Rich Rudysill, of Big Rapids, Michigan. Both are the fastest cars where they race, and they have a team called Team Optima, and challenge anyone to a race. Anyone want to take on the Optima and Javelin?

25 YEARS OF WINNING SERVICE TO THE HOBBY INDUSTRY



Drag racing fans will appreciate Parma's new 1/12 scale Plymouth Arrow funny car body (#1965, \$15.00). Available in clear, this body is a beautifully scaled replica of Don Prudhomme's World Champion drag racer, now owned by Parma International. This body has a longer wheelbase than standard 1/12 scale road cars, and will fit most 1/12 scale funny car chassis available at this time. Ask your Parma dealer which of our body mount kits you need to mount your new body!



Parma's new 1/10 scale Penske PC-17 body (#10278, \$19.00), is bound to put a sparkle in the eye of Indy car fans! Accurately reproduced in clear lexan and including the rear wing, Rick Mears' '88 Indy 500 winner will make any 1/10 scale on-road car look like a million!



Parma's newest 1/12 scale body is the '88 Pontiac NASCAR (#1960, \$11.00). Molded in clear lexan with superb detail, this body is sure to be a big hit with oval racing fans! Also shown, are new adhesive wheel discs available in both 1/12 (#5500, 16/\$3.60) and 1/10 scale (#17005, 16/\$3.50). Supplied in white with an excellent adhesive, they can be painted to match your car's paint scheme!

parma NEW PRODUCTS No. I



Parma is proud to announce the introduction of their newest fast electric boat kit, the Follansbee Hydro. Available in three kit versions; basic (#20013, \$79.50), deluxe (#20014, \$129.50) and supreme (#20015, \$189.50). This 1/10 scale beauty features a revolutionary lexan construction for strength, durability and flexibility in painting design. Create your own waves with Parma boat kits.



New tires from Parma! Shown above left are Parma's new pinspiked monster truck tires (#12042, \$18.00/pr.). Designed for superior car crushing traction. They fit Blackfoot/Monster beetle-type rims above, right are new Yokomo replacement tires (#12038 soft, \$12.00/pr.) and (#12039 hard, \$12.00/pr.). Make your choice based on track surfaces and conditions. Either type is bound to give you biting competitive action. They fit 2"-2 1/8" rims, and are available now at your local Parma dealer.



Parma's newest 1/10 direct replacement body is for the Tamiya Grasshopper II, (#10283, \$13.00). Available in clear, it replaces the styrene version included with the kit. Enjoy the easy painting and impact resistant qualities of lexan with this and many other bodies now available from your local Parma dealer.



Parma adds six more decals to the already extensive collection! From left to right are . . . Sunoco (#10652, \$3.50), Campbells Soup (#10650, \$3.50), Wiseco (#10649, \$3.50), Texaco (#10651, \$3.50), Zerex (#10648, \$3.50) and Purolator (#10647, \$3.00). These high quality Parma decals add the finishing touches to any car. When it comes time to detail your next concourse winner, insist on the winning finish that Parma decals give you!



Parma is pleased to announce the release of their 1/10 scale '89 NASCAR Thunderbird body (#10276, \$19.00). Available in clear, it captures the detail and realism that Parma's bodies are famous for. This body fits most 1/10 cars with the use of a Parma tall body mount kit (#10453, \$6.50). Have you driven a Ford lately? If not, visit your local Parma dealer for a "test drive."



New accessories from Parma include above left, 64 pitch spur gears, available in 98 tooth (#17310, \$4.00), 102 tooth (#17311, \$4.00), 106 tooth (#17312, \$4.00), and 110 tooth (#17313, \$4.00) counts. Also shown are Parma's precision machine steel 64 pitch pinions (#6020-A thru #6020-O, \$4.50). Convenient storage of all small parts can be had with Parma's small parts container (#463, \$1.25). On the right are Parma's new narrow front tires for the Schumacher Cat (#12035, \$8.25). These tires fit Schumacher and similar sized front rims. All are now 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 Car.

- Disassemble & clean entire motor.
- Computer balance your armature.
- Diamond true your commutator.
- Remagnetize your magnets.
- Dyno-test for maximum R.P.M. and minimum amp draw.

PLEASE INCLUDE EXTRA FOR FOLLOWING

- New Motor Brushes \$3.50 pr.
- New Motor Springs \$2.00 pr.
- New Motor Bearings \$6.50 ea.
- New Armature \$30.00
- We pay shipping inside N. America! Outside N. America add \$3.00 postage

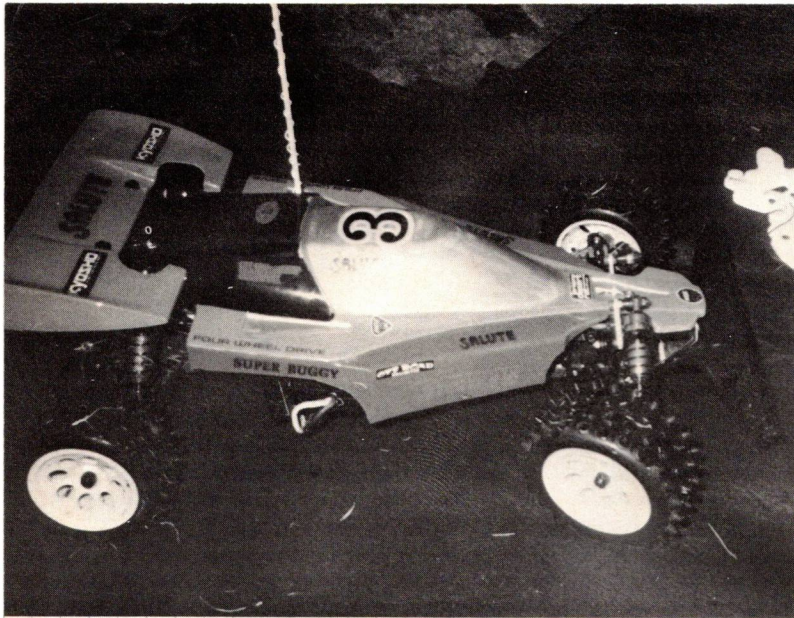
ARMATURE SERVICE ONLY

- Armature tune-up Inside N. America \$5.00
- Outside N. America add \$1.00 postage

SEND \$2

FOR A FULL SET OF COLOR CATALOGS & 1/10 BODY POSTER

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



"My name is Wayne Lousteau and this is my Salute. It has a Trinity Sprint motor and a Magnum Jr. radio. I live in Mandeville, Louisiana where I race my Salute at the Performance Hobby track."



This '67 Camaro body masks a modified Fox underneath. It is the work of Greg Matuson, of Coatesville, Pennsylvania who says his car has 14 ball bearings and a Trinity offroad stock motor.



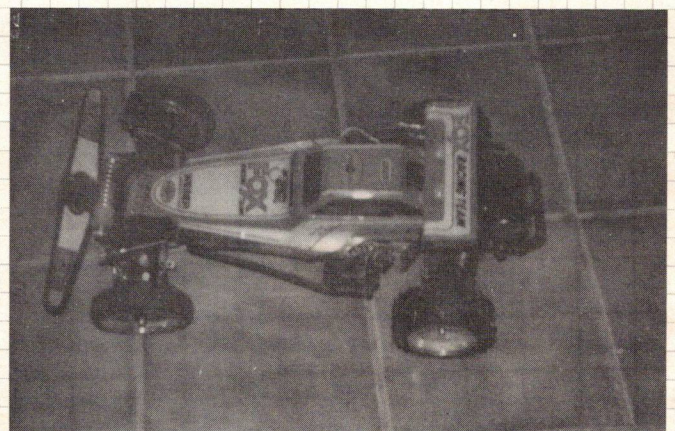
Duffy Squier, from La Canada, California sends this shot of his souped-up Grasshopper with a Rev-Tech superstock motor, a CRP front bumper, and a Parma Stinger body. Duffy says he and his friends like to race on his track, and that the mag is rad.



This RC10 driven by Jerrod Pickle is part of the Pickle's Hammer Down Racing Team. The car is tricked out with a Victor speed control, polished Centerline wheels, a cut down chassis, and a hopped-up Trinity motor. Jerrod lives in Bakersfield, and says he's won or come in second in every race he's entered. Yoww!



Exploring the wonderful world of camouflage photography is Chris Searles, of Ontario, who says his new, improved Ninja has a Novak speed control and a Revolution motor.



James Revel's Fox has a RX540 Black Endurance motor, front sway bars, all-metal gears, and a Futaba radio system. James is from Poughquag(that's what it says!), New York.



BODY LANGUAGE!

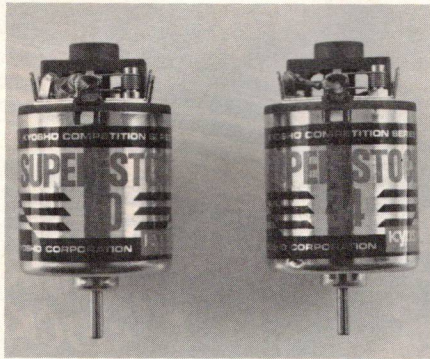
We're talkin' SPEED... we're taikin' OUTRAGEOUS... we're talking about the latest look of "Today's" racing.

McAllister Racing is always on the leading edge of what's current in full scale racing, bringing scale realism to RC cars. All bodies pictured are 1/10 scale.

Send self-addressed, stamped envelope and \$1.00 for complete catalog to...
MCALLISTER RACING
 2205 FIRST ST. #107
 SIMI VALLEY, CA 93065

McAllister

AT HOBBY SHOPS NATIONWIDE



KYOSHO SUPER STOCK MOTORS

Economical high-powered performance is what you'll get from the new Kyosho Competition Series motors now available. With dynamically balanced rotors, diamond-trued commutators, high-strength wet magnet design, and a one-piece motor casing that concentrates magnetic flux for maximum power, these 27-turn, single wind Stock 20 motor's timing is set at 20 degrees, the ideal setting for total power on tight courses. The Super Stock 34 motor has a 28,000 rpm peak and 34-degree timing, perfect for high top end and all-out racing. These new Kyosho Competition Series motors are available now at Kyosho dealers nationwide. For more information, write Great Planes Model Distributors, Box 4021, Champaign, Illinois 61820.



PARMA CYCLONE MOTORS

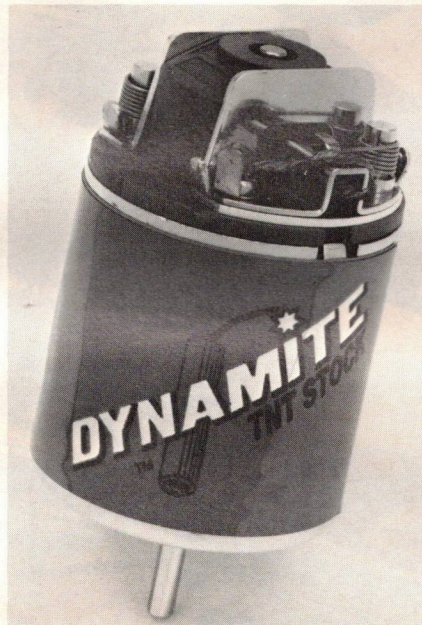
ROAR-approved, these powerful Parma motors are available in 12 different winds for all types of competition. Look for them at your nearest Parma dealer.



NERON DYNA-METER

The new Dyna-Meter from Neron Associates can measure relative rpm at the wheel hub through the drivetrain. This direct-

connect tachometer can also check the condition of motor brushes, and identify top-performing motors. It also is handy for adjusting pinion gear tension, and can identify the peak electronic speed control setting. The Dyna-Meter sells for only \$29.95, and is available at your hobby dealer. For more information, contact Neron Associates, Box 348, Germantown, Maryland 20874.



DYNAMITE TNT STOCK MOTOR

This Yokomo-design motor uses a heat sink endbell for thermal efficiency and comes with brushes fully broken in for power right out of the box. Based on the most popular stock motor design in the country, the Dynamite motor uses a full 18 degrees of advanced timing to achieve its high-rated horsepower. The Dynamite TNT motor is available from hobby dealers nationwide, distributed by Horizon Hobby Distributors.



LOSI TURNBUCKLE LINKS

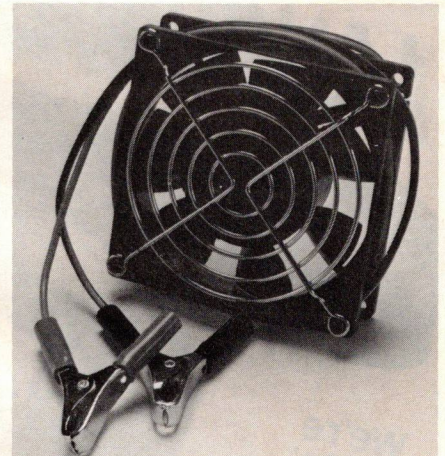
The new Turnbuckle Links from Team Losi can be used on the JR-X2, RC10, Optima, and other dirt cars to make fine tuning of the suspension easily and quickly. The new A-1009 link is 1-1/2 inches long, and can be used for steering links or upper control links. The A-2005 link is 1-1/8 inches long and is ideal for rear links or when a shorter

link is needed. The 4-40 thread fits most popular ball links. Also shown are the heavy-duty balls and ball cups. All items are available separately at fine hobby shops everywhere.



BUD'S WING MOUNTS

These wing mounts are designed for attachment to the rear shock tower, with a set screw to hold the mount in place. The mount may also be used vertically on 1/10 and 1/12 onroad cars. For a catalog, send \$1.00 and a SASE to: Bud's Racing Products, Box 601, Amherst, Ohio 44001.



12V FAN

This 12-volt electric fan connects to any DC source to provide cool air for heatsinks on chargers or dischargers. This handy fan will prevent overheating of your expensive charging equipment, and it's available from your favorite CRP dealer.



PARMA DECALS

New decal sheets include Citgo, Endless Line, and Silk Cut. These high-quality colorful decal sheets are available at your Parma dealer.

Hot New Product

Gold Dot Tires

High Traction Low Wear

1/10 1/12 1/8 1/4 Sizes

Send \$1.00 for our catalogs



Manufacturers of highest quality 1/4th, 1/8th, 1/10th, 1/12th scale model racing equipment

Delta Manufacturing, Inc.

27 Racecar Court

Lorimor, IA 50149

(515) 763-2271

FAX ONLY: 515 763 2272



JOIN THE TEAM !

BRIGHT YELLOW
"HANES BEEFY T" SHIRT: \$8.00

YELLOW & WHITE
"TEAM" HAT: \$6.00

ADD \$2.00 SHIPPING.

CALIF. RESIDENTS
ADD 6% SALES TAX.

AMOUNT ENCLOSED: _____

NAME: _____ ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____ PHONE #: _____

MAIL TO: CRP, 3250 EL CAMINO REAL B-3, ATASCADERO, CA. 93422 (805)466-6945

METHOD OF PAYMENT: CHECK, MONEY ORDER, VISA, MASTERCARD.

☐ Visa ☐ Mastercard

PLEASE ALLOW 4 to 6 WEEKS FOR DELIVERY.

Card No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

SHIRT SIZE: (adult) SM. MED. LRG. X-LRG

CARDHOLDER SIGNATURE: _____ EXP. DATE: _____

ABOUT ROAR & CATS & BUSTERS

Dear Answerman,

I would like to know which motor is better, a Reedy, Twister, or a LeMans? Also, which is better for competition, a Turbo Optima, Kyosho Ultima, or a Tamiya Fox? Thanks.

Bryan M. Ontario, Canada

A. Reedy and Twister are two of the top modified motor builders in the world, and their custom hand-wound motors are considerably better than the machine-wound LeMans motors. However, there is more to choosing a motor than just the manufacturer, as most motor suppliers have a line of motors for specific applications (2WD or 4WD, oval or offroad, etc.).

As far as the cars are concerned, which racing class do you plan to compete in? The 4WD Turbo Optima is a good 4WD car, but the Turbo Mid Optima is an even better racer. Likewise, the Turbo Ultima is vastly superior to the standard Ultima. The Fox is a good entry-level car that will get you off to a good start in 2WD offroad racing.

Dear Answerman,

I'd first like to say that I LOVE your magazine. I read it the second I get it from the mailbox. Remember the Thundershot article in the August issue? Well, it helped me out a lot. I made a decision between about five different cars by reading that article.

The question that I want to ask is do you feel that the Thundershot is a good, stable car? I put a Diamond 4 in place of the stock engine and it really performs. I feel it's a good car but everybody puts it down. Why?

William T. Brewer Poughkeepsie, NY

A. A lot of racers feel that a race car isn't good enough unless it wins the big races, like the Nationals or the World Championships. But if you're perfectly happy with your car, who cares what others think? The Thundershot is one of the better 4WD cars from Tamiya, and I know of a lot of T-shot owners who feel the same way you do about their cars.

Dear RCMC,

I'm interested in racing in the U.S.A. Would you kindly give me some information on how I could obtain a ROAR race schedule and information on amateur races in Canada and the U.S.A.? I would be most grateful for your assistance.

Glenn Van Speybroeck Kitchener, Ontario
A. Write the ROAR Information Center (P.O. Box 1536, Lawrenceville, Georgia 30246-

1536) to find out about racing in your area. Your ROAR regional director should be able to give you all the info you need. Good luck and good racing!

Dear RCMC,

I am a twelve-year old boy who is telling other people with Schumacher Cats not to give up on building and maintaining them. After you get your Cat tuned up and ready to run, you'll be very satisfied that you took the time to fix it. Believe me, I know. I have a Schumacher Cat XLS with a Novak speed control (1X), servo and receiver, Revolution "Insane" motor, Aerotrend sealed ball bearings, and the Speed Connection differential. When I race my Cat against my friends, I blow away their "toys." So far I've beaten an Optima Mid, two Turbo Optimas, an RC10 modified, and a Stinger MkII with an OS CZ-R gas engine. The closest one that ever came to my car was the Stinger, and I still beat it. My car only lasts about 3 minutes, but it's worth it. I only have one question. Can anything beat the Schumacher Cat XLS?

Andrew Fenero New Jersey

A. Thanks for the encouraging words, Andrew. The Schumacher Cat is indeed a bit tedious to build and maintain. But once you get the car properly set up, it is one awesome four-wheeler. You don't win the World Championship without being competitive, that's for sure. Your Cat certainly sounds like a winner. However, with four-minute heats being the norm for most organized races, you may want to work on your car's running duration. You'll want to be running when the checkered flag drops!

As to your question, while the Cat is a most formidable 4WD car, there are other competitive cars in this class. The Yokomo C4 and the Kyosho Turbo Mid Optima SE are also very capable 4WD racers. And don't forget the most important part of a winning package: the driver!

Dear Answerman:

I've had many R/C cars in the past four years, and they lose their competitive edge, too quickly. I have had a Tamiya Rough Rider, Kyosho Big Brute, Kyosho Optima, and Turbo Optima. When I first got my Turbo Optima, I had the advantage. Now with all the new cars like the Turbo Mid Optima SE and the Schumacher Cat, my car just doesn't do it anymore. I have been looking into a new car again, like the Turbo Ultima

and the RC10. I need to know which one will become an antique quicker. I have noticed that the RC10 has lasted a long time. The question is, how much longer will it be competitive? The Turbo Ultima is quick and a nice car. But Kyosho has shown me before: they make a new car every year that beats their old one and makes me loose! Help!

Jason Autry No Address Given.

A. Jason, yours is a sentiment shared by many. We all want a car that will be competitive for a long time. Unfortunately, the constant research and development to build better cars and the nature of retail marketing will see many cars lose their competitiveness to the newer products. The cars you are looking into are very competitive 2WD cars. Having won the World Championship last year, Kyosho may rest on their laurels for a while before working on a new 2WD car. The RC10 going into its fourth year of production, is more competitive now than ever, and it remains a favorite of the 2WD offroaders. I can't see Associated replacing this venerable race car any time too soon.

Dear Answerman,

I have a Blackfoot and a Clodbuster from Tamiya. They are both giving me the same problem. While running forward, they suddenly go into reverse. Is this a "glitch"? So far, I've tried to cure my Blackfoot by changing radios, servos, receivers, batteries, motors, and have changed from the mechanical speed control to an electronic speed controller, and still no cure. My cars are now gathering dust. Do you think I can cure my problem with one of the new glitch-free electronic speed control?

I read your magazine every month. Like all good things, they get better with age. Keep up the good work.

John Pelebowski Iroquois, IL

A. Your problem certainly sounds like a glitch, which is an interference in the transmitted signal of your radio system. Since you have replaced just about every component that may have been the source of the problem, the only other possibility I can think of may be the unsuppressed "noise" from your motors. There are several motor noise suppressor kits available, all of which consist of a can-type polarized capacitor and two disc-type capacitors. It's a good idea to equip all of your motors with these capacitors.

25 YEARS OF WINNING SERVICE TO THE HOBBY INDUSTRY



Parma's latest 1/10 "Classic" body is the '47 Ford convertible (#10277, \$19.00). Available in clear with outstanding detail, it's sure to be popular with "fat fendered" lovers. Fits most 1/10 cars with the use of a #10450 body mounting kit.



Parma is proud to unveil a new body for the recently released Tamiya Q.D. car (#10300, \$14.00). This 1/14 scale Toyota pickup is produced in clear, and includes body mounts for simple installation. Also shown are Parma's treaded tires (#12016, \$10.00/pr). These tires are an exact fit for Q.D. rims, and better suited to on-road use.



Parma announces the release of the Pro Panther 12 in a graphite version! (#1855, \$165.00). The Pro Panther 12 features a rockerball/flexplate rear suspension for superior handling. Also included are ready to race tires and complete ball bearings. Begin your winning season with the Pro Panther 12.

parma NEW PRODUCTS No. II



Attention monster truck owners! Parma introduces a direct replacement lexan body for the Tamiya Clod Buster (#10270, \$19.00). Molded in clear lexan, with great detail, it also fits other monster trucks with the use of a universal, adjustable body mount kit from Parma (#10450, \$6.50).



New from Parma are Sanyo SCE 1700 battery packs. Noted for their extended run time, these cells are suitable for both sport and competition. Assembled packs are available in 6 cell with Tamiya connector (#11253, \$50.00) and 7 cell (#11265, \$58.00). Individual 6 cells are also available (#11242, \$48.00), as well as individual 7 cells (#11243, \$56.00).



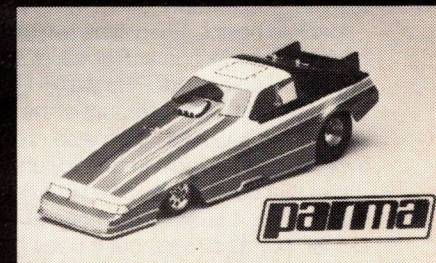
Get the "New Look Of Performance" at your local Parma dealer. Parma's new Cyclone modified motors (#14003, \$80.00), are now approved for R.O.A.R. competition. Parma's Cyclone is available in twelve different winds for all forms of competition. Start your winning season with R.O.A.R. approved Cyclone motors from Parma.



Parma announces the availability of Pro Panther 10 chassis components in graphite! Each is available separately; clockwise, left to right are front crossbar (#18012, \$12.00), Chassis (#18211, \$55.00), Dampener plate (#18014, \$12.00) and Flex plate (#18021, \$10.00). The lightweight and stability of graphite is just the thing to give any race the professional edge. These and other Pro Panther 10 cars and accessories are available now at your local Parma dealer.



Parma's extensive line of decals receives four new additions! Shown left to right are Citgo (#10632, \$3.50), 7-Up (#10635, \$3.50), Endless line (#10638, \$3.50) and Silk cut (#10645, \$3.00). These decals boast three, four and five colors, and are just the thing to add "concourse looks" to any body. Use Parma decals, and finish with a winner!



Parma's 1/10 Oldsmobile Firenza funny car (#10251, \$19.00). Fits any funny car chassis with the use of adjustable, lightweight body mounts (#8012, \$5.50). Also available from Parma!

PARMA'S MOTOR SERVICE FOR ANY MAKE MOTOR

ONLY \$12.00

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

- Disassemble & clean entire motor.
- Computer balance your armature.
- Diamond true your commutator.
- Remagnetize your magnets.
- Dyno-test for maximum R.P.M. and minimum amp draw.

PLEASE INCLUDE EXTRA FOR FOLLOWING

- New Motor Brushes\$3.50 pr.
- New Motor Springs\$2.00 pr.
- New Motor Bearings\$6.50 ea.
- New Armature\$30.00
- We pay shipping inside N. America!
- Outside N. America add \$3.00 postage

ARMATURE SERVICE ONLY

- Armature tune-up
- Inside N. America\$5.00
- Outside N. America add \$1.00 postage

SEND \$2

FOR A FULL
SET OF COLOR
CATALOGS
& 1/10 BODY POSTER

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

ELIMINATING INTERFERENCE

Electronic speed controls again. Or actually, *still*, because we have been on the subject for a number of months now. It is a complex subject; the ESC is easily the most misunderstood and most maligned part of the electric-powered R/C car. Also the most abused, which is unfortunate, as many a speed control is running around so poorly installed that the major portion of the reasons for its being purchased in the first place are lost. The owner might just as well have saved his money and stuck with the original equipment servo-driven resistor.

So let's discuss a bit about how to keep your ESC doing what it can do so well if it is treated properly.

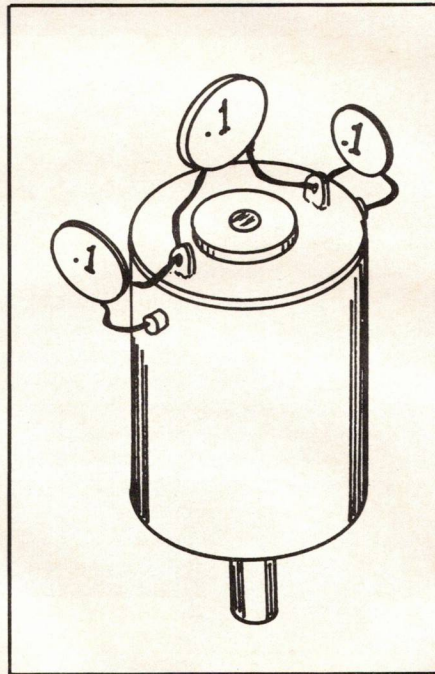
First of all, right after exchanging the resistor SC for an ESC, you might experience some results that you were not expecting. For example, quite often a previously perfectly operating motor will now seem to cut out and the steering will be erratic for a second or two upon hard acceleration. Since everything worked normally before you put in the ESC, it is the ESC's fault, right?

Wrong! It is the motor's fault. Or the battery's fault. Or the receiver's fault. But it is NOT the electronic speed control's fault. There may be a number of reasons; let me tell you about them.

Back to basics. Every time two wires carrying a voltage contact or separate, they create a visible spark. The size of the spark is dependent on the amount of the applied voltage. This visible spark also creates an invisible burst of radio frequency energy not unlike that being emitted by your R/C transmitter. True, it is nowhere near as clean a signal, nor as strong, but it does have the ability of being radiated and traveling through free space. As a matter of fact, the very first radio transmitters, which contrary to some common beliefs, were not invented at the same time as radio control cars, but decades before, were nothing more than spark generators. Actually called "Spark Gap Transmitters," a single transmitter generated a signal wide enough to wipe out the entire airplane and car frequency bands all at once. Crude, yes, and they are certainly a long way from today's super-sophisticated satellite transmitting equipment and even R/C cars, but they made their contribution.

Now in your R/C car, the electric motor is also making the same type of contribution. Unwanted in this case, but it is still there. The brushes in said motor, in their

constant make-and-break contacts with the armature, are great little spark and radio frequency noise generators. To confirm this, look inside the end bell at the same time you punch the throttle. In a darkened room you will see a miniature version of an upcoming event, the celebration of the Chinese New Year, sparks and flashes all over the place! And also unseen but nevertheless extensive radio noise of undetermined frequencies, all certainly within the 27 and 75 MHz bands that are being used for R/C cars. With the brushes and armature in poor enough condition, it is possible for a motor to generate enough RF energy to completely blank out the receiver and render the R/C system completely inoperative.



Proper method of installing RF noise suppression capacitors on motor. Though often only two are furnished or mentioned, three capacitors are recommended for worst-case conditions. For best results, leads should be kept as short as possible.

Normally though, the greatest amount of sparking, and highest RF noise intensity, will occur during motor acceleration, as this is when the motor is pulling the greatest amount of current. Your system might be clean otherwise, during periods of normal cruising, but the greater radio noise at acceleration can easily overcome the transmitter's signal at the receiver, making it deaf to your commands. After the car reaches a certain speed, the motor and the motor

current stabilize, the RF noise is reduced and the receiver takes control once again.

NOW, A VERY IMPORTANT FACT. The reason this RF noise occurs with the ESC and not with the resistor is that the ESC turns on the motor considerably faster than the resistor. The greater acceleration of the ESC-equipped car compared to the resistor equipped one is certainly noticeable, but you'd be reminded of the turtle and the hare if you could see the current flow; which unimpeded actually travels at the speed of light. The secret of the ESC's greater efficiency is that it does little to impede that current flow, but in some cases it will work against you by causing the motor to generate that radio noise. But again, it is the motor that is the culprit in this case, *not* the speed control.

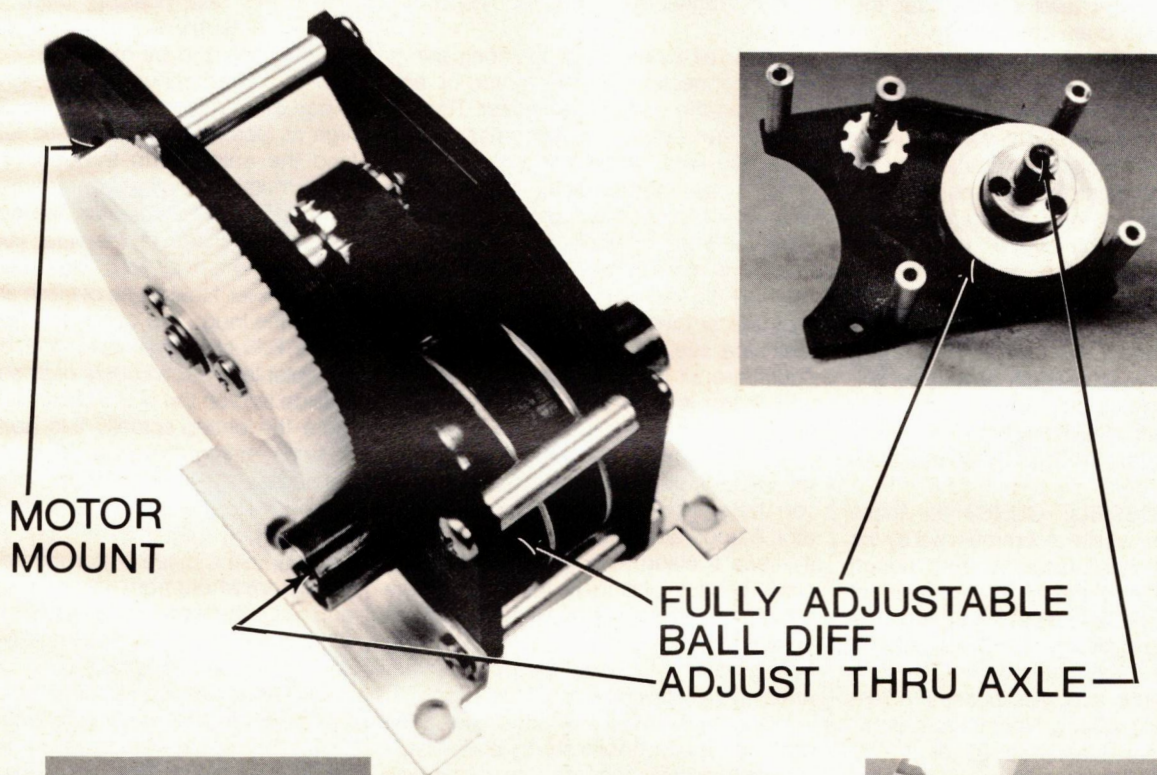
POSSIBILITY NUMBER TWO: the battery. As already established, when you punch the throttle, as when starting off, or in coming out of a turn, the motor turns on extremely fast, drawing a tremendous amount of current. Depending on the battery and the motor, peak currents in excess of 50 amps are easily possible. Now, when this happens, the battery voltage is pulled down momentarily; the greater the current draw, the lower the available voltage. This lessened battery voltage, which is actually powering all of the electronics in the car, will be felt throughout the system. Remember that the receiver's power is coming from a voltage regulator within the speed control. Voltage regulators do exactly that, control the voltage to a predetermined level—BUT, they can only lower it, not raise it. If, then, the heavy current drain drops the battery voltage below a critical level, the voltage regulator output also drops—the receiver no longer gets enough voltage for stable operation, and it simply quits working. As stated above, as the motor speed stabilizes, so does the current drain; the voltage comes back up to normal and everything is working merrily away. But for that short period when the voltage was down, you did not have effective radio control. In this case, such loss of control was caused by the battery—not the electronic speed control.

The exact cause? Well, not exactly easy to pinpoint, but it can start with the battery itself. A less than completely healthy or poor quality battery will not maintain full voltage as well as a superior one. Some motors create a heavier drop than others. Sometimes dropping down one step in the motor gearing will resolve the problem, at the loss of

BELT DRIVE

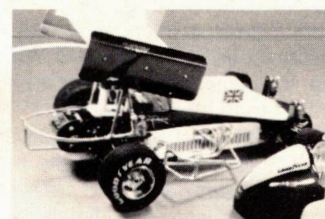
TURBO GLIDE

TRANSMISSION



STOCK RC 10

REVERSABLE
SIDE PLATES
FOR REAR OR
MID ENGINE
APPLICATIONS



SPRINT CAR



STOCK ULTIMA



MID ENGINE



OFF ROAD



MADE IN U.S.A.

AVAILABLE AT YOUR LOCAL
HOBBY STORE

TRACK MASTER MFG, 10450 FRIARS RD., STE P,
SAN DIEGO CA., 92120 (619) 562-6331

some performance but in some situations consistency is better than pure speed without it.

Sometimes this particular problem will rear its ugly head when running on six cells, but not on seven. The reason for it is because on the higher seven-cell voltage, the effective voltage never drops down below the critical level even under the highest current drain conditions.

LAST BUT NOT LEAST in this particular chain of events is the receiver. As just explained, some of these funnies can be caused by the receiver not working under lowered input voltage conditions. Now, by design, some receivers are less forgiving of this than others. In other receivers, quite possibly it is not the lowered voltage that is causing the erratic operation, but the voltage peaks generated within the battery circuit that travel to and upset the receiver's decoder circuitry. Your best solution to this problem is to look carefully at what receivers are being used by those that are consistent runners without any indecisive starts, and consider trying their type of equipment.

SOME POSSIBLE CURES for these problems are usually recommended by the speed control manufacturers, even though they realize that the problems are not directly caused by a defect in speed control operation or design, but by its effect on the rest of the R/C equipment. One such cure, intended to suppress those RF noises we discussed earlier is "motor capacitors." These are small ceramic .01 or .1 Mfd (Micro-Farad) capacitors intended for installation at the motor input connections. Their function is to bypass the RF noise to ground, rather than having it radiate from the wiring and find its way into the receiver.

These little capacitors are usually furnished with ESC's, some cars, and are even pre-installed on a few motors. Usually two capacitors, connected from each brush to case ground, are used or recommended. Better RF noise suppression, over a wider amplitude and frequency range, will be obtained through the use of three such capacitors, the third one being connected from brush to brush. Please refer to the sketch for proper location of these insignifi-

cant appearing but essential little items. As in all electrical and electronic connections, short leads and proper soldering are important. Depending on the type of motor used, sometimes the connection of the capacitor lead to motor ground can be made to a lug, other times it will have to be made directly to the motor body. In this case, the solder connection will be especially critical.

First of all, never use a soldering gun to make connections to the motor, or anywhere on the car for that matter. The soldering gun creates an extremely strong magnetic field, and if used close to the motor, can permanently change the characteristics of the motor magnets. To save you from unnecessarily cooking any motors, let me assure you that the magnetic field will not improve the motor magnets; they are at their optimum depending on their type, size, etc. The changes that might occur are all on the negative side—and your motor is just not going to run as efficiently with a less magnetized magnet.

On the other hand, soldering to the motor body will not require the same iron you use on your gutters or automobile radiator. A good quality 40 or 50 watt will do it—keep it clean, use fine sandpaper to clean off any plating at the spot on the motor case where you will solder, and use solder flux and rosin core solder. No acid core please! Never any acid core solder around electrical wiring.

In the final analysis, whether your radio equipment will operate solidly and reliably is determined by one factor only—the ratio of the control signal versus RF noise as heard by the receiver. In some respects, the receiver is somewhat like the human ear, it will respond to the loudest noise, be it the one that it should be listening to or not. If the control signal is at a higher level than all the electrical and outside RF noises in the system, it is in command. Any time the unwanted RF builds higher than the control signal, the latter is drowned out and you have erratic or no control at all. In addition to the noise suppression capacitors mentioned, you can help to increase the control signal to RF noise ratio in other ways.

As a bonus, one of these recommendations also brings some benefits to the Speed Control itself. There are two basic but important rules to the most efficient R/C equipment installation in the electric race car:

- (1) The receiver and receiver antenna need altitude, and
- (2) The ESC needs ventilation.

Referring to (1) above, the higher the receiver and receiver antenna are in the car, the better signal it will receive from your transmitter, and the better the signal to noise ratio described above will be. Remember that we fly airplanes at distances many times greater than those at which the R/C car can be reliably controlled, with transmitters of only slightly increased power if at all, and with receivers of the same sensitivity. The secret—

more an actual reason than a secret—is the altitude that the receiver in an airplane is operated at. Obviously, you'll never reach those heights with your R/C car, but every little bit helps. Therefore, mount the receiver as high in the car as possible. Depending on the design, pick the highest place on the chassis. If the car has a shock tower, that is the best possible place for the receiver, in terms of the amount of signal that it is going to be receiving.

In the same manner, and actually of more importance, mount the antenna itself as high as possible. Use a plastic tube and feed the antenna up through it. Forget those metal whips that you are instructed to wrap the wire antenna around, or to solder to the end of the wire, your best antenna is the one that comes attached to your receiver. Now, some of these antennas are a little long, and can pose a problem in the R/C car installation. It is perfectly acceptable to trail a couple or three inches outside and on top of the plastic tube. The more the better, actually this part of the antenna, being the most "visible" to the transmitter, is the most efficient. The excess antenna at the base should never be coiled or wrapped together in any manner. Instead, use a piece of cardboard or thin plastic anywhere from 1/2 to 1 inch wide, and wrap the extra wire around it, leaving about 1/4 inch between the turns. Never cut off any part of the antenna.

Do not mount the receiver or antenna down in the pan, especially in the metal pan cars. This has even more of a detrimental effect on the receiver, as the metal plate will have a detuning effect on it. Mounting the antenna itself on any kind of bracket right to this metal pan will also reduce its effectiveness.

Next point (2) up above—the speed control needs air. Actually, the cooler you can keep the speed control, the faster you will go. You see, as the MOSFET transistors in the ESC get hot, their internal resistance increases, reducing the voltage available to the motor. The ESC also needs ventilation for obvious reasons—if it doesn't get it, it will eventually get hot enough to be damaged. Mount the speed control in the pan or bottom of the chassis, with ventilation openings in the rear as well as in the front, as the incoming air also has to have an exit. Also, the ESC should be mounted so the air will flow *through* the MOSFET or heat-sink fins. Mounting the ESC crosswires to the airflow will allow air on one end of the MOSFET's but not equally through all of them. In the same manner, do not mount the ESC upright against a vertical surface, as the air will get to it but also be blocked from flowing through it. In short, the air has to flow across and through the MOSFET's or heatsink to be most effective.

End of the track again this month. Next lap we'll discuss more about proper ESC installation procedures, important accessories like fuses, and those plugs that seem to be such a problem to so many car racers. Be sure to tune in! ●

the
DEALER'S
SOURCE.
Competitive
Prices

JA LEA CO.
11999 Plano Rd Dallas, TX 75243 214/238-0929

"THE FUTURE" IN 1/10 SCALE ON-ROAD RACING!

INQUIRE ABOUT OUR "SPONSORED DRIVER" PROGRAM!

THE

Lucas

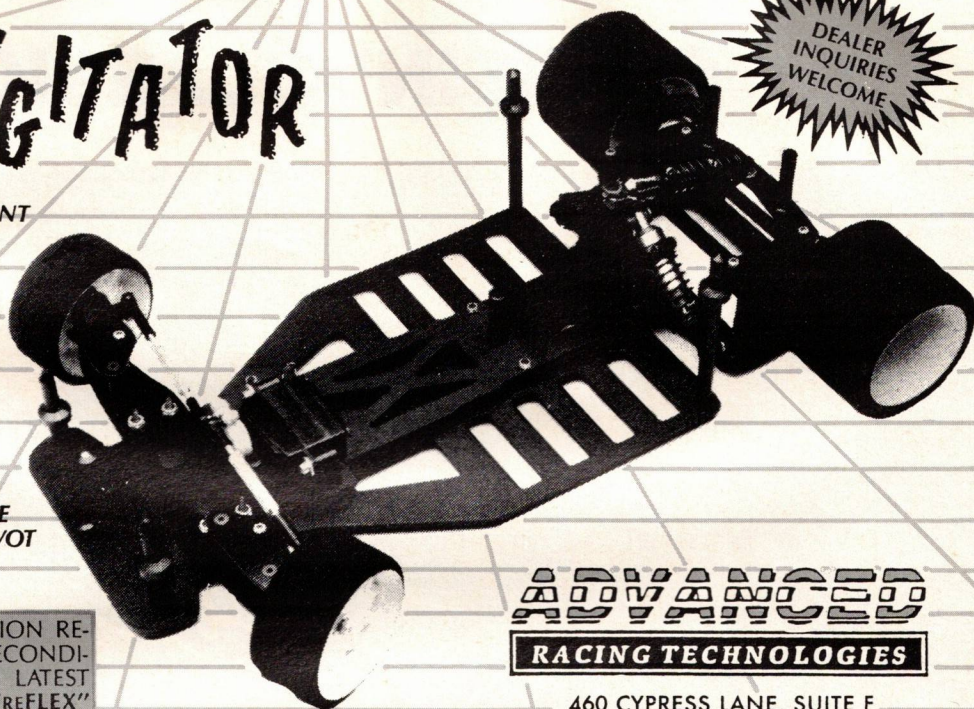
AGITATOR

DEALER
INQUIRIES
WELCOME

- FULLY ARTICULATED DUAL-AXIS REAR MOVEMENT
- THREE POINT REAR SUSPENSION
- FIVE BEARING MODULAR GRAPHITE DIFFERENTIAL
- FULLY INDEPENDENT FRONT SUSPENSION
- SUSPENDED DIAPHRAGM STIFFENER
- ADJUSTABLE CASTER & CAMBER UTILIZING OUR EXCLUSIVE DELRIN SADDLEBLOCK PIVOT
- PRECISION MACHINED DELRIN COMPONENTS

SEND SASE FOR INFORMATION REGARDING BATTERY PACK RECONDITIONING, UTILIZING THE LATEST COMPUTER ENHANCED "REFLEX" TECHNOLOGY.

YOUR NEW SOURCE FOR GRAPHITE & FIBERGLASS COMPONENTS.



ADVANCED
RACING TECHNOLOGIES

460 CYPRESS LANE, SUITE F
EL CAJON, CA 92020
(619) 441-8595

PARAGON

It Works For Them . . .

Louis Leblanc • Scott Chiras • Bud Bartos • Bob Schoenau • Mike McBride •
Jim Hoffmann • Tony Neisinger • Peter O'Kano • Christian Keil • Mike Stewart •
Rick Howart • Joe Lawrence • Dan Louis • Jay Bowman • Norm Mead • Chris Doseck •
Carl Christy • Peter Fitch • Bob Light • Steve Rule • Kevin Perry • Joel Johnson •
Scott Smith • Eric Goldschrafe • Mark Blackketter • Masami Hirosaka • Kathy O'Kano...

It Can Work For You.

For Catalog Send \$2.00 to:

**Paragon Racing Products Dept. MC • 8802 Knollwood Dr.
Eden Prairie, MN • 55347 • (612) 934-1220**

CRUISIN' CLASSICS



This month I will write about the Cruisin' Classics available from the factory of BoLink. The classic bodies by BoLink

reproduce some of our favorite full-size classic cars.

These car bodies are available in both

1/12 and 1/10 scales. There are six 1/12-scale and eight 1/10-scale classic bodies listed in the catalog that I have. The bodies include the following styles:

1/12 scale	1/10 scale
------------	------------

1932 Ford coupe	1932 Ford roadster
1934 Ford Hot Rod	1932 Ford coupe
1940 Ford coupe	1934 Ford Victoria
1955 Chevy	1940 Ford coupe
1966 Mustang	1955 Chevy
1967 Camaro	1966 Mustang
	1967 Camaro
	1957 Thunderbird

These bodies are suited for both dirt and asphalt racing. In the real world of racing these body styles have been used in both. The 1/10-scale '40 Ford coupe looks good with all its fenders intact; but, when you cut the fenders off it makes a terrific looking dirt oval racer. This particular body is a perfect fit on the RC10. The '32 Ford coupe is also another car that looks good with the fenders cut off and fits the Yokomo Dog Fighter with no modifications. These cars, especially the '32 Ford coupe, look like what you see at the local Saturday night short track dirt oval tracks. The '66 Mustang also fits into this class that looks good in either the dirt or on the asphalt. I have used this body mounted



At top, a 1932 Ford Coupe body from BoLink. Above, a hot '55 Chevy body by BoLink sits astride the BoLink Eliminator road racing chassis.

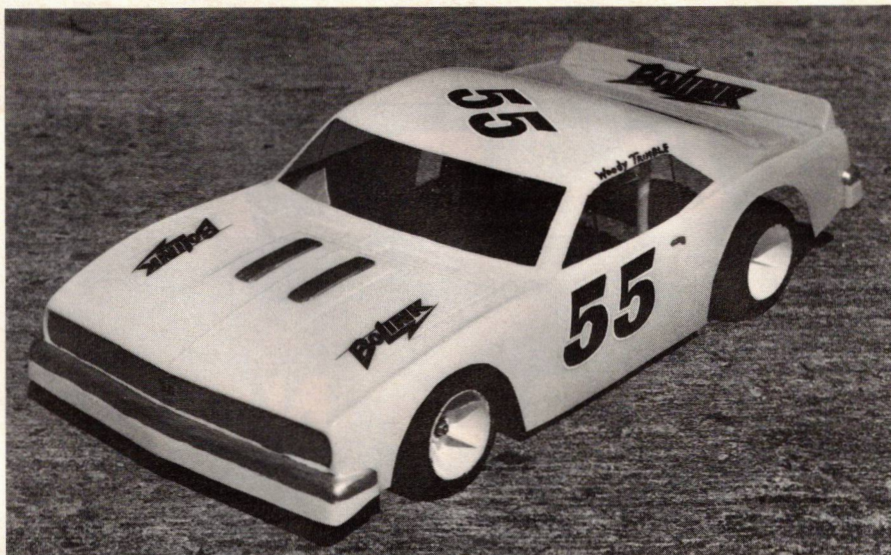
on an RC10 and a BoLink Invader oval racer.

The '55 Chevy is more of a street rod-type of body (at least for me) and looks good as a drag car or paved short track racer.

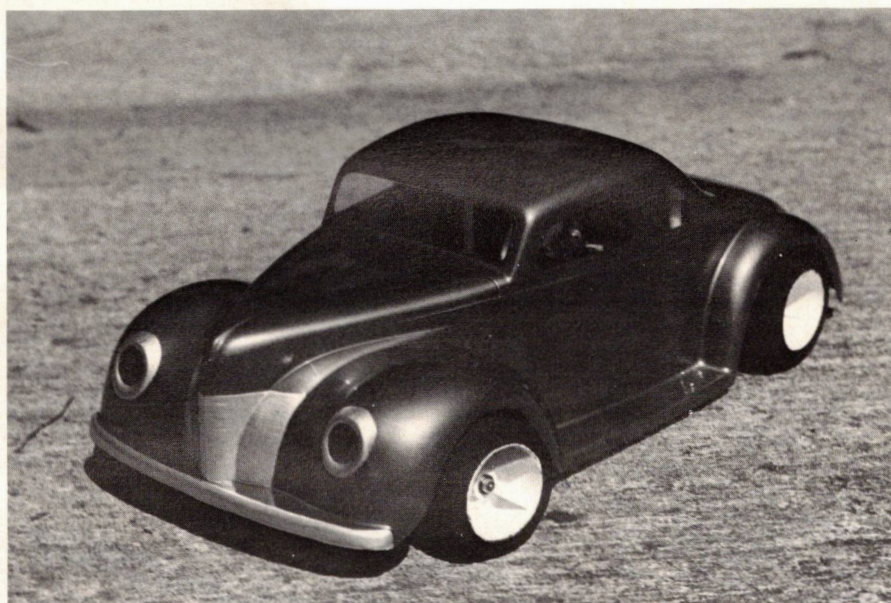
My personal favorite is the '67 Camaro. The full-size version of this car looked good and is popular, judging by the number of them I see running and being both restored and customized. This particular body is a superb-handling body on both the asphalt ovals as well as the dirt ovals. I have never used it on an offroad track and you would probably have to cut too much away to get the suspension to work. In past reviews you have seen these bodies featured on the Lazer Lite Shadow and the TRC Pro-10 asphalt racers.

When you go to an oval track and see about eight of these cars racing around the banked turns side by side, it's just like seeing the real thing. With these bodies you can cruise the neighborhood streets, the local parking lots, your backyard, or the closest oval track, be it either dirt or asphalt/concrete. These cars are made with the standard wheelbase and if you "stretch" your cars wheelbase, you may have to work with the wheel wells to get a good fit. However, with the proper body posts and a little trimming, they will fit on most cars, both dirt and asphalt.

Some articles that I have coming up in the future will be the BoLink Enduro, a performance review of the stretched chassis for the Optima MID by SRS, some weight loss for the BoLink Eliminator 10, a review of the Competition Electronics Turbocharger, a look at the CRP cell lab charging system, a review of Tekin electronic chargers and speed controls, plus lots of other support equipment that makes our hobby/sport easier as well as makes our racers go faster. ●



The '67 Camaro body in Lexan by BoLink. Author finds this to be a good-handling body on asphalt and dirt ovals.



A real cutie is this classic 1940 Ford Coupe from BoLink.

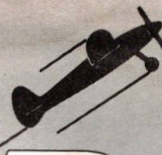
SUBSCRIBE TO R/C MODEL CARS

See page 36



A popular full-size car, the '66 Ford Mustang makes for a good model too.

MODEL BUILDER



WORLD'S MOST COMPLETE MODEL PUBLICATION

SUBSCRIBE NOW AND SAVE!

FEATURES

PRODUCT REVIEWS
ELECTRIC FLIGHT
RADIO CONTROL
RUBBER SCALE
HELICOPTERS
FREE FLIGHT
R/C SOARING
OLD TIMERS
R/C CARS

CONSTRUCTION

FULL-SIZE PEANUT PLAN
RADIO CONTROL
CONTROL LINE
FREE FLIGHT
ELECTRIC
RUBBER



SEND FOR YOUR SUBSCRIPTION TODAY

Begin my subscription with the ____ issue.

☐ New ☐ Renewal

Name _____

Address _____

City _____ State _____ Zip _____

☐ \$25.00 for one year (12 issues). Save \$5.00 off newsstand prices. For copies mailed in protective envelope, add \$3.00 per year.

☐ \$47.00 for two years (24 issues). Save \$13.00 off newsstand prices.

M/C or Visa # _____

Expiration Date _____

Signature _____

Credit card orders add 5%

\$38.00 for one year (includes postage), outside U.S., including Mexico & Canada. For two years (24 issues) send \$68.00.

ALL PAYMENTS MUST BE IN U.S. FUNDS

Send to: Model Builder Subscriptions

898 W. 16th St. Newport Beach, California 92663

Not responsible for cash sent through the mail

KYOSHO® **DOUBLE DARE**™

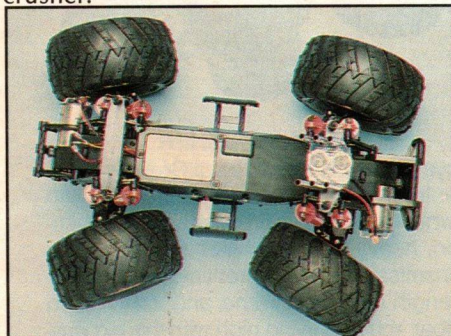
This Is One Hot Machine!



All-Out Performance

This monster truck smokes with all-out performance. Exceptional maneuverability from all-wheel steering. Exceptional power from 4-wheel drive. Extraordinary speed.

With enough design ammunition to keep it thundering in the trenches for double duty, the new **Kyosho Double Dare** fires up the monster truck kingdom with features you'll find in no other car crusher!



All-wheel steering gives the Double Dare amazing maneuverability by any standards – exceptional agility for a car crusher!

Twin engine horsepower with all-wheel steering.

With incredible all-wheel steering, the Double Dare executes sharp, fast turns and smooth corners, leaving other monster trucks lumbering far behind. Twin front and rear mounted, high-torque LeMans Stock 05 motors let you bolt through soupy bogs and over steep hills with the climbing ability of true 4-wheel drive. Powered by twice the horsepower, the Double Dare will be the hottest, fastest 4WD crusher on the track.

Made for industrial-strength monster trucking, the Double Dare boasts a tough, reinforced ABS chassis and double over-size truck shocks on each of its four wheels for constant command of the land. A superb front and rear independent double wishbone suspension provides extra-long wheel travel. Front and rear differential boxes protect the drive train gears from dirt and sand, and the included 3 forward/1 reverse Kyosho Heavy Duty Speed Control offers flawless operation and longevity, even under the pounding conditions monster trucks endure.

Big, bold, and beautiful.

A lean Datsun body rides on top of the Double Dare's huge, 5.7" diameter x 2.8" wide, special tread tires and chrome-plated wheels. It's outfitted with a fully-blown chromed hemi engine featuring chromed headers and dual carbs. Chrome struts, too, show just how far Kyosho has gone to make this the most scorching car crusher ever. Standing 12.2" high x 17.3" long x 11.6" wide, the Double Dare towers above most other off-road vehicles.

Hot-looking and flaming with power, the new Kyosho Double Dare 4WD is truly built for twice the monster-trucking fun. Go ahead: challenge this car crusher to a battle of the brawn.

We Double Dare ya'!

DISTRIBUTED TO LEADING RETAILERS
NATIONWIDE EXCLUSIVELY THROUGH



For an inside look at the hottest Kyosho R/C models, send to the address above for your free copy of the Kyosho Mini Catalog from Great Planes.



4WD VANQUISH

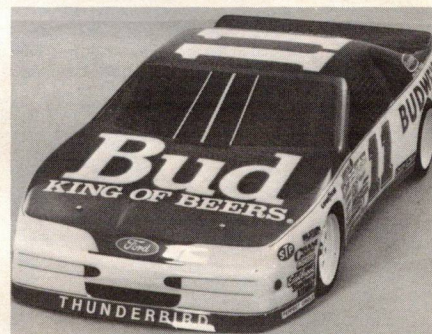
Using the proven main components of the successful Avante, Tamiya has produced a new 1/10-scale 4WD car called the Vanquish. The front and rear suspension arms are adjustable for setting up the car to suit the conditions, and a monocoque chassis holds everything together, including the mid-ship mounted 540 motor. The three-step forward and reverse speed control is mounted on top of the chassis for quick adjustment or maintenance. Coil-over oil-

filled shock dampers keep the one-piece wheels and pin-spike tires glued to the dirt for outstanding traction and performance. Eight ball bearings are used to eliminate friction in the gearboxes, and new-style universal shafts up front give the Vanquish an edge over the competition. To further boost performance, you can add the Avante carbon graphite chassis set, and the titanium screws assortment to reduce weight. See your MRC/Tamiya dealer for a closer look.



LEXAN PUMPKIN BODY

Parma International has produced a new Midnight Pumpkin replacement body that has the detail of the original styrene body, but molded in clear, tough Lexan for better crash resistance. The Pumpkin body will also fit other cars and trucks with the use of a body mounting kit from Parma. See your nearest hobby shop.



'89 T-BIRD COUPE BODY

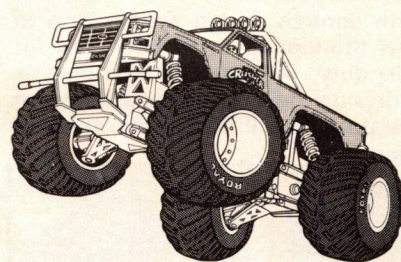
MRP has expanded its line of stock car bodies with the introduction of the new 1989 Thunderbird stock car body. This new body is smaller and lighter than the 1988 Grand National T-bird body, which results in a lower coefficient of drag, and helps to increase top speed. Look for it at your MRP dealer.



NISSAN MINITRUCK BODY

McAllister Racing has added the awesome Nissan Racing Mini Pickup to its line of racing bodies. The Nissan, Toyota, and Chevy

Sportside pickups are all great for offroad trucking, or for installation on a monster truck chassis. Look for the McAllister logo on the body you buy.



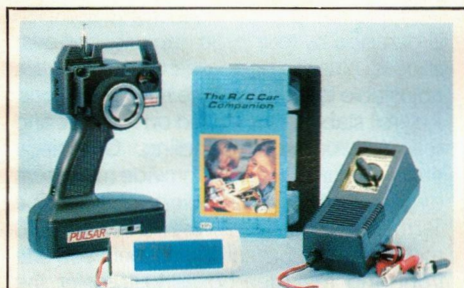
ROYAL CRUSHER

Royal Products' new Royal Crusher monster truck is a 1/10-scale powerhouse, with 4-wheel steering, twin wishbone suspension, heavy-duty ball link tie rods, sealed transmission with differential gear, a high-strength ABS resin frame, and a reinforced rollbar. You'll be flying high with this big guy, so get to your Royal Products dealer and check it out.

“Entry Level Car of the Year!”

– R/C Car Action Magazine

- Gets you into action fast!
- Quick and easy assembly (only 8-10 hours)!
- Milt Video's “R/C Car Companion” helps you through construction!
- Sophisticated design means great handling and high speed!
- Tough design keeps you away from the workbench!
- Suspension design comes from Kyosho racing heritage!
- Designed to grow with you—just add hop-ups!



With Kyosho's Pulsar Pro radio, Power Charger, and Power Battery, plus Milt Video's “R/C Car Companion,” you're fully equipped for action that only the Car of the Year can provide – the Kyosho Raider!

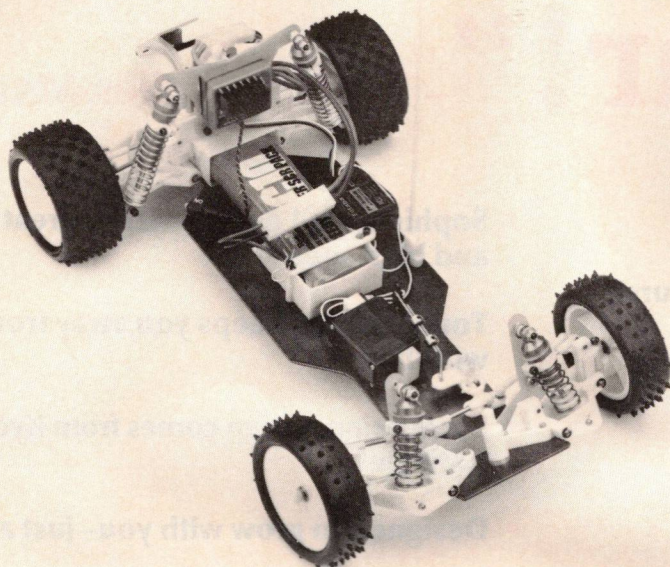


KYOSHO®

RAIDER™

For an inside look at the hottest Kyosho R/C models, send to the address at the right for your free copy of the Kyosho Mini Catalog from Great Planes.

DISTRIBUTED TO LEADING RETAILERS
NATIONWIDE EXCLUSIVELY THROUGH
 **GREAT PLANES**™
MODEL DISTRIBUTORS COMPANY
P.O. BOX 4021, CHAMPAIGN, IL 61820 ©1988, Hobbico, Inc.



TQ10 GRAPHITE

The TQ10 was designed for Horizon Hobbies by Associated Electrics as a special version of the legendary RC10. Developed for the serious racer, the TQ10 is available as a rolling chassis with a carbon fiber/graphite chassis, which reduces weight without sacrificing rigidity. Four-wheel

independent suspension, custom coil-over oil shocks, and a low CG gearbox make the TQ10 a durable and reliable offroad machine. Team Associated's high-traction TQ tires give balanced handling and grip on any track. Also in the kit is a clear Lexan Sidewinder body and wing kit. For more information, see your local hobby dealer.



4WD TERRA SCORCHER

MRC/Tamiya has a new 1/10-scale 4WD racer designed for the novice, with a bathtub chassis that offers durability and easy access to the radio equipment. The front and rear double wishbone suspension is damped by four large capacity coil-over shocks, plus the upper wishbone arms are adjustable for fine tuning to road conditions. Anti-roll stabilizers are used on the front and rear for rock-solid handling. One-piece hubs and pin-spike tires provide maximum torque and wheel-grabbing traction. The Terra Scorcher comes with a Tamiya 540 motor, and universal shafts between the front and rear gearboxes to transfer the power with minimal loss. There are 23 ball and ball thrust bearings to reduce friction loss in the transmission. The polycarbonate body is sleek and aerodynamic, and makes the car a standout in any crowd. Look for it at your nearest MRC/Tamiya dealer.

WAGONHILL HOBBIES

FREE UPS SHIPPING **FREE UPS SHIPPING**

225 S. Broad St., Grove City, PA 16127

GREAT DEALS ON A GREAT CAR

TEAM ASSOCIATED R/C10

	#6010 W/Bushings	#6016 W/Bearings
KIT (CAR ONLY)	\$135.00	\$170.00
with Futaba 2-Stick radio, battery, and DC Quick Charger	\$228.00	\$268.00
with Futaba Sport Pistol radio, battery, & AC-DC Quick Charger	\$274.00	\$314.00
with Futaba Magnum Junior radio, Sanyo SCR battery, & MRC or ProTech AC-DC Quick Charger	\$299.00	\$339.00

Mastercard/Visa
Free Shipping

1-800-874-6229

C.O.D. add \$2.00
PA customers add 6%



PARMA'S GRASSHOPPER II BODY

The latest replacement body from Parma is the Grasshopper II in clear Lexan that replaces the styrene version that comes in the kit.



MONSTER VETTE

Put the new McAllister '85 Monster Vette on your Monster Truck chassis and you've got a mean-looking car crusher like the ones you see smashing everything in sight on TV. It's available at your nearest McAllister Racing hobby dealer.



THE ALL NEW 1989 TOWER HOBBIES CATALOG

- 320 Pages (32 pages bigger than last year) Jam-Packed with Thousands of R/C Products from Nearly 300 Different Manufacturers.

- 177 Different R/C Car, Truck, Motorcycle and Tank Kits!

- 41 Pages of the Finest in R/C Car Accessories.

- Great Car Radios from the Best Manufacturers!

HOW TO GET YOUR 1989 CATALOG:

The 1989 Catalog is included FREE with your first order, or available by itself for only \$3.00 (A coupon for \$3.00 off your first mailed-in order is included).

Don't miss out - Order yours today!

Order your **FREE** copy of Tower Talk today & get:

- Up-to-date information on the newest R/C releases.

- Special sales promotions at low Tower prices.

- Great buys on hundreds of items not shown in our ads!

Mail this Coupon to:

Tower Hobbies, Dept. RCMC
P.O. Box 778
Champaign, IL 61820

or Just Call Us Toll-Free
Phone 1-800-637-4989

☐ Yes, send me Tower Talk free of charge.

☐ Yes, send me the 1989 Tower Hobbies Catalog (\$3.00 enclosed).

Name _____

Address _____

City _____ State _____ Zip _____

Stock Number	AIRTRONICS	Retail Price	Now Only
CC1001	VT2R 2 Ch/2 635/2 Stick	\$99.95	\$52.99
CC1002	XL2P 2Ch/2 Std/Pistol	144.95	84.99
ARISTOCRAFT			
CC1003	1/10 Truck Pull Sled	99.95	74.99
CC1004	260 2Ch Basic Pistol Radio	64.95	44.99
ASSOCIATED			
CC1005	6010 RC10 w/o Batt./w/Body	225.00	129.99
CC1006	6016 RC10 w/BB & Body	290.00	165.99
ASTRO FLIGHT			
CC1160	4005B AC/DC Auto-Chgr 4-7Cell	69.95	39.99
B&B MANUFACTURING			
CC1007	Juice Machine AC/DC Charger	79.95	54.99
BLUE BIRD			
CC1008	Firebird Elec. Boat w/Motor	89.95	74.99
COMPOSITE CRAFT			
CC1009	Predator 1/10 On-Road Lynx	299.95	219.99
DURATRAX			
CC1010	Bearing Set for Clod Buster(20)	64.95	44.99
CC1161	Bearing Set for BlkFt.MnBtl	25.95	17.99
FUTABA			
CC1011	2PBKA, 2 S132H, Pistol	189.95	114.99
CC1012	2PBKA, 2 S148, Pistol	159.95	99.99
CC1013	2PBKA, 2 S9601, Pistol	239.95	144.99
CC1014	2PBKA, S132H, MC112B, P	214.95	129.99
CC1015	2PBKA, 1 S148/MC112B	199.95	119.99
CC1016	2PBKA, S9601, MC112B, Pstl	244.95	149.99
CC1017	2PD, 2 S9301 Servos, Pistol	299.95	179.99
CC1018	2PD, 2 S9601, Pistol	299.95	179.99
CC1019	2PD, 2 S132H, Pistol	249.95	149.99
CC1020	2GS, 2 S148, 2 Stick	99.95	46.99
CC1021	2P, 1 S148, MC112B	169.95	89.99
CC1022	2NBR, 2 S148, 2 Stick	114.95	59.99
CC1023	2NBL, 2 S148, 2 Stick	104.95	53.99
CC1024	2P, 2 S48, Pistol	119.95	64.99
CC1025	S-28 Servo-Standard	39.95	16.99
CC1026	S-33 Servo-Micro	59.95	28.99
CC1027	S-48 Servo-Precision, Std	39.95	16.99
CC1028	S-128 Servo-Standard-J.FM	39.95	16.99
CC1162	S-133 Servo-Micro	59.95	28.99
CC1029	MC112B SCn/Rv-7.2-8.4V.J	79.95	54.99

GREAT PLANES			
CC1030	Wildcat Boat w/2 Motors	139.95	99.99
HOBBICO			
CC1031	DC Multi-Charger 12V 6-7C	39.95	27.99
CC1032	AC/DC Multi-Charger	49.95	34.99
CC1033	Mafrec 12V 6AMP Battery	35.95	24.99
CC1034	Deluxe 12V H.D. Starter	47.95	26.99
KYOSHO			
CC1035	Fairwind ARF Sailboat	249.95	169.99
CC1036	Shadow 4WD Elec 1/10	179.95	124.99
CC1037	Aero-Streak 4WD Elec 1/10	194.95	144.99
CC1038	Optima Mid 4WD Buggy 1/10	289.95	199.99
CC1039	Turbo Optima Mid SE-4WD 1/10	379.95	289.99
CC1040	Optima 4WD Elec Buggy 1/10	339.95	149.99
CC1041	Turbo Opt 4WD w/Mot 1/10	339.95	239.99
CC1042	Salute 4WD Elec Buggy 1/10	319.95	199.99
CC1043	Ultima Elec Buggy 2WD 1/10	199.95	138.99
CC1044	Turbo Ultima 2WD Elec 1/10	279.95	199.99
CC1045	Raider 2WD Elec 1/10	119.95	89.99
CC1046	Baja Bug-T, Optima 1/20 2WD	79.95	59.99
CC1047	Baja Bug-Ult 1/20 Scl 2WD	79.95	59.99
CC1048	Mini Sticker BMW 2WD 1/20	99.95	74.99
CC1049	Mini Sticker-Mercedes 2WD 1/20	99.95	74.99
CC1050	Big Brute Monster 2WD 1/10	169.95	109.99

Stock Number	KYOSHO(Cont'd)	Retail Price	Now Only
CC1052	Double Dare 4WD/4WS El.1/10	\$219.95	\$159.99
CC1053	Axis 2WD Racer 1/12	359.95	274.99
CC1054	S.Alt Porsche Elec 2WD 1/12	104.95	74.99
CC1055	Honda CR-X 2WD 1/12	179.95	129.99
CC1056	Peugeot w/Lights 2WD 1/12	179.95	124.99
CC1057	Plazma MK III Elec 2WD 1/12	169.95	99.99
CC1058	Fantom EP4WD Ext Elec 1/12	259.95	189.99
CC1059	F-1 Lotus Honda 99T 1/18	149.95	109.99
CC1060	F-1 McLaren Turbo 1/18	149.95	109.99
CC1061	F-1 Williams Honda 1/18	149.95	109.99
CC1062	Honda NSR500 Motorcycle 1/8	99.95	74.99
CC1063	Yamaha YZR500 Motorcycle 1/8	99.95	74.99
CC1064	Rocky 4WD Electric 1/10	189.95	129.99
CC1065	Montero .10 Pick-Up 2WD 1/12	179.95	119.99
CC1066	Nitro Brute w/OS.12 1/10	309.95	229.99
CC1067	.10 Stinger MKII 4WD Gas 1/10	299.95	219.99
CC1068	Assault w/OS C21 2WD 1/10	279.95	219.99
CC1069	.20 Mint 2WD Gas 1/8	399.95	269.99
CC1070	Ford RS200 w/OS.10 2WD 1/10	399.95	299.99
CC1071	.20 Integra Vanning 1/8 4WD	449.95	299.99
CC1072	Burns .20 Gas 4WD 1/8	549.95	399.99
CC1073	6 Cell Power - Kyosho	28.95	18.99
CC1074	7 Cell 1200 Power Pk/Kyo	35.95	23.99
CC1075	6 Cell 1200 Hump - Tamiya	28.95	18.99
CC1076	7 Cell Power Hump Pk/Tam	35.95	23.99
CC1077	6 Cell Power - Tamiya	28.95	18.99
CC1078	7 Cell Power Flat Pk/Tam	35.95	23.99
CC1079	6 Cell 1200mAh SCR Saddle	54.95	42.99
CC1080	6 Cell 1700mAh SCE Saddle	54.95	42.99
CC1081	6 Cell 1200 Sprint SCR - Kyo	44.95	33.99
CC1082	6 Cell 1700 Speed SCE-Kyo	44.95	33.99
CC1083	7 Cell 1700mAh SCE-Kyo	52.95	38.99
CC1084	6 Cell 1700 Speed SCE-Tam	44.95	33.99
CC1085	7 Cell 1700mAh SCE-Tam	52.95	38.99
CC1086	6 Cell 1200mAh Race-Pack	47.95	36.99
CC1087	7 Cell 1200mAh Race-Pack	52.95	42.99
CC1088	6 Cell 270mAh Square - F-1	31.95	22.99
CC1089	6 Cell 270mAh Batt-Mini Cars	26.95	17.99
CC1090	Bearing Set-Ultima, T,Ultma (14)	44.95	32.99
CC1091	Bearing Set-Optima, Javin (12)	39.95	24.99
CC1092	Bearing Set-B.Brte, N.Brte (14)	49.95	33.99
CC1163	H-006 Bearing Set-RD	41.95	33.99
CC1164	H-012 Bearing Set-DD	52.95	39.99
CC1093	Bearing Set Hnda,Yamaha (8)	24.95	17.99
CC1094	Belt Drive-Optima Series	39.95	31.99
CC1095	Fog Lights-Big Brute, Ntr Brute	19.95	15.99
CC1096	Rod Set-Op.Rs,Tu,Ul,Om	23.95	18.99
CC1097	Car Aids Metric Screw&Nut Set	15.70	11.99
CC1098	Platinum Shocks-Short (2)	39.95	29.99
CC1099	Platinum Shocks-Long (2)	39.95	29.99
CC1100	Rotary Sp Control/Ult,1817 Op	19.95	14.99
CC1101	Swing Shaft RSOPUL (2)	29.90	23.99
CC1102	240WS Wet Mag Elec Motor	79.95	56.99
CC1103	480WT Wet Mag Elec Motor	79.95	56.99
CC1104	480G LeMans Elec Motor	72.95	45.49
CC1105	360ST LeMans Elec Motor	27.95	18.99
CC1106	240ST LeMans Elec Motor	27.95	17.99
CC1107	240T LeMans Elec Speed Motor	79.95	61.99
CC1108	480T LeMans Elec Speed Motor	79.95	61.99
CC1109	Super Stock 20 Degree	27.95	18.99
CC1110	Super Stock 34 Degree	27.95	18.99
CC1111	Pulsar Pro2000 2 Ch	99.95	59.99
CC1112	Pulsar Pro w/Car RS Set	119.95	87.99
CC1113	Pulsar EXP 2001 2 Ch	119.95	79.99
CC1114	Impulse 2Ch,2 Stick Radio	82.95	59.99

Stock Number	KYOSHO(Cont'd)	Retail Price	Now Only
CC1115	Impulse II w/Cycle RS Set	\$109.95	\$79.99
CC1116	SC-500 Speed Ctrl-Kyosho	89.95	64.99
CC1117	SC-500 Speed Ctrl-Futaba J	89.95	64.99
CC1118	SC-500 Speed Ctrl-Futaba G	89.95	64.99
CC1119	SC-500 Speed Ctrl-Airtrics	89.95	64.99
CC1120	SC-1000 Speed Ctrl-Kyosho	199.95	139.99
CC1121	SC-1000 Speed Ctrl-Futaba J	199.95	139.99
CC1122	SC-1000 Speed Ctrl-Futaba G	199.95	139.99
CC1123	SC-1000 Speed Ctrl-Airtrnc	199.95	139.99
CC1124	DC Multi-Charger II	39.95	27.99
CC1125	DC Peak Charger	109.95	74.99
CC1126	6C DC Power Quick Charger	24.95	18.99
CC1127	Quick Charger 7.2V-270mAh	24.95	17.99
CC1128	Standard Field Bag	19.95	12.99
CC1129	Extra Large Field Bag	23.95	17.49
LEISURE			
CC1130	107 AC/DC Charger-6 Cell	58.50	39.99
TEAM LOSI			
CC1131	1/10 Off-Road Car Kit JR-X2	299.95	199.99
MARUI			
CC1132	"Coores" Thunderbird 4WD	199.95	139.99
CC1165	Big Bear Datsun	117.95	79.99
MINICRAFT			
CC1133	1/10 Lazer 2WD Buggy	89.95	49.99
MILT VIDEO LIBRARY			
CC1134	VHS "How To" Video: Car	14.95	11.99
MRC			
CC1135	1/10 Electric Bruiser 4WD	415.95	269.99
CC1136	1/10 Electric Black Foot 2WD	131.95	96.99
CC1137	1/10 Electric Mnstr Beetle 2WD	187.95	122.99
CC1138	1/10 Electric 4WD/4WS Clod	322.95	209.99
CC1139	1/12 Electric Lunch Box 2WD	123.95	86.49
CC1140	1/12 Electric Midnt Pumpkin 2WD	156.95	98.99
CC1141	RB431 Hump Pack 7.2V	34.95	19.99
NOVAK			
CC1142	NESCT4 Econ SC w/Led-FutJ	115.00	74.99
CC1166	NESCT4 Econ SC w/Led-Kyo	115.00	74.99
O.S. ENGINES			
CC1143	.12 CZ-2 ABC RC Buggy	124.95	74.99
CC1144	.12 CZ-R ABC RC Buggy	129.95	79.99
CC1168	.21 EX-B ABC RC Buggy	329.95	199.99
CC1169	.21 RF-B ABC RC Buggy	199.95	129.99
PRO-TECH			
CC1167	701 Pro-Tech AC/DC 4-8C Chgr	68.50	49.99
RC VIDEO MAGAZINE			
CC1147	RC Wheels VHS Video Tape	17.95	15.49
ROBART			
CC1148	HQ500 Prop Speed Cntl-FutJ	95.00	62.99
CC1149	Prop. Speed Ctrl w/Brake	115.00	69.99
ROYAL			
CC1150	12V Electric Fuel Pump	19.95	13.99
THORP			
CC1151	Diff-Frog, Blackfoot	50.00	39.99
TOWER HOBBIES			
CC1152	12 Volt Battery Charger	14.95	7.99
CC1153	12V Starter Battery	25.95	12.99
CC1154	Prem.Fuel-10% Nitro 4 Gal	58.95	39.40
CC1155	Sport Fuel-10% Nitro 4 Gal	50.95	36.20
TRINITY			
CC1156	Off-Road Stock Motor	28.00	17.99
TWISTER			
CC1157	2WD Ultrastock Motor	28.00	19.99
CC1158	Hurricane Wet Mag Motor	80.00	49.99
VARICOM			
CC1159	Big Grizzly 4WD w/Asm Chassis	199.95	139.99

Orders Only

800-637-4989

Orders/Information

800-637-6050

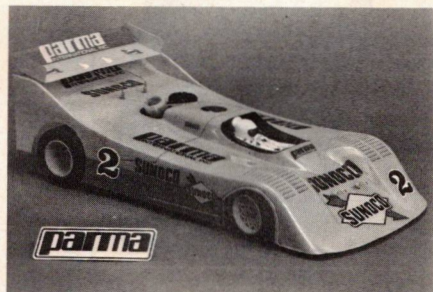
Foreign: 217-398-3636

Send mail to **TOWER HOBBIES** P.O. Box 778 Champaign, Illinois 61820 (Send \$5.00 for regular postage & handling. For C.O.D. also add \$3.50.) Prices are good on orders received by March 31, 1989.

HOURS: All times are Central Time.
Monday-Thursday: 8:00 a.m.-10:00 p.m.
Friday: 8:00 a.m.-5:00 p.m.

Saturday: 9:00 a.m.-5:00 p.m.
Sunday: 10:00 a.m.-7:00 p.m.

REFER TO:
TH10C01
WHEN ORDERING



1/8-SCALE BODY

The newest 1/8-scale body from Parma is the Osella PA-9 Can-Am style Lexan body, just the thing for today's 4WD gas cars. You'll find this body and many more at your favorite hobby shop.



YOKOMO BODY

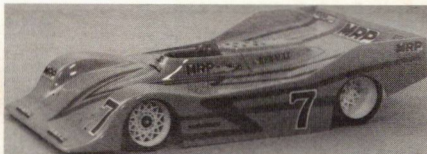
This direct-replacement body and under-tray is designed expressly for the Yokomo C4 offroad car, and comes in clear Lexan.

Also included with the body are the wing, mounts, and wing wire to give Yokomo owners a new look for their C4. You'll find the new Yokomo body at Parma dealers nationwide.



1/10-SCALE INDY BODY

This new 1/10-scale replica of the championship-winning Penske PC-17 racer is sure to be a hit. Accurately reproduced in clear Lexan, the 1988 Indy winner will make any 1/10 road car a winner. See your Parma dealer for the new Penske Indy body.



MRP SPIDER BODY

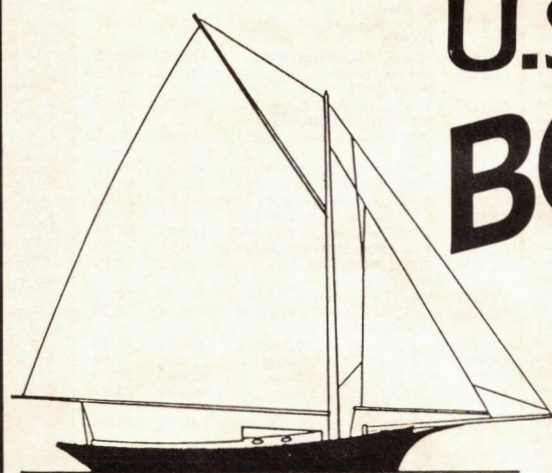
MRP has expanded their line of onroad

bodies with the introduction of the Spider, a sports racer that had been produced in 1/8 scale for years. Now it is available in 1/10 scale, and is capable of outstanding handling characteristics. Look for the new 1/10-scale Spider at MRP dealers now.



SUPER SABRE Q.D.

A new racer, in a new size: the 1/14-scale Super Sabre from MRC/Tamiya comes with the radio installed, and a pistol-grip transmitter that features fully proportional left and right turns, and an electronic speed control. The car also offers pin-spoke tires, a sealed differential gearbox, and a turbo switch so you can go from offroad torque to straightaway speed in an instant. Look for the new Super Sabre Q.D. at your nearest MRC/Tamiya hobby dealer.



U.S. BOAT & SHIP MODELER

THE **COMPLEAT** MODEL NAUTICAL PERIODICAL!

The **REAL** how-to magazine on all types of model boats and ships; R/C, steam, electric, sail, racing, sport, static and operational scale. Also construction articles on all types, with full-size plans and patterns available, complete with reprint of building instructions.

SUBSCRIBE NOW (Starts with next published issue).

U.S. Only (includes APO and FPO): One year (4 issues) - \$12.95
Two years (8 issues) - \$24.85

Overseas (also Canada and Mexico): One year only - \$21.45 includes postage & handling. Payment must be in U.S. funds, drawn on a U.S. Bank.

Name _____ Sig. _____

Address _____

City _____ State _____ Zip _____

Visa or M/C No. (Add 5%) _____ Exp. Date _____

BACK ISSUES AVAILABLE - Limited supply. \$4.00 per copy. U.S. add 50¢ per copy, outside U.S. add \$1.50 per copy for shipping.

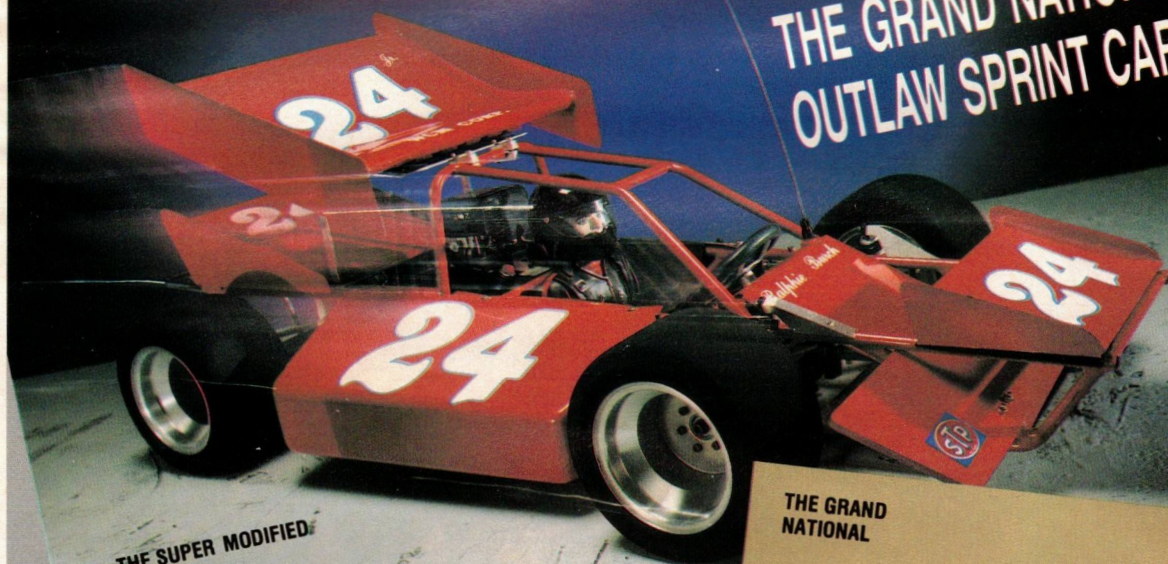
U.S. BOAT & SHIP MODELER, 898 West 16th St., Newport Beach, CA 92663

THE
INNOVATORS
IN
1/4 SCALE
RC RACING

THE WCM RACING TEAM

Wait No Longer to Own
The Ultimate Race Car...

THE SUPER MODIFIED
THE GRAND NATIONAL
OUTLAW SPRINT CAR



THE SUPER MODIFIED

Nothing to Build—
Simply Paint, Polish
and Assemble

THE GRAND
NATIONAL



The WCM 1/4 Scale Replica Car Kits are leading the way in radio controlled racing. Each kit is designed in exact detail, including fully adjustable front and rear suspensions. From the aircraft quality aluminum for radius rods and torsion arms, to the welded tubular steel frame, every bolt, nut and part needed to race your car is WCM quality built. All WCM racing cars come with high quality steel rod ends. Our cars are completely belt driven for the toughest racing demands. You need only to add your radio components. After assembly, top off the fuel tank with 50:1 gasoline to oil mix and start the engine with self contained recoil starter. You are now ready for the thrill of your life. Your race car sits idling, awaiting your command. Slowly advance the throttle and the WCM precision clutch smoothly rolls the racer onto the track. Wait no longer to own the ULTIMATE race car. **The WCM Racing Team is here.**

GENUINE

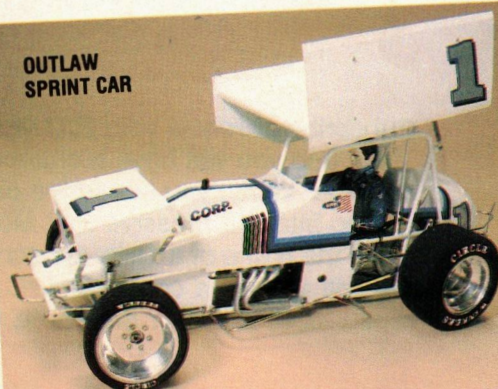


WCM INC.

Rt. 2 Box 207A • Buffalo, Texas 75831
214-322-4869 - factory

FOR TECH HELP CALL: 214-322-3269

OUTLAW
SPRINT CAR



**4 More Reasons
to Choose the
WCM Race Team:**

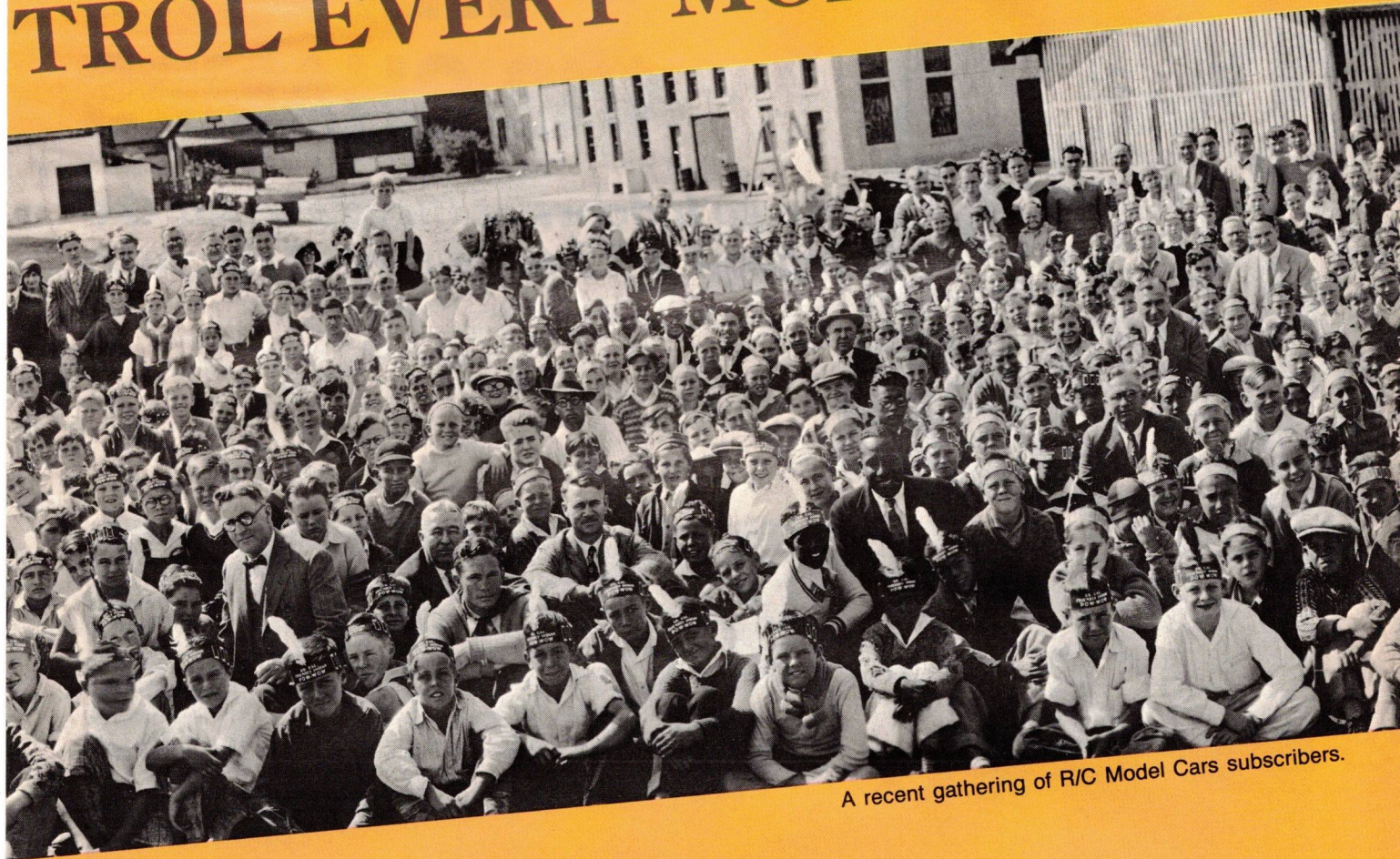
- WCM Parts & Service
- Visa-Mastercard Accepted.
- U.P.S. Daily Pickup
- C.O.D.'s OK.

JOIN WITH THOUSANDS
AGREE THAT R/C Model
THE BEST IN RADIO CON



Subscribe or renew your *R/C Model Cars* subscription before June 30, 1989, and you will have a chance to win a brand new radio-controlled car, free! When you subscribe or renew your subscription, your name will go into the massive *R/C Model Cars* computer, and on June 30, 1989, the name of a lucky subscriber will be drawn at random. The winner will receive a complete R/C car kit, absolutely free! Subscribe or renew now, and you may be a winner!

OF SUBSCRIBERS WHO EL CARS BRINGS THEM TROL EVERY MONTH.



A recent gathering of R/C Model Cars subscribers.

To subscribe, send your name, address, check, money order, or credit card number and signature to:
R/C Model Cars, 898 W. 16th, Newport Beach, California 92663.

Name _____

Address _____

City _____ State _____ Zip _____

Begin my subscription with the _____ issue.

☐ \$25.00 for one year (12 issues) in the U.S.A., including APO and FPO.

☐ Two years, \$47.00. For protective mailing bag, add \$3.00 for one year, \$6.00 for two years.

☐ For overseas subscriptions, one year (including Canada and Mexico, but not APO or FPO, \$38.00.

☐ Two years, \$68.00. Payment must be in U.S. funds, drawn on a U.S. bank.

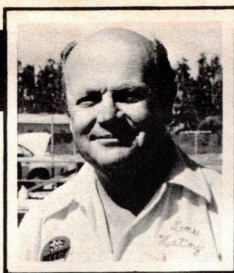
Mastercard or Visa number: _____ Expiration date: _____

Signature _____

A photograph of a young man kneeling on grass, holding a large trophy and a model car. He is wearing a white t-shirt with "TEAM ASSOCIATED REEDY" and "USA" printed on it, and blue jeans. The trophy is a large, dark, multi-tiered structure. The model car is green and white with the number 3.

A black and white photograph of a Reedy Modifieds RC car chassis, viewed from above. The chassis is white with black and grey accents. It features various sponsor logos including 'TEAM ASSOCIATED', 'Reedy Modifieds', 'NOVAH', 'RCM', 'LAIVco', 'BOS', and 'LAVco'. The car has a large number '3' on the side and is equipped with a motor, gears, and four wheels.

38



COMPETITION

BY GENE HUSTING

Ask any 1/12-scale indoor racer, "What's the biggest race in the year," and the answer will simply be "Cleveland!"

There is no argument. The race is held in Cleveland over the Thanksgiving weekend, and again this year, there were over 350 entries. That's single entries, not double entries, meaning there were over 350 racers competing in two classes - Sportsman and Modified. You were only allowed to enter one race. There were 240 Sportsman entries and 120 Modified entries.

This year's race was held at the Holiday Inn, in their large ballroom. The NORCAR club had a beautiful track layout with a perfectly smooth track. It couldn't have been better. Tracks like this make the cars more predictable and fun to drive.

Thanksgiving day was practice day, all day, 8 a.m. to 12 midnight. That's not

enough time for 350 racers, but it had to do. With so many racers everywhere, it was hard to imagine that there was one missing. A racer who had won a few of these events. A racer that seemed to be a one-man team. I'm referring to Joel Johnson, of course. The rumors were true. He was no longer with Trinity. This was hard to believe. While I was at the Trinity booth in the hallway, a racer asked Tony P., "Where's Joel?"

Tony said, "Joel doesn't exist anymore. We've taken his name off of everything. He's gone!"

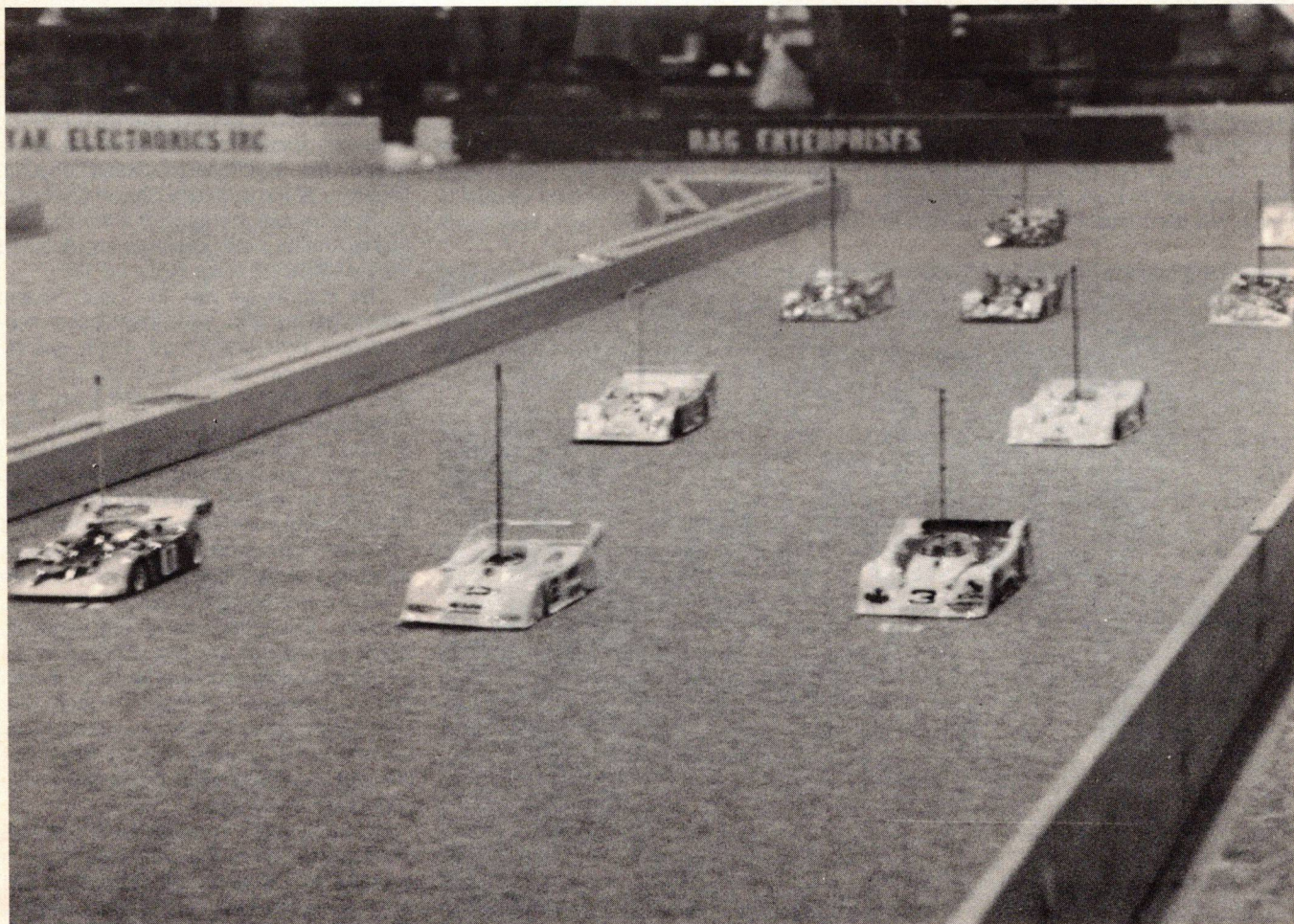
Well, he certainly wasn't at Cleveland. Then the rumors going around were "whose going to take Joel's #1 spot at Trinity? Bob Light, Dave Hechler or Chris Doseck?"

Then another bombshell hit. Dave Hech-

ler announced he was going to quit racing for a while!

I spent at least eight hours catching the practice session. I did take time out to eat. It's amazing. The cars continue to go faster and faster. We keep making small improvements, which add up to one big improvement in performance. This track is on the large side for four cell cars, but with 10-car qualifiers, the track would seem small.

Practice ended at midnight with qualifying ready to start at 8 am the next morning. The whole event was inside the hotel, which was great, because at times it was raining and snowing outside. One channel on the TV was used to show the race status, such as which race was being run, who was in tech, and who was marshaling so that the racers could spend most of their time in their hotel rooms. Qualifying for the



Cars await the signal for one of the finals at the indoor carpet track set up in the ballroom of the Holiday Inn in Cleveland. The large room allowed for a large track, with plenty of room for spectators to witness the racing action.



The indoor track at the Holiday Inn was a drivers' track; super-smooth with wide lanes and lots of turns.

Modified Class started at 8 p.m. That's right. Eight o'clock at night. It took all day and half of the night for the Sportsman Class. In the first round, Tony Neisinger led for 7 minutes, then dumped. Chris Doseck and Bob Light swapped places back and forth a couple times, with Bob finishing first at 37 laps in

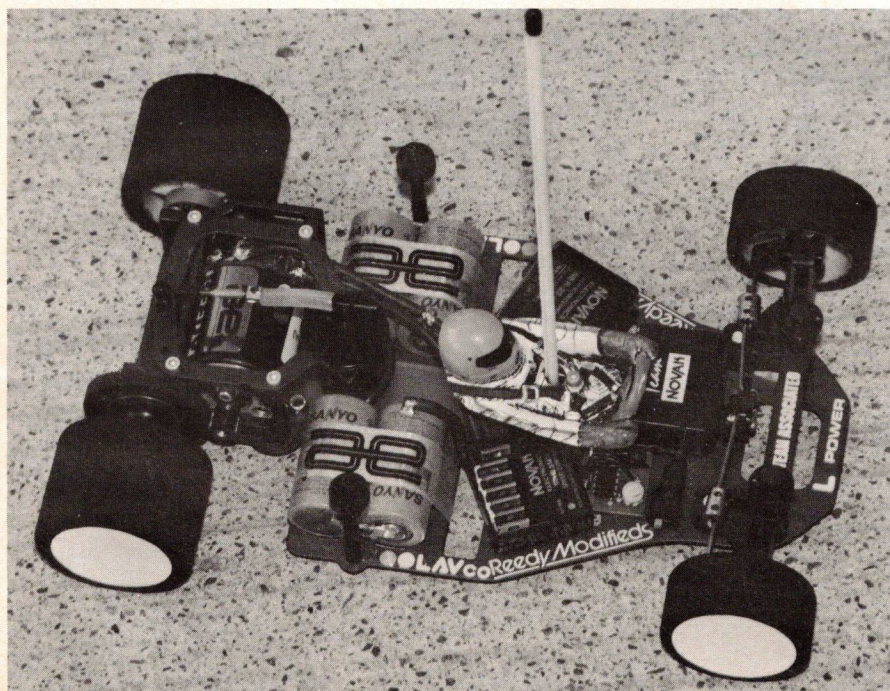
8 minutes .018 seconds or 37-8.018. A great run.

Bob Light's time wasn't beaten in the second round, but something happened in the third round. Neisinger led, with Kent Clausen in second and Shawn Ireland in third. Kent and Shawn both had more

power than Tony so they both just drove around Tony. Tony never had power all weekend. We of course changed motors, batteries, speed controls, receivers, transmitters, etc., but there just wasn't enough time to cure the problem. Shawn finally got by Kent to take the lead, but then on the last lap, he hit a dot, spun out and finished with a 37-8.018, tying Light for TQ.

The last round was the best. Shawn Ireland got the lead, with Chris Doseck second and Bob Light third. Light got by Doseck. Shawn kept the lead for two minutes then clipped a dot, and Light and Doseck both went by. Doseck chased Light around for seven minutes, then they both dumped, and Shawn took the lead again. But right on Shawn's rear bumper now was Christian Keil from Germany. Christian had spun out at the start of the heat, and was dead last. Toward the end of the heat, he clipped a dot and got stuck in the boards in front of the driver's stand. The marshals didn't see his car, so Christian had to get off of the driver's stand and pick up his own car. He overcame all that, and now was right behind Shawn. With 30 seconds to go, Shawn started slowing and Christian took the lead and finished with a 37-8.005 to take Top Qualifier honors.

You'll remember that last year at this race, Christian was also Top Qualifier and won the race. He did have a big advantage with his pushed batteries, which he donated for a raffle after the race. Last year Christian's pushed batteries were assembled from



Shawn Ireland's well-prepared RC12L car was dominant in Modified, a tribute to the car's preparation, and the driver's ability. Watch out, Ireland is a force to be reckoned with!

Sanyo SC cells. This year everyone could use the new Sanyo SCE cells, so it appears that whatever method Christian used to push the SC cells, is not working on the SCE cells the same way. Christian's batteries were certainly good, but they didn't appear to be any better than anyone else's in the "A" heat.

SPORTSMAN CLASS

All Sportsman Class drivers run stock motors, which are handed out by the Race Director at the tech-in, so their racing is always very close. They all have an equal chance so the drivers feel it is up to their driving and car preparation. Peter Klebert showed his driving skills by winning the "C" Main by half a lap.

SPORTSMAN C MAIN RESULTS

- 1 Peter Klebert
- 2 Gary W. Sager
- 3 Mike Walpole
- 4 Mark Frechette
- 5 John Incantalupo
- 6 Mike Overbay
- 7 Tony Carrubba
- 8 Doug Orton
- 9 Tim L. Smith
- 10 Joe Hutton

"B" MAIN

Keith Hamilton should have been in the A Main, because he won this race by almost a lap.

SPORTSMAN B MAIN RESULTS

- 1 Keith Hamilton
- 2 Ray Cifani



Last year's winner and Top Qualifier was also TQ this year. Christian Keil, from Germany, used his Associated RC12L car with a Reedy motor and Keil batteries to capture the top qualifier honors at Cleveland.

- 3 Dean Smith
- 4 David Chester
- 5 Jay Killingsworth
- 6 Craig Romero
- 7 Chuck Mackin

- 8 John G. Pens
- 9 Scott Smith
- 10 Dave MacLennan

SPORTSMAN A MAIN

Top Qualifier, George Martin, got hammered at the start and dropped back. Dwight Smith grabbed the lead, with Mike Pulfer right behind, and Wayne Penfold following in third. For four minutes Pulfer followed five feet back of Smith. Both cars were going the same speed, but then Pulfer got caught in traffic and Frank Calandra took over second.

Meanwhile, George Martin was moving up through the field. He moved into third and at the 6-1/2 minute mark he moved into second, but he couldn't catch Smith because Smith wasn't making any mistakes.

SPORTSMAN A MAIN RESULTS

Place/Driver	Car
1 Dwight Smith	Associated
2 George Martin	TRC
3 Wayne Penfold	Schumacher
4 Dave Webb	Associated
5 Jason McWethy	Parma
6 Frank Calandra	Corally
7 Glenn Orant	Bolink
8 Bill Schoenau	TRC
9 Jim Kesarich	Parma
10 Mike Pulfer	TQ

MODIFIED C MAIN

Bob Schoenau took off in the lead and was long gone.



Dwight Smith, on the right, won the biggest class in terms of entries, with his RC12L car, followed by George Martin in Second with his TRC car, and Wayne Penfold, from Canada, in Third with his Schumacher car.

MODIFIED C MAIN RESULTS

- 1 Bob Schoenau
- 2 Paul Martin
- 3 Louis Leblanc
- 4 Bernie Piatt
- 5 Wayne Gerber Jr
- 6 Dan Louis
- 7 Terry Rott
- 8 Bill Jeric
- 9 Jim Hoffman
- 10 Fernando Belair

MODIFIED B MAIN

Tony Neisinger took off in the lead, but it was soon apparent that we still hadn't figured out the power problem. Tony was driving as good as it's possible to drive. His driving was keeping him in first place, but Joe Lawrence was all over his back. While Joe was trying to figure out how to get by Tony, he let the door open for Dave Hech-

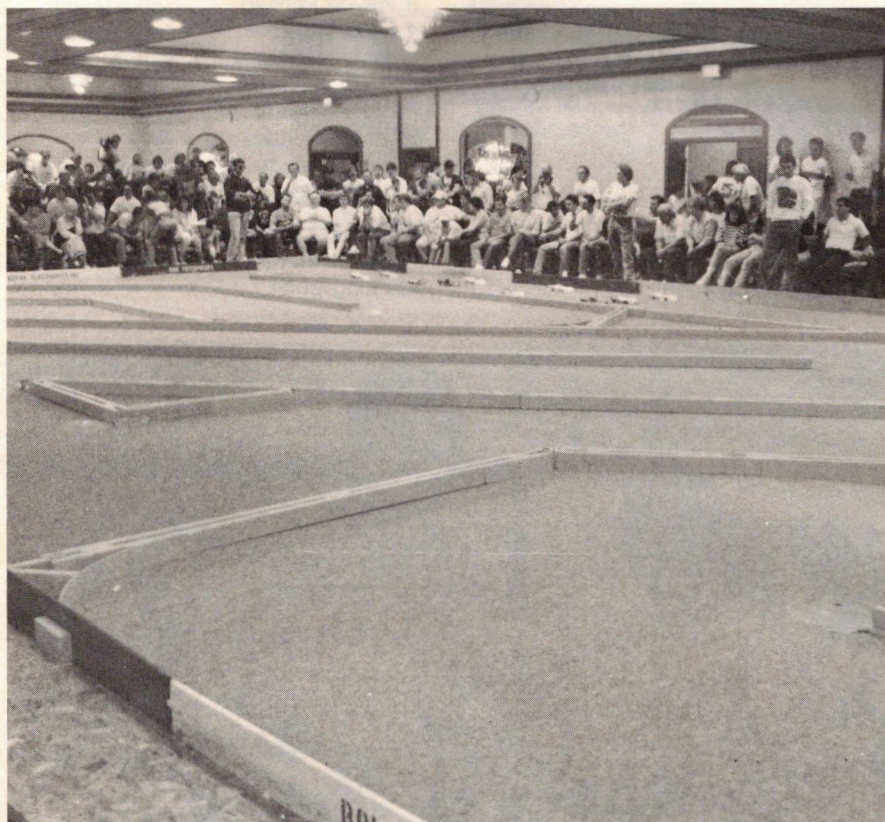
ler and Dave moved into second spot.

Tony kept driving the tight lines with Hechler in second and Lawrence and Bud Bartos fighting for third.

At the four-minute mark, Hechler finally got by Tony to take the lead. He simply passed him on the straightaway. Bartos was now on Tony's tail, and he too got by Tony. But nobody was going to catch Hechler. He was gone.

MODIFIED B MAIN RESULTS

- 1 Dave Hechler
- 2 Bud Bartos
- 3 Tony Neisinger
- 4 Ron Ferguson
- 5 Joe Lawrence
- 6 Ron Schuur
- 7 Carl Christy
- 8 Lee Morrison
- 9 Mark Blackketter
- 10 Mike Blackstock



Flash cameras were prohibited, so inside shots of racing action were out of the question; all you would see would be a blur as the 1/12 cars zipped around the carpet.

1/12 U.S. INDOOR CHAMPIONSHIPS MODIFIED A MAIN

Place/Driver	Car	Motor
1 Shawn Ireland	Associated	Reedy
2 Christian Keil	Associated	Reedy
3 Chris Doseck	TQ	Trinity
4 Mike Ebert	Associated	Reedy
5 Kent Clausen	Associated	Reedy
6 Mike Seubert	TQ	Trinity
7 Kevin Mercandante	Associated	Reedy
8 Tyree Phillips	Corally	Revolution
9 Andy Dobson	Parma	Parma
10 Bob Light	Corally	Trinity

MODIFIED A MAIN

This was it! The big one! The room was packed to overflowing. The drivers were introduced, pictures taken, cars lined up, the horn sounded and the race was underway. Christian Keil jumped in the lead from his number one spot, with Kent Clausen in second, Tyree Phillips in third, and Shawn Ireland in fourth.

Bob Light went out on the first lap with car problems. Bob had more than his share of bad luck. Clausen clipped a dot and Tyree and Shawn went by. Christian hit a dot and Tyree closed up on his bumper. Tyree was looking for a spot to pass. He finally picked an opening and went for it. Both cars exchanged body paint, and as they got squirrely, Shawn passed both of them to take the lead. Clausen also got by Tyree.

Now you've got to imagine this. Here is Shawn Ireland, leading his first big race. And he's earned it. He's paid his dues. Club races, learning to be a mechanic, making the A Main at the World Championships, and now leading Cleveland. Nervous time? You bet!! Shawn is human. You can see him making more and more little mistakes. He's excited! And there's still five minutes to go.

Clausen tries to pass Christian, but hits a dot and Tyree goes by into third. Then a couple laps later, Christian clips a dot, Tyree sees his chance and goes for a pass. The two cars bump and Mike Seubert passes both of them to go into second. Mike who? Mike Seubert. He's flying. And he's driving super.

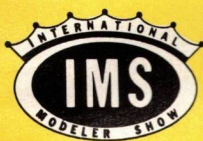
There's been an awful lot of passing going on in this race, and there more to come. Every time someone passes someone, half of the crowd screams. They're getting hoarse. It's great!

At the four-minute mark, Shawn had a straightaway lead, but he's nervous. He clips a couple of dots and Mike's within six feet. Then Shawn totally drills the boards at the timing bridge. I don't know how it didn't break the car. Mike goes into the lead. Shawn is stuck on the boards, but everything is happening fast. Christian hits Shawn, sending Shawn off in the right direction, but now in second.

Mike Seubert is driving perfectly, making no mistakes. Shawn can't catch him. But Chris Doseck is moving up. He's now in third and a few laps later, he's in second chasing Seubert. Then Doseck totally center-punches a wall, and Shawn and Christian go by.

Then at seven minutes Seubert dumps, and everyone knows why he was going so fast. Shawn is back in the lead, but this time he's not making any mistakes. Christian can't catch him. Shawn takes his first big win, with Christian second, Doseck third, and Mike Ebert in a steady drive to fourth. This was one of the most exciting races we've had in quite awhile. The NORCAR club members deserve a great deal of thanks, again, for doing such a super job running a race this big.

SECOND ANNUAL



Atlanta

May 13 and 14, 1989

Trade Only Day, Friday, May 12, 1989

MODEL SPORT & HOBBY SHOW

- LIVE INDOOR RADIO CONTROL MODEL FLYING DEMONSTRATIONS*
- HUGE BOAT POND & CAR TRACK • SWAP SHOP • GIANT RAFFLE

Following up on the highly successful introductory 1988 Model Sport & Hobby Show in Atlanta, Georgia, IMS is once again bringing major model manufacturers from all over the U.S. for its second annual

show in the great Southeast. The IMS show, where selling by exhibitors is permitted, continues to be presented by, and for, the model hobbyist. Y'all come on by, ya hear!

See the latest products and visit with major manufacturers and distributors of:

- * Radio Controlled Model Aircraft, Boats, and Cars
- * R/C Systems * Model Railroads * Modeling Accessories

FREE STATIC MODEL DISPLAY COMPETITION IN MANY CATEGORIES

(Send legal size SASE to IMS office for list of categories, competition rules, and advance entry forms)

Bring your children, so they can learn to build and fly a model airplane, FREE, during the show!

HEY MOM!
*** IT'S YOUR *
WEEKEND!**

ATTEND THE SHOW AND
WIN SPECIAL PRIZES.
REGISTER FREE OF CHARGE
FOR A DRAWING TO WIN
**A DIAMOND PENDANT WITH
14-CARAT**

**GOLD CHAIN! ONE TO
BE GIVEN AWAY EACH
DAY; SATURDAY
AND SUNDAY
ON THIS
MOTHER'S
DAY
WEEK-
END**

GEORGIA WORLD CONGRESS CENTER

285 International Blvd., N.W. Atlanta, GA

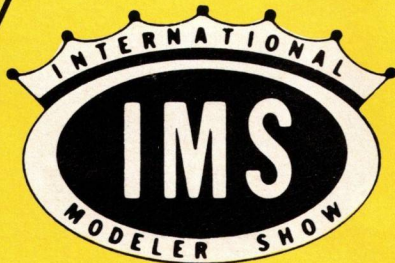
SATURDAY, MAY 13, 1989, 10 a.m.-6 p.m.

SUNDAY, MAY 14, 1989, 10 a.m.-5 p.m.

ADMISSION: Adults \$5.00, Juniors (12 and under) \$3.00
Children under six, FREE when accompanied by an adult.

ADVANCE TICKETS: Save time and waiting in line. Order your tickets in advance. U.S. only. Send check or money order payable to IMS, Inc. (Allow 3 weeks for checks to clear), and include self-addressed legal-size stamped envelope. One adult ticket \$5.00, 12 and under \$3.00 (No charge under age 6).

* Watch this ad for time and location of outdoor R/C flying demonstrations, including helicopters and ducted fan aircraft (subject to site availability).



INTERNATIONAL MODELER SHOW INC.

P.O. Box 10127, Costa Mesa, California 92627-0031 Phone: (714) 548-4700

IMPORT FIGHTER.

THE TEAM DOES IT IN THE DIRT.

Race the car that beat the imports in the toughest kind of off-road competition.

The All-American Associated RC10 took home the gold in both the ROAR and ORRCA National Championships.

Our RC10 turned back the foreign car invasion with the

same racecar technology that has kept Team Associated on top of the RC car racing world for over 15 years.

A RACE CAR, NOT A TOY.

Sure, you've heard that before. But Team Associated designs and engineers only model RACE cars. The new RC10 features

fully adjustable, four wheel independent suspension, an aluminum alloy monocoque tub and race-proven hardware throughout.

And the RC10 doesn't need expensive accessories and modifications to handle the roughest tracks. The strength and durability is standard equipment.



Smooth undercarriage for maximum ground clearance

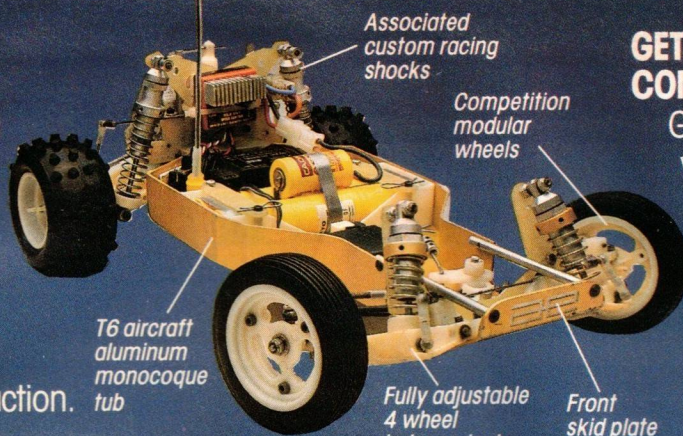
Sealed gearbox
Varilok
differential

Full race rear suspension includes bulletproof half shaft and u-joints with tapered and keyed modular wheels. Quick release knock off design for fast pit work and tuning.

RACE-WINNING ENGINEERING.

For maximum traction the RC10 suspension is damped by long throw, oil-filled racing shocks. These custom shocks use machined alloy cylinders and drill blank shafts for silky smooth action.

Rugged, yet light, the suspension gives you all the adjustability of full size, full race buggies. The A-arm/Ball joint design allows precise camber, caster, ride height and spring rate tuning. Even anti-roll bars and a VariLok dif are included.



Exceptional ground clearance and low center of gravity also contribute to the superb balance and performance of the RC10 over all types of terrain.

GET THE JUMP ON THE COMPETITION.

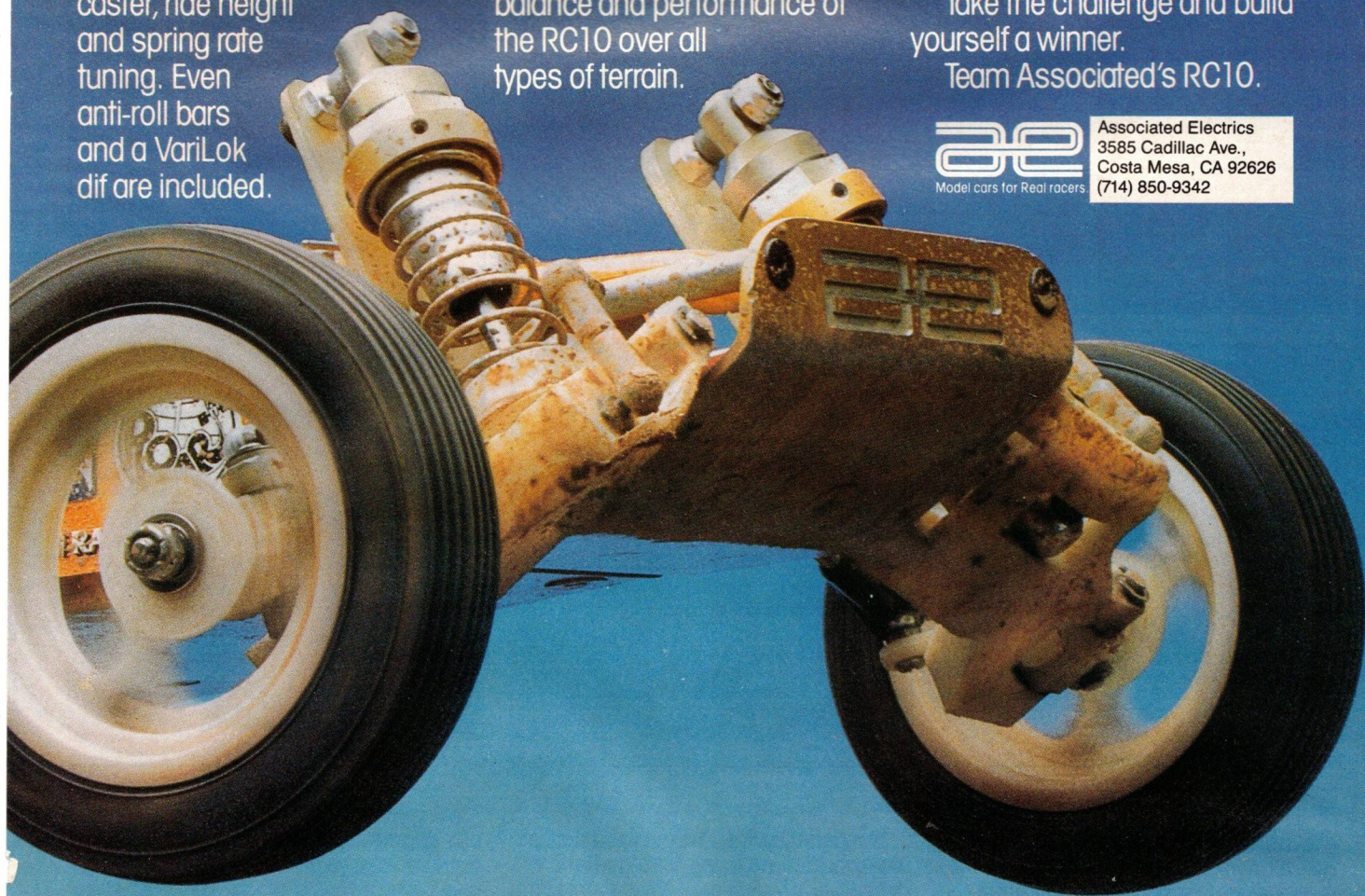
Go RC off road racing with the leaders. The National Champion RC10 is available now and legal for ROAR and ORRCA nationally sanctioned competition.

Complete RC10 kits, replacement parts and spares are readily available through model car racing's most extensive dealer network. Take the challenge and build yourself a winner.

Team Associated's RC10.



Associated Electrics
3585 Cadillac Ave.,
Costa Mesa, CA 92626
(714) 850-9342

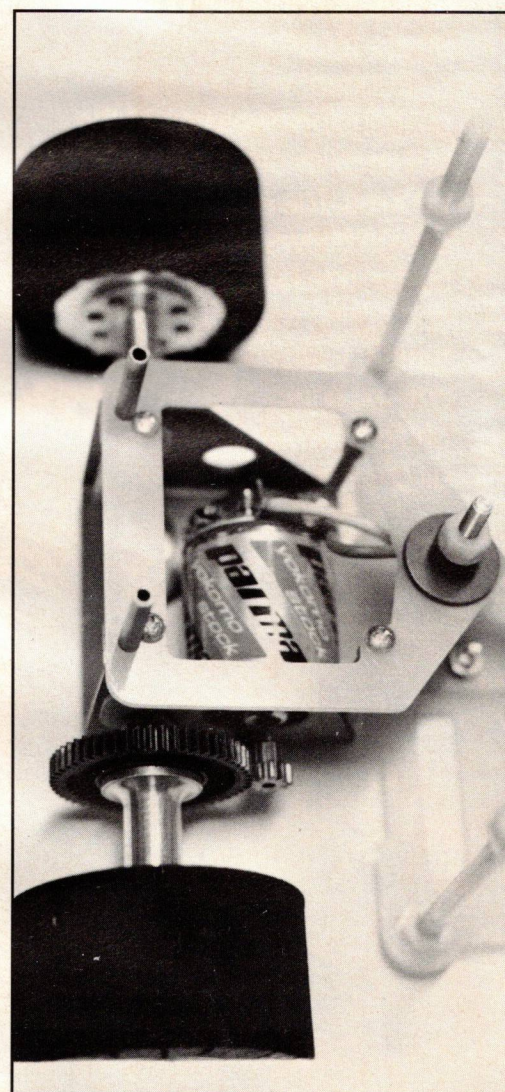
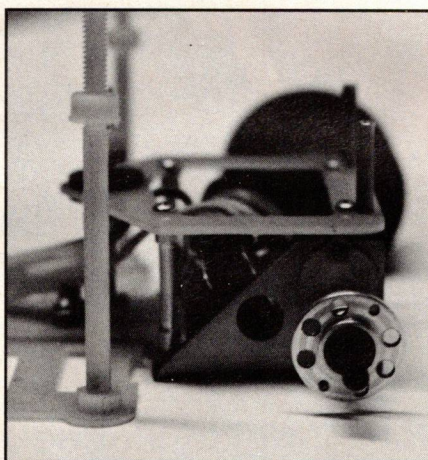
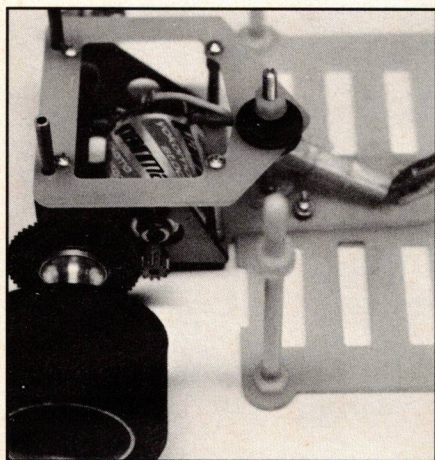
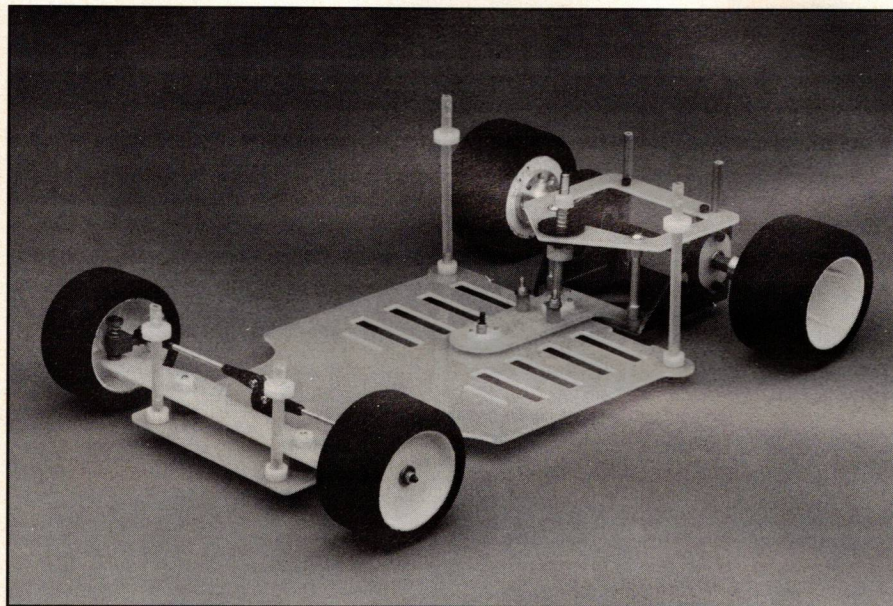


TEAM ASSOCIATED RC10

ROAR 1:10 NATIONAL CHAMPION / ORRCA NATIONAL CHAMPION
IFMAR WORLD CHAMPION

P A R M A PRO PANTHER

Brothers in Arms



BY WOODY TRIMBLE

One of the best known suppliers of aftermarket accessories in R/C car racing is Parma. Several years ago, Parma designed and manufactured its first car, a 1/12 racer. Now Parma is a well-established car manufacturer with an impressive list of credentials that includes the 1984 IFMAR 1/12 World title.

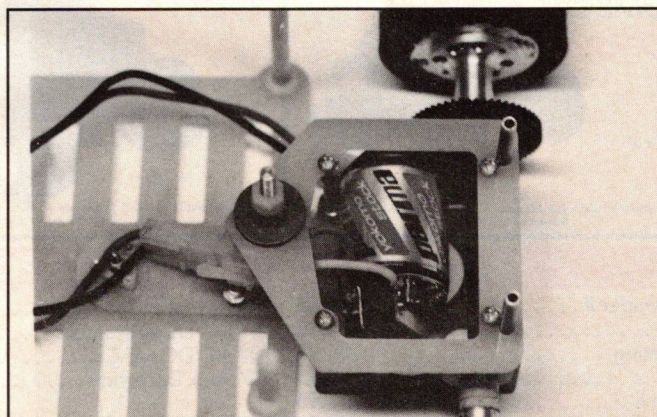
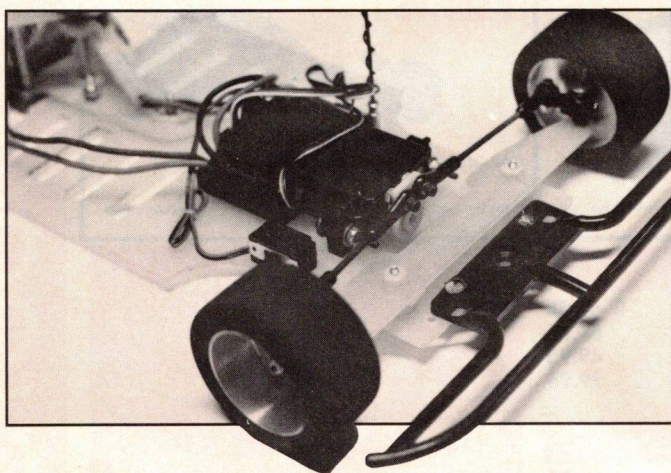
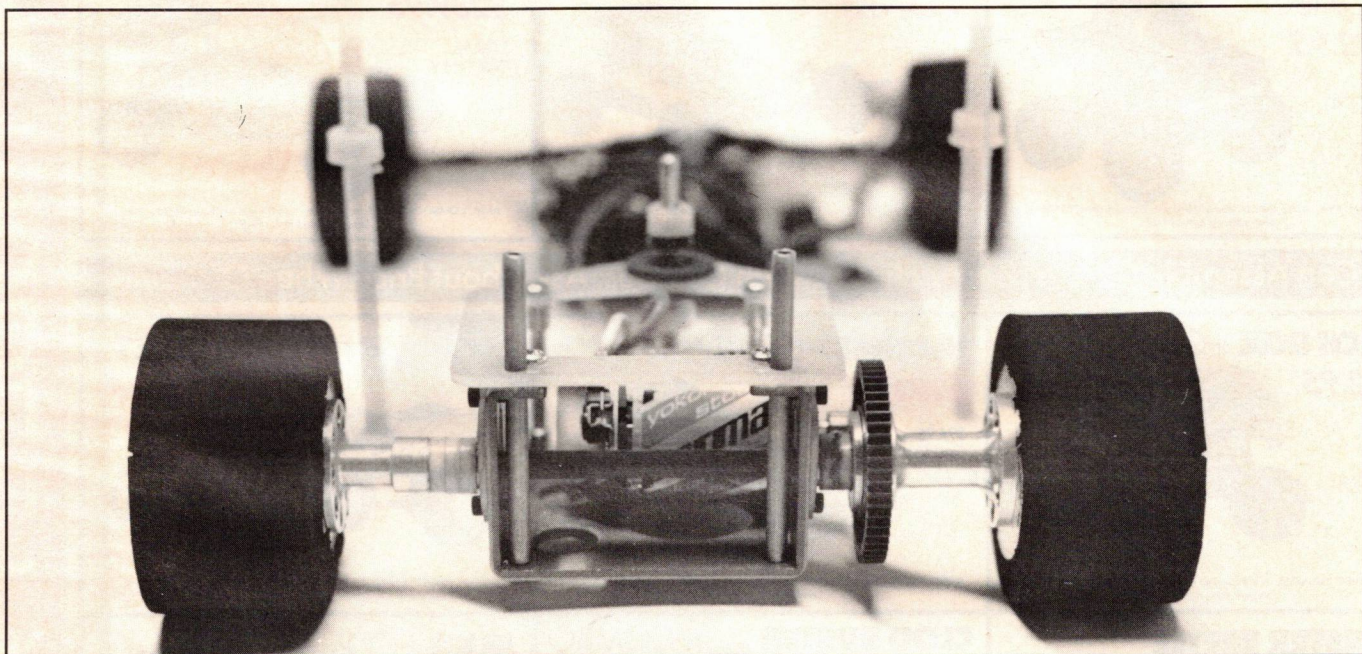
Parma's latest creation is the new Pro-Panther 1/10 on-road racer. As the name implies, the new car is an extension of the popular Panther series. In fact, the car appears to be a hormone-fed version of the 1/12 Panther, employing much of the smaller car's design features.

The beam front end is the most noticeable resemblance to the 1/10 Pro-Panther's diminutive predecessor. This simple and lightweight setup is extremely strong; the beam crossbar being a hefty unit cut from a thick piece of fiberglass. At either end, the steering blocks are kingpin-sprung, and it is highly recommended that the kingpins be polished to allow the steering blocks to travel up and down smoothly. Chuck the kingpins in a drill and use a fine emery cloth to polish.

The front caster can be adjusted using a set of nylon wedges. By slipping the desired wedges under the crossbar, vari-

ous degrees of caster angle can be effectively set into the front end. Less caster will give you more steering and reduced straightaway stability, while more caster will make your car track better in a straight line, but takes away a bit of the steering. Normally, five degrees of caster is plenty for most track conditions.

Moving to the rear you will find an aluminum power pod attached to the chassis by means of a pair of swivel balls. This type of rear suspension works most effectively on the 1/10 cars, as it is quite simple and requires a minimum of adjustments. Do take the time to make sure that the balls



swivel freely in the nylon sockets, and polish the balls if necessary. A damper plate provides (what else?) the damping, and care must be taken to locate the friction plates so that the lateral movement of the pod is free from bind.

A graphite diff is supplied with the Pro-Panther, and this unit is undoubtedly the most reliable type of differentials available. I have had the misfortune of tightening the loc-nut on a graphite diff, only to have the stud pulled from the axle. Put a small drop of cyanoacrylate glue at the base of the stud before you assemble and adjust the diff. The graphite axle rides on nylon bear-

ing adapters which can be "flipped" to alter the ride height.

The main chassis of the Pro-Panther is a fiberglass single-plane unit with mounting slots at either side to locate the batteries. The 'glass piece is quite stiff, and I honestly can't see the need for a graphite chassis. This certainly contributes to the Pro-Panther's price advantage in comparison to other 1/10 on-roaders. In typical 1/12 fashion, the batteries are strapped using fiber tape. For circuit racing, a six-cell saddle pack can be mounted either forwards or towards the rear in the slots to redistribute the CG.

The Pro-Panther is a very responsive car to drive, and certainly much easier to control than the twitchier 1/12 cars. The tweak adjustment screws are especially helpful in dialing the car. There is a wide selection of 1/10 rubber available, but I found the stock tires to be very sticky and long-wearing, at least on the parking lot that I used for a "test track." Parma had done an excellent job with the Pro Panther. It's a simple, straightforward design that's both inexpensive and efficient. If you've always wanted to try 1/10 on-road, this car virtually eliminates any excuse you may have for not taking the plunge. ●

BLACKFOOT +COMBO \$199.95  \$99.95 TRUCK ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.	SPECIAL FX10 +COMBO \$157.50  \$57.50 CAR ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.	RC-10 Ball Bearings +COMBO \$267.50  \$167.50 CAR ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.
MIDNIGHT PUMPKIN +COMBO \$202.95  \$102.95 TRUCK ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.	STRIKER +COMBO \$187.95  \$87.95 CAR ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.	TURBO ULTIMA +COMBO \$289.95  \$189.95 CAR ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.

We Can Assemble Cars When Purchased With Combos. Ask About Price When Ordering.

LUNCH BOX +COMBO \$192.95  \$92.95 TRUCK ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.	HORNET +COMBO \$194.95  \$94.95 CAR ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.	SPECIAL TRAXXAS BULLET \$189.95  FULLY ASSEMBLED AND INCLUDES PISTOL GRIP RADIO.
MONSTER BEETLE +COMBO \$239.95  \$139.95 TRUCK ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.	CLOD BUSTER +COMBO \$329.95  \$229.95 TRUCK ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.	JRX2 +COMBO \$289.95  \$189.95 CAR ONLY BASIC COMBO INCLUDES: 2Ch. Futaba or Airtronics Radio, Protec 703 Charger, Sanyo Racing Battery Pack.

CARS		PROTECH	
Grasshopper II	\$ 75.95	700 Digital	\$ 69.95
Fox	152.95	701 AC/DC Adjustable	59.95
Boomerang	139.95	702 AC/DC 6/7 Cell	49.95
Falcon	109.95	707 Peak Detection	79.95
Hotshot II	175.95		
Super Sabre	147.95		
Lotus Honda 99T	115.95		
Williams Honda F-1	115.95		
Avante	274.95		
Sonic Fighter	96.95		
		NOVAK	
		T4 With Choice of Plug	\$ 79.95
		T1 With Choice of Plug	117.95
		T1X With Choice of Plug	149.95

FOR ORDERS ONLY (NO CATALOGS AVAILABLE) 800-446-6335 (OUTSIDE CALIFORNIA)	FOR INFO & PRICES (818) 766-6772 CALIFORNIA ORDERS (818) 506-7564
---	---

BASIC COMBO UPGRADES:
 AC/DC Adj. Current Charger Add \$26.95
 AC/DC 6/7 Cell Charger Add \$18.95

DELUXE COMBO:
 Pistol Grip Radio, Protec AC/DC Charger and Sanyo Racing Pack:
 Add \$48.95 TO BASIC CAR + COMBO PRICE

COD Add \$2.50 — \$3.00 Handling PLUS Shipping — California Residents add 6 1/2% tax. No extra charge for credit card orders. Please allow time for personal checks to clear.



MK MODEL PRODUCTS

12420 Burbank Blvd., North Hollywood, CA 91607

Hours: Mon. - Fri. 10-7, Sat. 10-5, Sun. 12-5

All items are subject to prior sale or manufacturers availability. Not responsible for typographical errors. Prices subject to change without notice.

INTRODUCING PERFORMANCE PLUS™

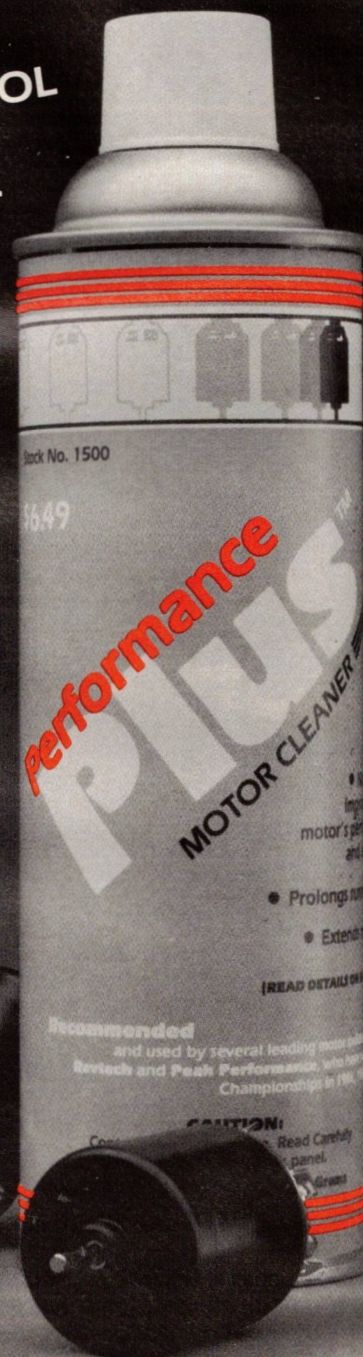
THE NEEDED MAINTENANCE TOOL
THAT NOTICEABLY IMPROVES
YOUR MOTOR'S PERFORMANCE
AND EFFICIENCY!

- PROLONGS
RUNNING TIME!
- EXTENDS MOTOR
LIFE!

Performance Plus™ has been developed specifically to aid in maintenance, cleaning and conditioning of all stock and modified electric race car motors. It is a needed prevention maintenance tool that will noticeably improve your motor's performance and efficiency. This is done by eliminating power-robbing resistance and arcing caused by accumulated and unwanted carbon deposits on the commutator. The **Performance Plus™** formula removes accumulated brush dust and impurities caused by the wearing of moving parts within the motor. As a result, your batteries and entire system will benefit from the use of **Performance Plus™** and experience longer running times. This also means less cost to you in maintenance and motor repair, lowering the likelihood of total replacement of these expensive motors. This small precaution saves you money both now and in the long run, so invest wisely in **Performance Plus™** today.

Recommended and used by several leading motor builders, including **Revtech** and **Peak Performance**, who have won national championships in 1986, 1987 and 1988.

Available through your local dealer
for only **\$5.75**



DISTRIBUTORS
AND DEALERS
CONTACT:

T.A. EMERALD INDUSTRIES //

18361 ENTERPRISE LANE, HUNTINGTON BEACH,
CA 92648 (714) 841-2750

DESIGN FOR FUN

*Architects put on an IROC-style
R/C race at their annual convention*



BY ERICH HIEDEMANN

As we gathered at the Lansing Center on October 19-21, 1988 for the 73rd Annual Convention of the Michigan Society of Architects (MSA), my thoughts were not of seminars or workshops, but of R/C racing and maintaining 10 Hornet chassis

in good running order. Sound odd? Perhaps, but last December when the Convention Chairman and the MSA's Executive Director visited the Center to make preliminary arrangements for the use of their facilities, a walk on the exhibit floor was in order.

Fortunately, the floor was empty, offering 50,000 square feet of space for over one hundred exhibitors and their displays; but then, empty, it looked like a great place to run R/C cars. As time passed, the idea stuck, and I was recruited to design and produce an event which would "bring out the kid" in a group of adults who are usually preoccupied with a more serious side of life, and which would, incidentally, entice conference attendees to visit the exhibits.

So we wouldn't steal the show, we curtailed our enthusiasm and settled on a quasi-IROC format, racing 10 equally prepared chassis in 5- or 6-car heats with the only variable being driver skill, or lack thereof. Keep in mind that the people attending this convention had probably

EVENT: MSA GRAND PRIX
SITE: LANSING CENTER
SPECIFICATIONS: STOCK TAMIYA
HORNETS • KYOSHO PULSAR RADIOS



The first heat race for the MSA Grand Prix about ready to go. Hey--that guy second from right looks like my brother-in-law!

never seen an R/C car, let alone driven one.

A quick trip to the hobby shop to discuss a healthy discount for bulk ordering confirmed the financial viability of the project. The Hornet was chosen based on two criteria: established quality of the brand name and cost. We left the store with 10 Hornets, 10 radios, 30 Ni-Cds, and 5 chargers; it was Christmas in May! Four weeks of lunch hours and spare time after work later, and we were testing and tuning chassis. We also came across what became the Official Truck of the MSA Convention—a big, bright red Clod Buster. This truck was as much a pleasure to build as it is to drive, and inevitably became the focus of attention wherever we took it to promote the event.

Then a simple track was devised—a long oval with a chicane on one side. Drivers stood at one end, so that all but one turn would be right-reading. The track surface was an inexpensive carpet provided by the exhibit installer. Edges were defined by 2 x 4's cut to 3 foot lengths (for future flexibility), braced by a piece of bent sheetmetal, and velcroed together at each end. Remember, we're talking novice drivers and lots of crashing. The cars can't take all the abuse, so we designed the track to "give a little." Then we staged a few practice heats in our office to test the mechanics of the event, and when the dust cleared, all 10 Hornet bumpers were replaced with Pro-Lines. We also stocked up on replacement gear sets for the differential and steering servo, since two sets of each were required to repair the practice damage.

While all this research and development



The Tamiya Clodbuster, the official truck of the MSA Grand Prix, joins one of the identical prepared Hornet offroad cars that participants raced during the convention.

was going on, we were also selling car bodies to architectural firms and exhibitors throughout the state to engage their participation and help defray costs. We cut out car bodies, pre-assembled the "driver" and mailed them to the participants for painting and decals. We kept the wings, painted them white, and numbered them sequentially so our lap counters would have a consistent feature to key on. (I didn't want 14

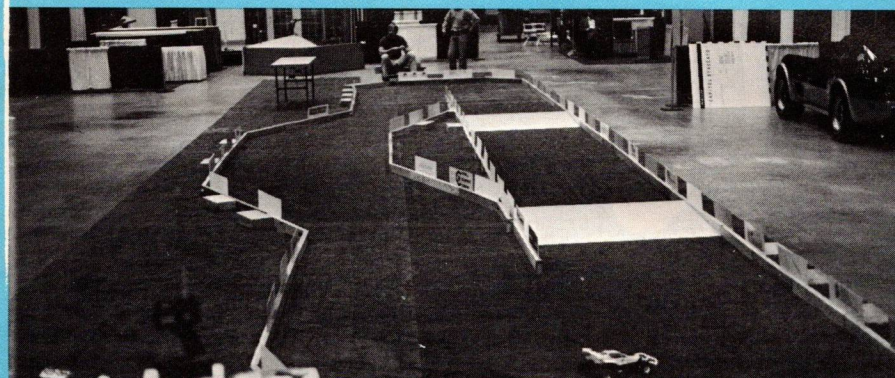
cars numbered "1"!)

As the finished car bodies started coming back from the participants, it was evident that quality ran the gamut from very elegant to very bizarre. We knew we were going to have an interesting and entertaining event!

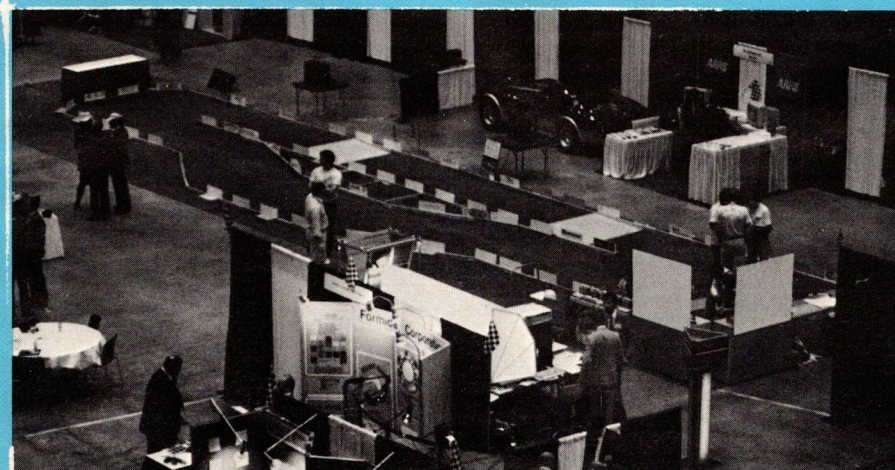
With the dress rehearsal behind us and 10 repaired chassis, 30 charged batteries, and 40 or so car bodies in hand, we packed up our crate and headed to Lans-



The first two Hornet chassis were assembled individually to check for bugs (there weren't any), then the other eight racers were mass-produced.

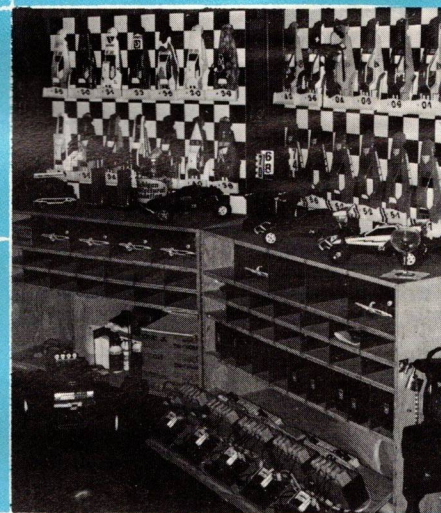


Viewing the track from the pits during setup and testing. Two ramps on the long straight got things airborne. The car in the foreground just crossed the start-finish line.



The track at the convention center was 15x60 feet, with a 5-lane width. The '78 Indy pace car in the back was not, contrary to popular demand, first prize at the Grand Prix.

ing. The first day there, we unpacked and set up the track. The more vulnerable areas were reinforced with concrete blocks and all joints between the 2 x 4's were spanned with billboards. These billboards, originally intended to dress up the track, were made of .030 white rigid vinyl cut to 7 x 21 inches. Artwork was applied with double-sided tape, and each billboard was set into a 1/2-inch deep slot cut the length of the 2 x 4 and held tight with shims cut from scrap vinyl. By spanning the joint, we were able to strengthen it and keep it flexible at the same time. The track held up beautifully — giving, but not breaking, and I am con-



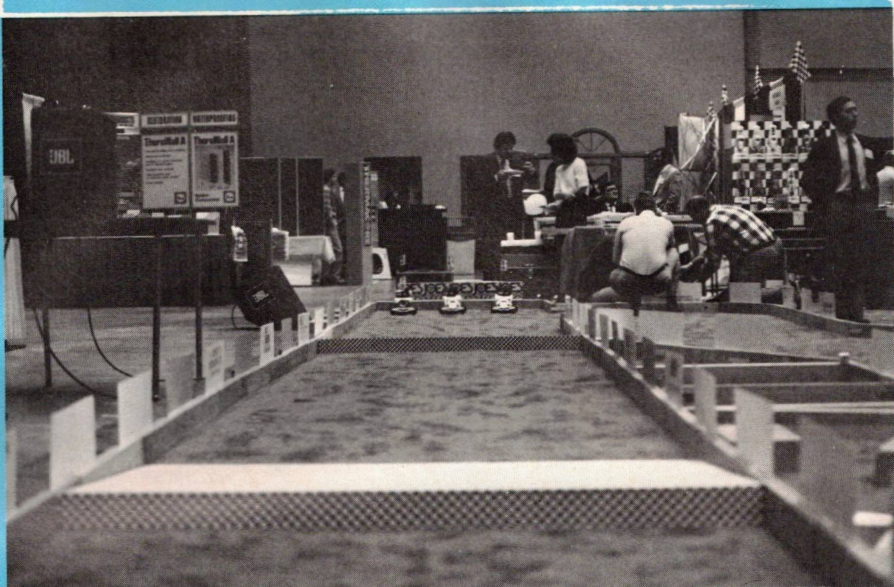
On display at the convention was the array of customized Hornet bodies, the radios, and the transport crate, which doubled as the pit area and garage for the Grand Prix races.

vinced this flexibility prevented serious damage to the Hornets.

Racing began at noon the next day, with elimination heats between the MSA and its nine chapters. Dubbed the "Chapter Challenge," all our expectations and anxieties were confirmed—the novice drivers had their hands full coping with the speed and steering responsiveness of these 1/10-scale cars. Naturally, the spectators lining the track showed little mercy with their shouts of encouragement and laughter. Two quarter-finals and a semi-final advanced two entrants to the Grand Prix, to be held later that evening. Damage control reported one broken servo saver, one servo gear set with broken teeth, and what was thought to be a blown rear end proved to be a loose lug nut. An hour later, all was well and we were ready for the evening's event.

The "Office Clash" would pit over 20 architectural firms and exhibitors against each other in four semi-final heats of five or six cars, depending on driver availability. Each heat was timed at four minutes,

with the top two or three lap counts advancing to the Grand Prix. Our official starter and timer kept all drivers apprised of the remaining time via a small public address system. While one heat was running, the pit crew quickly changed car bodies and installed a fresh battery pack. Filament tape secured the battery covers, which would otherwise have been disclosed by the relentless pounding to which the chassis were subjected. Two-way radio communication between the pit crew and the drivers' table ensured each racer the proper transmitter. By the time the semi-final heats were completed, only six chassis were operable, two more servo savers were broken, and two chassis were cracked where the rear axle stays mount to the chassis. With no protection for the back of the car, the differential had to absorb all the impact. Stress cracks formed between the two screw holes and would then extend to the edge of the chassis. These cracks (both sides) caused the locating shaft to pop out on impact and the



Looking down the throat of the straightaway, three cars sit and wait for some juice. First place in the Grand Prix took home a complete car, radio, battery, and charger.



The R/C races delighted the crowd, many of whom had never seen a radio-controlled race before. Many were drawn to the sport from viewing this race at the architect convention in Lansing, Michigan.

differential to drop from the chassis and drag behind the car, held only by the shocks and engine wires. Two cable ties cinched together and tightened around the axle stays kept these chassis available as back-ups.

Twelve entrants qualified for the Grand Prix, so we decided to have two six-car heats, with the top three lap counts overall receiving the three prizes. With 30 seconds left in the first heat, one car coasted to a stop for no apparent reason (and as of this writing, the problem is still not diagnosed). A cable tie chassis was pressed into service, and they were off! It was the observation of those of us marshalling the course

that these final two heats were driven much more capably than the first six—these drivers actually had some control over their cars! Lap counts throughout the day increased from an initial average of 5.4 to a final average of 11.8. First Place was secured with 19 laps, Second and Third with 18 and 16, respectively. The lowest lap count was 3, and it is my guess that the four minutes used to produce those laps seemed like an eternity to the driver.

First Place took home a complete car and radio, with a battery charger and two spare batteries. Second and Third Place each received a Hornet Jr. mounted on a fabricated trophy base so that it could be

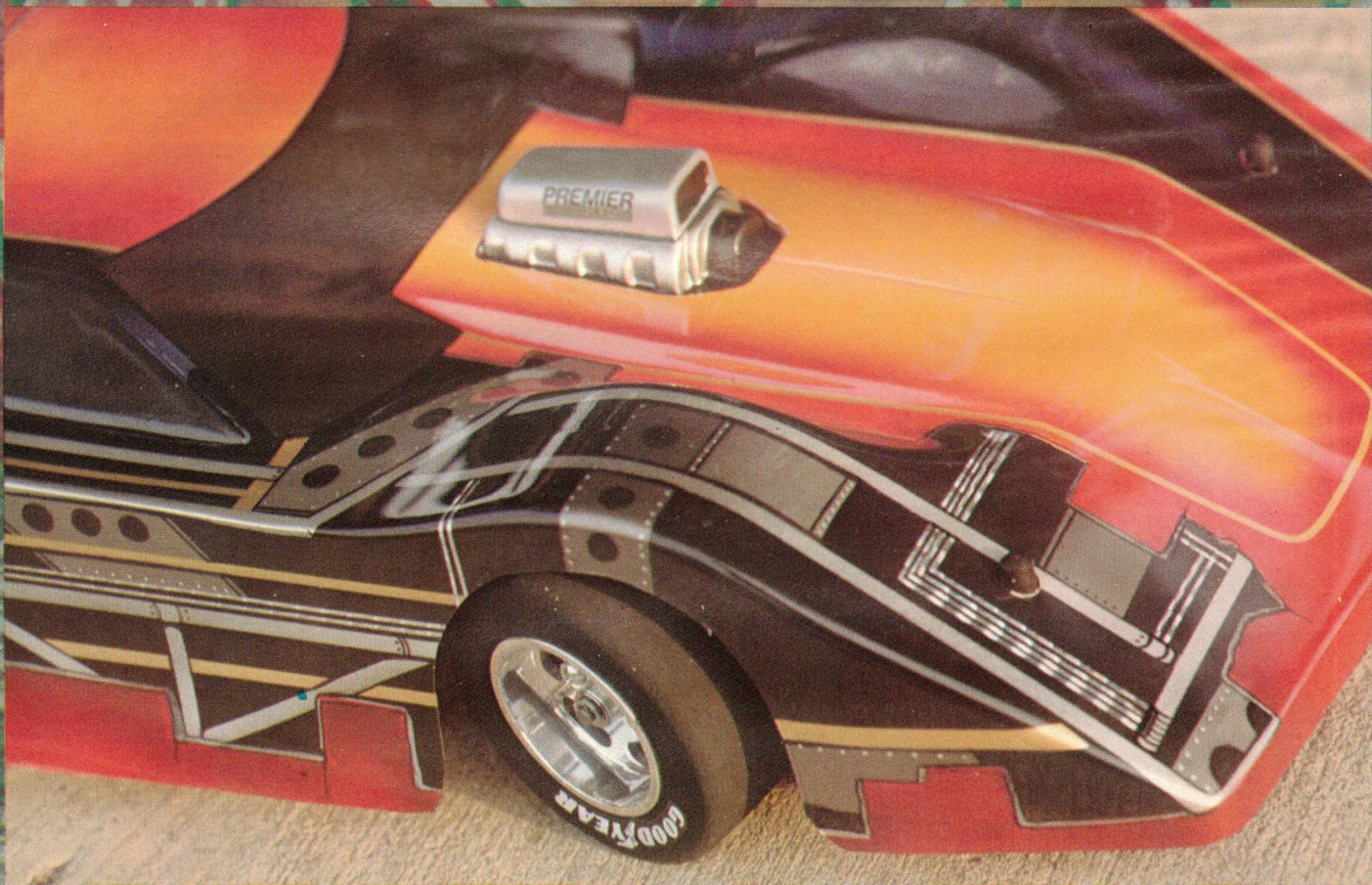
run. Everyone who participated in the event received an official "MSA Racer" button and everyone else, I think, took home memories of people laughing, having fun, and acting like kids again.

If I can indulge for a moment, I would like to thank our official starter and timer, Jim Perkins; and the Pit Crew, Jim Braathen, George Ontko and Wayne Bills. Without their solid support and tireless efforts, none of this would have been possible.

All in all, it went very well, and my guess is that we turned more than a few people on to the hobby—they're already talking about next year! Maybe we can do truck pulls, or 1/4-scale dragsters, or. . . . ●

Air Power

*Airbrush artistry is a breeze
for this Lexan Leonardo*

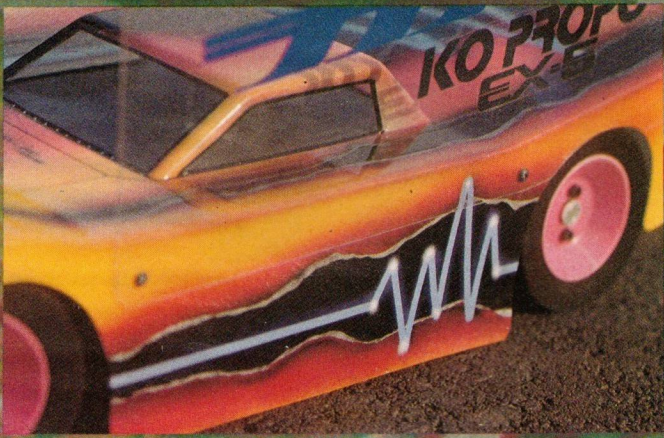


Southern California graphic artist Michael Ogle saw his first R/C race 2-1/2 years ago in Cahokia, Illinois. He was surprised to see that racers who would put hours into preparation of their cars would only give passing interest to the car's paint job. Often they would merely spray the car one solid color, sometimes without even masking the windows.

In order to finance his own racing activities, Mike offered to paint a few racers' cars. Borrowing a friend's airbrush, Mike went to work, and within a few weeks he was swamped with orders.

Today, Mike paints for many R/C car manufacturers in Southern California, including Superior Racing Products, Premier Designs, Global Distributors, and Race Brothers, to name several. Some of the cars shown here have appeared in hobby shows such as the recent International Modeler Show in Pasadena; others have taken concours trophies at tracks across the nation.

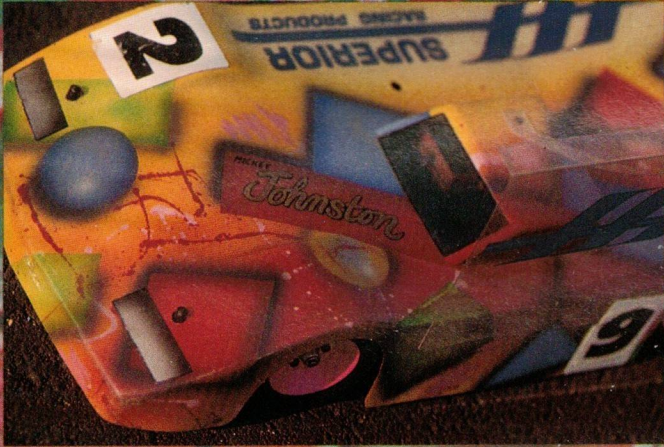
In future issues, Mike will give you hints on how to do many of these trick painting techniques. With an airbrush, you can recreate most of the paint schemes you see on these pages, including fogging, cobwebbing, flames, and even murals! You don't have to be an artist, but it helps to have an artist show you his tricks.



Pulse car wedge painted in pearl purple "glow" around blue pulse line.



Closeup of the pulse car hood with tear effect.



Surfer wedge oval car with circles, squares, and dry-brush and splatter technique. This effect is easy to achieve when the tricks are known.



Back view of the surfer wedge with "floating" graphic shapes which were done by shadowing each shape in black first.



The Rex Camaro, with restaurant's logo on door panel, is painted to match decor inside the establishment.



The "Tron" wedge car done for Sean Young. Thin angle-slices of tape and flourescent colors on black give a futuristic look to body.



Note pulse design on hood begins with white burst.



Side panel of ASA Mustang shows mural effect combined with gold "engine turned" numeral. This car has won several concours competitions.



The left side of the "cutaway" car shown in lead photo has ribbed side treatment done in pearl purple/black, with fluorescent yellow stripe, outlined in gold.



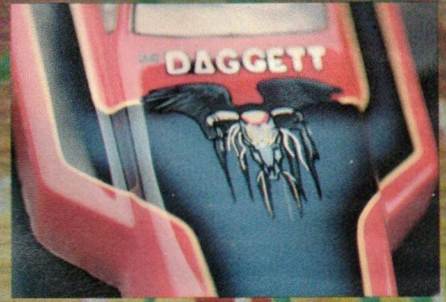
Squiggle graphics achieved using fluorescent yellow that has been outlined in black.



A 1/12 Camaro with flames. This technique is easy, and will be covered in a future issue.



Graphic tricks are only limited by your imagination and your ability. You supply the imagination, we'll give you the artist's secrets!



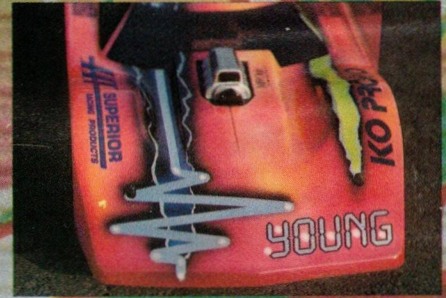
An RC10 with an Eagles' trademark. This was a tedious graphic that took a lot of time to do.



Kyosho Salute with fogged windows and blue and white color scheme.



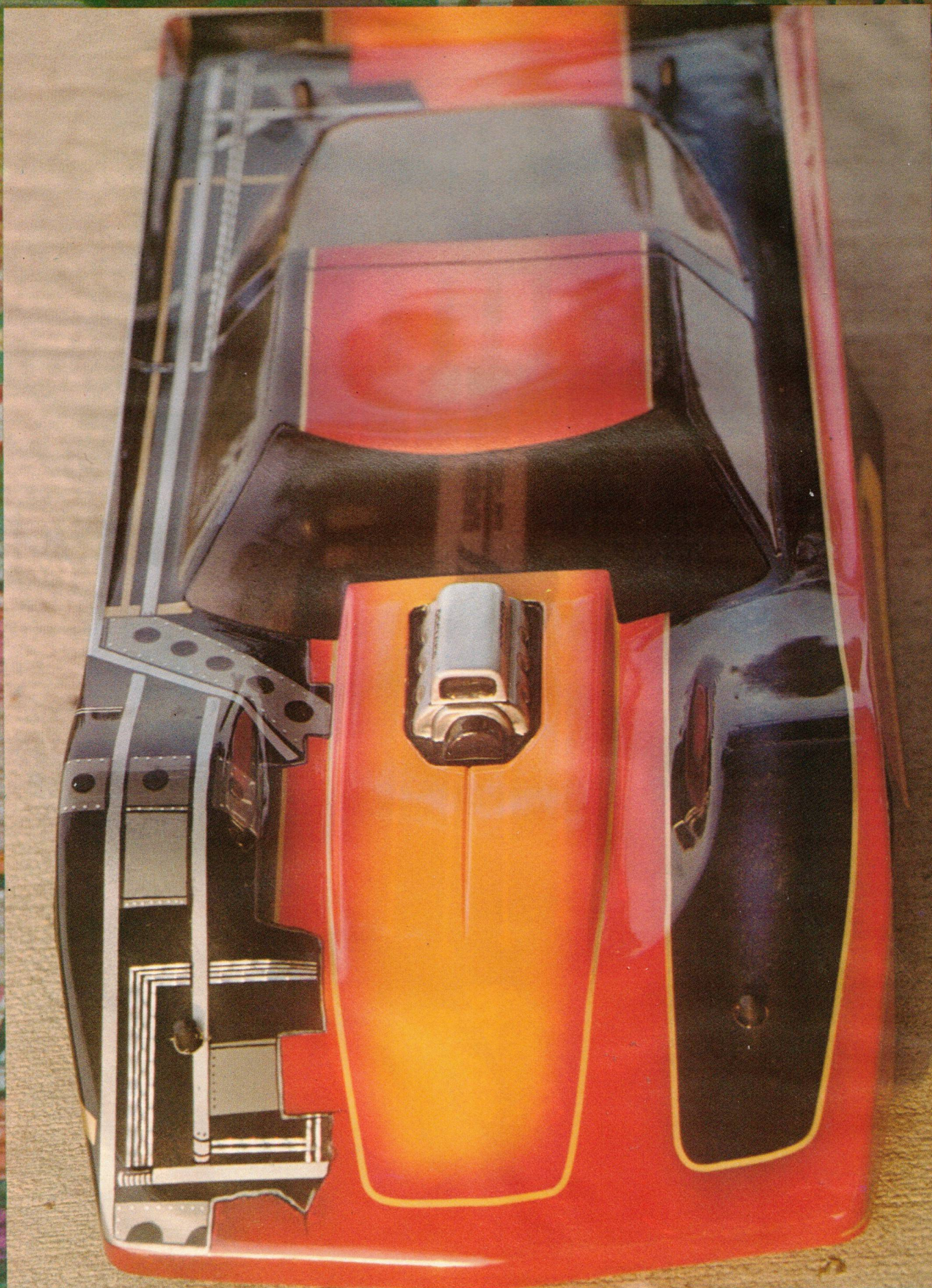
Mustang hood mural, done on underside. We'll cover this technique in an upcoming issue.



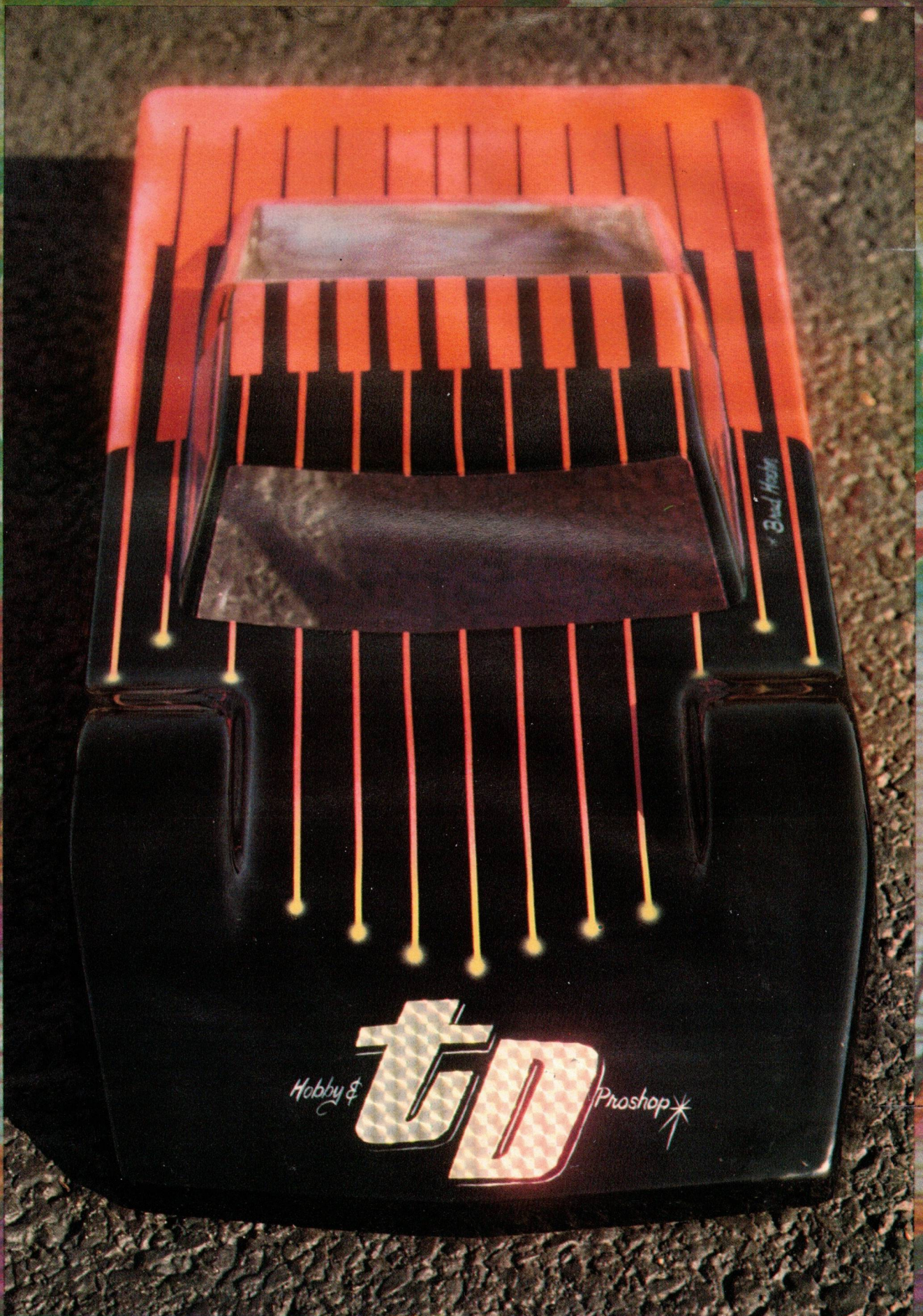
Sean Young's Corvette, with his name done in presstype and accented with white bursts.



Hood mural on Mustang was painted entirely on underside, in reverse. This technique will be covered in a future issue.



Top view, the "Cutaway" car. One side was painted normally, the other in a "tearaway" style that reveals structural details.



Dominator body in black and fluorescent orange with gold iridescent TD emblem.

READERS!

**Do You Want
To Learn How
To Recreate These
Effects On Your Own
R/C Car Bodies?
It's Easy When A
Pro Shows You How.**

**COMING
IN**

***R/C MODEL
CARS***

ROAR REGION II

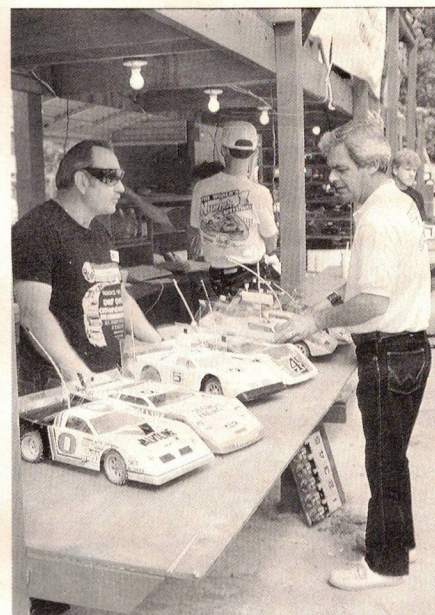
DIRT OVAL CHAMPIONSHIPS

A well-tended Burlington, South Carolina dirt track attracted a crowd of enthusiastic oval racers

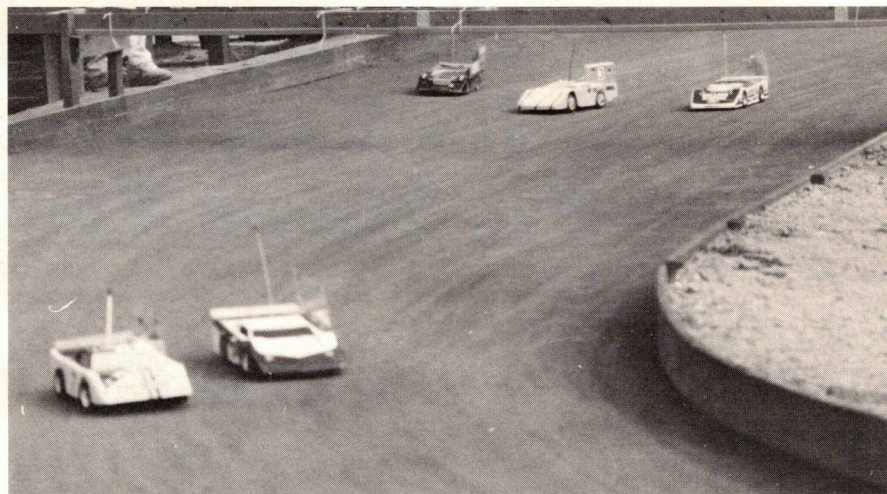
BY GARY BRANDE

Racers from throughout ROAR Region II converged on the R/C Hobby Raceway in Burlington, North Carolina for the 1/10-Scale Dirt Oval Championships this fall for some hot and fast dirt racing for 2WD and 4WD Stock, and 2WD and 4WD Modified events. Progressive Technologies, sponsor of the event, had representatives on hand at the track to greet the arriving racers and to introduce them to Progressive's products. By the end of the day on Friday, the racers knew the track, their cars, and related equipment, and were ready for Saturday's qualifying and Concours competition.

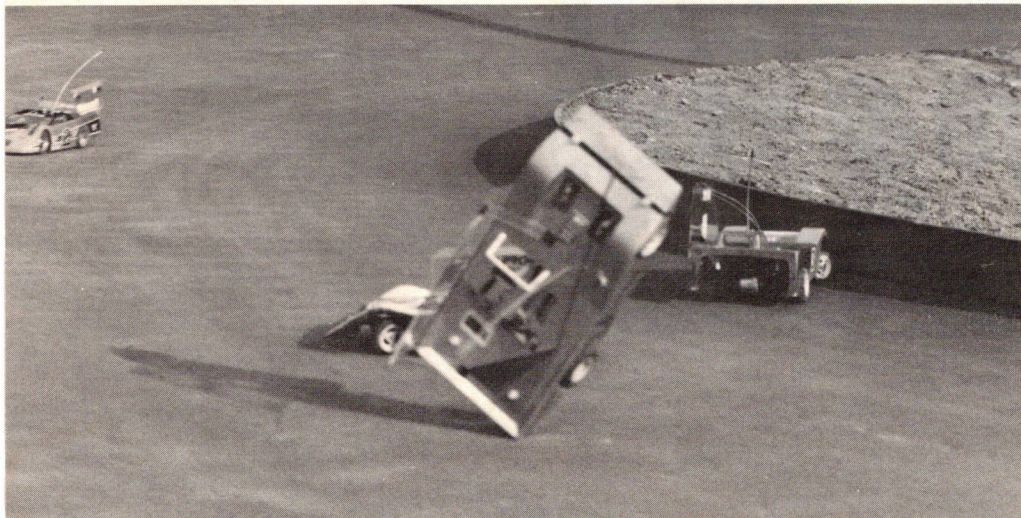
After two heats had been run on Saturday, Concours judging was conducted. With a majority of the cars entered in the races also entered in the Concours, the judging was quite a task. The trophies were finally handed out to Robert Joyce for First, Chris Smith for Second, and Johnny Bright Third.



Getting ready for some Southern-style dirt oval racing in North Carolina.



Cars pass under the computer bridge during a hotly contested heat race. Computer scoring has become almost a must for large races, eliminating many disagreements over car placement.



After a brief practice session on Sunday morning, the third and final qualifying round went on the track. By now the cars were flying, really hooked up to the track. Top Qualifiers were Slamming Sammy Blackwell in 2WD Stock with 28 laps in 4:01.98. The 4WD Stock TQ was Art Austin, who turned 29 laps in 4:01.98, beating the R/C Hobby Workshop track record by six seconds. Sammy Blackwell came back to take 2WD TQ honors with 30 laps in 4:02.06. The top man in 4WD Modified was Chris Smith with 33 laps in 4:02.35. The positions for the mains were now set, so the contest organizers began drawing names for prizes that were generously donated by R/C manufacturers. When the drawings were over, every racer present got a prize. The grand prize of the weekend was a Turbo Optima Mid SE, donated by

Kyosho/Great Planes, and won by Lucky Randy Bartlett.

Spectators jammed the bleachers as the first contestants of the main events drew to the line. Pit crews and drivers all felt the excitement and thrill of competition as they began the first of several thrilling races.

2WD MAIN EVENT

The racing was hot in 2WD Stock with Top Qualifier Sammy Blackwell leading from the start, with James Doby breathing down his back. Sammy was caught in a four-car pileup on the back straightaway halfway through the race, giving James the lead to the finish line, despite Blackwell's efforts to catch him. James and Sammy both finished with 28 laps, with 13/100s of a second separating the two, who were both a full lap ahead of the rest of the field.

4WD STOCK MAIN

Top Qualifier Art Austin was left behind at the start by Dennis Fields and Johnny Bright. Bright overtook Fields early in the race and never looked back, holding onto a one-lap lead to the finish, with lap times averaging 8.09 seconds.

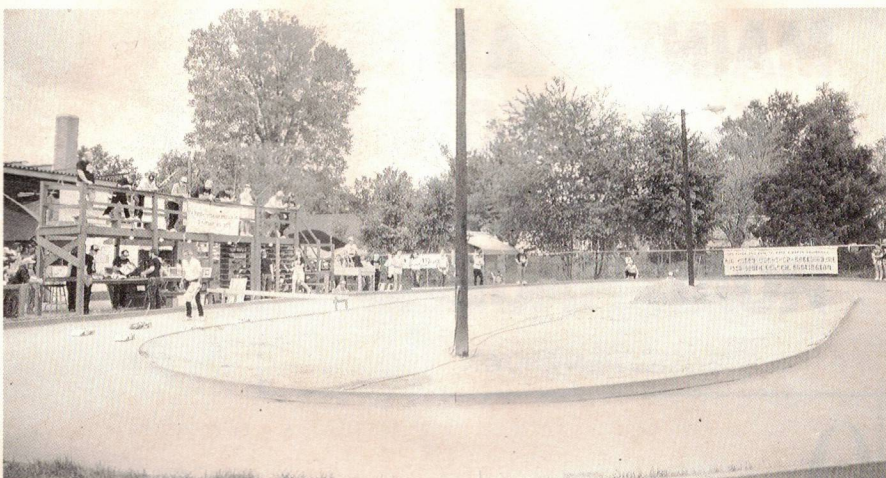
2WD MODIFIED MAIN

TQ Sammy Blackwell came back from his close defeat in 2WD Stock by blowing everyone's doors off after taking a quick lead at the start that he never relinquished. Sammy ran a steady race to the finish, with Bobby Beard coming in Second a lap down.

4WD MODIFIED MAIN EVENT

Everyone knew that the race to watch in the 4WD Modified was between TQ Chris Smith and Johnny Bright. Chris ran a fast, steady race with lap times averaging 7.10 seconds. Bright gave it his best effort but a tangle in his seventh lap cost him his chance for the Championship, and brought him to the finish line in Second with average lap times of 7.71 seconds.

Despite a long ride home for many, most of the racers were reluctant to pack their gear and bring the great weekend to a close. Rounds of applause echoed throughout the track for the winners, sponsors, track crew, and the R/C Hobby Workshop & Raceway. Everyone who participated departed with a sense of goodwill, camaraderie, and a race well run. Before the tire rubber was washed off the oval in Burlington, plans were being made for the next season of racing at R/C Hobby Raceway. Owners Dave and Margaret Guerin wish to extend their appreciation to their valued friends who helped organize and run the event, and to each and every racer and guest who participated in the Dirt Oval Championships, congratulations for their sportsmanship and enthusiasm, which help make the Championships a memorable weekend for all.



The track at the R/C Hobby Raceway was smooth and fast. After the last race on Sunday, many of the racers were reluctant to leave; they were having too good a time!



Some of the trophy hunters at Burlington.

1988 ROAR REGION II DIRT OVAL CHAMPIONSHIPS BURLINGTON, NORTH CAROLINA

2WD MODIFIED A MAIN

1. SAM BLACKWELL
2. BOBBY BEARD
3. MIKE BOYLAN
4. JAMES DOBY
5. DARRELL WINSLETT
6. CRAIG PERRY
7. JIM McCALLUM
8. TERRY BLACKWELL
9. R. LEE DAVIS
10. STEPHEN MINIEA

4WD STOCK A MAIN

1. JOHNNY BRIGHT
2. DENNIS FIELDS
3. ART AUSTIN
4. ROBERT JOYCE
5. BYRON KING
6. J.P. STANCIL
7. JESSE JONES
8. JOHNNY STARR
9. BRIAN HAWTHORNE
10. BILLY RUSSELL

4WD MODIFIED A MAIN

1. CHRIS SMITH
2. JOHNNY BRIGHT
3. KEN COREY
4. TOM MOONEYHAM
5. BILLY DEAN
6. STEPHEN MINIEA
7. ART AUSTIN
8. RONALD TIMM
9. BILLY RUSSELL
10. ROBERT JOYCE

2WD STOCK A MAIN

1. JAMES DOBY
2. SAM BLACKWELL
3. JIM McCALLUM
4. TERRY BLACKWELL
5. DENVIL McCALLUM
6. R. LEE DAVIS
7. RANDY BARTLETT
8. DARRELL WINSLETT
9. LOUIE BROWN
10. PAUL DOBY

A MAINTENANCE GUIDE FOR 1/10-SCALE ROAD RACERS

BY STEPHEN BROWN

Okay, so you went out and bought that killer 1/10-scale road car for about a half a zillion bucks, ran it for a while, and blew everyone away. Then, all of a sudden, it starts to run like a Yugo with 400,000 miles on it. What happened? Maintenance, my boy, maintenance! You've got to take care of your equipment. A little work between races and a little care in setting up your car can prove very productive down the road. Here are a few tips to help you keep that car running great:

MOTOR

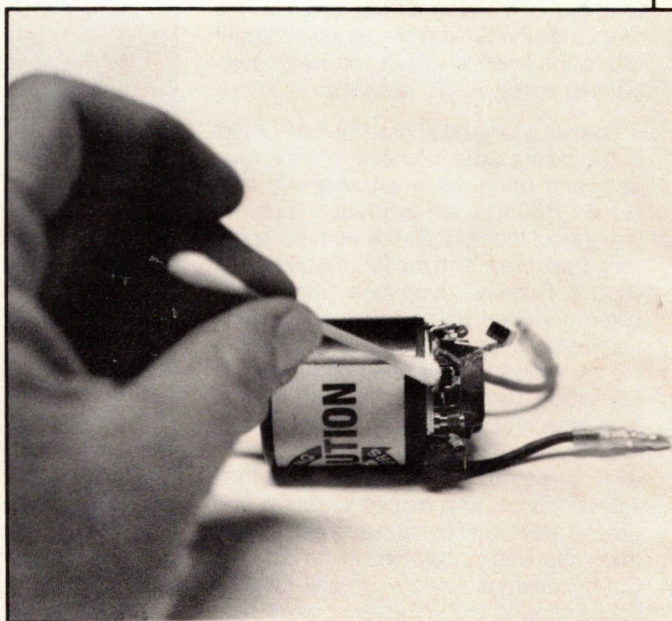
Your motor is a crucial element of your car, one that requires great care to keep it running at optimum performance. A bit of care here will really pay dividends in terms of speed and running time. The motor masters at Trinity recommend, first of all, cleaning your motor after every run, if possible. Trinity's Motor Doctor can work miracles here and without destroying any plastic parts on your car or hurting you. Spray out the ball bearings and spray the commutator. It is also advisable to remove the motor brushes and clean the brush hoods out to avoid having the brushes hang up in them. This is a simple process that takes only a few seconds and should become a habit to you. It should be noted that some motor cleaners contain Tri-chlorethane, a chemical that the EPA lists as a cancer-causing agent. Trinity's does not, and you would be well-advised to make certain that yours doesn't either. The second step in taking proper care of your motor would be to replace your motor brushes after approximately eight runs. Looking at motor brushes that have been run for an extended period of time you will notice, aside from the wear, a change in color and texture at the tip, where they touch the commutator. This means that they have lost the essential oils (sounds kind of like an ad for Oil of Olay or something) that are needed to give you lots of horsepower without hurting the commutator. Replace them, it's a

cheap price to pay for keeping your motor running well. I have found Trinity's #4035 "Off-Road Brush" to work exceptionally well in my modified motors (this is a cut brush that gives more horsepower and greater running time), and Trinity's #4007 "Timed Brush" is perfect for stock motors. Their #4007 brush is cut to give the stock motor more "timing," thus making it run faster. It really does work. Check out the motor of whoever is running fastest in stock class near you; I'll bet he has these brushes in his motor. Both these replacement brushes have eyelets already installed on them, making your job of installing them an easy one. When replacing your motor brushes isn't enough, it may be time to send your motor out to be rebuilt. Check with the original manufacturer of your motor, they should offer this service. Also remember to keep your bearings or bushings clean and properly (not overly!) lubricated.

BODIES

The body on your car is a fragile, lightweight, ultimately disposable piece of equipment. They may not always last a long time, depending on your driving and the kind of track you run on more than anything else, but they can be made to last longer. The first step would be to use a good-quality paint that will not chip off at the first sign of contact with an obstacle. It may sound silly, but I have seen many, many car bodies that have half as much paint on them at the end of their first run as they had on at the beginning. Pactra makes an excellent quality paint that is convenient (it comes in a spray can), economical, and won't chip off. There are other paints you can use, like Rustoleum, but most take hours to dry. Pactra's takes only minutes. Parma, Kyosho, and Tamiya also make good-quality paint that comes in jars, to be either brushed on or airbrushed on. Next step would be using body bumpers, like Dan's R/C Stuff's "Body Mount Foams," on your body posts to prevent splitting the holes around them when you run into some geek going the wrong way down the back straight. They can't guarantee that your body holes won't rip, but they sure do help. Another good idea would be to use body mount washers between your body and body clips, these are sold by Trinity Products and Dan's R/C Stuff, among others. If you get cracks around your wheel wells or body holes, try putting some Shoo-Goo inside the body over the crack. It should seal the crack and prevent it from getting worse, as well as stopping new cracks. This thoroughly disgusting stuff is available at most stores that sell sneakers.

It is important to keep your motor as clean as can be. After every run you should clean the commutator and brushes, if possible. Check for unnecessary wear, and replace brushes as needed.



BATTERIES

The most important thing to do to your batteries is to not abuse them. If you keep charging and discharging them many times in a matter of hours, they won't like it and they won't give you the horsepower or running time that you want. When you are done running, put a resistor on them and leave it there. Current feeling of those who should know is that if you are running Sanyo SCs or SCRs you can leave the resistor on until just before charging. If you are running Sanyo SCEs, leave it on until they are fully discharged (when the resistor is fully cool) and then remove it. Sanyo SCEs should only be run once a week, if possible, and should be charged at a very low (between two and four amps) amp rate for maximum running time and for greater life of your batteries. Trinity and Bud's Racing Products both make resistors specially for battery discharge. You can even get them with battery connectors already installed, so you don't have any excuse.

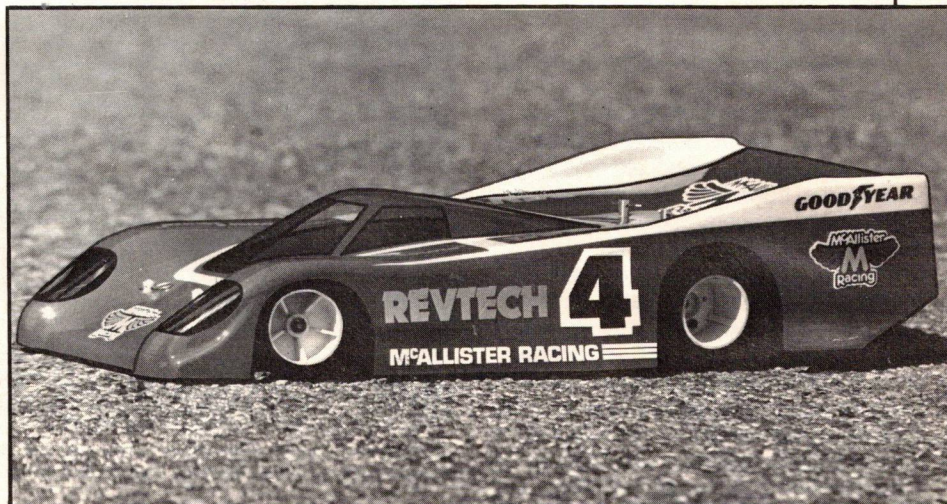
TIRES

Tires are the most disposable part of your car, but they too can benefit from some care. If you get a piece coming off your tire, instead of pulling it off, try reattaching it with tire glue. I would strongly recommend tire glue instead of Crazy glue as Crazy glue is very stiff when it dries; tire glue is flexible. Gluing your tire back together doesn't always work, but it's certainly worth a try. Another tip is to alternate the sides that you run your tires on (i.e., swapping left and right rear tires), especially for oval. One side will usually wear more noticeably than the other, so why not reverse the two? You'll get more life out of the pair.

Keep your car clean! Dirt and grime mess everything up and also add extra weight. This is far more of a problem when running on dirt tracks, of course, but it still applies to road racing. A simple paint brush should be able to get rid of the loose dirt, or take a rag with some lighter fluid on it to get rid of the tough stuff. Very important here is to keep your front and rear axle bearings clean. MCS Products makes a bearing cleaning tool that will make your life much easier. Just stick in your bearings, close the case, and spray with your favorite motor spray. It works like a charm.

Now that you know everything there is to know about keeping your car running well, there's simply no excuse. Put in a little extra effort and see how much it pays off. Welcome back to the winner's circle. Don't forget, if you have any suggestions that I didn't cover here, and there must be a million things I didn't mention, *R/C Model Cars*, your favorite magazine, is having a contest for hot tip of the month. ●

Batteries need tender care to be able to give you the power you are paying for. Follow the manufacturer's recommendations for charging and discharging, and your cells will last longer, and give you a better chance of making the winner's circle.



Lexan car bodies are durable, but they can only take so much punishment before they begin to crack and tear. Body mount washers help, and a product called "Shoo-Goo" can help keep it together to run another day.



MODELER SHOW RETURNS TO ATLANTA

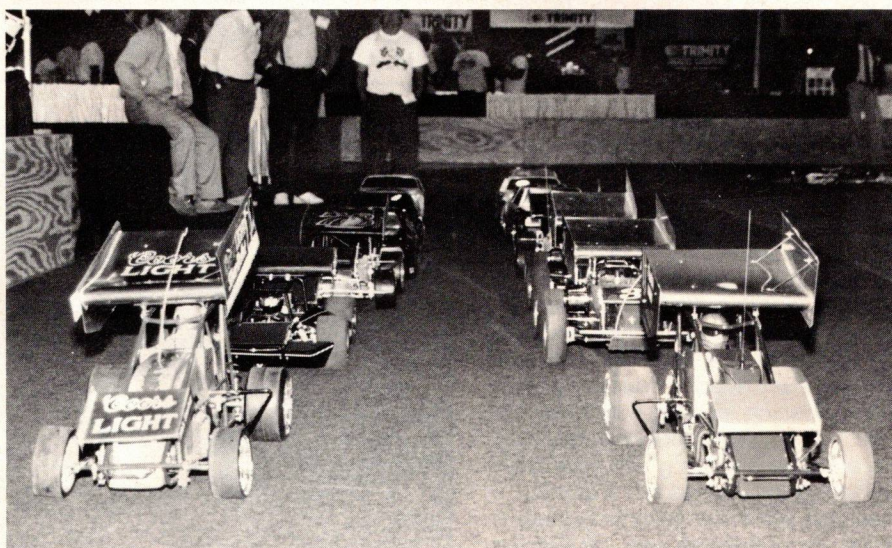
The IMS Show is back

It's about that time again, time to make plans to attend the South's largest model hobby show, the 1989 International Modeler Show, which returns to Atlanta's World Congress Center with more exhibitors than ever showing the latest in radio control products.

Last year, the biggest names in the R/C car industry were on hand to show their products and answer questions. Many of the items on display were on sale at the show, and modelers who attended were seen loaded down with bags of brochures and boxes of cars, accessories, and souvenirs.

This year's show will be no different, with booths displaying not only radio-controlled cars and accessories, but also airplanes, boats, and trains. There will be flight demonstrations during all public show days, and returning again will be the big quarter-scale racers that will run on the special indoor track. A large boat pond is also constructed especially for the show, with speedboat and yacht demonstrations going on continuously throughout the show's run.

Here's your chance to see for yourself up close the things you may only have read about, and to talk with the manufacturers and representatives from the modeling world.

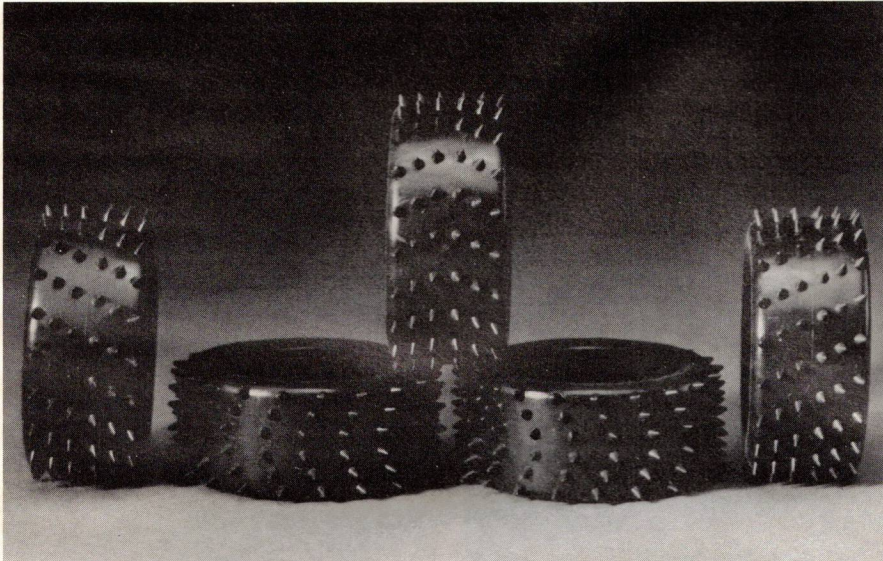


Quarter-scale racers will return in force to the IMS Atlanta show to put on another thrilling demonstration indoors during the Second Annual model hobby show.

The IMS Atlanta show will be held this year on May 13 and 14, Saturday and Sunday, with May 12 set aside as a trade-only day. Hours on Saturday are from 10:00 a.m. to 6:00 p.m., and Sunday from 10:00 a.m. to 5:00 p.m. Adult admission is \$5.00, juniors 12 and under is \$3.00, and children

under 6 are free when accompanied by an adult.

The Georgia World Congress Center is the place, and the IMS Show is going to be the South's event of the year, so plan on joining all your modeling friends for the bigger and better International Modeler Show.



PRO-LINE'S SPRINTER SERIES

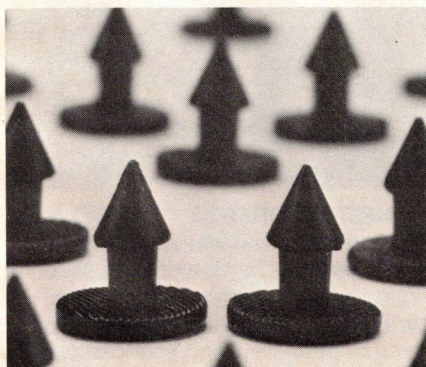
The new Sprinter Series of tires from Pro-Line are the answer to improving your dirt car's handling. The front pin spike tires fit 1.7 wheels, and the Sprinter Ovals come in both left directional, and right directional

pin spike tread patterns. The Sprinter Vee has a V-pattern pin spike tread designed to be used either with the matching ovals or alone. The Sprinter Series will give your car increased control and higher speed on almost any dirt oval course.



REPLACEMENT WHEELS

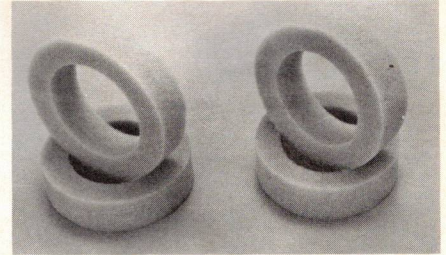
Parma's new replacement wheels fit the Tamiya Grasshopper, Grasshopper II, Hornet, and other cars. These wheels and tires are great for budget-minded enthusiasts. Each set contains gold-plated wheels, molded rubber tires, and all necessary hardware. See your Parma dealer for a closer look.



CRP TIRE SPIKES

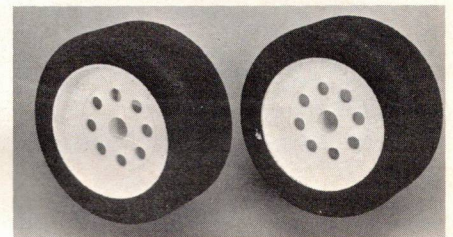
Here are 100 plastic tire spikes that you can

use to design your own offroad tread patterns. They fit CRP and other rubber tires, and can be found at your favorite hobby shop.



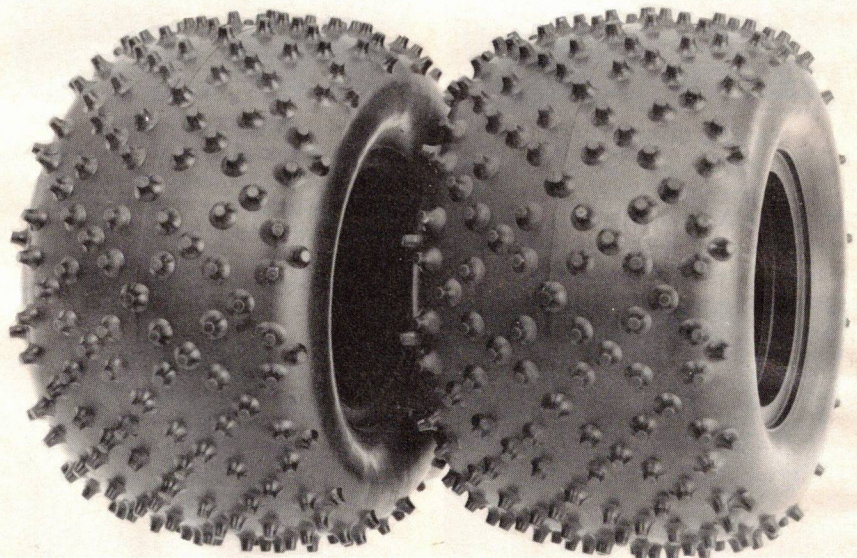
FOAM INNER TIRE LINERS

Parma's new foam inner tire liners are inserted into any offroad rubber tire prior to mounting on the wheel. The inserts reduce tire flexing, resulting in better handling and traction. Look for them at your favorite R/C hobby shop.



PARMA GREEN TIRES

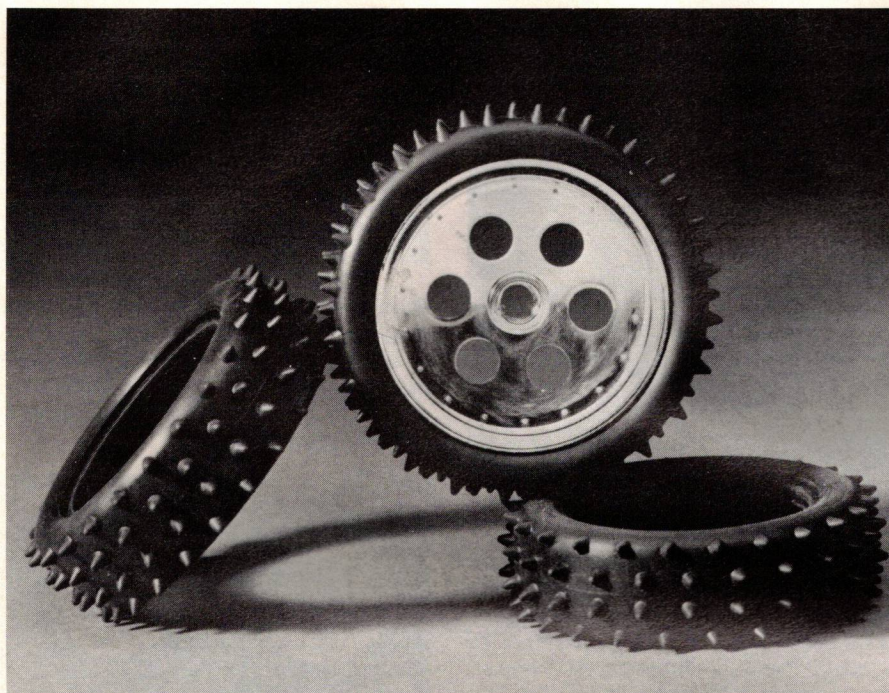
Parma's newest 1/10 onroad tires are these green compound rubber tires that will fit all 1/10 road cars and come pre-mounted on Parma's new lightweight rims. You'll find them at your nearest hobby shop.



DURATRAX MONSTER TIRES

New pure rubber monster tires from DuraTrax will keep your monster vehicle under control on any kind of track surface. There are a variety of tread patterns avail-

able to suit varying surfaces, and there is a size for almost any monster vehicle on the market today. Look for the new DuraTrax tires at Great Planes/DuraTrax dealers nationwide.



PRO-LINE TERRA TAMER

Pro-Line's new Terra Tamer tires are guaranteed to give your car added control in the

dirt. The pin spike front tire will fit stock RC10 and other 1.9 front wheels, and is available at your hobby dealer.



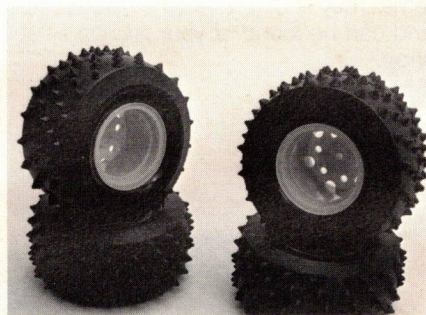
SMALL SPIKE TIRES

Here are some new offroad tires from Parma International that will fit the Schmacher CAT and other cars using the 2.1-inch rims. Front and rear tires are available at your nearest Parma dealer.



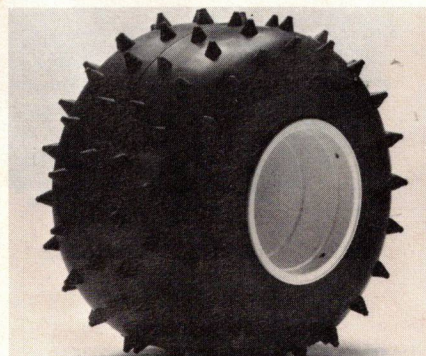
DUAL WHEEL ADAPTERS

Here's an easy way to give your monster truck a really awesome look: get Parma's new Lunchbox/Midnight Pumpkin dual wheel adapters from your hobby shop and you'll tower over the competition! The adapters are \$10.00 a pair, at hobby dealers.



MONSTER TIRES

Parma introduces new pin-spiked Monster Truck Tires and wheels for the Blackfoot, Monster Beetle, and other monster vehicles. These new tires are available separately, or in combination with wheels. Look for them at your nearest Parma Dealer.



DYNAMITE SPIKED TIRES

CRP has some new tires made just for the Clodbuster that use the 'Buster's wheels front and rear and give excellent traction.



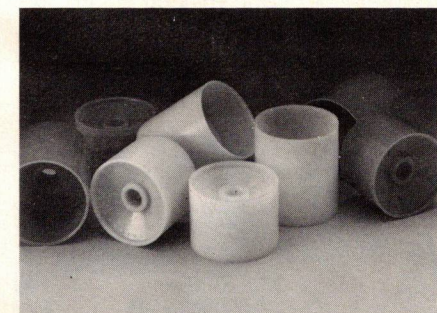
FUNNY CAR PARTS

Parma's new replacement parts for their funny car include front and rear tires and wheels. These tire/wheel combinations are ideal for scratchbuilders too. Look for them at your Parma dealer.



TMS ALUMINUM WHEELS

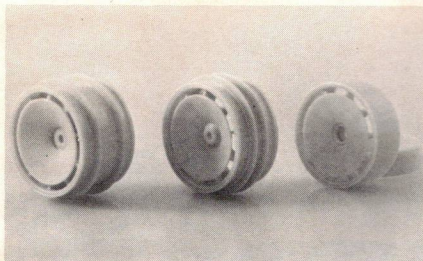
Now available for RC10/monster truck conversions are the new TMS Centerline aluminum wheels. This concours-winning wheel is designed to fit RC10 conversions with no adapters, and is made from aircraft grade aluminum. They're made in America, and can be found at your nearest TMS dealer or contact: TMS Products, 1948-A Del Amo Blvd, Torrance, California 90501.



NEW FLUORESCENT WHEELS

Paragon Centerline wheels are now available in near-blinding fluorescent colors that include hot pink, fire orange, and saturn yellow. For more information and a catalog of Paragon products, send your name, address, and \$2.00 to: Paragon Products, Dept. MC2, 8802 Knollwood Dr., Eden Prairie, Minnesota 55347.

WHAT'S NEW



KYOSHO COLORED WHEELS

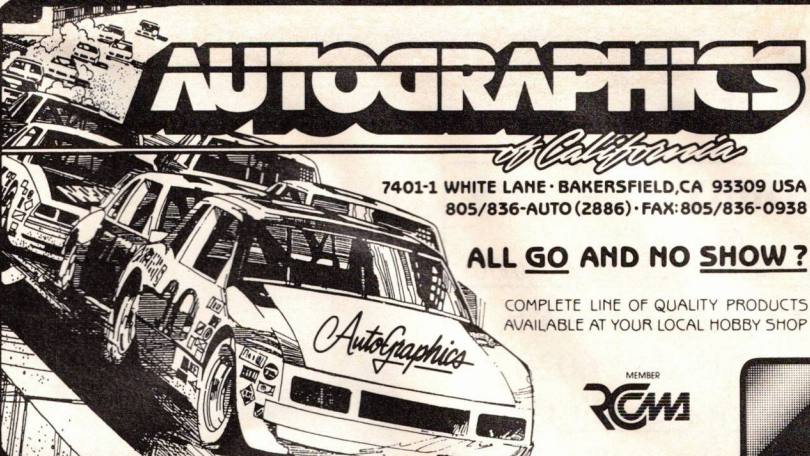
Drivers needn't worry about losing sight of their cars on dusty, long-range runs with these highly colorful new florescent yellow, green, and orange wheels. Colors are molded-in, so they won't scratch off from use. The wheels are available in three widths: narrow, medium, and wide. The wheels will fit most of the Kyosho cars and require low-profile tires. See your Kyosho dealer.



ULTRALIGHT ALUMINUM RIMS

Williams Precision Racing Products has introduced new precision aluminum rims for the RC10 that have been hand-polished to a chrome-like luster and weigh within grams of the plastic counterpart. The new rims are turned to exacting tolerances that plastic rims can't match, and they look a darn sight better, too. For more information, see your hobby dealer or write: Williams Precision Racing Products, 9285 Chesapeake Dr., Suite D, San Diego, California 92123.

MARCH 1989



AUTOGRAPHICS

of California

7401-1 WHITE LANE • BAKERSFIELD, CA 93309 USA
805/836-AUTO (2886) • FAX: 805/836-0938

ALL GO AND NO SHOW ?

COMPLETE LINE OF QUALITY PRODUCTS
AVAILABLE AT YOUR LOCAL HOBBY SHOP

MEMBER
RCM

Finally
A New Technology in 1/4 Scale
Racing Tires



Hook up with

B & L Racing Products USA

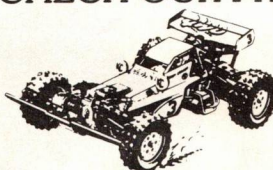
- 100% Rubber
 - Sprint Cars
 - Grand Nationals
 - Super Modifieds
 - Pneumatic
 - Foam Core
- OFFICIALLY LICENSED
BY GOODYEAR

TO ORDER / INFO
CALL OR WRITE
P.O. BOX 69 DEPT. A
NUEVO, CA 92367
(714) 521-6334
(714) 657-3441
FAX: (714) 521-9539

JACKSON HOBBY SHOP

RD 5, Box 12, Route 526, Jackson, N.J. 08527
201-364-3334

- A FULL-LINE, FULL-SERVICE HOBBY SHOP
- THE PARTS AND SERVICE SPECIALISTS
- CHECK OUR PRICES



5 mm x 11 mm BALL BEARINGS
TO FIT TAMIYA AND MOST
OFF-ROAD CARS—\$1.95 EACH.

Send \$1.00 for Catalog
BEARING SET FOR
ASSOC. RC10—\$49.95

MasterCard, Visa, or money orders please
add \$2. handling on orders under \$40. NJ
customers add 6% sales tax.

Prices subject to change without notice.

QUARTERSCALE CONNECTION

HIGH TECH R/C ENGINEERING

- High Performance Products for WCM Cars
- Pozi-Drive Belt Systems
- Titanium Rear Axles
- Dyno Proven Air Cleaner Assemblies
- Expansion Chamber Dyno Tuned Exhaust
- Machine Shop & Dyno Service Available
- Send for Catalog by DAVE LEE

1907 MOFFITT • LANSING, MI 48911 • 517-393-7116



HOBBYMASTERS

62 White Street
Red Bank, New Jersey 07701

OPEN 7 DAYS

1-201-842-6020

All Major Credit Cards

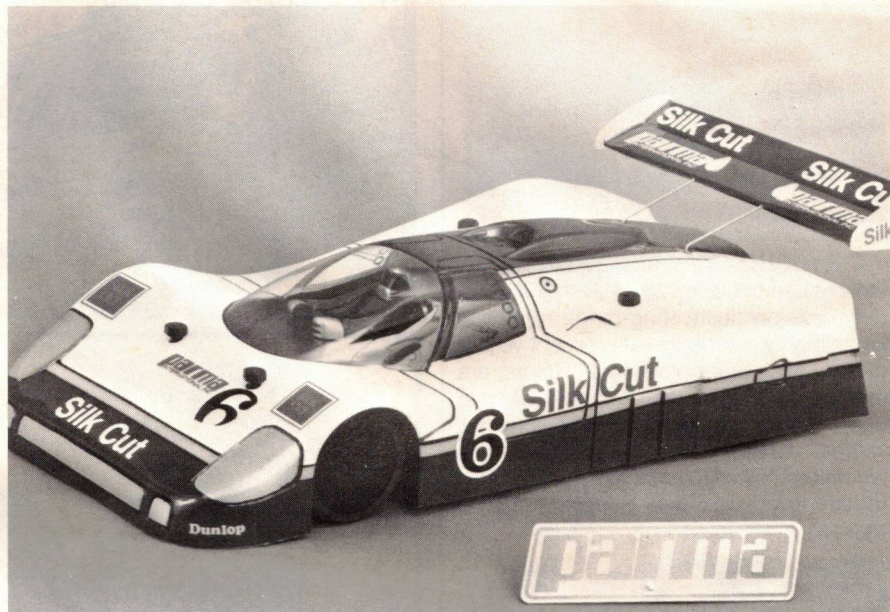
FULL-LINE
FULL SERVICE
HOBBY CENTER

R/C Parts Specialists

All-Scales Trains • Rockets
Models • Snowboards
& More

**This Month's
SPECIAL!!!
Free Tube of
GREAT GREASE™**

with any car purchase



JAGUAR XJR-8 BODY

The latest body for 1/10-onroad racing is the new Jaguar GTP number from Parma International. Molded in clear Lexan, the body is a scale replica of the 1988 Group C Euro-

pean Championship car, and comes with the rear wing too. You'll find it, along with a wide range of other 1/10-scale bodies, at your nearest Parma dealer.

The True Facts About R/C Car Gears

**Kimbrough Products
Precision Differential Gears
are the best because:**

- ▼ We do our own injection molding and control the quality, every gear we sell is round and concentric, so the gear mesh is easy to adjust.
- ▼ They are molded from high temperature Teflon lubricated virgin nylon, to last longer and run friction free.
- ▼ The twelve 12 ball bearing hole circle and Teflon lubrication make it easy to get a free running differential adjustment, so your car gets more tire bite when powering out of the corners.
- ▼ Our gears can be purchased with or without 12 ball bearings pre-installed.
- ▼ 32 pitch gears for high strength and long lasting off-road use with good efficiency.
- ▼ 48 pitch gears for oval or on-road racing at high speeds with high efficiency, and still tough enough to take a banging without breaking.
- ▼ These gears fit the R/C 10, R/C 12 and other compatible ball differentials.

Sold through Distributors & Dealers only

KIMBROUGH PRODUCTS

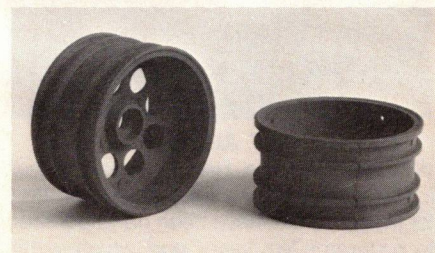


1420 East St. Andrew Pl., Unit F • Santa Ana, CA 92705 • FAX (714) 557-4609



'47 FORD CLASSIC

The latest Parma body is this 1/10-scale reproduction of the popular classic 1947 Ford convertible. It comes molded in clear Lexan and fits most 1/10-scale cars with the use of the Parma body mounting kit. See your nearest Parma dealer.



WIDE FRONT WHEELS

CRP's new wide front wheel comes in one piece and enables you to mount 1.9 to 2.0 rear tires to the front of your 2WD car, giving you extra traction. The wheel mounts using Tamiya 5x11 bearings, and it is made of dyeable nylon. See your Custom Racing Products dealer.



PLYMOUTH FUNNY CAR

The newest 1/12-scale funny car body is this latest offering from Parma, the Don Prudhomme Plymouth 'Arrow. This body has a longer wheelbase than standard 1/12 road cars, and will fit most 1/12-scale funny car chassis currently available. Look for it at your favorite Parma dealer.



QD REPLACEMENT BODY

Tamiya's newest scale, the QD series, has just been released, and already Parma International has a replacement body for it! The 1/14-scale Toyota pickup is reproduced in clear Lexan and includes body mounts and hardware for simple installation. Also shown are parma's treaded tires that are an exact fit for QD rims, and better suited for onroad use. These and other accessories for the Tamiya QD series are at your Parma dealer.



'50 FORD BODY

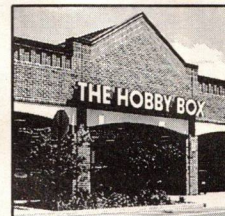
The latest classic body in 1/10-scale from Parma is this 1950 Ford Custom Chopped Coupe. Molded in clear Lexan, it will fit most 1/10-scale cars with the use of the Parma Body Mounting Kit.



The Hobby Box®

With 3 years of solid experience and 35 wholly owned stores, **The Hobby Box** has already established itself as the leading hobby retailer in the Southeast.

The American consumer is spending more and more time and money on their leisure activities, and the national hobby market is already estimated at \$4 billion!



FRANCHISES NOW AVAILABLE

- Take advantage of the surge of consumer interest in Radio Controlled cars, boats and planes; plus the steady demand for models, trains, puzzles, games and other hobby supplies.
- Franchise support package includes site selection, inventory recommendations, interior design and advertising support.
- Choice locations now available.

MINIMUM CASH REQUIREMENT \$75,000.00. FOR FURTHER INFORMATION PLEASE CONTACT OUR FRANCHISE DIRECTOR.

**The Hobby Box Marketing, Inc.
140 N. Westmonte Dr.
Suite 101
Alta Monte Springs, FL 32714
(407) 788-1888**



Look Like a Winner!

For complete information on BoLink's full line of products, send \$3.00 for your catalog & price list to:



Richard Petty Car - 1988 Pontiac Grand Prix done in genuine "Petty" blue and day glo red paint - direct from Randleman, N.C.!

BL-2363-D Painted body with decals - \$45.00

BL-2363-R Painted body only - \$35.00

BL-2626 Official Richard Petty #43 Decal Sheet - \$10.00

**BoLINK R/C CARS, INC./ 420 HOSEA ROAD(RCM), LAWRENCEVILLE, GEORGIA 30245
(404) 963-0252/ FAX: 404-963-7334**



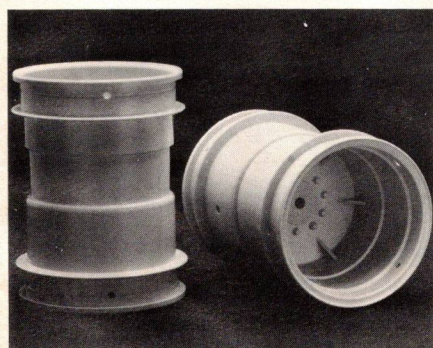
OUTLAW REPLACEMENT PARTS

McAllister Racing has a complete line of replacement parts for the Outlaw 1/10-scale road racer. Also there is a selection of light-weight performance parts for the Outlaw. See your hobby dealer, or write to McAllister for more information: McAllister Racing, 2205 First St., Unit 107, Simi Valley, California 93065.



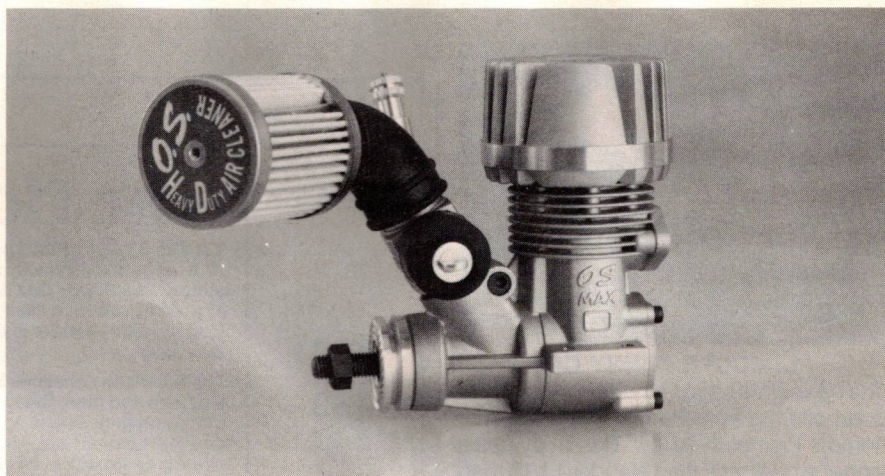
DURATRAX BATTERIES

DuraTrax's new 1400 battery packs are available in several configurations with either a 7.2 or 8.4 volt output. The economical DuraTrax 6-and 7-cell packs come with Kyosho, Tamiya, or Associated connectors. See your Great Planes/Kyosho dealer.



CLODBUSTER WHEELS

These direct-replacement front and rear wheels are made of heavy-duty plastic and can be used with the stock Clodbuster tires. You'll find them at your CRP hobby dealer.



O.S. .21 RF-B ENGINE

Great Planes Model Distributors is now shipping the new O.S. .21-size engine that offers high power, durability, and reliability that you expect from an O.S. engine product. The .21 puts out 1.2 bhp at 28,000 rpm,

and weighs just 10.5 ounces. It features Schnuerle porting and ABC construction for high power performance. Look for the new O.S. .21 RF-B at your nearest Great Planes/O.S. dealer.



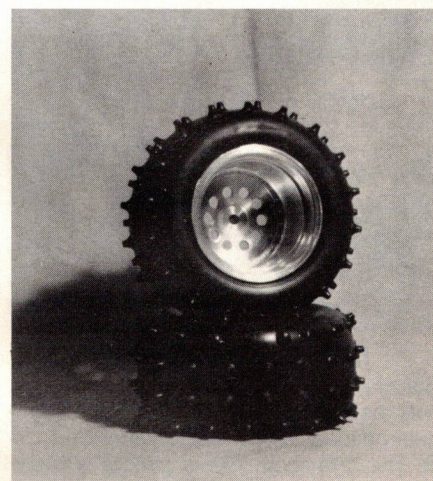
RK950 QUICK CHARGER

MRC/Tamiya's new RK950 Quick Charger has been developed specifically for their ready-to-run line of Q.D. cars that include the Super Sabre Q.D. and Thundershot Q.D. 1/14-scale cars. The RK950 operates from an AC outlet, or a 12-volt DC cigarette lighter socket. A 15-minute mechanical timer and an ammeter help keep track of the condition of your battery. Battery holders are provided so that the Ni-Cds from your Q.D. buggy can be placed into the holders, permitting safe charging of the packs. A discharge mode is also built into the charger to help cycle your batteries. See your MRC/Tamiya dealer for more information on the new RK950.



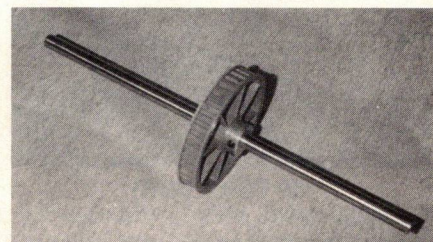
PARMA DECAL SHEETS

Three new additions to Parma's extensive line of mylar decal sheets include a new 9x12 Oval Racing sheet, a Hershey's, and a new Snap-On Tools sheet. These and other racing decal sheets are available at your Parma dealer.



PUMPKIN & LUNCHBOX WHEELS

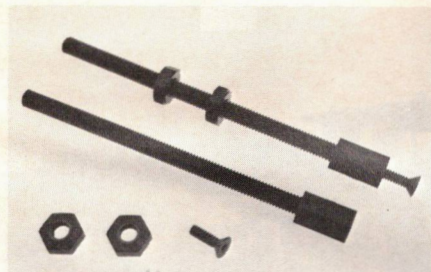
Stock TMS Centerline-design aluminum wheels designed expressly for the Tamiya Midnight Pumpkin and the Lunchbox are now on sale. These rugged wheels will accept the stock Lunchbox and Pumpkin tires, so you can upgrade the look and performance of your truck without needless expense. See your hobby dealer, or write for more information: TMS Products, 1948-A Del Amo Blvd., Torrance, California 90501.



TITANIUM REAR AXLE

The Quarter Scale Connection's new titanium rear axle is designed for use with

the WCM quarter-scale racecars, providing strength and durability with less weight than stainless steel, and less unsprung mass. There's no axle distortion from belt tension, and the axle comes with collars and set screws. For more information, contact QSC, 1907 Moffitt St., Lansing, Michigan 48911.



ADJUSTABLE BODY MOUNTS

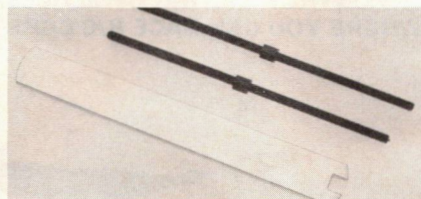
The new Du-Bro body mounting posts are called the most universal body mounts available. Made of tough nylon, these 10-32 diameter body mounts allow you to adjust your body up to three inches. These adjustable body mounts were designed to fit almost any car/body combination on the market. For more information, see your hobby dealer, or write: Du-Bro Products, 480 Bonner Rd., Wauconda, Illinois 60084.



OPTIMA MID ACCESSORIES

Parma has two new accessories for the Kyosho Optima Mid: first, the full-width front bumper, made from impact-resistant Kydex that'll protect your front tires and drivetrain from damage. The bumper fits with no modifications necessary, and uses existing kit hardware. Also shown is the slipclutch

that allows the use of any standard 32, 48, or 64 pitch spur gear while allowing for adjustable slip for varying track conditions. Both items are available at your nearest Kyosho/Great Planes dealer.



TURNBUCKLES & BALL LINKS

Du-Bro Products has eliminated the need to disconnect your ball links to make steering adjustments with the introduction of their 2-56 and 4-40 Turnbuckles and quality Ball Links. Precise toe-in, toe-out, and camber adjustments can be made with ease to get you back on the track fast. The turnbuckles are 2-5/8 inches long, and can be cut to the length you desire. See them at your nearest hobby shop now.

A Proven Winner!



The RACO R/C quarter scale Grand National stock car won **80%** of the national races it entered in 1987. An **unmatched** record built on state-of-the-art design and the finest manufacturing techniques and materials. This all adds up to the reliability and capability of a winner!

- Gas powered ZENOAH MAX 140 engine with recoil starter, centrifugal clutch and solid state ignition.
- Four wheel independent suspension with fully adjustable coil spring, oil filled shocks.
- Fully enclosed, hardened steel gear drive with quick change ratios (6:1 standard, 5:1 and 7:1 optional).

- Gearbox mounted, positive action, multiplate disc brake.
- Ball bearings used throughout all high load points.
- Choose Thunderbird or Montecarlo body styles.
- Options available: radio system, servos, battery, polished wheels, anodizing (red, blue or gold).

See the RACO Grand National at your local hobby dealer, quarter scale race track, or contact:



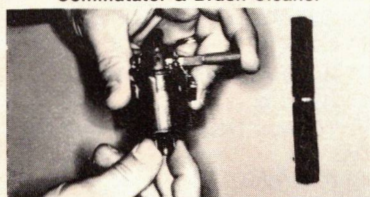
Make the right choice. Win with a RACO!



1400-C E. Saint Andrews Place
Santa Ana, CA 92705 (714) 546-3045



Commutator & Brush Cleaner



Increase your RPM

High performance cars, parts, stock and modified motors available.

Call **(805) 324-1090 Price \$4.95**

plus .75¢ S&H to Edge Products
2520 H Street, Suite D - Bakersfield, CA 93301
Dealer Inquiries Welcome

R/C TRACK GUIDE

A MONTHLY LISTING OF PLACES
WHERE YOU CAN RACE R/C CARS



ALABAMA

Checkered Flag Raceway

4052 Dawes Rd., Mobile, 36609

Bryan's Hobby Shop

1400D Westgate Pkwy., Dothan, 36303
(205) 793-2439

ARIZONA

Escalante Raceway

10505 E. Escalante, Tucson, 85730
(602) 298-1253

Saguaro West Raceway

West Plaza Shopping Center, Phoenix
(602) 465-9614

Scale Racing Sports

1120 N. Hayden Rd., Tempe, 85281
(602) 829-9117

CALIFORNIA

AA R/C Raceway & Hobbies

Sandhill Ranch, Brentwood, 94513
(415) 757-6594

Antioch R/C Raceway

5631 W. Lone Tree Way, Antioch, 94509
(415) 754-5700

Electric Offroad Raceway

1801 Springs Rd., Vallejo, 94590
(707) 557-0302

Ground Zero Raceway

Naval Air Station, Lemoore, 93245
(209) 998-3137

Hobby Bench Raceway

515 S. Glendora Ave., Glendora, 91740
(818) 963-9517

Hot Trick Raceway

2055 Thibodo, Vista, 92083
(619) 598-9571

Nor-Cal Mini Offroaders

2665 Park Marina, Redding, 96001
(916) 241-3737

Square Roundhouse R/C Speedway

1468 Lander Ave., Turlock, 95380
(209) 668-4454

Peterbuilt Jr. Raceway

1261 Lick Ave., San Jose, 95110
(408) 279-0111

Radio Control Race Center

18240 S. Vermont Ave., Gardena, 90247
(213) 324-3105

R/C Hobbies Raceway

2011-B Placentia Ave., Costa Mesa, 92627
(714) 631-1555

Ranch Pit Shop

1655 E. Mission Blvd., Pomona, 91766
(714) 623-1506

T.Q. Hobbies

1358 Pacific Coast Hwy., Harbor City
(213) 539-3611

Riverside County Int. Mini Speedway

41240 E. Florida, Hemet, 92344
(714) 925-7112

Spoka's Indoor R/C Speedway

5216-B Arboga Rd., Marysville, 95901

COLORADO

Mhor R/C Raceway

15540 E. Batavia Dr., Aurora, 80011
(303) 343-0151

R/C Dirt World/AA Hobbies

1801 S. College, Fort Collins, 80521
(303) 493-7199

Queen City R/C Raceway

5050 S. Federal Blvd., Englewood, 80150
(303) 730-1391

DELAWARE

Auto Derby Raceway

Rd 142, Kenton, 19938
(302) 734-5675

FLORIDA

Ft. Lauderdale R/C Speedway

N.W. 15th Ave., Ft. Lauderdale, 33313
(305) 472-1032

Let's Race America Rental Speedway

1030 W. State Rd., 434, Longwood, 32750
(305) 834-7888

Lake Whippoorwill Int'l. Speedway

12345 Narcoossee Rd., Orlando, 32812
(305) 277-9586

GEORGIA

BoLink Raceway Park

420 Hosea Rd., Lawrenceville, 30245
(404) 963-0252

Winning Cars Aren't Bought...They're Customized!

Are you ready to be a winner?

Then make your car the best it can be. **CUSTOMIZE IT!**

Trick shocks, faster motors, better tires, slicker bodies.

Max speed & tighter handling means more WINS!

We'll help you. We're Tech Toys... Your Speed Shop for R/C Motor Sports!

We're experts who sell the best products in the business. We stock everything in specialty and racing parts. If you know what you need, we'll get it to you fast! **Orders are in and out the same day!** We ship to all 50 states, Puerto Rico and Military Bases! We accept VISA, Mastercard and Discover cards!

We cover all vehicle types: **On and Off Road, Cars, Trucks & Boats, 1/4, 1/6, 1/10, 1/12, 1/24.**

And don't forget, we specialize in 1/4 and 1/6 Scale!

**TECH TOYS HAS
TRIPLED IN SIZE TO
BETTER SERVE YOU.
PLEASE NOTE OUR NEW
ADDRESS.**

A&L PRODUCTS
ACOMS
ACTION MAGS
ADVANCE
ADVANCED RACE CASE
AEROTREND PRODUCTS
AIRTRONICS
ANDY'S
ARISTO/CHALLENGER
ASSOCIATED
ASTROFLIGHT
AUTOGRAPHICS
BADGER AIR BRUSH
BLACK MAGIC MOTORS
BLUE RIBBON
BOLINK
BONDUS
BOXES PLUS
BUDS R/C
CAM MOTORS
CARL GOLDBERG
CHAMPION

CHECKPOINT MOTORS
CICHON
COBRA INTERNATIONAL
COMPOSITE CRAFT
CONCEPT II PAINT
COUNT CHRISTOPHER PRODUCTIONS
COX
CRP
CUSTOM WORKS
DAHMS
DEANS
DELTA
DREMEL
DUBRO
DURATRAX
FIVE STAR
FLEXAN PAINT
FLOQUIL
FOX
FUTABA
GONZO
HIGLEY

HI POINT
HOT TRICK
HOUGE ENTERPRISES
JG MFG
K&B
KIMBROUGH
KO PROPO
KYOSHO
LABELLE
LAVCO
LEISURE
LIGHT SPEED
LITE SPEED
M & M
MAJOR DECALS
MARUI
MCALLISTER
MCS PRODUCTS
MIP
MONOGRAM
MPE
MRC/TAMIYA

MRP
NICHIMO
NIKKO AMERICA
NMB
NOVAK
PACTRA
PANASONIC
PARAGON
PARMA
PDI SPEED CONTROLS
PERFECT
PERFORMANCE RACE PRODUCTS
PREMIER DESIGN
PRO CUT STICKERS
PROLINE
PRO-SHOP
PRO-TECH
PRO-TRACK
RACECO
RACE MASTER
RACE PREP
RACE TECH

RACING SILKS
RAM
RCH
RCRC PRODUCTS
R/C PERFORMANCE SPECIALTIES
REV-TECH
ROBART
ROBBE
ROBINSON RACING PRODUCTS
RPS
SANYO
SCHUMACHER
SCOTCH -3M
SRS PRODUCTS
SULLIVAN
TEAM LOSI
TEAM PIT STOP
TECNIACRAFT
TEKIN
TESTORS
32ND PARALLEL
THORP

TIGER'S MILK
TRC
TRINITY
TUF-GRIND
TWINN-K
TWISTER
UNGAR
UNIVERSAL ENGINES
VARICOM/GRIZZLY
WORLD ENGINES
X-ACTO
YOKOMO
YOU-G
ZAP-PACER TECH

1/4 SCALE

B&L TIRES
PACE SETTER
RACO
WCM

1/6 SCALE

MK ENGINEERING

TECH-TOYS

Speed Shop For R/C Motor Sports!

Dept. 3B, 370 Rt. 46 W, Parsippany, NJ 07054 (201) 227-7012



THIRTY-FIFTH ANNUAL RADIO CONTROL EXPOSITION

TOLEDO SPORTS ARENA
ONE MAIN STREET, TOLEDO, OHIO

ADVANCED TICKETS may be ordered by sending a self-addressed stamped business size (4 1/8 x 9 1/2) envelope to: TICKETS, 38235 Castle, Romulus, MI 48174.

All orders above 5 tickets **must** include extra postage. U.S. orders **must** include a 25 cents, **per order**, handling charge. All foreign orders **must** include 50 cents, **per order**, handling charge, but only need send an addressed envelope. We will provide the necessary postage. **Express Mail Orders Will Not Be Accepted!**

Include a check or money order in U.S. funds made payable to the "Weak Signals R/C Club." Ticket prices are: \$4.00 per day for adults and \$1.00 per day for children, 12 and under. (Please specify number of each.)

Deadline for ticket orders is March 31, 1989. All sales are final and non-refundable.

TICKETS ARE ALSO AVAILABLE AT THE DOOR.

Exposition information is available by contacting Wayne Yeager, co-director, at the ticket address or by phone — (313) 941-6661.

Bring your latest completely finished models to display and enter the competition for exciting awards. R/C radios will be awarded to the first, second and third place winners in the following classes:

NON-MILITARY SPORT SCALE PLANE (AMA Rules)
MILITARY SPORT SCALE PLANE (AMA Rules)
PRECISION SCALE PLANE (AMA Rules)
PATTERN PLANE
SPORT MONO-PLANE (non-scale models only)
SPORT BI-PLANE (non-scale models only)
OLD TIMER FREE FLIGHT R/C ASSIST
R/C SAILPLANE (non-scale models only) (No Engines)
HELICOPTER
R/C CAR
COMPETITION BOAT
MILITARY SCALE BOAT
PLEASURE POWER BOAT
WORKING VESSEL-UNARMED

All models entered into competition will be judged for Best Finish, Best MonoKote, The Directors Award and the Best of Show.

Come, join us and enjoy yourselves at, unquestionably, the world's greatest radio control model show.

"We will have our traditional Swap Shop and Saturday Night Auction"

Open to the public all three great days . . .

APRIL 7, 8, 9, 1989

FRIDAY	9 am to 6 pm
SATURDAY	9 am to 6 pm
SUNDAY	9 am to 4:30 pm

presented by the

Weak Signals R/C Club, Toledo, Ohio

PDQ Raceway

429 Bankhead Hwy., Mableton, 33059
(404) 941-2626

Raceway Hobbies

Johnson Ferry Rd., Marietta, 30068
(404) 565-2191

ILLINOIS**WEP Electronics & Hobbies**

Rt. #2, Box 59, Lawrenceville, 62439
(618) 884-9048

Hobby Connection Raceway

925 N. Lynhurst, Indianapolis, 46224
(317) 247-5702

Raceway Hobbies, Ltd.

80 E. Main St., Rt. 22, Lake Zurich, 60047
(312) 438-0460

Hobbytown

4915 W. Rte. 120, McHenry, 60050
(815) 344-1777

Teen Town

105 N. 13th, Herrin, 62948
(618) 942-2085

Marty's R.C. Hobbies

1335 E. Broadway, Bradley, 60915
(815) 933-8441

Downtown Hobby

6017 Northwest Hwy., Chicago, 60631
(312) 775-4848

Hobby Hut

22 Nameeki Vil, Granite City, 62040
(618) 451-7330

Thunder Road 31 Raceway

3603 Richmond Rd., McHenry, 60050
(815) 344-2277

Cougar Racing

23 Clover Dr., Belleville, 62221
(618) 282-1311

Machesney Park Raceway Hobbies

1220 Shappert Dr., Machesney Park, 61111
(815) 282-1311

INDIANA**Hobby Connection Raceway**

925 N. Lynhurst, Indianapolis, 46224
(317) 247-5702

Bremen Hobbies

308 N. Bowen, Bremen, 46506
(219) 546-3807

Goshen R/C Offroad Racing

1922 Elkhart Rd., Goshen, 46526
(219) 534-1992

Eagle Hobbies

24968-A C.R. 6, Elkhart, 46514
(219) 262-2066

KANSAS**Jim's R/C Specialists**

923 Fairlawn, Ste. 141, Topeka, 66604
(913) 266-0053

KENTUCKY**The Speedrome**

3451 Cane Run Rd., Louisville, 40211
(502) 778-7313

Ralph's Raceway & Hobby

227 Georgetown St., Lexington, 40508
(606) 252-1809

Hobby Center's Dirt-Drome

715 E. 4th St., Owensboro, 42301
(502) 683-7611

**Perry's R/C Hobbies**

214 Globe St., Radcliff, 40160
(502) 352-0159

Pit Stop Hobby Shop & Raceway

Rt. 1, Box 80, Hwy 70 West, Madisonville, 40252
(502) 825-8900

LOUISIANA**Performance Hobby Raceway**

8308 Lafitte Ct., Chalmette, 70043
(504) 279-5158

JJ R/C Hobbies & Raceway

2579 Monterey Blvd., Baton Rouge, 70814
(504) 927-3969

Acadiana R/C Hobbies

126 Toledo Dr., Lafayette, 70506
(318) 235-5825

MAINE**Brett Hill Speedway**

Gore Rd., Otis Field, 04268
(207) 743-8251

Oxford Boys Speedway

Rt. 26, Oxford, 04268
(207) 743-5924

MARYLAND**Doug's Hobby shop Raceway**

Rt. 301, Box 96-C, Waldorf, 20601

King's R/C Cars

219 E. Washington St., Hagerstown, 21740
(301) 739-0080

R & R R/C

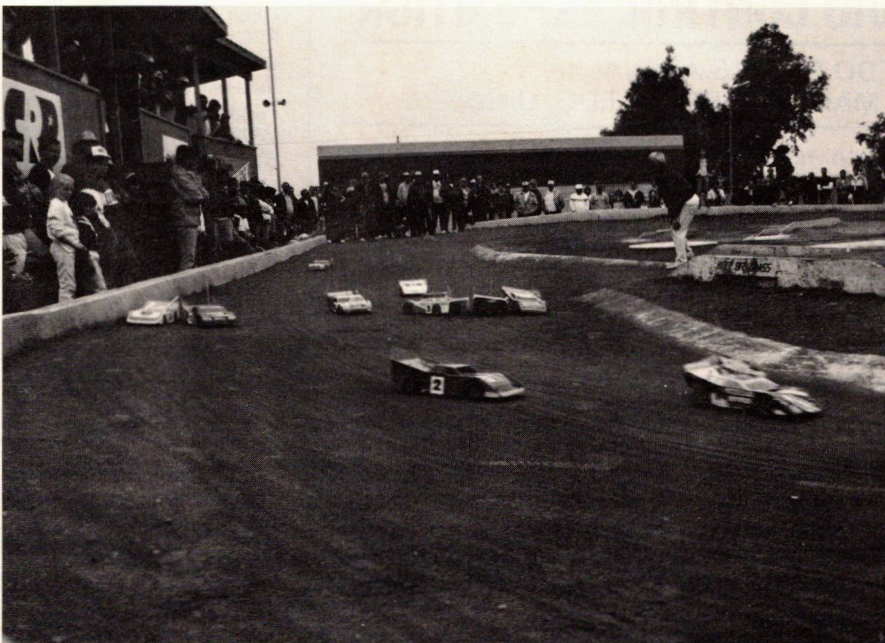
84 E. Main St., Westminster, 21157
(301) 848-2144

MASSACHUSETTS**CKS R/C Raceway**

46 Wilbraham St., Palmer, 01069
(413) 283-2260

Northboro Speedway

Rt. 20, Northboro, 01532
(617) 393-2691





CHILL OUT!

...and let the good times roll — high roll, that is, with **ROYAL's** big-wheel **CRUSHER** truck. This monster comes with enormous 5" tires and powerful Mabuchi 540S motor. Its **4-wheel steering** and independent suspension make cornering a cinch! Chrome rims, chrome roll bar, chrome bush guard and a wild decal set are all standard equipment. For a modest additional price, this 2-wheel drive

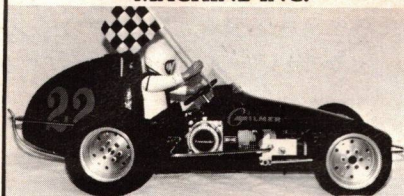
monster **can be converted to 4-wheel drive**. Best of all, however, this truck carries a retail price that is sure to crush the competition and not your budget. In short, when it comes to off-road fun and value, whether running in snow, sand or dirt, the Crusher leaves mighty big tracks to follow. See it, along with other Royal off-road vehicles, at your local dealer today!

Royal

PRODUCTS CORP.

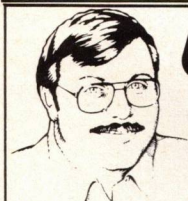
790 W. Tennessee Ave., Denver, CO 80223

GILMER HOBBY AND MACHINE INC.



MANUFACTURER OF 1/4 SCALE
RADIO CONTROLLED MIDGETS.
"KAWASAKI POWERED"
SEND \$2.00 FOR INFORMATION
AND PRICES.

DEPT. RCM 1213 4TH AVE.
HOWARD LAKE, MN 55349



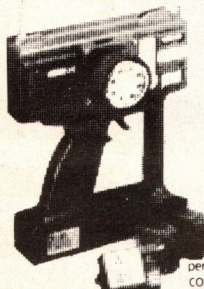
WALT'S

HOBBY

"Call Walt's"

Full line radio control hobby shop specializing in friendly, helpful service for remote-control cars, parts and accessories. Daily UPS service, discount prices, Visa, MasterCard, Discover card. Home of the indoor clay oval and computerized scoring. 4300 W. Genesee St., Syracuse, NY 13219, Tel. (315) 468-6544.

2 CHANNEL PISTOL GRIP WHEEL R/C on 75 MHZ



Easy handling for high speed racers...with 2 high torque servos. Battery box receiver and switch harness

\$77⁹⁵

Please add \$5.00 shipping and handling charge to payment of your order in personal check, money order, certified check, C.O.D. or acceptable major credit card include account number and expiration date.

Polk's
modelcraft
Hobbies

346 Bergen Ave., Jersey City, N.J. 07304
Telephone (201) 332-8100 Dept 27
phone toll free 1-800-225-POLK 9 to 5:30 EST
for orders only



the "Little Outlaw"

Convert your RC-10, Grasshopper, Hornet, or almost any other popular car into a super realistic sprint car.

Kit comes complete with outlaw style hood, tail section, nose wing, top wing, mounting brackets,

Price **\$20⁰⁰** Plus **\$5.00**
Shipping & Handling.

OVAL TRACK R/C RACING

2906 47th St., Des Moines, IA 50310
(Dealer inquiries welcome)

Hobby City

263 Lynnfield St., Lynn, 01904

(617) 581-7361

Pine Banks R/C raceway

35 Church St., Malden, 02148

(617) 324-4465

R/C Performance Cetner

Rt. 27, Hanson, 02341

(617) 294-8980

CMP Speedway

1 Bert Dr., #5, W. Bridgewater, 02379

(617) 580-1622

Pit Stop Riverside Racing

44 S. Main St., W. Bridgewater, 02379

(617) 586-7330

MICHIGAN

Pointe R/C Models

2119 S. Summerton Rd., Mt. Pleasant, 48858

(517) 773-5711

R/C USA Raceways

6083 Dixie Hwy., Bridgeport, 48722

(517) 777-7USA

Ar-Jay's Hobbies, Inc.

1430 S. Gratiot, Mt. Clemens, 48043

(313) 463-2982

Tait's Hobbies & Raceway

3270 Bay Rd., Saginaw, 48603

(517) 799-3900

Mason County R/C Car Track

Mason County Fairgrounds, Ludington

(601) 845-8553

Norm's Raceway

310 E. Beach, Long Beach

(601) 863-0524

MISSOURI

R/C Hobby World

113 S. 6th & Edmond, St. Joseph,

64501

(816) 233-4450

Hobby Haven Raceway

10901-D Hickman Mills Dr., Kansas City,

64137

(816) 763-9725

Hobby Village and Raceway

112 N.W. Business Park Ln., Riverside,

64150

(816) 587-6435

NEVADA

Circus Raceway

3132 S. Highland, Las Vegas, 89109

(702) 732-0022

NEW HAMPSHIRE

Fox Run's Raceway

200 Cass St., Portsmouth, 03801

(603) 436-1112

NEW JERSEY

Atlantic Hobbies Racing World

White Horse Pike, Elm, 08037

(609) 567-2947

Willingboro R/C Racing Assoc.

Rt. 130 S., Creek Rd., Delanco, 08075

(609) 786-2294

Chip-N-Dale

1240 Monmouth Rd., Mt. Holly, 08060

(609) 261-1981

NEW YORK

The Dragon's Lair Offroad Track

15 Tieman Rd., Scotia, 12302

(518) 399-8793

Rec. R/C Raceway

187 Church Ln. and Creamery Rd.,

Stanfordville, 12581

(914) 868-7715

Walkkill Wheels

Old General Slicing Bldg., Rte. 208,

Walden, 12586

(914) 778-1413

Forget-Me-Not Speedway

955 State St., Rexford, 12148

(518) 382-1030

Niagara Race-a-Rama

3366 Union Rd., Buffalo, 14225

(716) 681-1666

Walt's Hobby and Craft

4300 W. Genesee St., Syracuse, 13219

(315) 468-6544

R/C World

P.O. Box 304, Brooklyn, 11220

(718) 438-6497

Skaneateles R/C Raceway

W. Genesee t., U.S. Rt. 20, Skaneateles,

13152

(315) 685-8077

Lawrence Race Park

2509 Macedon Ctr. Rd., Palmyra, 14522

(315) 597-6429

Mod-Stock Raceway

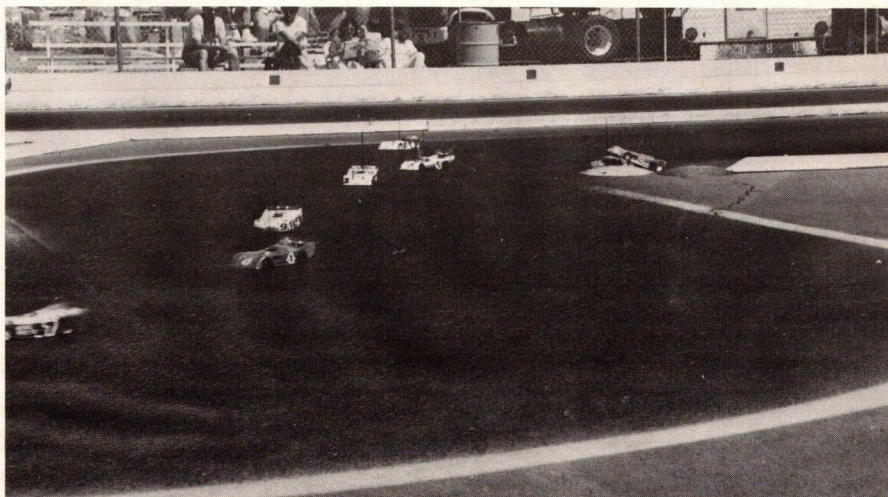
3478 Latta Rd., Rochester, 14612

(716) 392-8208

HO/RC Raceways

110 Anderson Ave., Rochester, 14607

(716) 442-9527



Classic Plastic

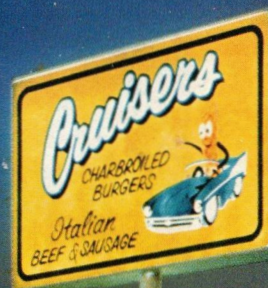
Street is neat. And nothing says "cruisin" better than a '57 Chevy built to the hilt, and Parma's got the goodies to create such a boulevard blaster. Like their '57 Chevy clear lexan body, colored and flamed with Parma paints.

The muscle under the hood comes from a mighty Sprint-wind Parma Yokomo modified motor, and keeping it cool, a Parma 360 degree motor heatsink. More than enough get-up-and-go juice from a high-powered battery pack of Parma matched Sanyos is fed through a Parma resistor speed control.

Burnout style torque is achieved with Parma's 10T steel pinion and 48T spur gears,

while wheel hop is controlled by a set of Parma teflon pistoned coil-over shocks and adjustable anti-roll bars. Traction action happens with meaty Parma rear sponge slicks and front smoothies mounted on sparkling styled chrome wheels.

Of course this Main street missile is just one example of the Parma-packed street machines that are possible. For help in building your "cruiser", send \$2.00 for the latest catalog of hot products from Parma that you can purchase at your local hobby dealer.



Established 1964
WORLD CHAMPIONS

Parma International, Inc. 13927 Progress Parkway North Royalton, OH 44133



Islip Miniature Speedway

58C Greenwood Ave., E. Islip, 11730
(516) 277-9339
581-9816

Miniature Grand Prix

2102 W. Genesee St., Syracuse, 13219
(315) 468-1463

TMC R/C Cars & Raceway

205 North Ave., Webster, 14580
(716) 872-1598

Island Hobbies and Raceway

111 Bridge Rd., Happaugue, 11788
(516) 234-7428

El Tigre Racing

1911-F Lejeune Blvd., Jacksonville,
28540
(919) 577-1943

Dixie R/C Hobby Shop

P.O. Box 135, Ramseur, 27316
(919) 824-2770

R/C Hobby Workshop & Raceway

1358 Church St., Burlington, 27215
(919) 228-6809

Joe's Hobby Shop & Raceway

Rt. 2, Box 682B, Bessemer City, 28016
(704) 435-2912

Triangle Offroad Racing Circuit

New Hope Rd. Ext., Raleigh, 27612
(919) 872-6997

Triangle Raceway

Daniel Boon Ice Rink, Hillsborough
(919) 471-8934

NORTH DAKOTA

Kountry Kiln Hobby

Box 247, 324 Railroad Ave. N., Mohall,
58761
(701) 756-6307

OHIO

Alcraft's R/C Raceway

1370 Custer-Orangeville Rd., Brookfield,
44403

(216) 448-1573

Alum Creek R/C Raceway

4351 Alum Creek Dr., Columbus, 43207
(614) 491-0091

OREGON

R/C Speed Center

2810 N. Pacific Hwy., Medford, 97501
(503) 779-8298

Hill Hoppers Hobby Shop & Indoor Track

2327-10th St., Baker, 97814
(503) 523-6081

PENNSYLVANIA

Raceway Heaven Hobby Shop and Racing Center

2007 S. Juniper St., Philadelphia, 19148
(215) 271-5600

Country Side R/C Raceway

1057 Waterman Rd., Clairton, 15025
(412) 653-3529

Denwick R/C Hobbies & Raceway

14961 Buchanan Trail E., Blue Ridge
Summit, 17214
(717) 794-5184

The Pit Shop

814 Thompson Run Rd., West Mifflin,
15222
(412) 462-1277

Mars R/C Raceway

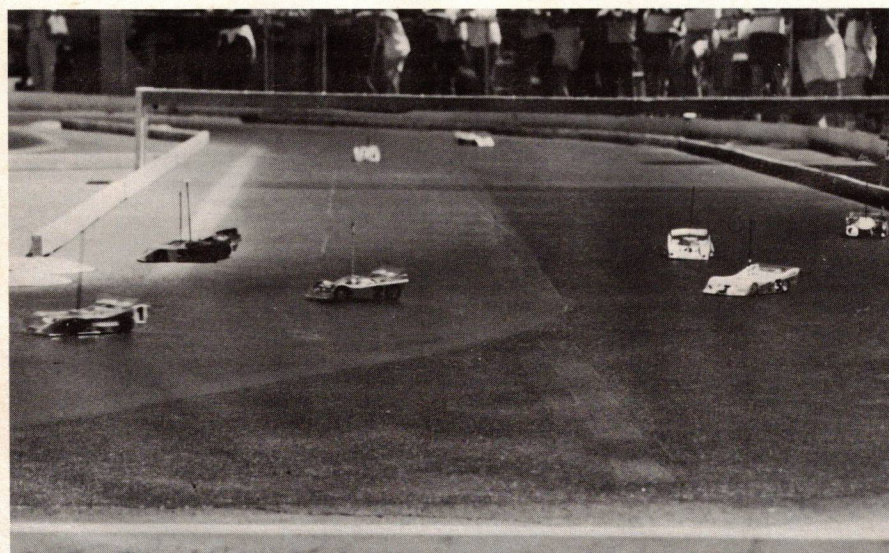
Rd. No. 7, Box 178, Mars, 16046
(412) 625-1550

Montgomeryville Dirt Track

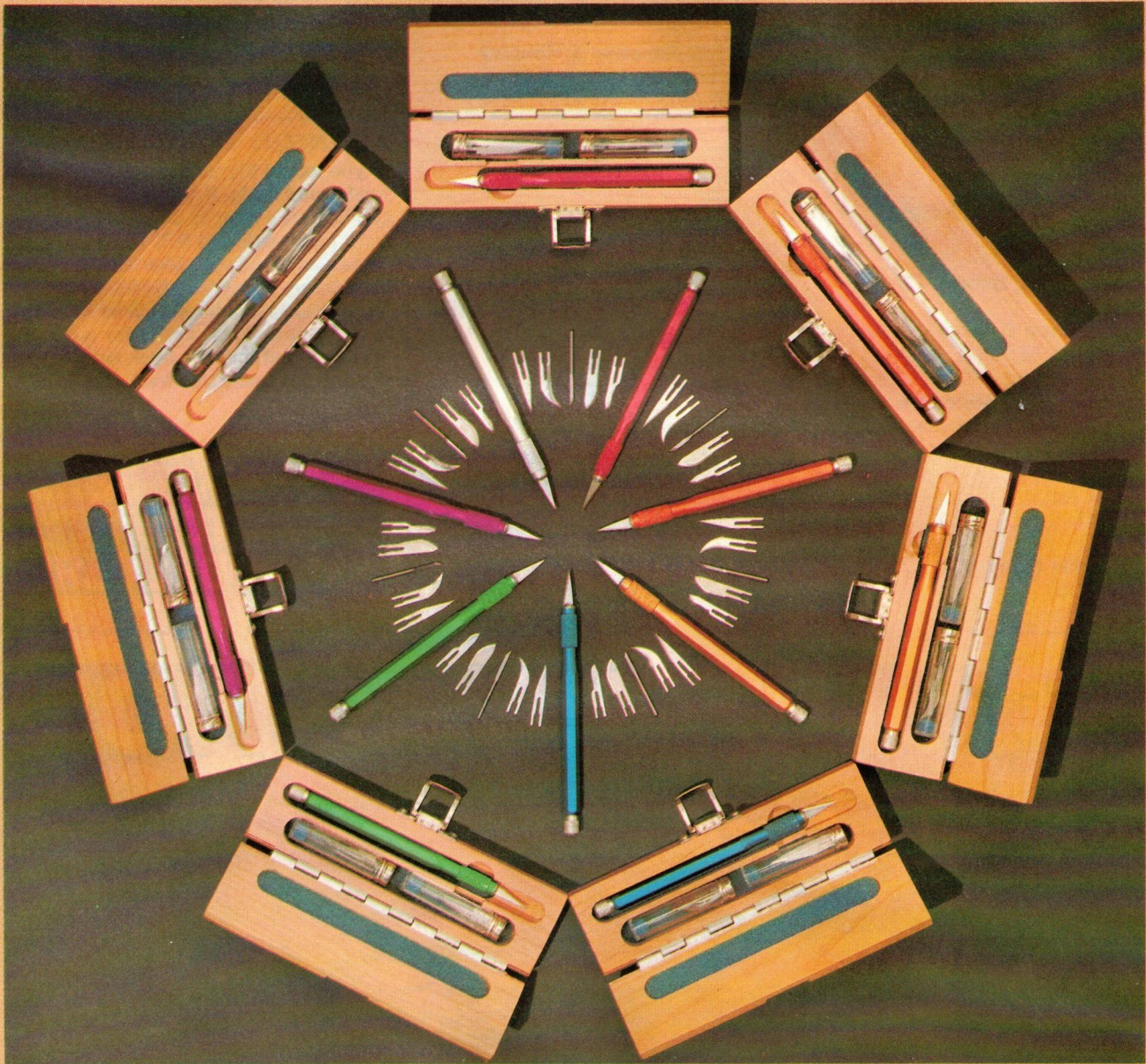
980 Rt. 309, Montgomeryville, 18936
(215) 885-3947

City Limits R/C Raceway

7201 Saltsburg Rd., Pittsburgh, 15235
(412) 793-7344



IN THE BEST CIRCLES, IT'S **über skiver**



A PRECISION INSTRUMENT FOR THE DISCRIMINATING MODELER

- Safe, Rear Draw-Bar Clutch
- Precision, Instrument-Quality Materials
- Strong-Holding Advanced Collet Design
- Non-Rolling Hex Cross-Section
- Deeply Knurled, Non-Slip Grip
- Long-Life, Stainless, Surgical Steel Blades

See your dealer, or order direct. Orders are shipped First Class in the U.S. Add 10% of total order. For overseas air mail, including Canada & Mexico, add 50% of total order. Remit by International Money Order or U.S. funds drawn on a U.S. bank. Postage is paid on APO and FPO orders. Calif. residents add



10
11
12
15
20

Available in seven satin anodized handle colors: silver, blue, red, green, gold, black, & violet. Complete set in fitted hardwood case; includes über skiver, together with two vials containing four No. 11, and one each of Nos. 10, 12, 15, and 20 **\$16.95**
Individual handles (specify color) **\$6.95**
Vial of 6 blades (No. 10, 11, or 15) **\$4.00**
(No. 12 or 20) **\$4.00**

MODEL BUILDER  **PRODUCTS**
621 West Nineteenth St., Costa Mesa, California 92627

T/C's R/Cs

1537 Freeport Rd., Natrona Heights,
15065

(412) 226-8802

SOUTH CAROLINA

Midland Mini Speedway & Hobby Shop

Rt. 5, Box 72G, Sumter, 29150

(803) 495-2006

Willow Grove Mini Speedway

Rt. 3, Box 57, Florence, 29501

(803) 669-1695

TEXAS

Victoria Hobby Shop & Raceway

5211 John Stockbauer Rd., Victoria,
77904

(512) 575-3270

Arrow Hobbies

2710 So. I-35W, Burleson, 76028

(817) 295-2821

I & I Hobby Center

6707 Chimney Rock, Bellaire, 77401

(713) 661-2270

Hal's Hobby Shop & Raceway

4886-A Hercules, El Paso, 79904

(915) 755-1914

Checkered Flag R/C Raceways

8100 S. Kirkwood Rd., Houston, 77072

(713) 879-7619

Outback Offroad

Market St. at Akron, Jacinto City

(713) 673-5911

Little Indy

1624 S. Houston St., Hwy. 146 S.,

Livingston, 77351

(409) 327-2303

Texas Speedway

6707 Chimney Rock, Bellaire, 77401

(713) 661-7137

W. Texas R/C Raceway

3477 Lee Blvd., El Paso, 79936

(915) 772-1382

UTAH

Hobby Express R/C Raceway

3150 Brinker Ave., Ogden, 84403

(801) 392-9760

Logan R/C Raceway & Hobbies

491 So. Main St., Logan, 84321

(801) 752-3915

VIRGINIA

Chesapeake R/C Hobby Shop & Raceway

7112-B Hull St., Richmond 23225

(804) 276-5013

Fairfax Raceway

11340-F Franklin Farm Rd., Herndon,

22071

(703) 471-4499

B & H Hobbies Raceway

Rt. 10, Box 178, Mechanicsville, 23111

(804) 746-2758

Poor Boy's Hobbies & Raceway

Rte. 6, Box 31, Mechanicsville, 23111

(804) 746-5184

WASHINGTON

Tearor Offroad Raceway

8012 S. Tacoma Way, Tacoma, 98499

(206) 537-9437

WISCONSIN

The Train Stop Raceway

5612 Hwy. 51, Schofield, 54476

(715) 359-9060

Cudahy News & Hobby Center

4758 S. Packard Ave., Cudahy, 53110

(414) 769-1500

Classic R/C Speed Shop & Raceway

N. 90 W. 16519 Roosevelt Dr.,

Menomonee Falls, 53051

(414) 251-2000

West End Hobbies, Inc.

144 North Main St., West Bend, 53095

(414) 334-0487

ATTENTION TRACK OPERATORS

If you would like to have your R/C race track listed in the R/C Model Cars Track Guide, here's what to do: Send your track information to R/C Model Cars, Track Guide, 898 W. 16th Street, Newport Beach, California 92663. Your track's title and address will be included in the next available listing for our readers to see and find the track nearest to them. Do it today, it's free!

**SUBSCRIBE
TO
R/C MODEL CARS**

GET ALL THE ACTION

SAVE \$5.00 OFF THE YEARLY NEWSSTAND PURCHASE PRICE!

\$25.00 for one year (USA, including FPO and APO). \$47.00 for two years (USA, including FPO and APO). For protective mailing bag, add \$3.00 for one year, \$6.00 for two years.

For overseas subscriptions, (one year, including Canada & Mexico, but not APO or FPO: \$38.00. Two years, \$68.00. Payment must be in U.S. funds, drawn on a U.S. bank.

Begin my subscription with the _____ issue.

Mastercard or Visa number: _____

Expiration date _____ Signature _____

R/C MODEL CARS 898 W. 16th St., Newport Beach, California 92663

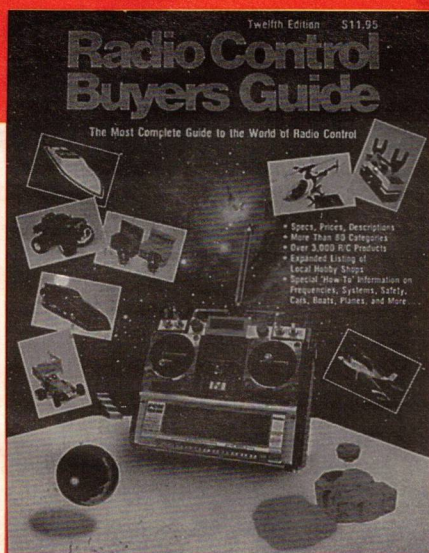
Name _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____



The 12th Edition of the Radio Control Buyers Guide is available direct from Kalmbach!

Now you can own the source book of radio control modeling information – the Radio Control Buyers Guide! In more than 300 pages, and thousands of product listings, this all-new 12th Edition of the Radio Control Buyers Guide provides the up-to-date information every radio control enthusiast needs – whether you're a beginner or a NATS champion. There's no other R/C book source like it! #24626

• Aircraft • Cars • Boats • Radios • Systems • Engines
• Hardware • Books • Videos • Finishing materials
• Accessories • R/C dealers • Plus much more!

**\$11.95
ORDER TODAY!**

**Limited
Quantity Still
Available!**

Kalmbach Publishing Co., 1027 N. 7th St., Milwaukee, WI 53233-1471

YES! Please send me _____ copies of the **Radio Control Buyers Guide**! Price per copy is \$11.95/#24626.

☐ My check is enclosed.

☐ Charge my credit card

Charge to: ☐ Mastercard ☐ Visa

Name _____

Card # _____

Street _____

Exp. date _____

City, State, Zip _____

Signature _____

Include for postage and handling: U. S. \$1.50; Canadian and foreign add 15% (minimum \$3.00). Make payment in U. S. funds.
Wisconsin residents add 5% sales tax.

0022

BACK ISSUES

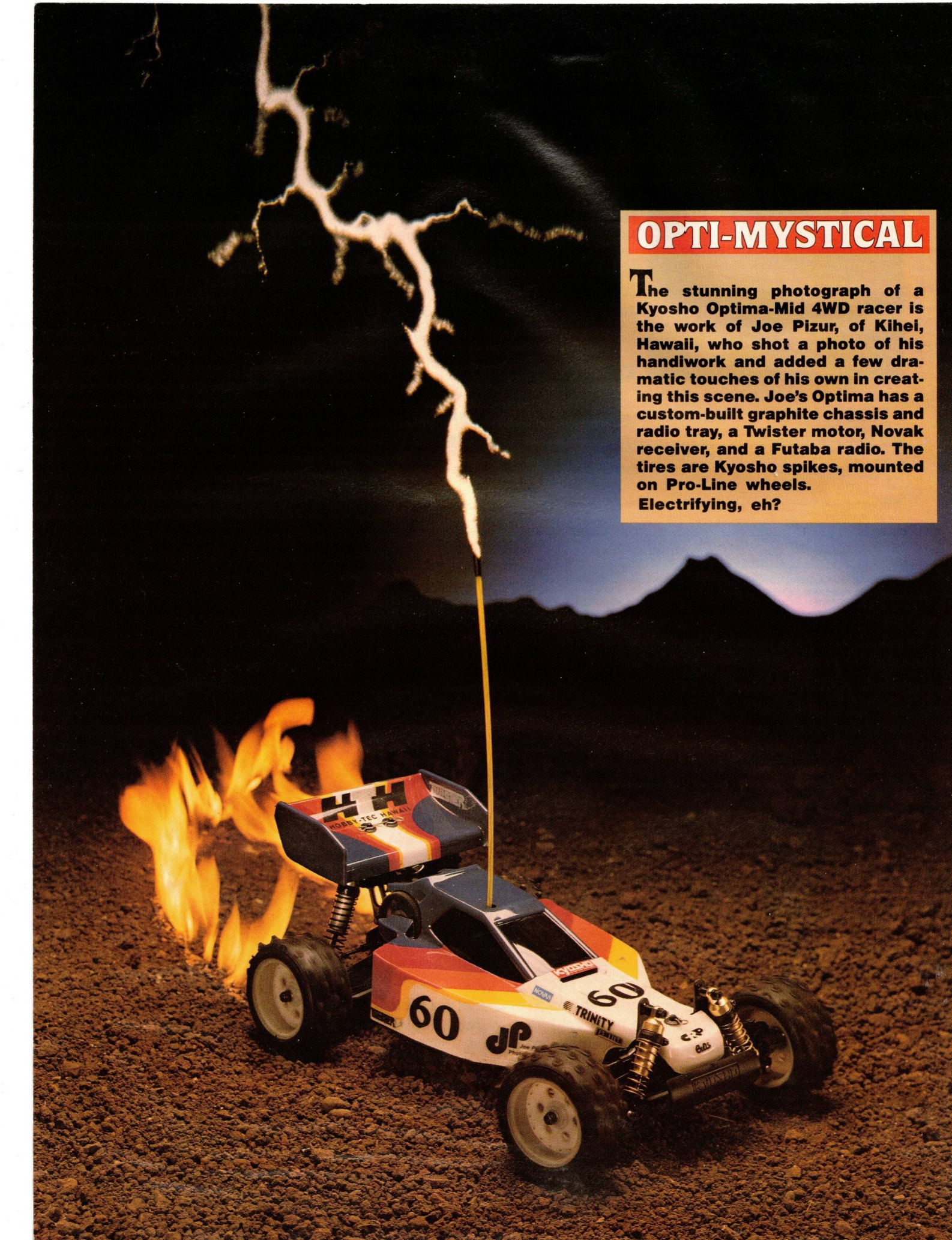
going fast!
Order yours today!



Now you can complete your collection of R/C Model Cars by picking up the issues you've missed. Copies of each issue from Volume 1, Number 1 are still in stock, but you'd better hurry! Each issue is \$2.95, and they're going fast. Order yours today.

Small Print Department: Specify issues desired by volume number and issue. Magazines will be mailed second class, post-paid. Foreign orders (except APO and FPO) must add 60¢ per copy. Allow four weeks for delivery in U.S. If UPS shipment is desired, add \$1.25 minimum for up to two magazines, or add \$1.25 plus 35¢ for each additional magazine on orders for three or more. Remit by U.S. funds drawn on a U.S. bank, or by International Money Order for overseas orders. Master Card and Visa orders accepted, \$10 minimum order, 5% charge. Include card number, expiration, and signature.

Send to: R/C MODEL CARS Magazine, 898 W. 16th St., Newport Beach, California 92663

A dramatic photograph of a Kyosho Optima-Mid 4WD model car. The car is white with red, yellow, and blue accents, featuring the number '60' and 'JP' on its side. It is positioned on a dark, textured surface. A bright lightning bolt strikes the antenna, which is a thin yellow rod. Behind the car, there are bright orange flames. The background is dark with a hint of a horizon line.

OPTI-MYSTICAL

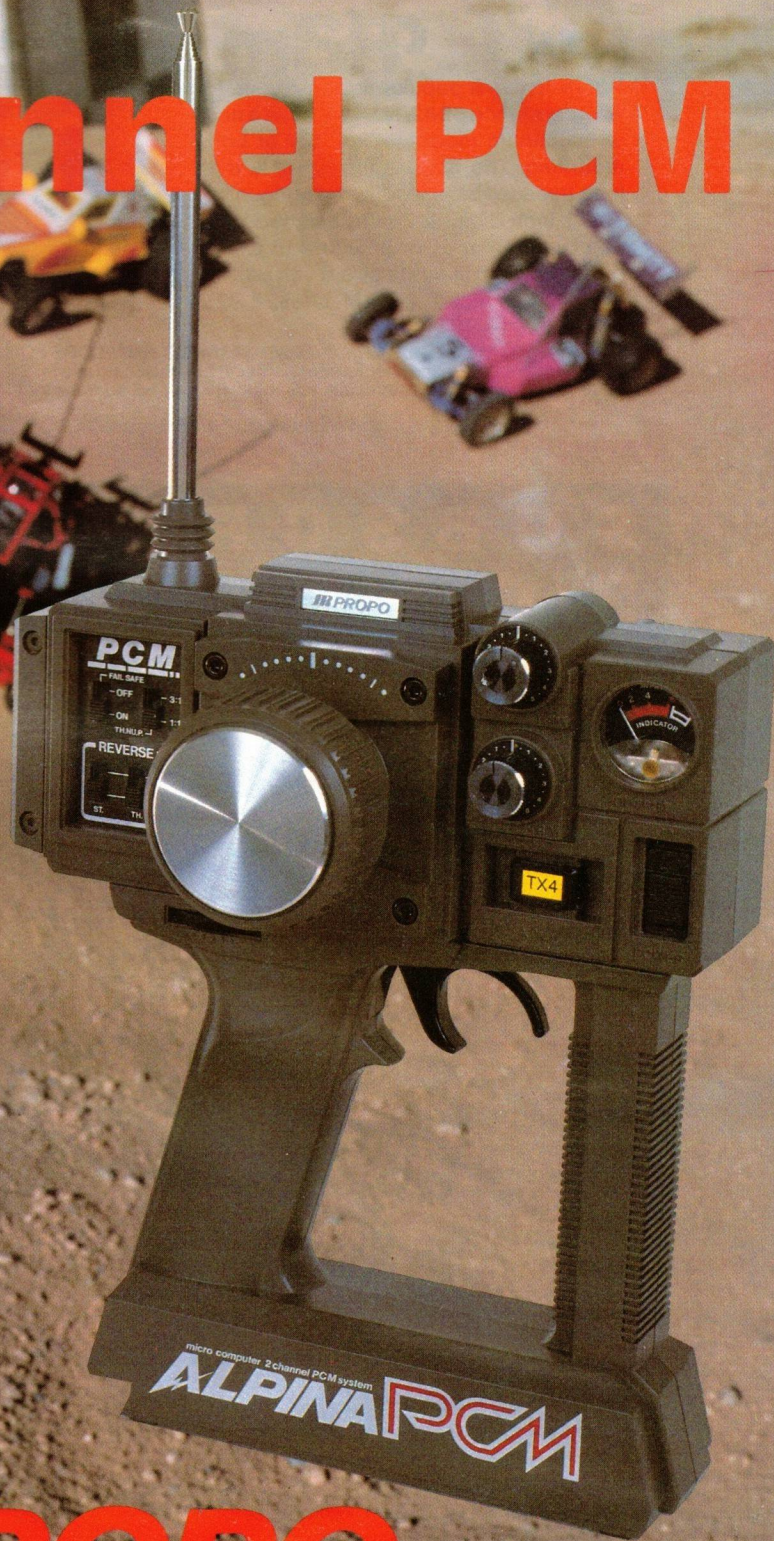
The stunning photograph of a Kyosho Optima-Mid 4WD racer is the work of Joe Pizur, of Kihei, Hawaii, who shot a photo of his handiwork and added a few dramatic touches of his own in creating this scene. Joe's Optima has a custom-built graphite chassis and radio tray, a Twister motor, Novak receiver, and a Futaba radio. The tires are Kyosho spikes, mounted on Pro-Line wheels. Electrifying, eh?

AT LAST . . .

Two Channel PCM



#JS2BPCM



#JS2APCM

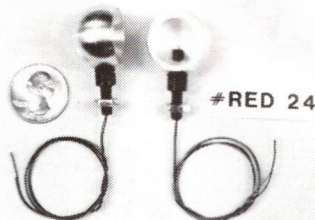
JR PROPO
... The Wait Is Over!

hobby
Dynamics TM
DISTRIBUTORS

DISTRIBUTED BY
HOBBY DYNAMICS DISTRIBUTORS
PHONE: 1-800-458-0241 • FAX (702) 731-5442

New Ram Lites

We've made 3 popular light systems for R/C cars since 1982. Now we have a new, all aluminum model for roll bar or body mounting. The black anodized, 1/2 inch long, threaded base provides easy mounting. The 1 inch diameter satin finished body can be used as is or polished to a high gloss. Power the lights by a 9 volt battery or your car nicad. 2 RAM Lites, #RED 24 Only \$14.95



• SEE YOUR DEALER • SEND STAMPED ENVELOPE FOR RAM INFO
If unavailable locally, send check, money order or full credit card info for the cost of the item plus \$2.00 (\$5.00 foreign) for immediate shipment. Include full address for U.P.S. Sorry no C.O.D.

Ram 4736 N. Milwaukee Ave. — Chicago, IL 60630

SUBSCRIBE TO R/C MODEL CARS

— CONVERT YOUR RC-10 TO A DIRT TRACK SPRINT —

Go For the Gold!!



• CAD-CAM Designed • CNC Fabricated •

- Light weight all metal Alum. 2024
- Stronger Chassis, Gold Anodized
- Increased rollover protection Alum. Tubular Roll Cage & Wing Supports
- Adjustable lightweight Alum. Wing
- Race winner on dirt & asphalt
- Fully adjustable for track conditions (Indoor/Outdoor)
- Super strong Lexan Body

\$140.⁰⁰ Retail

Send Check or Money Orders, No COD's
To:
RBS Fab., Inc.
230 N. Hoernerstown Road
Hummelstown, PA 17036
(717) 566-9513
Hours: 8:00 to 5:00 E.S.T.



FAB. INC.

RACE DIVISION

Super Sprint

DISTRIBUTOR & DEALER INQUIRIES INVITED

AD INDEX

Advanced Racing Technologies	25
Airtronics Inc.	Cover 2
Andy's RC Products	3
Associated Electronics	44, 45
Autographics	69
B&L Racing	69
BoLink R/C Cars, Inc.	71
Custom Racing Products	19
Delta Manufacturing Co.	19
Edge Products	73
Futaba Industries	Cover 3
Gilmer Hobby & Machine, Inc.	78
Hobby Dynamics	85
Hobbiemasters	76
IMS Atlanta	43
Ja Lea Company	24
Jackson Hobby Shop	69
JR Radios	85
Kimbrough Products	70
Kyosho Corp.	29, 31
McAllister Racing	17
MK Products	48
Model Builder Subscriptions	28
Model Rectifier Corp.	Cover 4
Novak Electronics	13
Oval Track R/C Racing	78
Paragon Racing Products	25
Parma International Inc.	15, 21, 79
Polk's Model Craft Hobbies	78
Pro-Line Mfg. Co.	10, 11
Quarter Scale Connection	69
RBS Fab. Inc.	86
R/C Buyers Guide	83
R/C Model Cars Back Issues	83
R/C Model Car Subscriptions	36, 77
Raco Modelcraft Inc.	73
Radio Controlled Models (RAM)	86
Royal Products Corp.	81
T.A. Emerald Industries	49
Team Losi Performance	9
Tech-Toys	75
The Hobby Box	71
Tower Hobbies	33
Track Master Mfg.	23
Trinity Products	6, 7
U.S. Boat and Ship Modeler	34
Uber Skiver Knives	81
WCM Inc.	35
Wagonhill Hobbies	32
Walt's Hobby and Craft	78

CLASSIFIED ADS

Non-commercial rate is 25 cents per word, with a minimum of \$3.00. Commercial rate is 40 cents per word, with a minimum of \$5.00. Name and address free, phone number counts as two words, abbreviations count as whole words. All ads are payable with order, and may be for any consecutive insertion period specified. Send ad payment to: R/C MODEL CARS, Classified Ads, 898 W. 16th, Newport Beach, Calif. 92633.

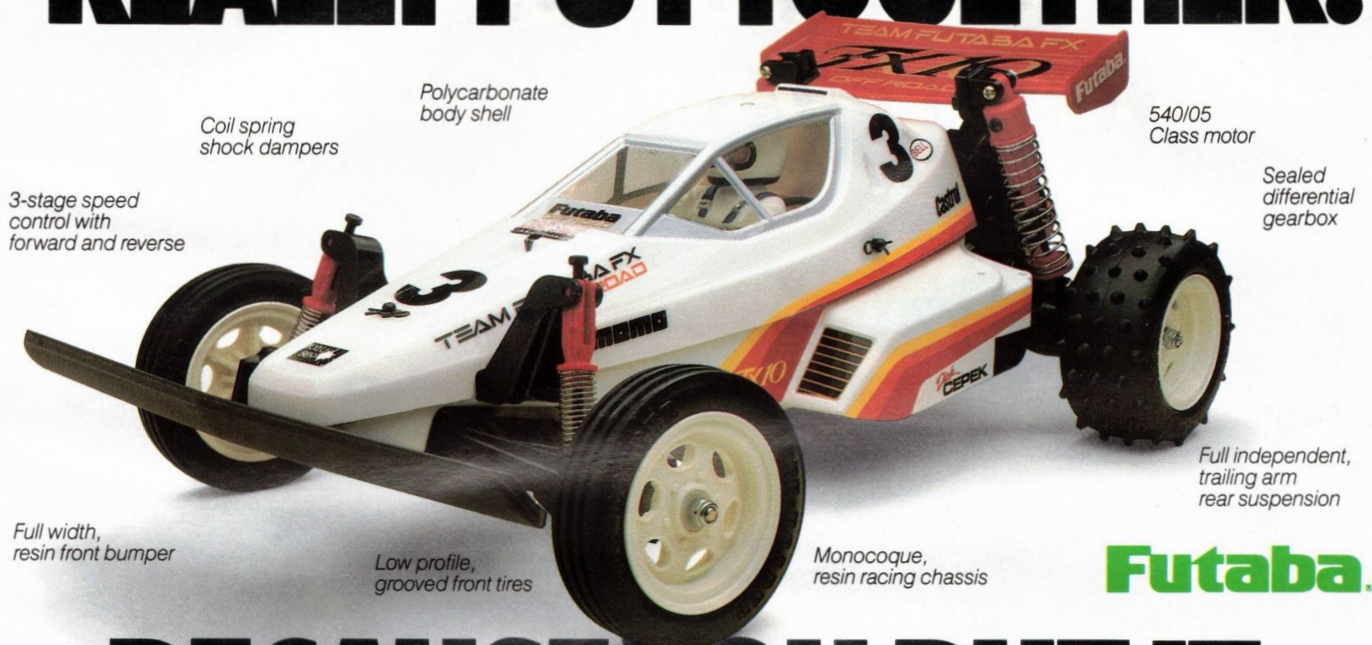
NI-CAD PRO BATTERY SECRETS. All you need to know about racing with Ni-Cads. Send \$3.95 to Vince Publishing, 808 W. 114th Avenue, Tampa, Florida 33612.

CLODBUSTERS!!! DOUBLE or TRIPLE YOUR RUNNING TIME Capability with our inexpensive kit! DOUBLE-TIME: \$16.95; TRIPLE-TIME: \$22.95. Add \$1.50 Shipping/Handling for each kit ordered (IL residents add 7% sales tax). MARK ALLEN, 400 West Roosevelt Rd., 2NW, Wheaton, Illinois 60187.

Secrets to racing the MRC Tamiya F-1 Road Wizard on oval tracks and road courses. Increase speed, durability and handling. Free shipping. Send \$5 cashier's check or money order. Bob Huddleston, Box 5704, Pearl, Mississippi 39208.

All advertising published in RCMB, Inc., publications is subject to the conditions stated in the applicable rate card, copies of which are available from RCMB, Inc., Advertising Department, 898 West 16th Street, Newport Beach, California 92663; (714)645-8830. RCMB, Inc., ad-takers have no authority to bind this Corporation, and only publication of an advertisement shall constitute final acceptance of the advertiser's order.

YOU KNOW THIS BABY'S REALLY PUT TOGETHER.



Coil spring
shock dampers

Polycarbonate
body shell

540/05
Class motor

Sealed
differential
gearbox

3-stage speed
control with
forward and reverse

Full width,
resin front bumper

Low profile,
grooved front tires

Monocoque,
resin racing chassis

Full independent,
trailing arm
rear suspension

Futaba.

BECAUSE YOU PUT IT TOGETHER YOURSELF.

FEAR OF BUILDING.

RC cars are a blast. Building RC cars makes a lot of people nervous.

Because building a radio controlled car should be as much fun as driving it, Futaba designed the FX10.

The FX10's step-by-step assembly

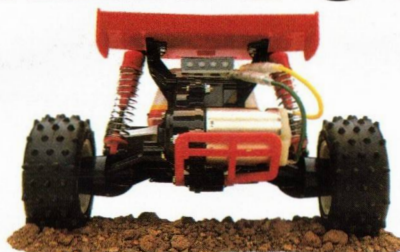


Detailed step-by-step instructions and coded parts make building fun.



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.

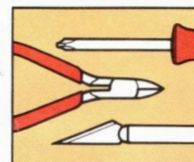
Four wheel, coil spring independent suspension and all terrain tires give the FX10 offroad capability. Trailing arm, full independent rear suspension provides optimum traction. And the FX10's sealed gearbox/differential delivers power to the wheels on all types of surfaces, from pavement to dirt and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



Dirt or pavement.

FX10. THE FORMULA FOR PERFORMANCE.

One test drive and you'll quickly realize what separates your FX10 from the toys. It's designed by RC car racing pros for bigtime 7.2v/1200mAh NiCd power and BEC-equipped. In fact, the FX10's 540/05 Class motor is the largest size legal for organized competition.



A few simple tools are all you need.

Servo saver steering, sealed 3-stage speed control with forward and reverse and polycarbonate body shell are just a few of the racing features you'll appreciate.

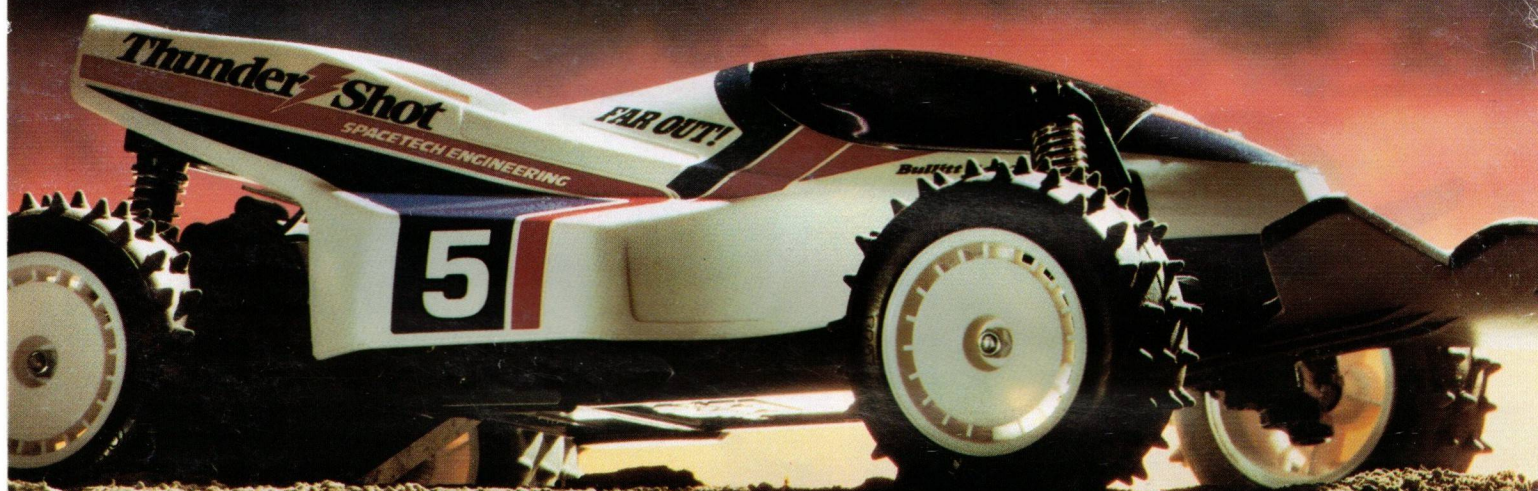
Make your first step into RC car building a real success. Put together an FX10 and you'll see just how easy it is.

FX10/ALL TERRAIN RC OFFROAD CAR KIT

Futaba Corporation of America
555 West Victoria Street Compton, CA 90220

Thunder Shot QD MRC-Tamiya's first ready-to-run

Now you can be satisfied with a ready-to-run R/C buggy



Thundershot QD comes completely assembled, and equipped with a factory installed, wheel-type radio control system. Batteries not included.

From the company that built R/C off-road into a driving passion

You know and appreciate quality in off-road buggies. And you're probably comfortable only with the high performance of a Tamiya kit. Its quality, its durability. And parts availability.

But now, Tamiya, the company that created off-road, has rolled out its first ready-to-run... a 1/14 scale buggy featuring the performance and technology of a kit, in a ready-to-go, right-out-of-the-box off-road. The first ready-to-run a pro can appreciate.

Until now if you wanted it built right, you had to build it yourself

To begin with, the Thundershot QD comes

with a wheel trigger two channel super het radio that's 35% larger than the ones found with most other ready-to-runs. In fact, it's the type used by the best drivers. And this radio features proportional steering, not just hard right and hard left, it will turn precisely in direct proportion to your adjustment of the wheel.

The body is durable, lightweight engineering plastic, contoured for aerodynamic efficiency. To get you through the rough spots, the front independent suspension is damped by two large coil springs and the rear has a rolling rigid axle for maximum control. For a power boost, there's a turbo speed gear that kicks in with the flick of a switch. Changeable crystals make it ready to run up to six cars for group racing... something you can't do with most other ready-to-runs that allow for just two frequencies.

It's the kind of engineering you'd expect in a high performance kit. And you get in Tamiya's Thundershot QD, the ready-to-run that's not a toy. See it at your hobby dealer... and for a change, enjoy the fun of being ready-to-run without being ready to build.

MRC™



Model Rectifier Corporation
2500 Woodbridge Ave., Edison, NJ 08817