

Radio Control MODEL CARS

AND TRUCKS

VOL. 5, NO. 54

INSIDE:
ROAR
Nationals Program

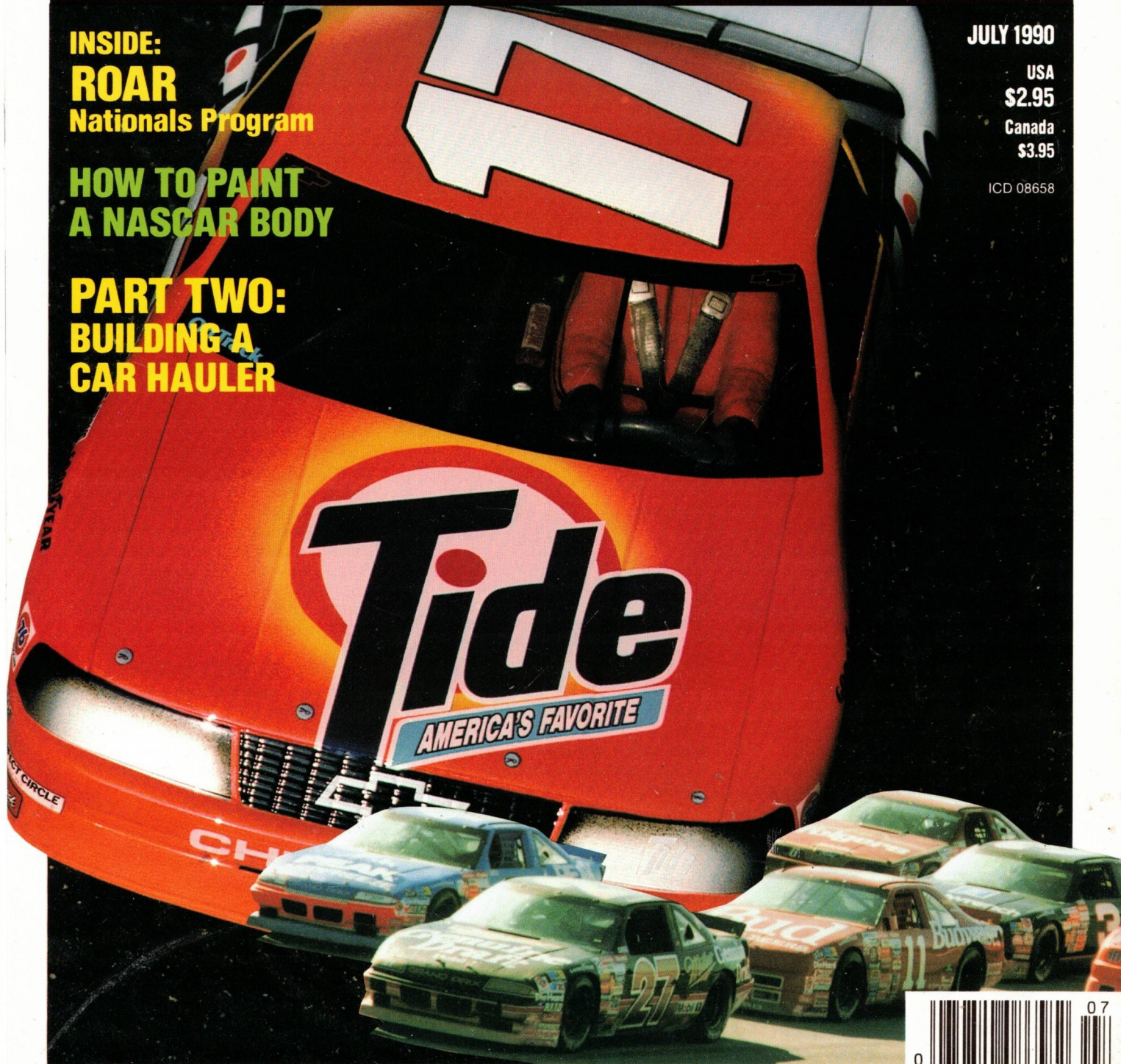
HOW TO PAINT
A NASCAR BODY

PART TWO:
BUILDING A
CAR HAULER

JULY 1990

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2PBKA/Junior



2PD/AM

(2PD and 3PB available with S9301, S9601 or S132H servos)



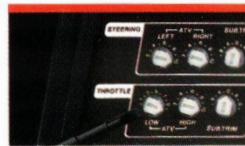
3PB/PCM1024



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Departments

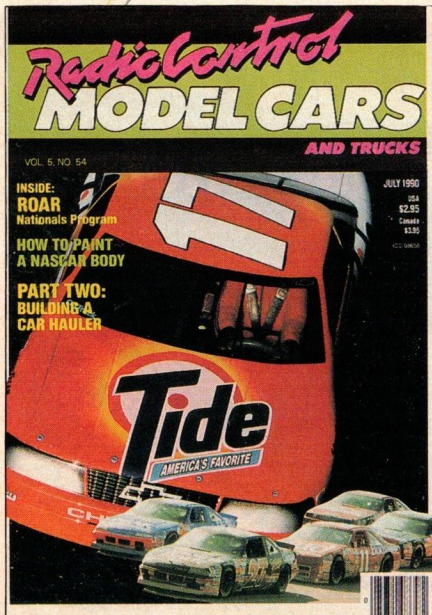
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COVER: NASCAR racers take centerstage as we show you 500 race action and how to paint the Tide car too. Come on in!



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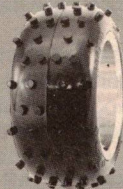
PRO-10

APPLICATION: Serious competition. Loose to medium dirt or clay conditions.

DESIGN: Flat Knobby. Lightweight Natural Rubber Blend

STOCK NUMBER
#7010

SPECS: Fits 2.0" Wheel
2WD—Rear Only
4WD—Front or Rear



PRO-20

APPLICATION: Serious competition. Medium to hard pack conditions.

DESIGN: Multi-Size Knobby. Lightweight Natural Rubber Blend

STOCK NUMBER
#7020

SPECS: Fits 2.0" Wheel
2WD—Rear Only
4WD—Front or Rear



PRO-15

APPLICATION: Serious competition. Medium to hard pack conditions.

DESIGN: Multi-Ribbed. Lightweight Natural Rubber Compound Blend

STOCK NUMBER
#7015

SPECS: Fits 2.0" Wheel
2WD Front



PRO-30

APPLICATION: Serious competition. Medium to hard pack conditions.

DESIGN: Short Knobby. Lightweight Natural Rubber Blend

STOCK NUMBER
#7030

SPECS: Fit 2.0" Wheel
2WD—Rear Only
4WD—Front or Rear



CONE DEEP DISH RACING WHEELS



#2531 Front dyable
2.1" Diameter.
#2532 Rear dyable.
2.0" Diameter.
#2547 Front chrome.
2.1" Diameter.



#2548 Rear chrome.
2.0" Diameter.
#2549 Narrow Front Dyable.
Fits Kyosho 4WD. 2.0" Diameter.
#2557 FRONT dyable fits
RC10 and 2WD Kyosho.
2.0" Diameter.
#2558 REAR dyable fits
RC10. 2.0" Diameter.
#2559 FRONT dyable fits
JR-X2. 2.0" Diameter.
#2560 REAR dyable fits
JR-X2. 2.0" Diameter.
#2561 REAR dyable fits 2WD
Kyosho. 2.0" Diameter.

MONSTER TRUCK

PRO-40

APPLICATION: Serious competition.

All track conditions.
DESIGN: Mini Pin with Centered Crossbars.

Lightweight Natural Rubber Blend

STOCK NUMBER
#7040

SPECS: Fits 2.2" Wheel
2WD—Front or Rear
4WD—Front or Rear



PRO-50

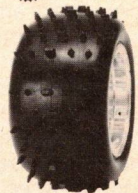
APPLICATION: Serious competition. Medium to hard pack conditions.

DESIGN: Mini-Pin with Staggered Crossbars.

Lightweight Natural Rubber Blend

STOCK NUMBER
#7050

SPECS: Fits 2.2" Wheel
2WD—Front or Rear
4WD—Front or Rear



PRO-45

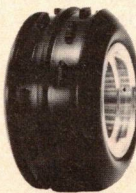
APPLICATION: Serious competition.

All track conditions.
DESIGN: Multi Rib with Staggered Bars.

Lightweight Natural Rubber Blend

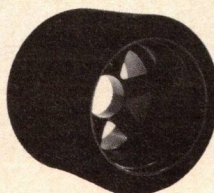
STOCK NUMBER
#7045

SPECS: Fits 2.2" Wheel
2WD/4WD—Front only



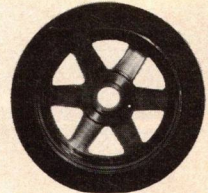
ON ROAD

ON-ROAD SPONGE TIRES



FRONT—Mounted and Trued on 2.0" Racing Wheels (Dyable)
#2001 SOFT (Yellow)
#2002 MEDIUM (Green)
#2003 FIRM (Blue)
REAR—Mounted and Trued on 2.0" Racing Wheels (Dyable)
#2004 SOFT (Yellow)
#2005 MEDIUM (Green)
#2006 FIRM (Blue)

ON-ROAD WHEELS



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#2564C FRONT Chrome
#2565 REAR On-Road Dyable Wheel 2.0" Diameter
#2565C REAR Chrome

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WELCOME TO RADIO-CONTROLLED AUTO RACING!

We want to welcome everyone to this issue of *R/C Model Cars*, particularly those readers who have discovered the sport of R/C racing (and our magazine) for the first time. You've come upon a fascinating pastime; one glimpse of the intensity and excitement that is R/C car competition should convince you that here lies the potential for hours of enjoyment and camaraderie with people who love runnin' and racin'.

Also this month, we want to welcome spectators and competitors who are coming to Hobby Haven Raceway in Livermore, California, for the 1990 ROAR Offroad Nationals. Visitors can expect to see the best drivers in the country battle for honors in two-wheel and four-wheel drive races. Along with lots of hotly contested racing, there will be seminars designed to enhance your enjoyment of R/C racing. You may have noticed the ROAR Nationals program bound into this issue; we hope you have as much fun at the races as the competitors themselves.

Also bound into this issue (our biggest yet) is a dirt-level review of Tamiya's new 2WD Astute offroad racer. Japan's latest (and best) candidate to try to topple the venerable RC10's dominance in dirt buggy racing. The Astute's design and simplicity mark it as one to watch in 1990 and beyond. Writer Larry Fletcher includes tips on race modifications that can turn the Astute into a fire-breathing, wheel-spinning road rocket.

For dirt oval aficionados, we review Kyosho's Slingshot, a four-wheel drive racer that brought praise from reviewer Steve Saik, who said the Slingshot's assembly was easy, and dialing it in on the oval just as trouble free. Be sure to check out the Slingshot's hot paint job from Mike Ogle—it's a knockout.

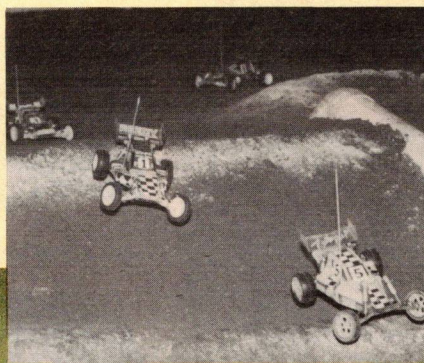
Kyosho is also responsible for one of the more unusual R/C vehicles we've reviewed, the Blizzard. It's a blade-equipped, track-driven 'cat with two motors for power and the ability to plow through snow, gravel, dirt, or whatever you want to push around. The Blizzard could even help you plow up your backyard track!

Darrell Waltrip's Tide car is probably the most recognized body in NASCAR racing (next to Petty's red and blue STP Pontiac), and painting whiz Mike Ogle chose to take us through a step-by-step lesson on how to recreate this flashy graphic design that is in reality deceptively simple to accomplish using spray cans and masks.

Our Competition Editor, Gene Husting, went east to Florida to cover the annual Winter Championships in Tampa. Just about everyone who is anyone showed up and put on a weekend of blazing R/C action that Gene has captured in his play-by-play commentary from trackside.

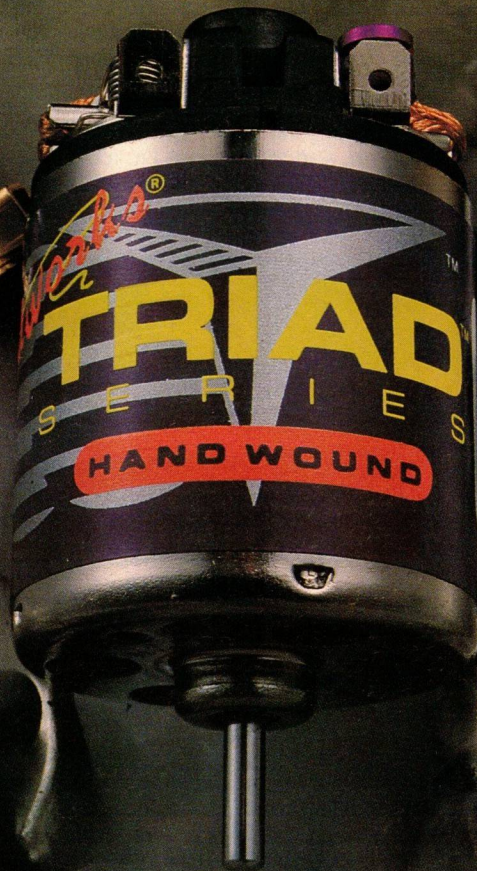
Speaking of trackside, our regular columnist, Mike Liem, presents in his Trackside column part two of "Against the Wind," which investigates aerodynamics and the R/C race car. The importance of low-speed aerodynamics is often ignored by racers who feel that raw horsepower is the only way to obtain optimum speed. Mike offers examples from full-size race car designs to illuminate his analysis of wings and body styles that can enhance your car's performance on the track.

That's just a brief look inside the pages this month; there's a lot more to be found, including our regular columns and features, just waiting to be discovered. And for those of you who don't have a chance to make it to this year's ROAR Nationals in Livermore, check out some racing in your hometown; it's likely that there is at least one track operating close by, and they'd love to have you join them, whether to race or just to watch the fun. And once you've been exposed to it, we're certain you'll be back soon, with a car and a desire to race—just like us. We'll see you there!—Editor.



Hobby Haven Raceway in Livermore, California, site of the 1990 ROAR Nationals.

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50,000 rpm 9 turns #0666	49,000 rpm 10 turns #0667	46,000 rpm 11 turns #0668	43,000 rpm 12 turns #0669	41,000 rpm 13 turns #0670
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CAN'T GET ENOUGH

Dear RCMC,

I was blown away by your May issue with the Big Boss on the cover and the reviews of it and the old Hi-Rider 'Vette and the Rampage. You guys come up with the best photos of model cars that I've seen. It sure puts my Polaroid to shame. I want you to run more big trucks in your magazine. I love the monster car crushers, and can't get enough!

Dale Enright II
Coral Gables, Florida

Dear RCMC,

In your May issue with the big truck on the cover you have a story about the Hi-Rider 'Vette. I didn't know it was discontinued, but it still is a hot looking car. I went to my hobby shop and they didn't have one, but also they didn't have the Big Boss, or the JR-XT. The hobby shop man said I should get a ready-built truck called the Vagrant or Vagabond, with a radio controller and charger all together. It was from Taiwan. I don't like it as much as the 'Vette or the Big Boss, but I don't know what to do.

Jay Preston
Amarillo, Texas

Jay: Find another hobby shop. —Ed.

MONSTER MASH

Dear RCMC,

Monster trucks are my favorite. You had a great photo on the cover of the Big Boss truck, and even better, the Hi-Rider 'Vette stompin' some cars on the inside of your magazine. I want to see more features on these big trucks, so please have some more soon.

Dean Clark
Oak Park, Illinois

Dear RCMC,

Your May issue with the Big Boss truck on the cover was the best yet! I loved the photos of the Hi-Rider, and especially the review of the Boss, because that's the truck I got for my birthday. I didn't have to know all the things you wrote about, because mine is already put together, but I cut out the photos and have them in my room to show my friends. P.S. I had a Nikko toy truck and it was a joke.

Ryan Steele
Lakewood, Colorado

Dear RCMC,

Your awesome rad May issue was the first one I got with my subscription, and when it came to my house I was wondering if it would ever show up. I was really glad to get it, and to see the hot photos of the trucks you have in it. I hope you will do more stories on monster trucks because I think they are the most radical things on four wheels. What are you going to do next? I can't wait!

Billy Dorr
Harrisburg, Pennsylvania

Dear RCMC,

Thank for the great coverage of the monster trucks and the directory of truck pulling in the May issue. What do you know, there is

a truck pull association right here in Portland! I am going to be getting involved with them, and I hope to be a winner soon. I would like to see more conversion articles by your Truckin' columnist, Jack Wright. He did a good job with his "Before and After Blackfoot" article, and I hope he continues.

David Snow
Portland, Oregon

ON A RAMPAGE

Dear RCMC,

I had been considering a 1/8-scale Kyosho Burns, which I don't think you have reviewed yet, and then in the May issue I saw the Kyosho Rampage, a .10-powered gas offroad car, and I have decided to get one and terrorize the neighborhood. There is nothing like the sound and smell of a gas engine, and that's what I'm looking for. Thanks for your article; it sold me!

Frank Thrasher
Chandler, Arizona



FLYING RC10

ALL THE CATS

Dear RCMC,

My housemates and I all love your magazine; in fact, I have a hard time getting the new issues away from them so I can read them! I started out with a Tamiya Grasshopper, but I didn't like the steering setup and I kept on breaking shocks. Nowadays, I run an RC10 with a Futaba radio and ESC, stock motor, Associated front shock tower, metal idler gears, and chromed shock shafts, plus Trinity U-joint dogbones and front bumpers. I've got two bodies and wings—the nice clean one for show, and the other one is my everyday thrasher body. All the cats in the neighborhood go nuts when I drive it around. They'll chase it, then run away, then come back and sniff it. They just can't seem to figure out what it is.

Paul Bartz
Palo Alto, California

DRAGGIN' RIGHTS

Dear RCMC,

Woody Trimble wrote about the BoLink 10th-scale dragster in your May issue and I was so intrigued that I ordered one from my hobby dealer after reading the article by Woody. I received it last week and quickly assembled the chassis and added a Novak ESC and a Trinity Big Daddy motor, and let me tell you, it screams! I couldn't believe how fast it was, and we were just running it in the Wal-Mart parking lot! I don't know exactly how fast it was going, but it was hard to keep

it in a straight line because it was going so fast. We don't have a strip around here to race at, but I think that after people get a look at my rail they will like to have one of their own, and then we'll get a strip made. Thanks for the informative magazine!

Ray Wolff
Palm Beach, Florida

Dear RCMC,

I really got off on Mike Ogle's story on the first IEDA Winternationals in your June issue. I love drag racing, and although I don't have a radio controlled dragster, I'm planning on getting one soon. The E.T.'s were unbelievable! I just wish I were out there near the Colton strip so I could race with you guys!

Chuck Clegg
Phoenix, Arizona

Dear RCMC,

The only thing I read in your June issue was the Winternationals story by Mike Ogle. I am now and forever a drag racing fanatic, and I have a Fine Design dragster of my own that I'm hoping to have turning 1-second laps real soon. I am hoping to get one of those new Novak HVT-1X speed controls for drag cars, and some hot 600 SCRs for power. Then I'll go hunting up some competition.

George Snell
Arvada, Colorado

THE RIGHT FORMULA

Dear RCMC,

I want to congratulate you on your fantastic cover shot and color photos of the Formula One racers at the U.S. Grand Prix. I love Grand Prix cars, and never miss a race on TV. I attended the Phoenix race, and was disappointed that so few people showed up to see these incredible exotic cars in person. Maybe they didn't come because there are no American drivers in Formula racing, but if you love motor sports, you certainly would have to slow up at the only Grand Prix in America, whether or not there were no U.S. drivers competing. To see the Ferraris, Lotus, Benetton, and McLaren cars is enough for me. Your magazine helped me relive the excitement I felt when I was sitting in the stands. I have a 1/10-scale Lotus-Honda by Tamiya that I run, and I'm hoping to convert some friends to the same car so we can race against each other.

Todd Englund
Las Vegas, Nevada

Dear RCMC,

I really liked seeing your coverage of the U.S. Grand Prix in the June issue, number one because I love F.1 racing, and number two because I have an original Road Wizard by Tamiya that I have modified and made into a real rocket racer. I wish Tamiya would make available some new updated bodies for the Wizard chassis, like the McLaren or the Benetton, or Williams. See what you can do to convince them.

Perry Cooke
Ben Lomond, California

MORE POWER TO YOU



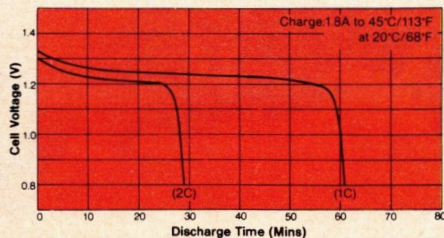
UNLEASH THE POWER THAT ONLY PARMA MATCHED AND SUPER MATCHED SANYO SCR'S CAN OFFER. FOR YEARS PARMA HAS BEEN PRODUCING CONSISTENT, MATCHED BATTERY PACKS FOR RACERS AND HOBBYISTS ALIKE. DON'T GET BLOWN AWAY WITH THE REST. INSIST ON THE BEST; PARMA SANYO SCR'S. THESE CELLS PACK POWER!

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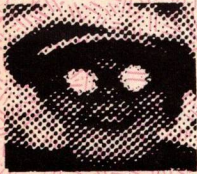
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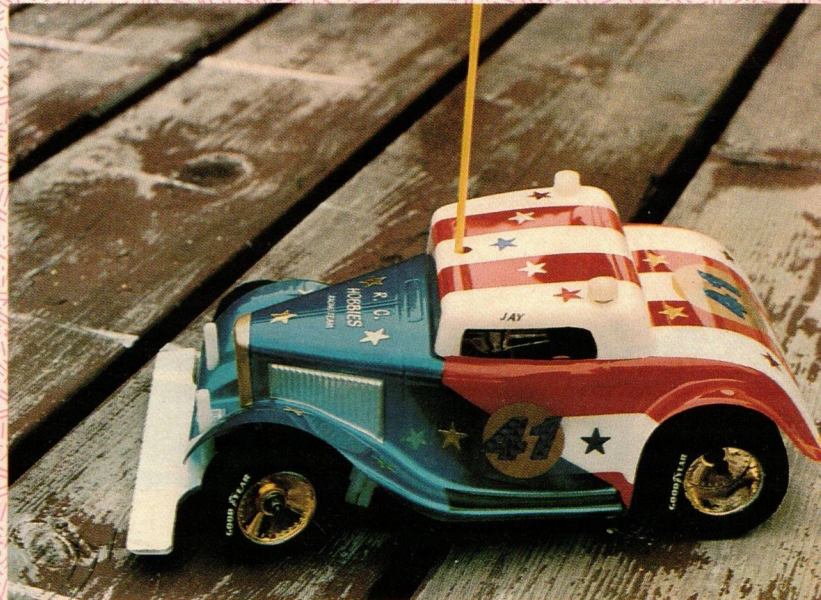
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LOOK FOR US AT THE RCHTA SHOW!

Readers' Pages



DEL'S CORNER

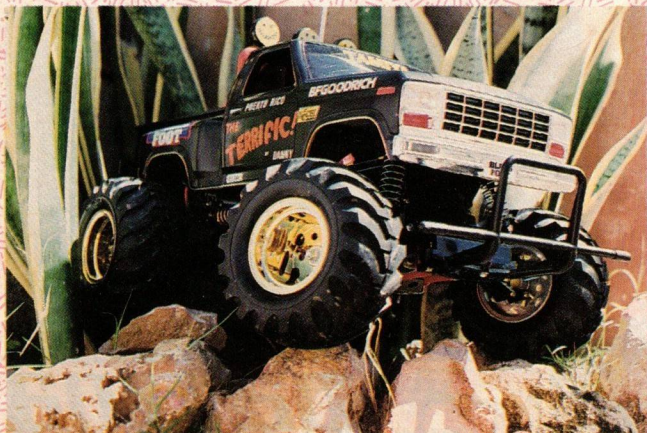
READERS: Well, here we are again, with another load of photos you've sent in to our Readers' Pages. I have been working real hard sorting through all the fine photos and making sure they get into the magazine in the correct order. If you have sent in your photo and you haven't seen it yet, be patient! There are a lot of people ahead of you! Remember, you have a chance for a free subscription just by sending in your photo, so do it now! See you right here next month. —Del.



A very patriotic TRC Pro 12 sporting a BoLink Ford coupe body comes to us from Jay Benton of Bozrah, Connecticut, who says he added a graphite axle, Paragon rims with TRC tires, and Novak Electronics. We'll add a free subscription to *R/C Model Cars*, Jay! Congrats!!



This "picture perfect" Boomerang is from Scot Sofield, of Edison, New Jersey (home of MRC/Tamiya). It has matched Sanyos, a black sprint motor, and Scot says he'll send shots of his Ultima soon. We're sending him a free subscription for his efforts.



"Hi! My name is Danny Rivera from Bayamon, Puerto Rico. This is my terrific Blackfoot with a KO Propo radio, stock motor and ball bearings. Thanks for a magazine that really helps us do our best!" Danny, here's a subscription to help you even more!



Josh Dodge, of Carbondale, Illinois, sends us this photo of his custom Ultima with skis and chains. Josh designed the skis and chains, with no help from a kit. The modifications keep his Ultima cruising through the winter. A free subscription is plowing its way to Josh.

VICTOR OR VICTIM

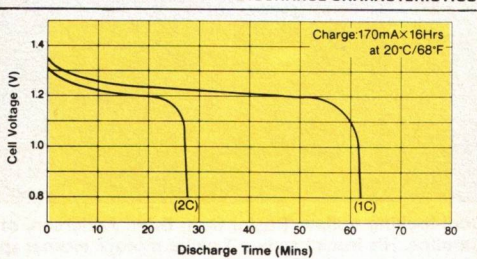
IN EVERY RACE THERE ARE VICTORS AND VICTIMS - WHICH WILL YOU BE? FOR YEARS PARMA HAS BEEN PRODUCING WINNING, MATCHED AND SUPER MATCHED SANYO BATTERY PACKS FOR RACERS LIKE YOURSELF, WHO ARE SERIOUS ABOUT WINNING. VICTOR OR VICTIM? THE CHOICE IS YOURS. JUST REMEMBER, WHEN THE DUST CLEARS, PARMA SANYO SCE'S ARE THE WINNER'S CHOICE.

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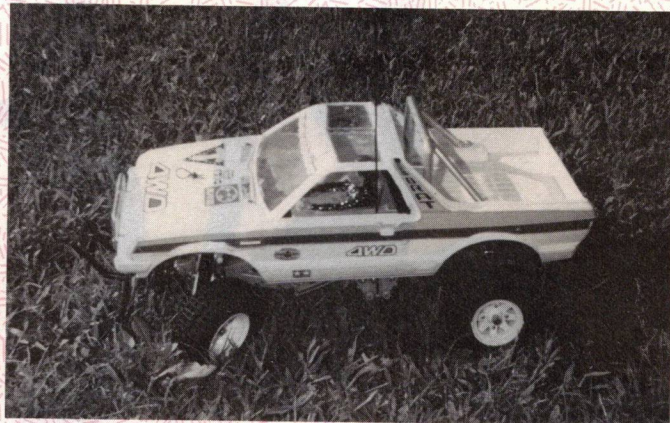
Dan Watson's forest flyer, a Tamiya Frog was modified by using Pro-Line rear tires, Tamiya oil shocks, a Trinity Monster motor, and a Parma Big Bear body. Dan, from Baltimore, uses a Futaba radio, and a Kyosho field bag.



"My name is Mark Stewart Jr. I painted my Clodbuster to match my dad's 4x4. I've got lots of hours in detailing my truck, and lots of hours of fun out of it."



Greg Thomas, from Pinellas Park, Florida, says he named his Clodbuster "Frankenstein" because it has three Trinity Monster modified motors, Novak ESC, and Universal Energies power pack. The ESC is cooled by additional heatsinks and a hair dryer fan powered by its own 6-cell pack. Six wheel, six drive!! It's nuts!!



Chris Tuttle, from Cushing Oklahoma says he's been enjoying R/C for about a year and a half, and doesn't intend to stop! That's the way, Chris! His Subaru Brat was the first R/C car Chris had built, and he loves it. It has a Futaba radio system inside.



This Monster Beetle with a Brat body has a Diamond sprint motor powering it, and JG shock mounts. The paint job is by Bill Leary's mom, and the Beetle belongs to Bill. They're both from Boca Raton, and Bill says he probably could have painted it too.



Here's a Kyosho Double Dare from John Miller, of Garden City, Kansas. John says his Double Dare is stock right out of the box, and can pull Draggin' Wagon sled a full pull with 37 pounds of lead in it! Wowiee Zowie!



Keith Brooks, from Batavia, New York, says his nice but nasty monster has a Thorp rear end, Clodbuster tires, and a 2-inch body lift. The power is from a Parma motor. Since the photo was taken, Keith has added quad front shocks, and a new ESC.



Cool-looking outlaw 'Buster from Brian Anderson, of Burlington, North Carolina. His truck has two Twister motors, Hornet speed controls, 2 8.4 battery packs, and 8 Tamiya shocks. Brian runs working headlights on his clean machine.

BORN IN THE

U

S

A



KYOSHO **USA-1**

Kyosho brings full-scale monster truck realism to R/C.

Everett Jasmer's USA-1 is America's patriotic favorite on the Red Man/TNT monster truck circuit. When it unfurls its monster truck action on the track, it gets a salute from fans as a winning original.

Jasmer and **Kyosho** have teamed up to bring you the **USA-1** as a high-performance, 4WD/4-wheel steering electric car crusher. The 1/10 scale kit duplicates every detail of the full-size truck's 1990 Chevy body. Details like chromed carbs, rollbars, mirrors, bumpers, and grille shine between waves of red, white and blue. This official scale replica is the 4th of July on wheels. BIG wheels.

The USA-1 is the largest monster truck Kyosho has ever produced, and the most sophisticated. Its newly developed heavy-duty 4-wheel independent suspension system features new steering arms, upper and lower control arms, and axles. Newly designed steering blocks plus metal bushings, speed control, eight coil-over shocks, and heavy-duty aluminum shock towers are all included.

If you still haven't found your dream R/C truck, stop dreaming. The USA-1 is now a 1/10 scale reality.

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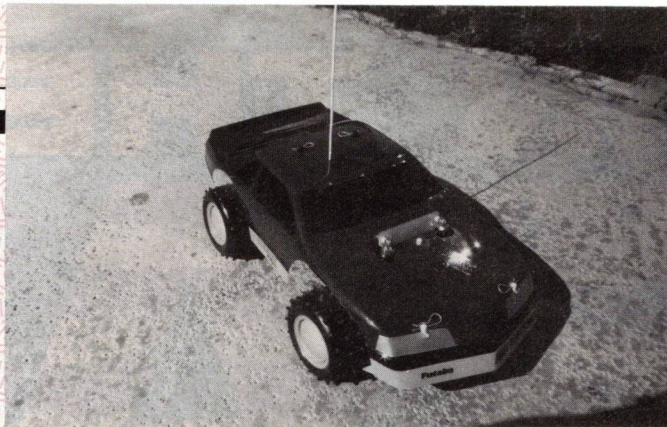
The distinctive full-size USA-1 is a top attraction on the Red Man/TNT monster truck circuit, and clinched the 1988 Monster Truck World Championship.

Length: 17.6"
Width: 16"
Height: 12"
Wheelbase: 10.6"
Motors: Twin Mega 360
Monster Truck

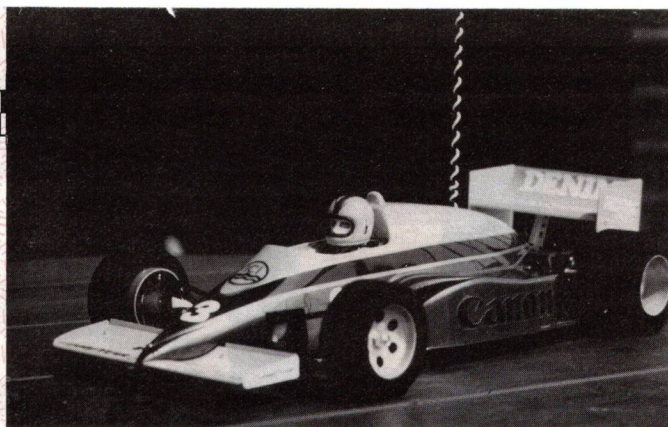
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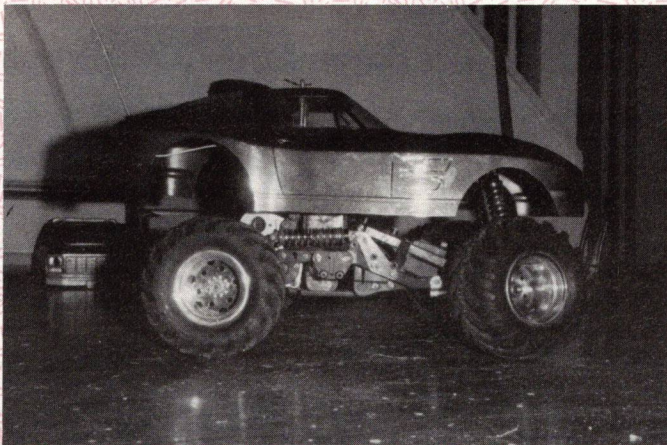
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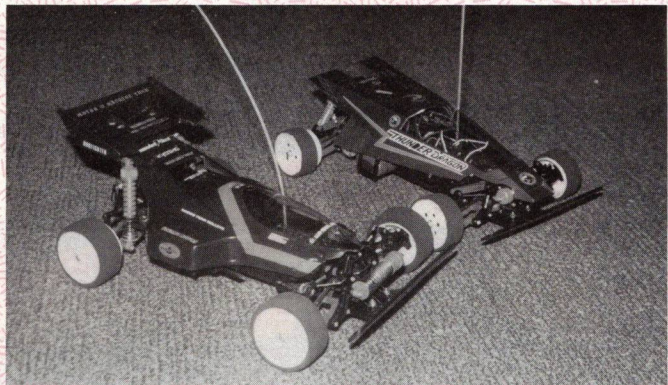
A nice Tamiya Blackfoot with an '87 T-Bird body mounted is from Adam Ince, of El Toro, California. Adam added coil-over oil shocks after modifying the chassis. He made moonish hubcaps for the rims out of Coke cans.



This hot Tamiya Road Wizard has full bearings, a Futaba radio and ESC, and a 6-cell battery. It's from George Dinsmore, of Arlington Heights, Illinois, who also did the paint job.



MRC's popular Blackfoot has been modified with a Trinity Silver Dot motor, dual shocks in the front, oil shocks in the rear, and is controlled with a Futaba Attack radio. It's from Jason Petty, from Sagaponack, New York.



From faraway (unless you're there) Singapore comes this photo of a Tamiya Thundershot and a Thunder Dragon. The 'Shot is Stanley Chan's car, and the Dragon belongs to his brother Derek. Both cars use Tamiya Technigold motors, Futaba ESC's, and the Thundershot is a little more modified than Derek's Dragon. Both brothers race at local races sponsored by Tamiya.



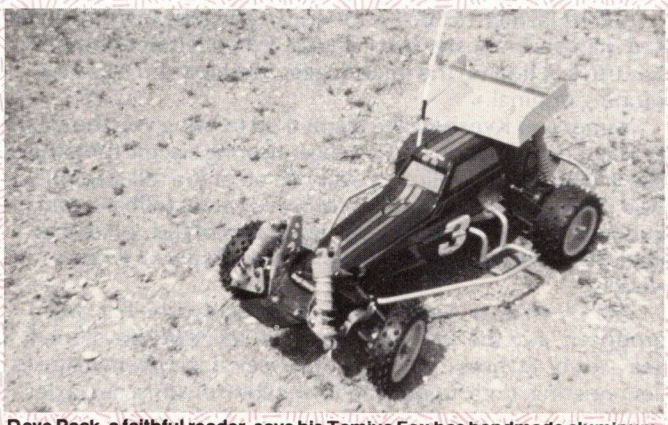
Here's a much-modified Ultima with a custom fiberglass chassis using Losi bell cranks and RC10 caster blocks, plus rear Option House shocks and CRP fronts. A Tekin ESC and receiver, and a Futaba mini-servo handle the control. It belongs to J.D. Wilson, Midwest City, Oklahoma.



"My name is Lisa Eilman and I'm sending you a photo of my boyfriend Chris Hinton's Big Bear. It has a '34 Ford body on an extended chassis and a 480 Spa motor and MIP gears. We both enjoy racing R/C cars; I own a Wild One, and we've both won ribbons. R/C car fans forever!"



This Turbo Optima Mid SP has a LeMans 240 SB motor, a Futaba ESC, and an internal torque limiter to prevent motor damage if the wheels jam. It's from Hsi Lin, 16 years old, from Santa Barbara, California.



Dave Pack, a faithful reader, says his Tamiya Fox has handmade aluminum front and rear shock mounts, rear skid plate and wing, custom steering linkage, and a kydex front skid plate. Power is from a LeMans 240ST motor with a heat sink, and Dave uses Thorp's adjustable ball diff and dog bones.

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HAVEN**
RACEWAY
ROAR 10th SCALE OFF-ROAD NATIONALS
1990
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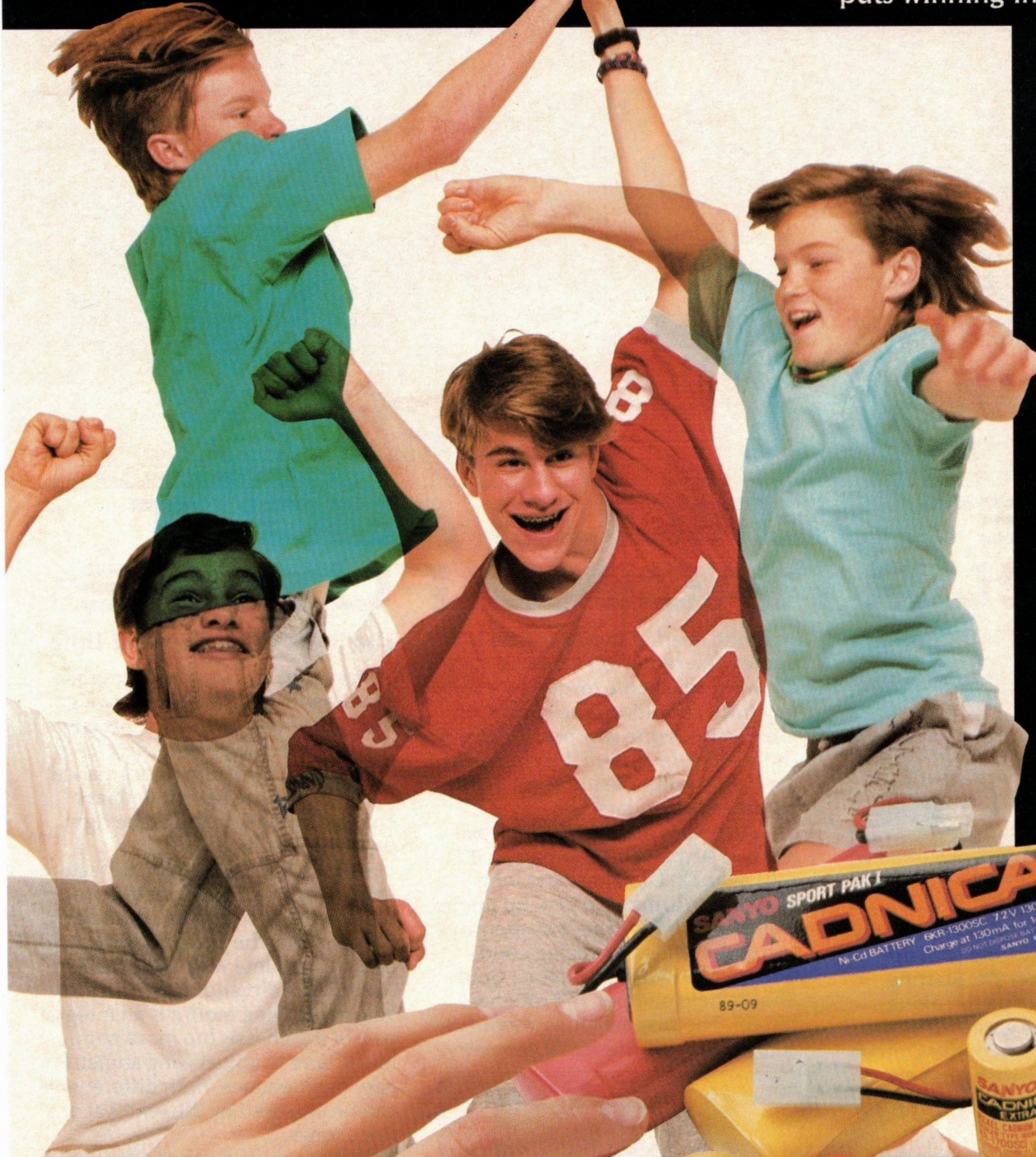
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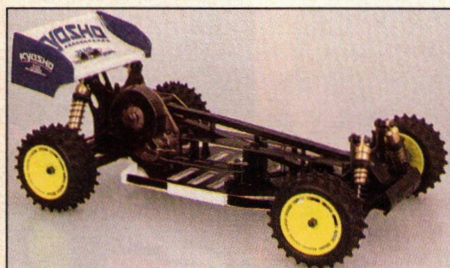
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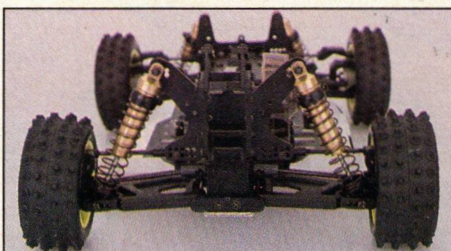
Kyosho has lifted 4WD technology and design to a new level with the introduction of **Lazer ZX**. Starting with a clean sheet of paper, along with the experience gathered in the design and refinement of the Optima Mid series of cars, Kyosho has given today's off-road racer a new weapon for the racing wars.

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Kyosho has engineered many significant improvements into the Lazer ZX. A new twin belt, low friction drive system powers front and rear differentials, with new universal swing shafts transferring power to the wheels.

At the heart of the drive train is a center differential on the mainshaft, allowing adjustable torque split for any track condition. The center diff also includes one-way bearings for the front drive system. Of course, a car of this caliber features full ball bearings as standard.

Kyosho has made a vast improvement in suspension geometry with the Lazer ZX. Utilizing extra long suspension arms with pick-up points well inboard, the Lazer's suspension tames the wildest of racing conditions, while Kyosho's famous Gold Shocks help dampen the roughest terrain. The suspension is also totally adjustable to any desirable geometry.



Lazer features improved double wishbone suspension arms. Upper suspension links allow front and rear camber adjustment.

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The Lazer ZX includes a graphite chassis and top plate for low weight and high strength, and accepts either saddle or stick-type batteries.

Unlike other "high performance" cars that include black fiberglass chassis, Kyosho includes the right parts the first time.

Kyosho also includes many features to help today's racer spend more time racing and less time in the pits. For example, the Lazer ZX body comes complete with an undertray to keep out dirt and dust. And an adjustable wing mount is an integral part of the chassis (no more bending music wire to adjust wing angle!) For easy maintenance, both differentials can be accessed by the removal of a few screws.

Today's racer demands serious equipment. Get the new Lazer ZX from Kyosho. And get serious about your racing future.

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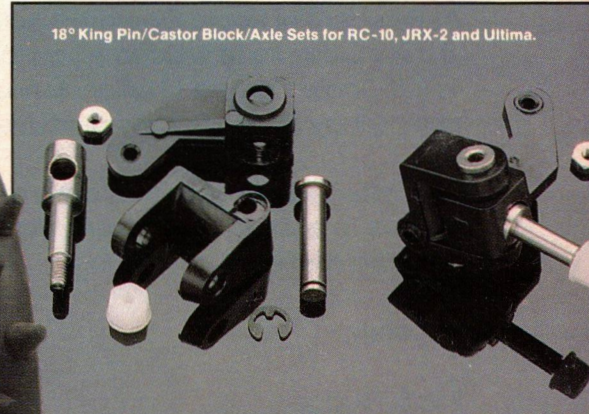
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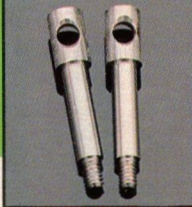
To significantly improve handling, ROBINSON RACING'S 18° Inclined King Pin puts the front wheel's pivot point *under the tire*, where it belongs (unlike stock castor blocks).



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RRP-2000 18° Monster Truck SS Front Axle Set (fits standard Tamiya bearings).



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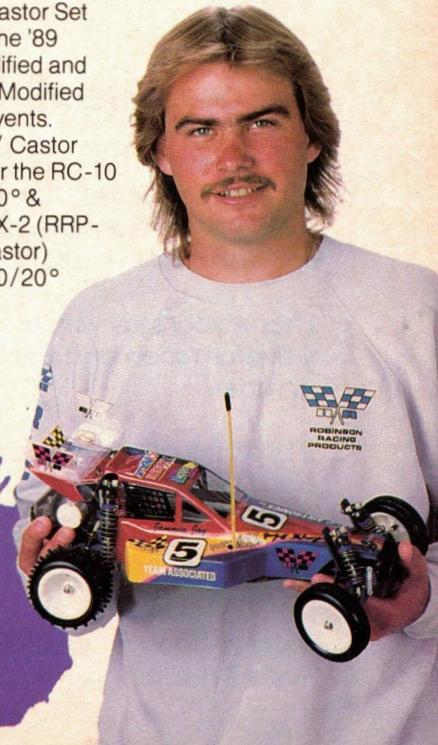
IMPROVE YOUR HANDLING.

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Jammin' Jay Halsey used the new Robinson 18° King Pin/Castor Set on his RC-10, in winning the '89 Cactus Classic 2WD Modified and the '89 Score Show 2WD Modified and Heavy Metal Truck events.

Robinson 18° King Pin/ Castor Block Kits are available for the RC-10 (RRP-2020/20°, 2030/30° & 2040/40° castor), the JRX-2 (RRP-8520/20° & 8530/30° castor) and the Ultima (RRP-3020/20° & 3030/30° castor).



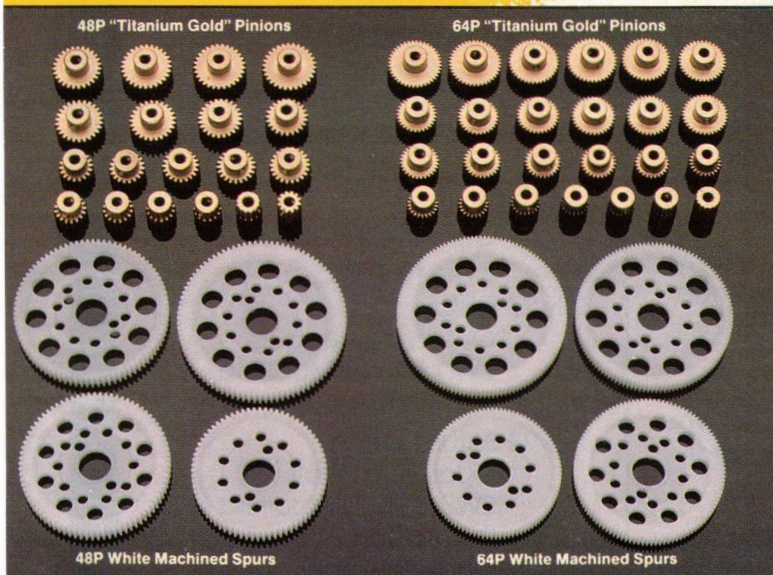
1985 World Champion Jay Halsey

Titanium Nitride.

Harder than carbide and lighter than steel, RRP's 48 and 64 pitch "Titanium Gold" are now coated with Titanium Nitride. This self-lubricating coating runs with 40% less friction and lasts 3 to 8 times longer than any other gear on the market. Best of all, "Titanium Gold" pinions are only \$4.95!

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The 1989 Off-Road World Championship's top three 2WD drivers *all* ran RRP's White Machined Spur Gears to victory. They're available in both 48 pitch (72, 75, 78, 81, 85, 87, 90 and 93 tooth) and 64 pitch (96, 100, 108, 115, 120 and 125 tooth) sizes. The world's best trusted Robinson, shouldn't you?

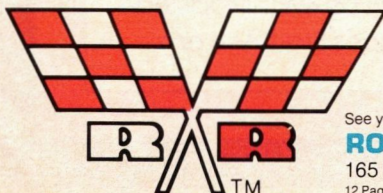


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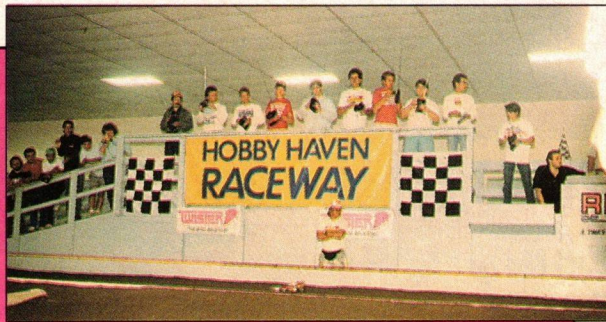
Greetings:

As President of Radio Operated Auto Racing, Inc. It is my pleasure to welcome you to the 1990 R.O.A.R. 1/10th Scale Off-Road Nationals hosted by the folks from Hobby Haven Raceway of Livermore, CA.

Your attendance adds that extra excitement and intrigue to a World Class event. Have a great time in the area and enjoy the racing!

Sincerely,

Eric S. Gudger
President



Dear Off-Road Racing Fans:

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If I can be of any assistance during your visit, please don't hesitate to talk to myself or one of my staff members.

Best Wishes,

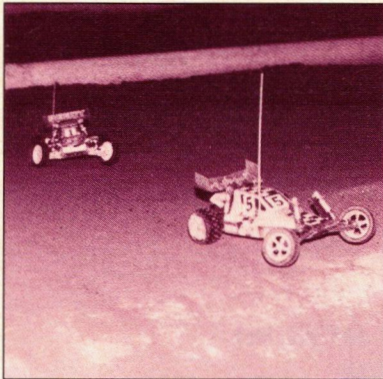
Thomas "Tommy" Welding Jr.
Race Director

Modified Race/July 19-21

- July 16-Monday
Track Closed
- July 17-Tuesday
Club Race
- July 18-Wednesday
Race Seminars
Session 1/8am-9:30am
Session 2/10am-11:30am
Open Practice 1-7pm
- July 19-Thursday
Controlled Practice
7 am to 7pm
- July 20-Friday
Qualifying Heats
2WD & 4WD Modified
Races Start At 8 am
- July 21-Saturday
Qualifying Heats
2WD & 4WD Modified
Races Start At 8 am
- July 22-Modified Finals
2WD & 4WD Modified
Races Start At 8 am

Stock Race/July 27- 29

- July 23-Monday
Track Closed
- July 24-Tuesday
Club Race
- July 25-Wednesday
Race Seminars
Session 1/8am-9:30am
Session 2/10am-11:30am
Open Practice 1-7pm
- July 26-Thursday
Controlled Practice
7 am to 7pm
- July 27-Friday
Qualifying Heats
2WD & 4WD Modified
Races Start At 8 am
- July 28-Saturday
Qualifying Heats
2WD & 4WD Modified
Races Start At 8 am
- July 29-Modified Finals
2WD & 4WD Modified
Races Start At 8 am



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Hobby Haven Raceway was the outgrowth of a 650 square foot hobby store started by Tom and Daphane Welding in 1969. Their growth forced them to expand several times and finally move to their current 10,000 sq. foot facility located in downtown Livermore, California.

In 1983 their son, Tommy Welding, opened one of the first outdoor off-road tracks in Northern California. Rapid growth of the hobby forced them to relocate in October of 1987 to the current race site which provided a 16,000 sq. foot air conditioned indoor off-road track. Hobby Haven Raceway is now established as one of the finest indoor off-road raceways in the country.

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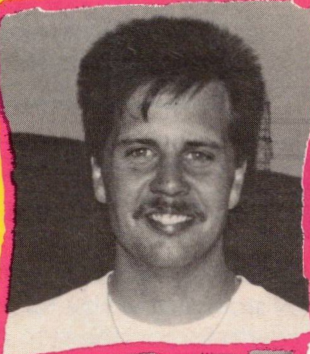
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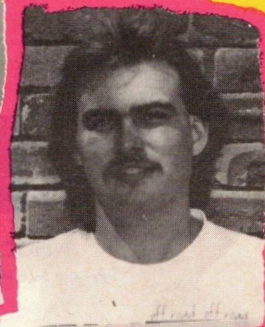
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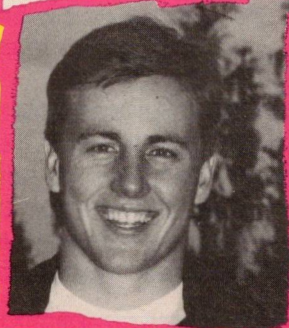
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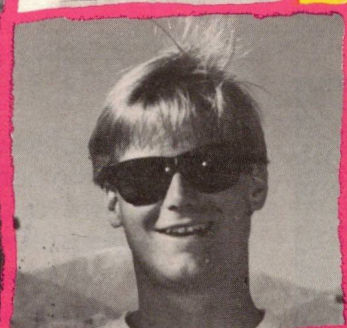
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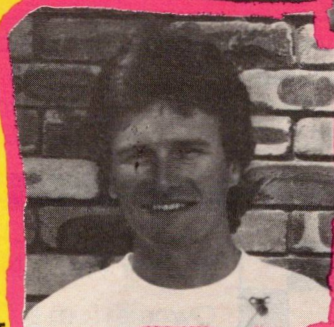
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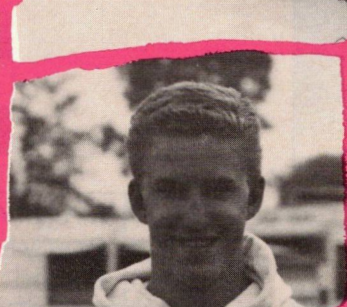
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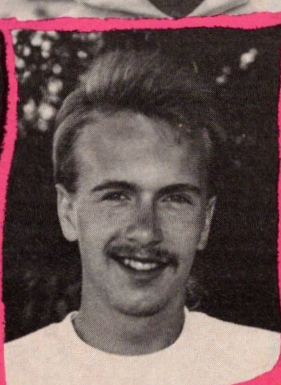
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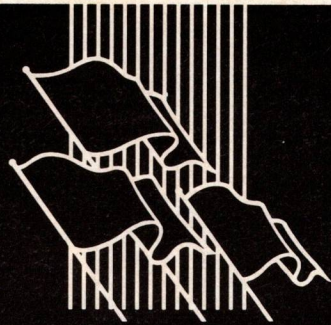
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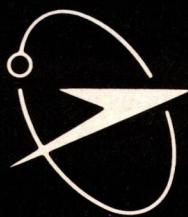
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Best of luck
to all
the participants,
from Airtronics.



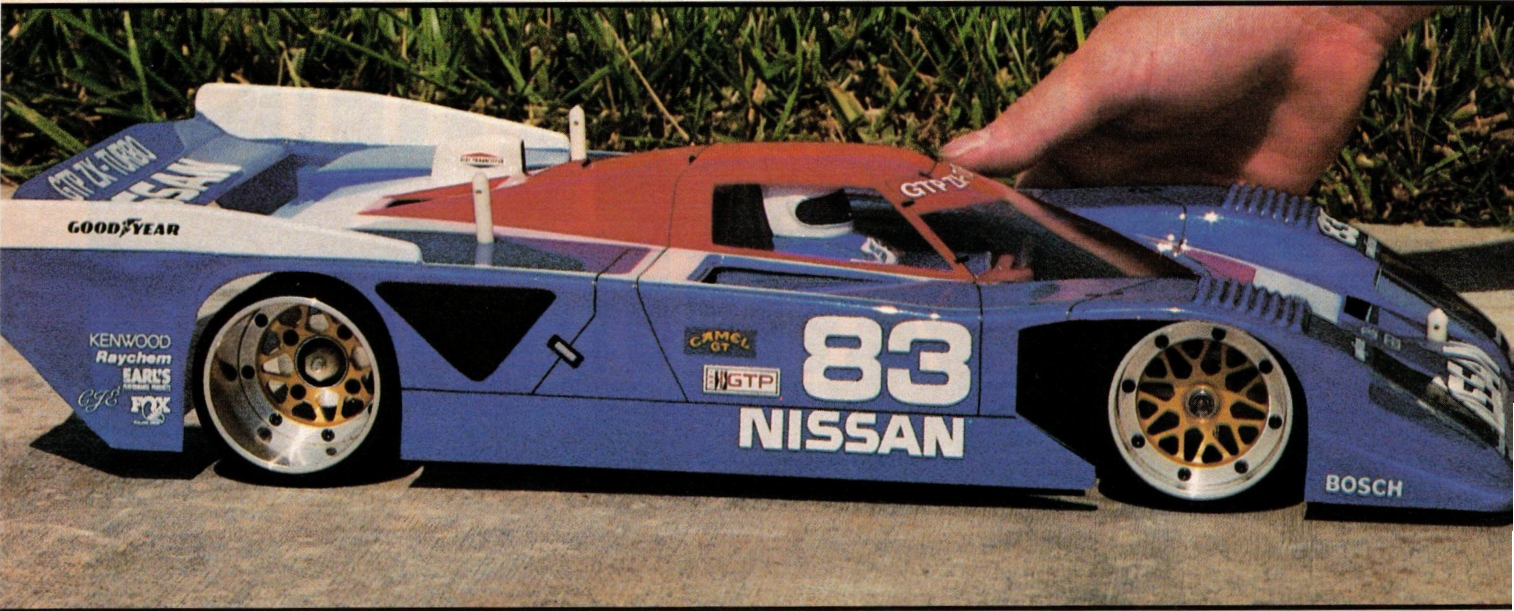
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The Hot Tip from Hot Racers

When a solder joint can make the difference between TQ and DNF, you find America's top racers using only the best soldering equipment: Ungar's Super Race Station. Its incredible power not only makes soldering easier and faster, but makes joints flow better for greater reliability and lower resistance. And the quick transfer of heat will protect your sensitive race-ready batteries.

Secrets revealed

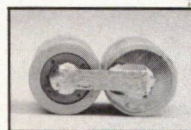
The key to the *Super Race Station's* incredible performance lies in its sophisticated electronics. Unlike conventional irons that have a fixed output rated in watts, the Ungar unit has an automatic variable output that keeps the iron tip at any temperature you select, all the way from a mild 400 degrees for precision work to a blistering 800 degrees.



The handy stand keeps the iron safely out of the way of car components in your pit area. Sponge helps keep a clean tip for the extra strong solder joints.



Unlike any other solder station, the *Race Station* comes equipped with a high mass thermal thrust tip that's perfect for R/C use.



Incredible output allows solder to flow all the way across this battery braid in seconds.

In fact, the *Race Station* has so much power that most racers adjust their temperature controls to about the 750 degree point.

You can buy the same unit

The pros you see use a stock *Race Station*, just like the one you can buy at your local hobby store or race track. Retailing at just \$119.95 for the *Super Race Station*, or \$109.95 for the smaller handled *Race Station*, they're an investment that will pay off handsomely... in better solder joints, and more TQ runs.

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RADIO CONTROL SYSTEMS



ALPINA PCM



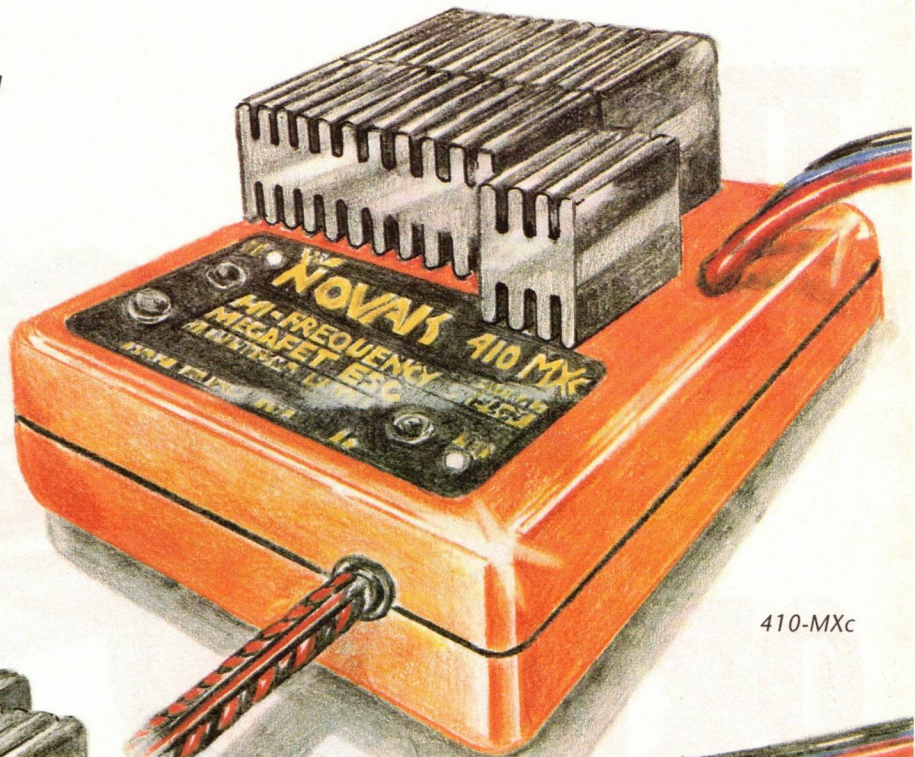
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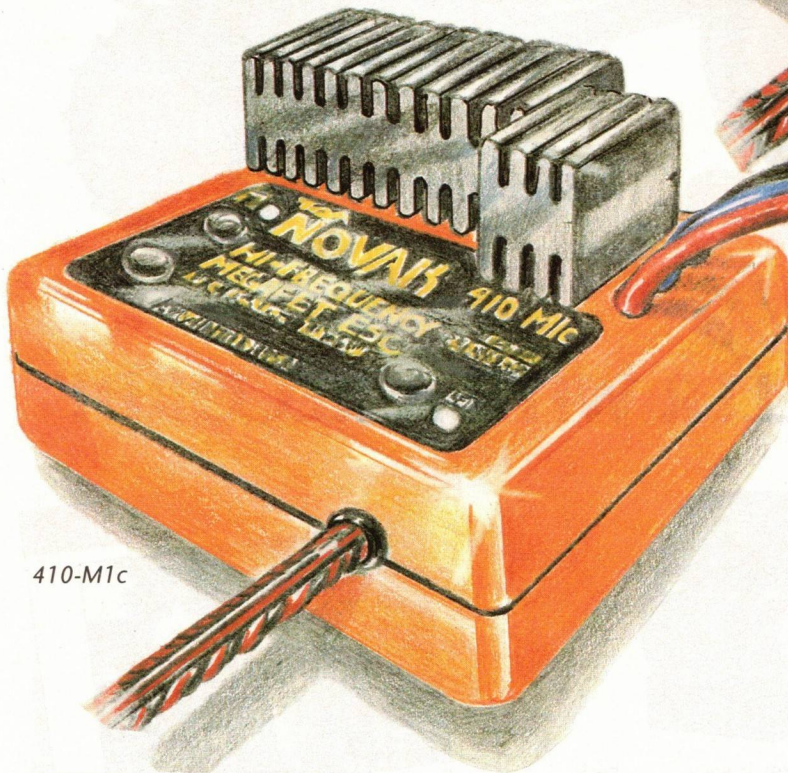
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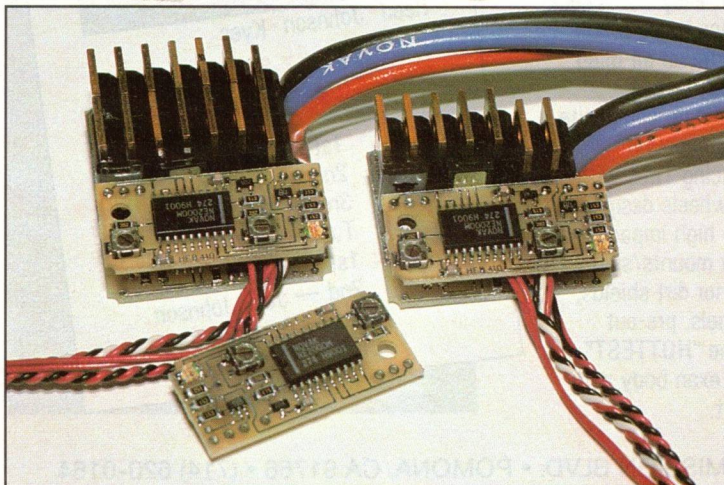
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 - 3rd — Kyle Reed
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 - 2nd — Jack Johnson
 - 3rd — Gary Kyes
 - T.Q. — Jack Johnson



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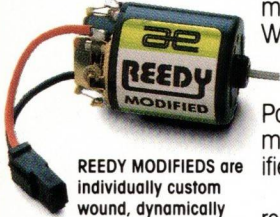
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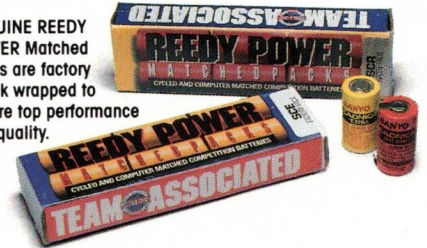
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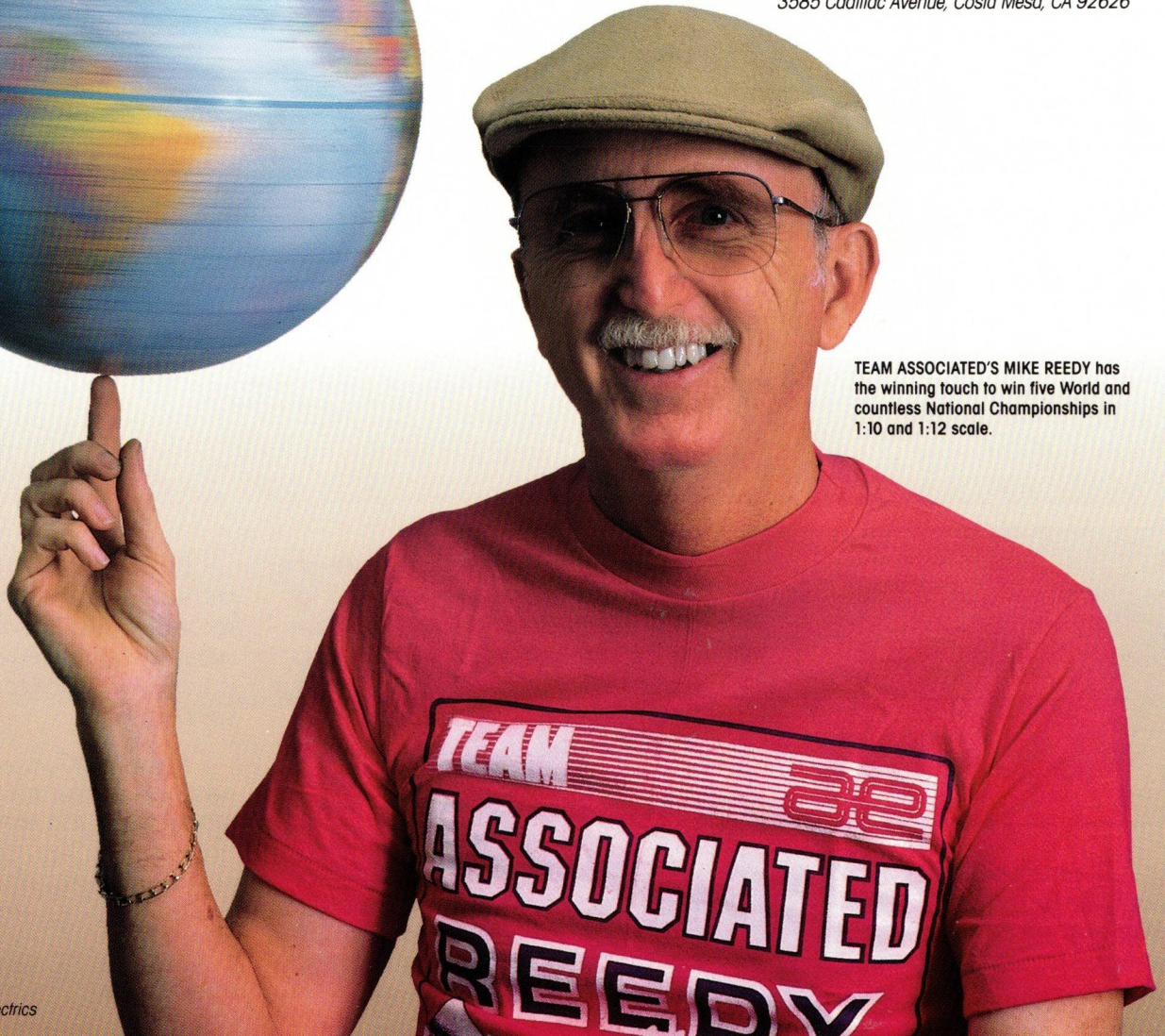
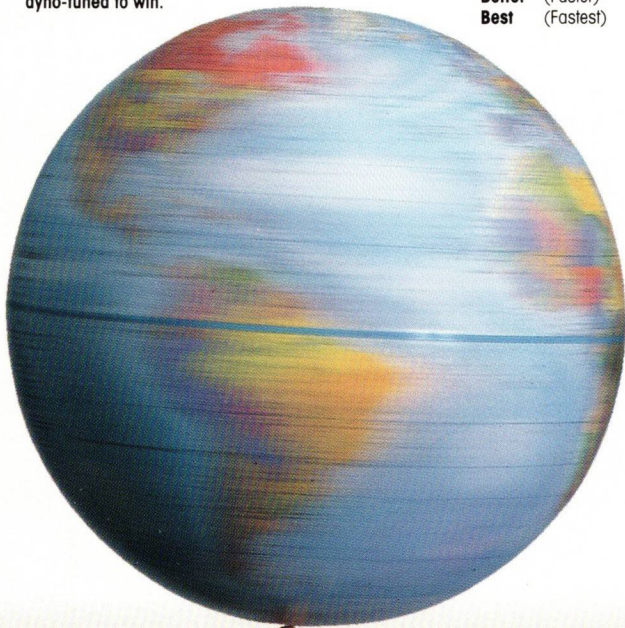
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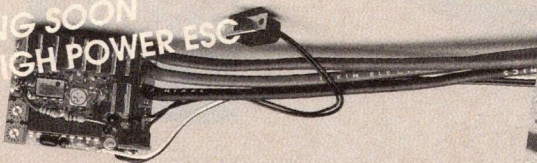


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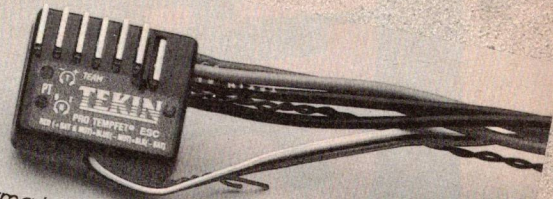
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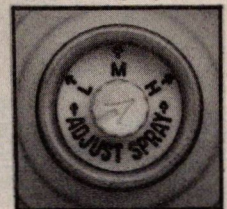
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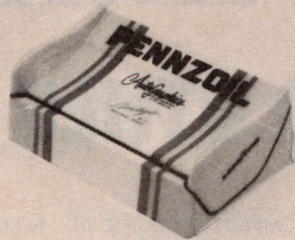
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3025
ELAN "OFF ROAD" - MID OPTIMA



3240
1/10th SCALE "OFF ROAD" WING



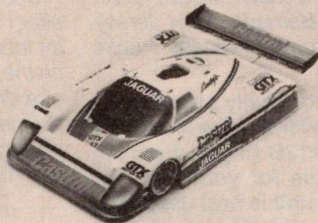
3022
HEATHEN "OFF ROAD"



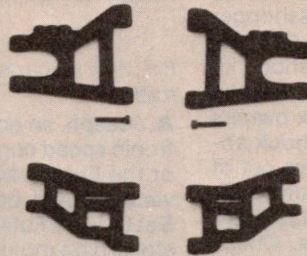
3145
NISSAN GTP



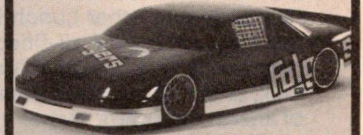
3418
RC-10 REAR BODY MOUNT



3141 - 4141*
89' JAGUAR GTP



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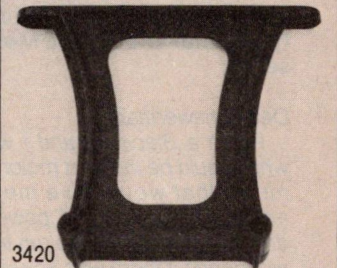
3162 - 4162*
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3134
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3420
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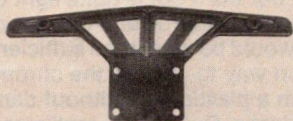
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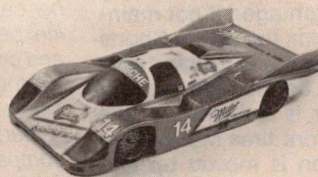
3030
JEEP COMANCHE TRUCK BODY



3412 RC-10 - 3512 ULTIMA
FRONT BUMPER MOUNT "OVAL"



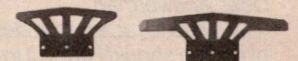
3026
APACHE WARRIOR - YOKOMO



3140
PORSCHE 962 GTP



3023
HALF-BREED "OFF ROAD"



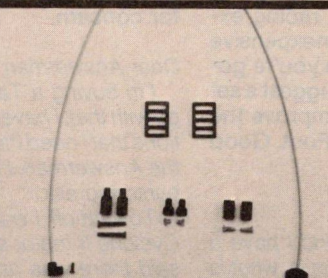
3414 - 3416
RC-10 "OFF ROAD" FRONT BUMPERS



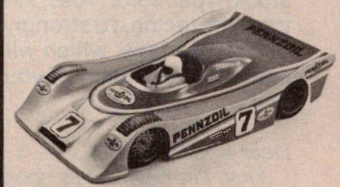
3020 - 3021 - 3024
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3160 - 4160*
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BODY PARTS & ACCESSORIES



3142 - 4142*
TOJ "ON ROAD" BODY

RAW SPEED AND OTHER THRILLS

Dear Readers:

In the May '89 issue of RCMC, in my response to a question from Fernando Valero of Miami, Florida, I stated that the CRP front shock kit for the Grasshopper would also fit the Lunch Box. CRP informed me that, indeed, their shock kit will not fit the Lunch Box. Fortunately, Fernando and other Lunch Box owners who wish to install oil-filled shock absorbers on their vehicles are not out of luck, as You-G, a Japanese manufacturer of aftermarket parts, makes front and rear oil-filled shocks to fit the 'Box. Check with your hobby supplier or call Andes Hobbies at (818) 303-7323.

This month I received a slew of inquiries from owners of Tamiya's extremely popular Blackfoot/Monster Beetle series.

Dear Answerman,

I own a Blackfoot and I was wondering what would be the best motor for it? I want a motor that would give me the greatest amount of speed and power but not cut down very much on the run time. I was also wondering if there was any way to increase my run time? What would a set of oil-filled shocks for my truck run me?

Danny Schave
Winchester, Kentucky

P.S. Your magazine is the best!!

A. Danny, I'd suggest a good stock-type motor for your Blackfoot, which will give you improved speed over your truck's standard motor without decreasing your running time considerably. A smaller pinion gear will give you longer running time, but this will cost you some top-end speed. Prices of oil-filled shocks vary, but the Duratrax shocks that I recently installed in a friend's Blackfoot retail for \$24.95 a pair (excellent shocks, by the way).

Dear Answerman,

If I were to race my model truck, what kind of engine should I put in it to get it up to some racing speed?

Sonny Salveggio
Scio, Oregon

A. Sonny, a post script (presumably written by your mom or dad) tells me that your truck is a Blackfoot in stock form. If this is going to be your first racing experience, I'd start with an inexpensive stock-type motor. Also, since you're going to be racing, I'd strongly suggest a set of ball bearings, which will improve the speed and reliability of your 'Foot. Good luck!

Dear Answerman,

First, I'm new to this sport and I have a Monster Beetle. My first question is, what is the best ESC for my Beetle? And would a

modified motor work with it? What kind of batteries would be best for a modified motor? And what in the world is bumpsteer and how would I solve it if I have it? Thanks a lot.

Joseph McGrantham
Barnegat, New Jersey

P.S. Your magazine is great. Monster Trucks rule!!!

A. Joseph, an economically priced electronic speed controller like the Novak T4 or the Futaba MC112B (if you want reverse) would be fine for your Monster Beetle. The Futaba unit is best used with stock-type motors, while the Novak ESC can be used with modified motors in the 17 to 25-turn range. A higher-rated ESC is recommended for the hotter motors.

“You can run SCR batteries with modified motors, but the rapid discharge characteristics of these batteries will most likely result in very short running durations.”

The Sanyo SCE is considered the best battery for modified motor racing because of its longer duration of discharge. However, the SCE is a delicate battery and can be easily damaged if not maintained properly. I think the Sanyo Sports Pack (KR1300SC) or the Duratrax 1400-mAH battery would be the better choice for you. Bumpsteer is a change in the direction that the front tires make when the front suspension is moved up and down. The Monster Beetle, like the Blackfoot, has a minimal amount of bumpsteer, which shouldn't be a cause for concern.

Dear Answerman,

I'm buying a Tamiya Blackfoot soon. To go with that, I have come across a few questions that I need the answers to. Since you're the Answerman, I thought you would be the person to ask.

To start off, I was looking at the ad for the Cyclone II motor series and I noticed that it said there was one especially for monster truck use, but it doesn't tell which one. I'd like

to know which one it is, or if you know of any other motor that is better and reasonably priced. Also, what tooth pinion should I buy for the best performance possible?

Secondly, do gold shocks have a greater effect on a car's performance or are they just for looks? Is there a way to put dual shocks on the Blackfoot? Will they make that much of a difference?

Finally, is there a way to take the chrome plating off the plastic parts of the car, or do you have to paint over it?

Eric Kanterman
Marlboro, New Jersey

A. Eric, most of the monster truckers that I race with run 19-turn modifieds in both the single and double-wind configuration. I'd try the 19-turn Cyclone II Super Modified motor for starters. The large-diameter tires of the monster trucks make it necessary to run lower gear ratios, but gearing pretty much depends on such factors as the type and condition of the track you're racing on, your motor, batteries, etc. Those gold-finished shocks do look nice, but they are also a big improvement over the stock Blackfoot shocks. They provide a better means of absorbing the bumps and jumps associated with offroad and monster truck racing. It's possible to mount dual shocks on your truck, but the 'Foot is quite light by monster truck standards and one shock per corner would be more than sufficient. I know of no way to remove the chrome plating from a plastic part without damaging the plastic. But do you really want to paint over all that gleaming chrome?

Dear Answerman,

I've had a Kyosho Raider for a long time, but I have not been able to use it much, for my mom won't let me charge my battery on her car battery. I'd like to know if there is an inexpensive charger that fits into a wall outlet and charges a Kyosho six-cell battery. Also, will the springs and shock stoppers on my car fit the Baby Gold shocks? Is there a HyperDrive kit that fits the Raider? Does any company make a good inexpensive dirt (not oval) motor that fits my car? If so, which motor is it? Thanks.

Justin Lantz
Gig Harbor, Washington

A. Justin, tell mom that you need a Hobbyco #900 AC/DC Auto-Charger, which is a good, inexpensive charger that will work off a 12V car battery or regular household current. Yes, the stock Raider springs and shock collars will work with the Baby Gold shocks, but no, HyperDrive does not have a belt drive system for the Raider. A stock-type motor or one

Continued on page 104

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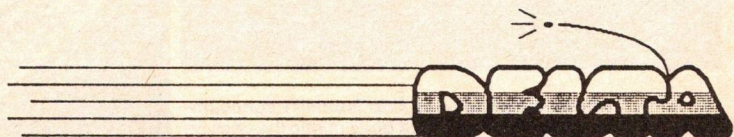
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AGAINST THE WIND

PART TWO

Race car aerodynamics was the topic of discussion in Trackside several months ago. This month I'm going to expound on the same subject by discussing the various devices that can be used to manage the flow of air to improve the performance of a race car, R/C or otherwise.

THE SPOILER

Grand touring and stock cars usually have a lip across the rear of their trunk lids that serves as a spoiler. The spoiler is a useful aerodynamic aid in that it breaks up the turbulence that follows in the wake of a moving car, giving the car improved stability at high speed.

Although the size of the spoiler does affect its aerodynamic characteristics, more often than not it's the angle of same that's the critical factor. An example of this was the wreck-strewn Goody's 500 Grand National race, which took place during the Daytona Speedweek. Dale Earnhardt, the winner of the race, blamed the speedway's biggest wreck in thirty years on the racers, the majority of whom were running flatter-than-normal spoiler angles in an effort to

gain more top-end speed. The trade-off, of course, was the reduced stability that made passing and drafting especially treacherous on the high banks of the Daytona International Speedway.

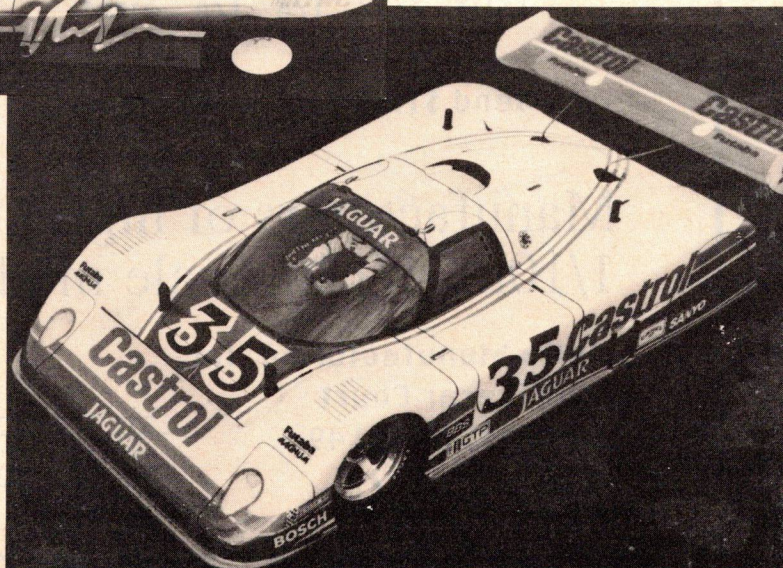
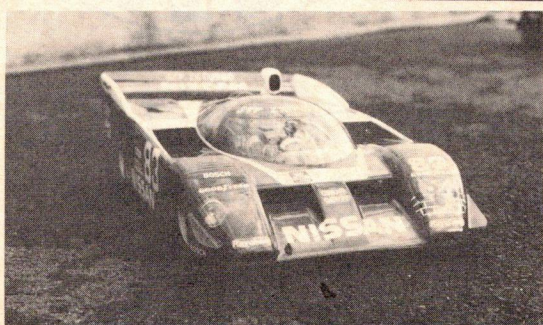
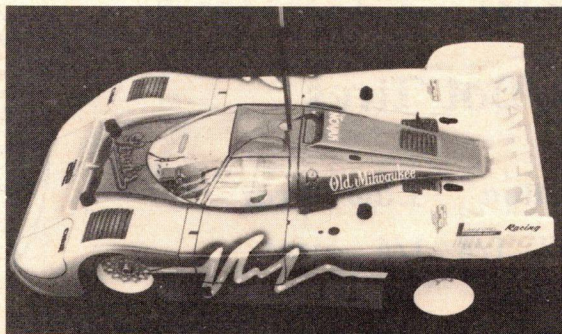
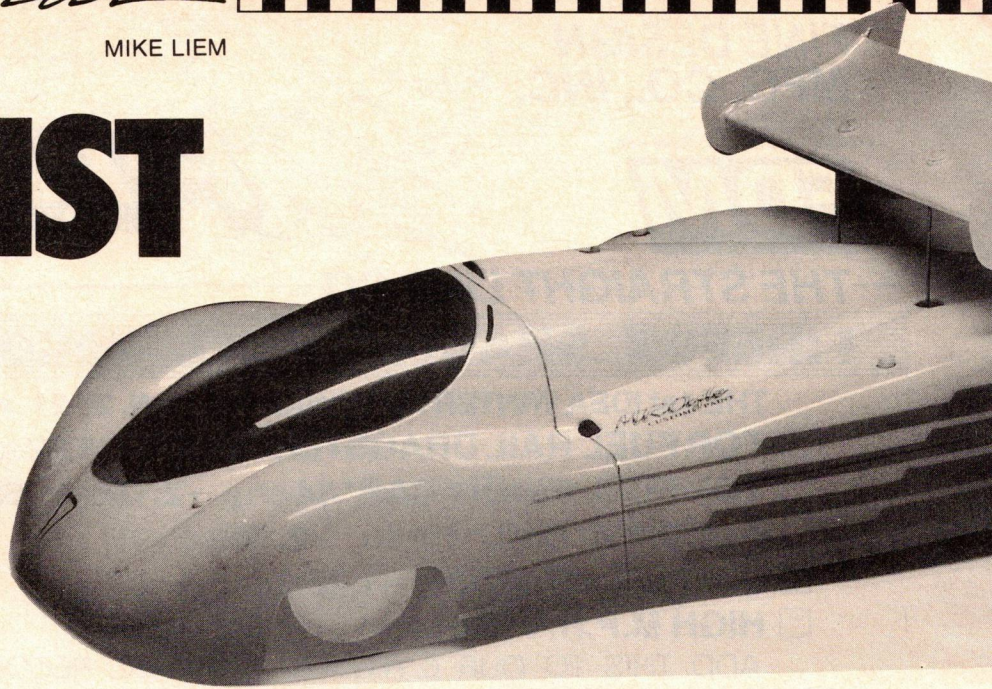
On R/C cars, the presence of a spoiler seems to make little difference in the handling of the cars. Those who race on the high-speed oval tracks find it necessary to run wings in conjunction with the stock car bodies. But then again, at scale speeds of over 400 miles an hour, I suppose you'd need more downforce than the teeny weeny spoilers offer.

THE WING

The wing is undoubtedly the most effective aerodynamic device known to man. The wings that are used on race cars are basically an inverted aircraft wing. As such, the same device that provides the lift needed to make an airplane fly also produces the effect that keeps a race car glued to the track. That effect, of course, is known as downforce.

Downforce is created when a race car wing moves through the air. As you can see in the illustration, the distance between the

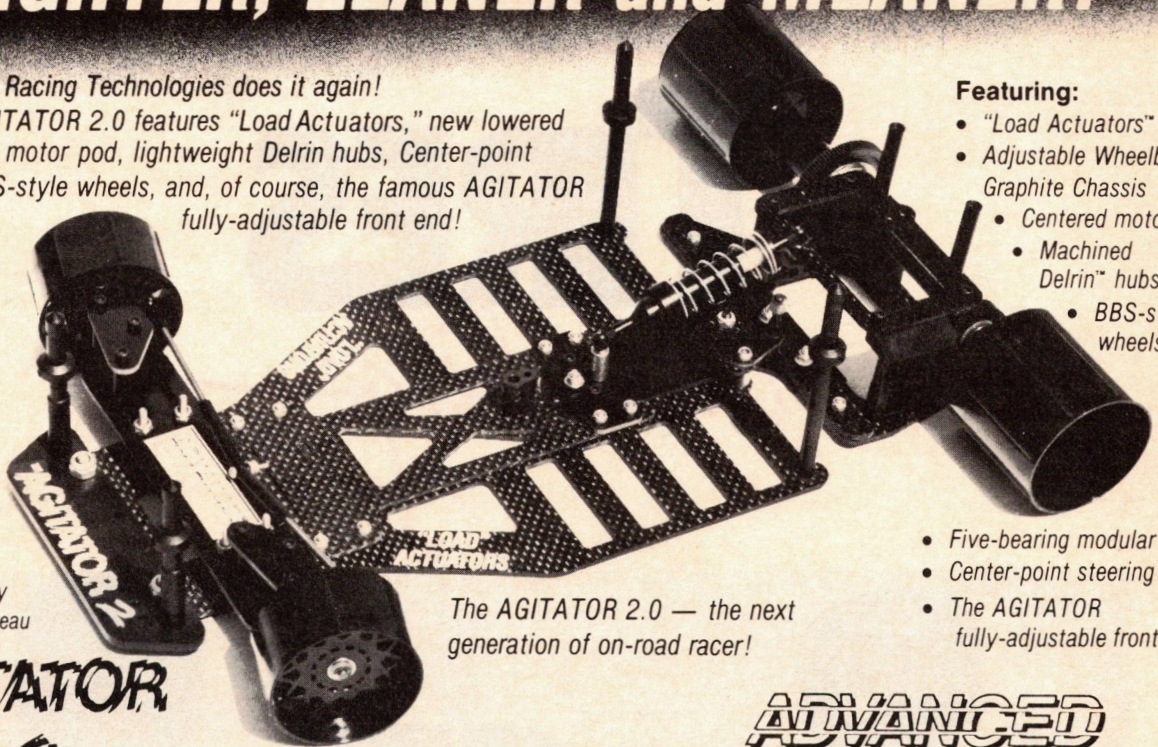
Continued on page 112



Above, the winglets on Eric Bourlett's concours-winning Nissan GTP-ZX body mimic the ones on the full-size racer. Above right, this GTP-bodied racer uses a rear deck spoiler for downforce and stability. At right, Ramon Zapata's Jag uses a rear wing in lieu of a spoiler for even more downforce.

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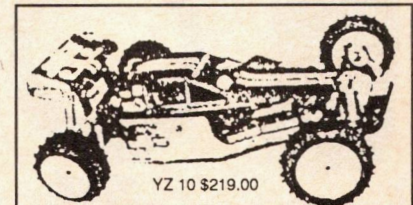


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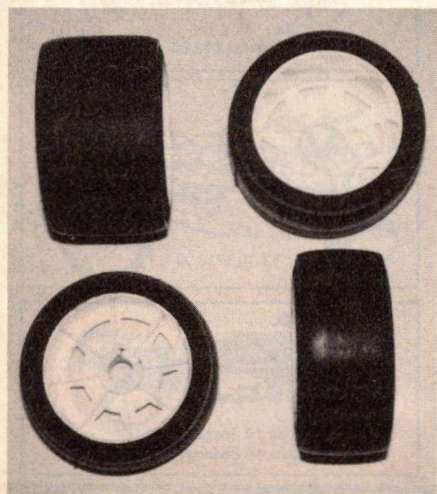
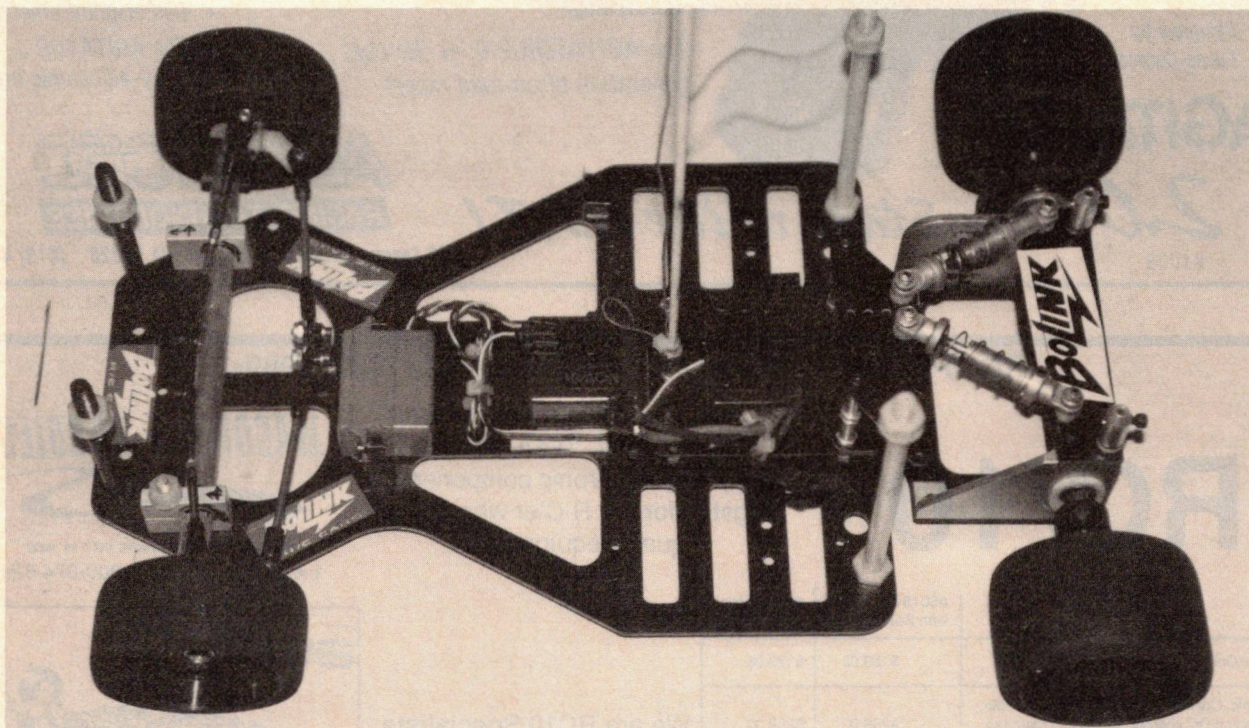
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TIRES

and things



This month I will start by updating the tire chart with some information about the T/M Radial. Tim Morton, of TRC, was one of the first to produce the rubber-capped tires for that are proving to be so popular with the concrete oval racers. These tires are available through TRC and now also have BoLink part numbers as well. The T/M radial tires are available in three compounds. The compounds are developed to respond to particular temperatures. The silver compound is for conditions above 90 degrees, the gold compound for conditions between 70 and 90 degrees, and the red compound for those

Above, the BoLink Eliminator 10 with the Pro-Beam crossbar that permits caster and camber adjustments to your 10th-scale racer. At left, new T/M capped radial tires that are available in three compounds, shown here mounted on lightweight T/M wheels.

conditions below 65 degrees. The tires are also on some new-style wheels that appear to be a little lighter than the BBS style of wheel. However, the rubber-capped tires do weigh more than the foam tires as these still are around the 4.3 ounce mark for a set of four. It should be pointed out that these tires are sold one at a time. This makes it a little cheaper, as you can replace tires one at a time or build up a special "mixed" set of various compounds that works right for you.

The information in the chart is just a comparative guide. If adapters are required to mount the tires, they are included in the weight figures.

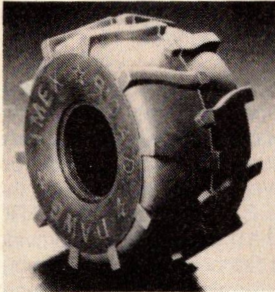
Believe it or not the temperature really does affect these tires and/or the tire additives which we put on them to get more traction. I didn't believe that until the past



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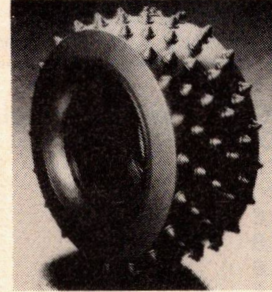
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New club size\$28.00 pr.

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Item 7591\$20.00 pr.
(Fits Blackfoot)

MONSTER SPIKE TIRE

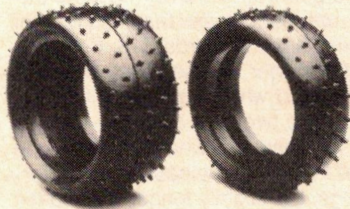


Item 7629\$18.00 pr.
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MONSTER PADDLE TIRE

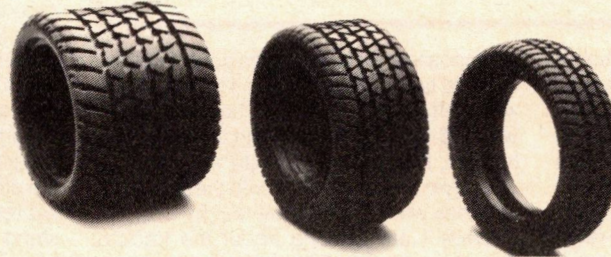


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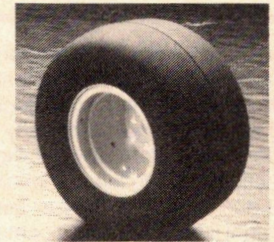
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Rear #7636\$10.00 pr.



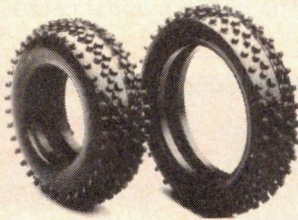
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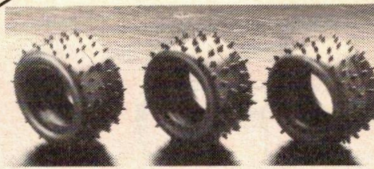
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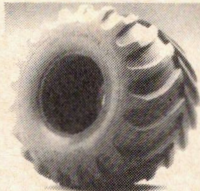


STREET TIRES

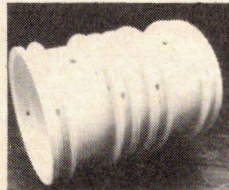
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NEW

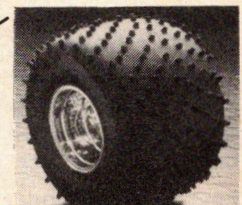
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CATALOG #050

Woody's Tire Chart

1/10 TIRE CHARACTERISTICS (weights = ounces & dia/width = inches)

COMPANY	WEIGHT	WEIGHT	WEIGHT	DIAMETER		WIDTH	
	SET - 4	FRONT	REAR	F - R	F - R	F - R	F - R
Space Age	4.6	2.2	2.4	2.3 - 2.3	1.2 - 1.5		
MCA	4.5	2.0	2.5	2.1 - 2.4	1.2 - 1.5		
BoLink (old)	4.3	1.6	2.7	2.3 - 2.6	1.2 - 2.0		
T/M Radial	4.3	1.8	2.5	2.4 - 2.4	1.2 - 1.5		
BBS (foam)	4.0	1.6	2.4	2.6 - 2.6	1.2 - 2.0		
Wide Track	3.8	1.8	2.0	2.4 - 2.4	1.2 - 1.5		
BoLink (old)	3.6	1.6	2.0	2.3 - 2.5	1.2 - 1.5		
BoLink (new)	2.9	1.2	1.7	2.4 - 2.4	1.2 - 1.5		

couple of weeks. I have been doing some oval racing at the track in Crestview, Florida, with races starting at six o'clock on Saturday nights. I would get there early to practice in order to get everything set. However, I was practicing during the day when the sun was out and would get the car set to run good straight lines. But when it came time to race, my car would act like a totally different car. It was spinning out on the starts and had major handling problems. I was to later (after the race) discover that the tire traction compound that I was using would work great during the day when it was warm or hot; but at night when it cooled down it the stuff had

an opposite effect as the tires got super slick. It would take a couple of laps for the stuff to wear off and by then the tires would be warmed up and would begin to have some traction. Regardless, you still need to alter your style of accelerating with these tires, as until they warm up, they are touchy.

While I am thinking about the track at Crestview, Florida, let me say that these are some of the friendliest people that you will find and will be more than glad to race you fender to fender. They've improved their lap counting procedures with the use of a BoLink computer scoring set up for most of their races.

WAX IT

Another product that is available that you may not have tried is from BoLink and is a car wax. It is a two-part system with a cleaner and a wax. I am not sure if my lap times have gone down, but my car body is a whole lot slicker now than it used to be.

PRO-BEAM

Of all the R/C equipment that I have written about, the one that has attracted the most attention was the "Pro-Beam" by Lower Alabama Products. In case you have forgotten or (heaven forbid) did not see the article, the Pro-Beam is basically a TRC cross bar with the ends reworked to provide both caster and camber adjustments to your car. The previous article had the Pro-Beam mounted on a TRC Pro-10. However, this month the pictures are of the Pro-Beam mounted on a BoLink Eliminator 10. A close look at the pictures will show how the adjustments are made easier than I could ever begin to explain it in words. The Pro-10 is also slightly longer in wheelbase than the Eliminator 10 so when I mounted it on the BoLink, I drilled two sets of holes—one for the stock Eliminator 10 wheelbase and one set for the Pro-10 wheelbase. As I understand things, the slightly longer wheelbase takes a little steering away; however, the Pro-Beam adds some extra weight to the front end which acts to increase steering. Anyway, the Pro-Beam is available from Lower Alabama Products which is in Dothan, Alabama. The phone number is (205) 793-2439.

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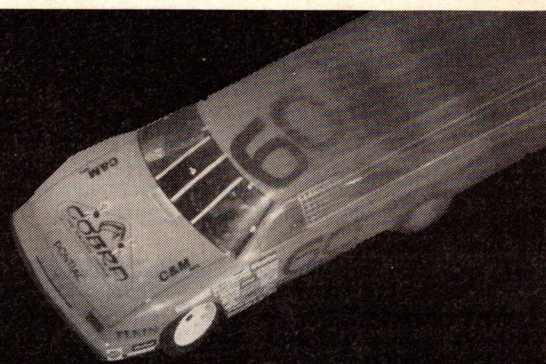
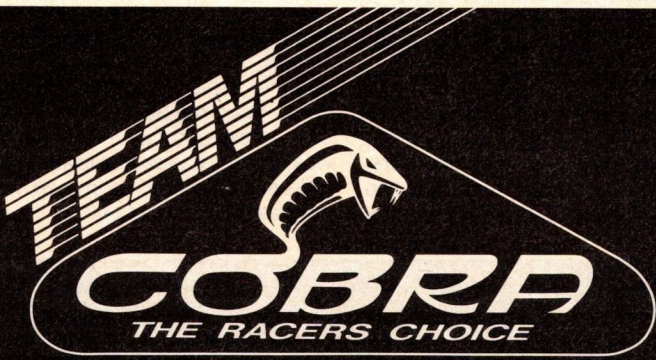
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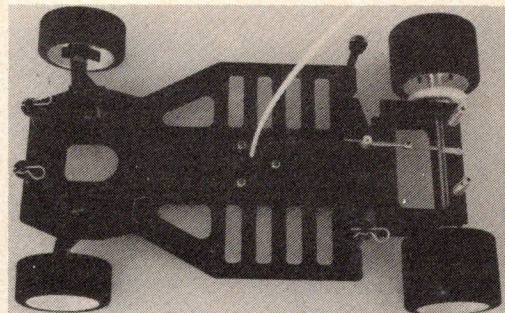
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RULES AND RACING IN 1/8 SCALE

Wow, so much to tell you and so little space to do it in! And unlike the nightly news with Dan Rather, all my news is upbeat. The first item is really an update on Roy Moody's construction of an indoor racing facility for gas and electric dirt oval racing. This track is located in Monee, Illinois. I reported to you a couple of months ago that Roy hadn't decided whether to start with just an outdoor facility or jump right in and enclose the whole thing right from the beginning.

The good news is that by the time you read this, not only did Roy choose to do it right with an indoor track, but that track is finished and has hosted several races. The building is 72 x 120 feet and the track takes up 60 x 110 feet of the available space. Lanes are 15 feet wide with the backstretch widening to a full 18 feet. That's plenty of room for 1/8 gas sprint and stock cars along with 1/10 electric cars the Moodys plan on running. Their schedule will be limited to about eight racing days or nights per month on a year-around basis. Call him at (708) 799-5597 for race dates, etc. The clay oval is slightly banked. Scoring is handled by computer and racers are always treated to well-organized events, thanks to Roy, Roberta, and Diane Moody's experience and dedication. I'm sure they never get the credit they deserve but I know their satisfaction comes from the growing number of drivers choosing to race 1/8-scale gas sprint cars that Roy pioneered. His Moody American

Sprint Car dominates the field at every race and Roy is always developing the necessary accessories to go faster.

The Gas Sprint Car Rules are listed below to give you an idea of what these cars are like. These rules are the same as ROAR's provisional ones.

GAS SPRINT CAR RULES

1. Wheelbase 11" to 12", Max. tread 10.5" outside
2. Minimum weight - 5 pounds, dry
3. Maximum 2-cycle engine displacement, - 3.5 cc
4. Maximum carburetor bore - .300"
5. No rear axle differential
6. Body size must be within 10% of scale
7. 4 oz. max fuel tank - must be within body shell
8. Only front engine, inline, rear drive system allowed
9. Max top wing size is 56 sq. in., max. side dam hgt. 4.5"
10. Driver figure in cockpit is mandatory
11. Max allowable exhaust outlet is 3/8" outside diameter
12. Front bumper, if used, cannot exceed chassis width - 3"

NEW TIRES FOR DIRT RACING

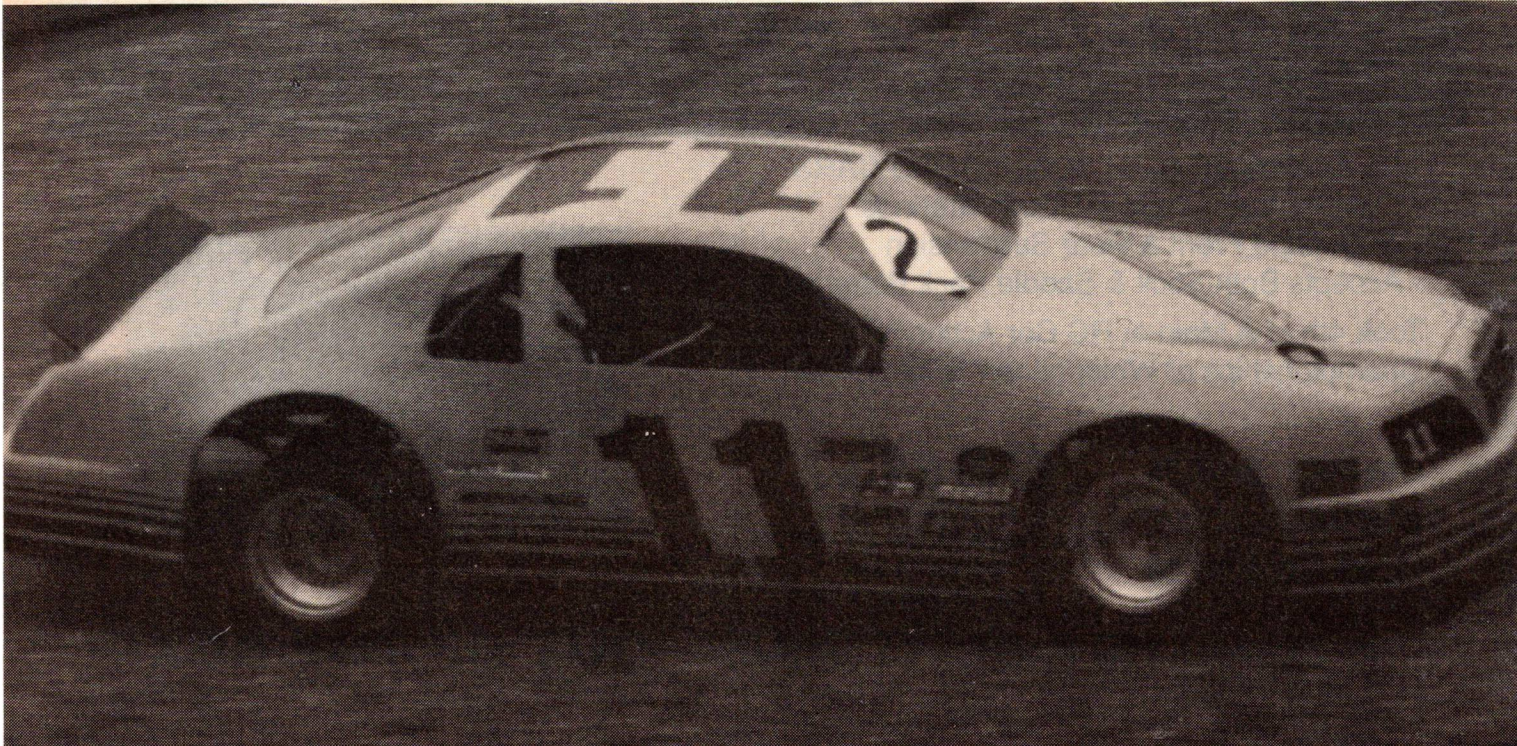
One of Moody Automotive's newest products is a Molded Rear Hoosier Tread tire. Roy is having these injection molded in two sizes (3.12" O.D. and 3.3" O.D.) to allow

some stagger to be run. Both tires are 2.6" wide and fit on standard 2.0" O.D. rims. They have a molded in block- or Hoosier-style tread pattern.

MIDWEST WINTER SPRINTER SERIES

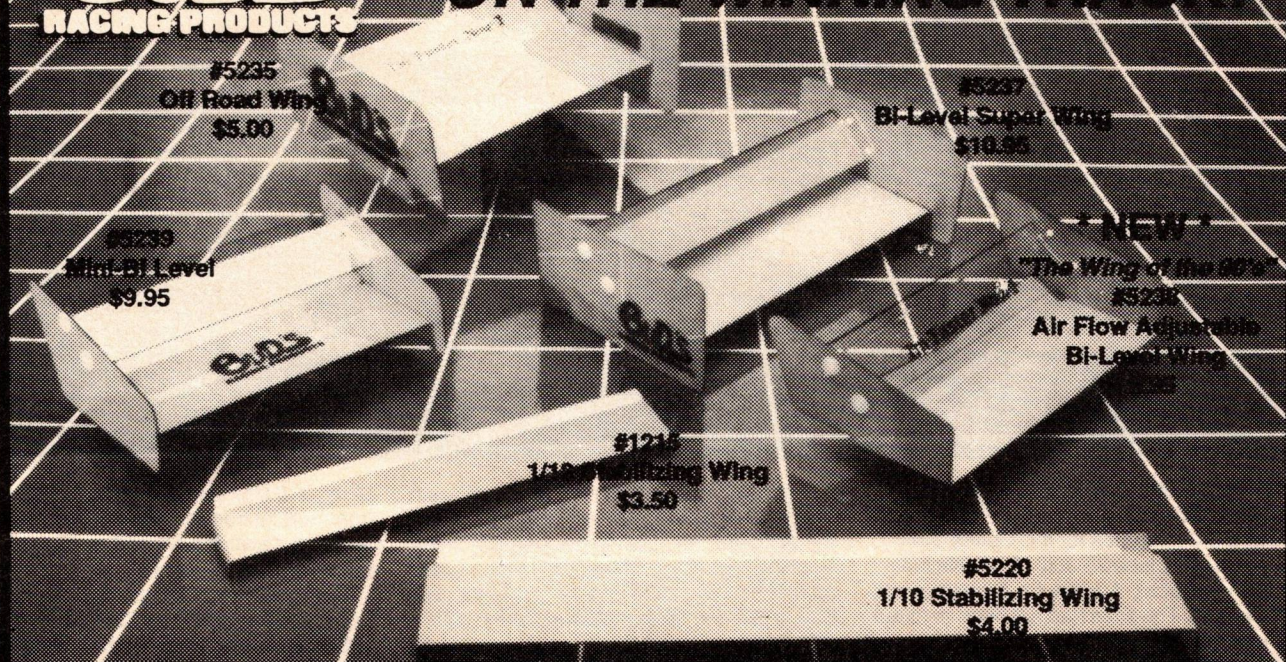
While I'm writing about 1/8 Gas Sprinters, it's important to note that gas cars can now be run indoors all winter long. I think this fact will do a lot to help Gas racing grow. The Midwest Winter Series was run at three different indoor tracks. The first race was at Hobby Corner Raceway, (217) 429-4477, in Decatur, Illinois. The second race was at R/C Raceways & Hobbies (414) 764-9701 in Oak Creek, Wisconsin. The last race of the season was at Moody's new Monee, Illinois facility.

I'm confident this indoor winter racing will continue next year with even more sites and more race dates. In fact, I think the winter season for indoor gas oval racing may grow quickly into events that draw more cars than summer races do. Why? Just look at all those outdoor summer activities that draw racers away from their first (?) love. Winter indoor racing was a big draw all the way back in 1/12 electric days. At the height of 1/12 activity, winter races always out drew the summer ones. I'm looking forward to this same thing happening with gas racing. It used to be said that indoor electric racing was used by gas racers to keep their driving skills sharp. It could be this will no longer be the case. Let's hope so.



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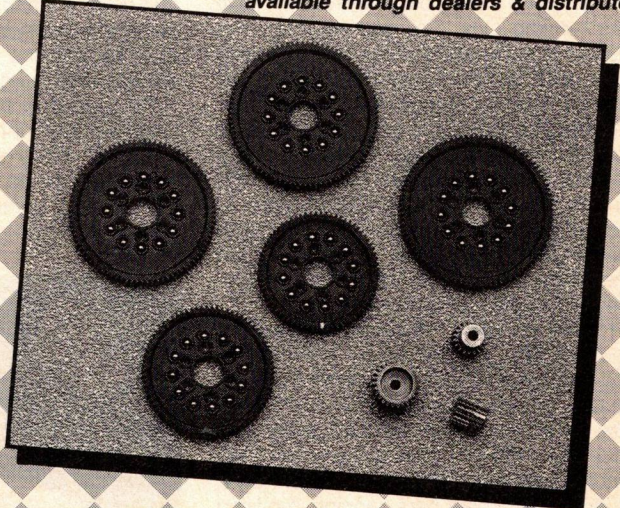
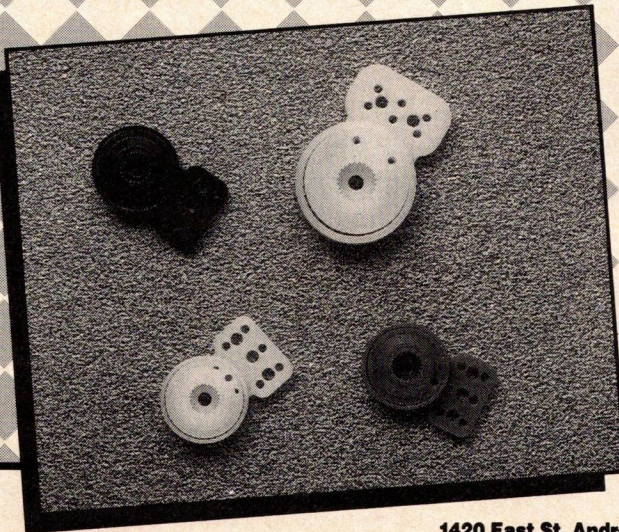
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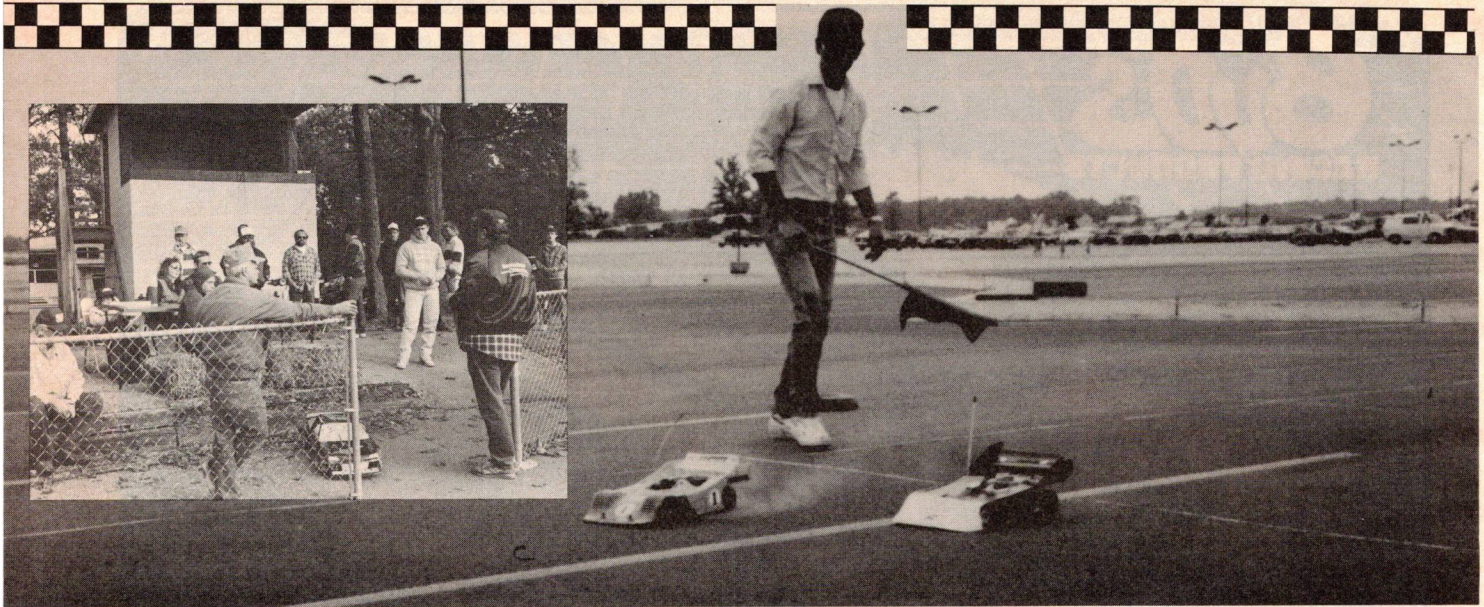
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1990 SUMMER MIDWEST SPRINT SERIES

Here are the dates for this Series: April 7, May 5, June 2, June 25, July 13-15 (Nationals at Monee track), August 11, September 8, October 15. The sites had not been decided by press date.

MIDWEST SERIES TO INCLUDE ELECTRICS

This 1/8 gas Series has got to be one of the oldest and most successful ones anywhere in the world. Many of the founders of ROAR also were instrumental in getting this organization off the ground. Over the off season these eighth scale onroaders hotly debated whether to add a 1/10-Scale Electric Class or a 1/12-Scale Gas Class to their Series. These little gas are just now coming on the scene from Cox. They're GTP style cars running Cox .049 gas engines. The chassis is fiberglass and the rear end even has a diff! The front suspension is independent with coil springs. So the idea of these cars becoming a class isn't as far out as it first may seem. The decision was finally made by a vote of the host clubs. Five of the six voted to add the Electric Class while only one club favored adding the 1/12 Gas Class. The feelings on this issue ran pretty hot but when race day rolls around maybe everybody will forgive and forget.

There is one other new twist for the added Electric Class. Races will be five minutes long, not the usual four. I guess this may help the C.D. because the computer won't have to be reset during any of the qualifying rounds since the 1/8 gas cars already run five-minute qualifiers. Oh yeah, I almost forgot, it's six-cell onroad cars running modified motors and stock car bodies that you'll see ripping up the track. Sounds like fun for the whole family! Mike Graham (419) 841-6409 is the contact person for Midwest Series schedule and site information.

The Eighth Scale Gas classes have also been set. They are as follows:

1. 4WD Open (ROAR)
2. 2WD Open (ROAR)
3. Sportsman = 2WD, no 2-speeds, any body style

Pan Cars: 5 lbs., .180" carb

Suspension Cars: 5-1/2 lbs., .156" carb
The Midwest Series will also give away the Art Carbonell Cup to the pan car driver finishing highest up in the 2WD Open Class points. For you newcomers, Art is the last guy to win the World Championship with a pan car.

CRYSTAL BALL GAZING

Last month I promised to go out on a limb and tell you where I think 1/8-scale gas car racing is headed. If you look back over the preceding paragraphs there is a lot of news about one particular type of racing at one particular type of facility. Oval racing on purpose built tracks is fast becoming a favored activity among old and new drivers alike. I think this trend will continue for several reasons. First, clubs that setup all those boards and driver's stands week after week just to race for a few hours and then pack all that stuff back in the trailer, just can't sustain enough dedicated workers year after year.

Purpose built tracks give everyone the maximum amount of track time and take the burden off those few club members who do all the work while the other members work on their cars, come late, or just sit back and gripe about being yelled at for not helping.

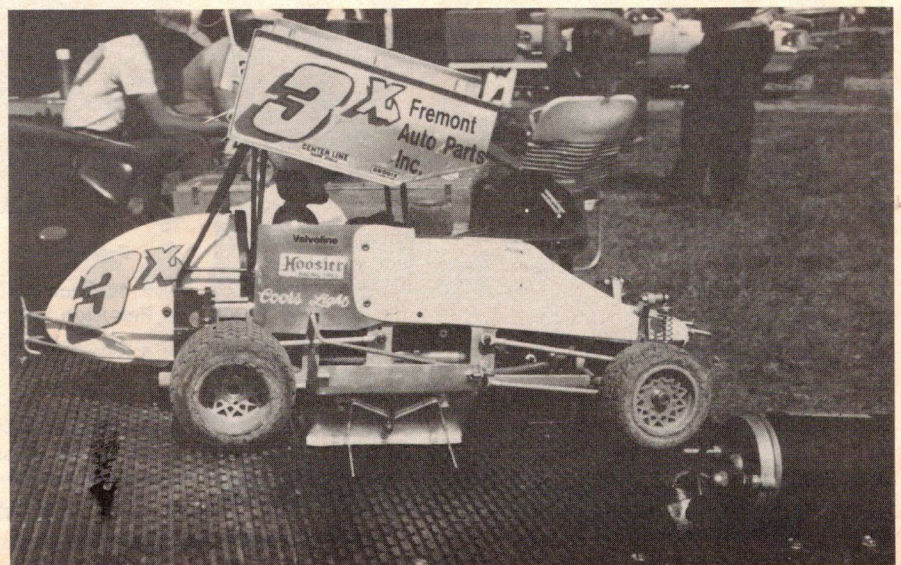
Most of these purpose built tracks will be commercial tracks that provide not only the facility but also the scoring system and personnel to run the races.

Oval tracks will be built, not road courses, because of economics. You can build a 72 x 120 foot building that allows for year around gas and electric oval racing. It would take a building three times this size to run a gas road course and a building that size is not practical. Indoor facilities are essential here in the midwest because winter racing is what will draw the number of gas and electric racers necessary to generate the cash flow required to get through the summer months when so many other activities take people away from our hobby.

So there you have it. It's an indoor oval racing future for eighth-scale racing winter and summer. Next month, more news about racing in the Midwest.

See you at the track.

Above, 1/8-gas action in Toledo, sponsored by the One-Eighth Racers club. Inset: drivers' meeting at a Lansing quarter scale event. Drivers' stand in background places drivers about 12 feet above the track.

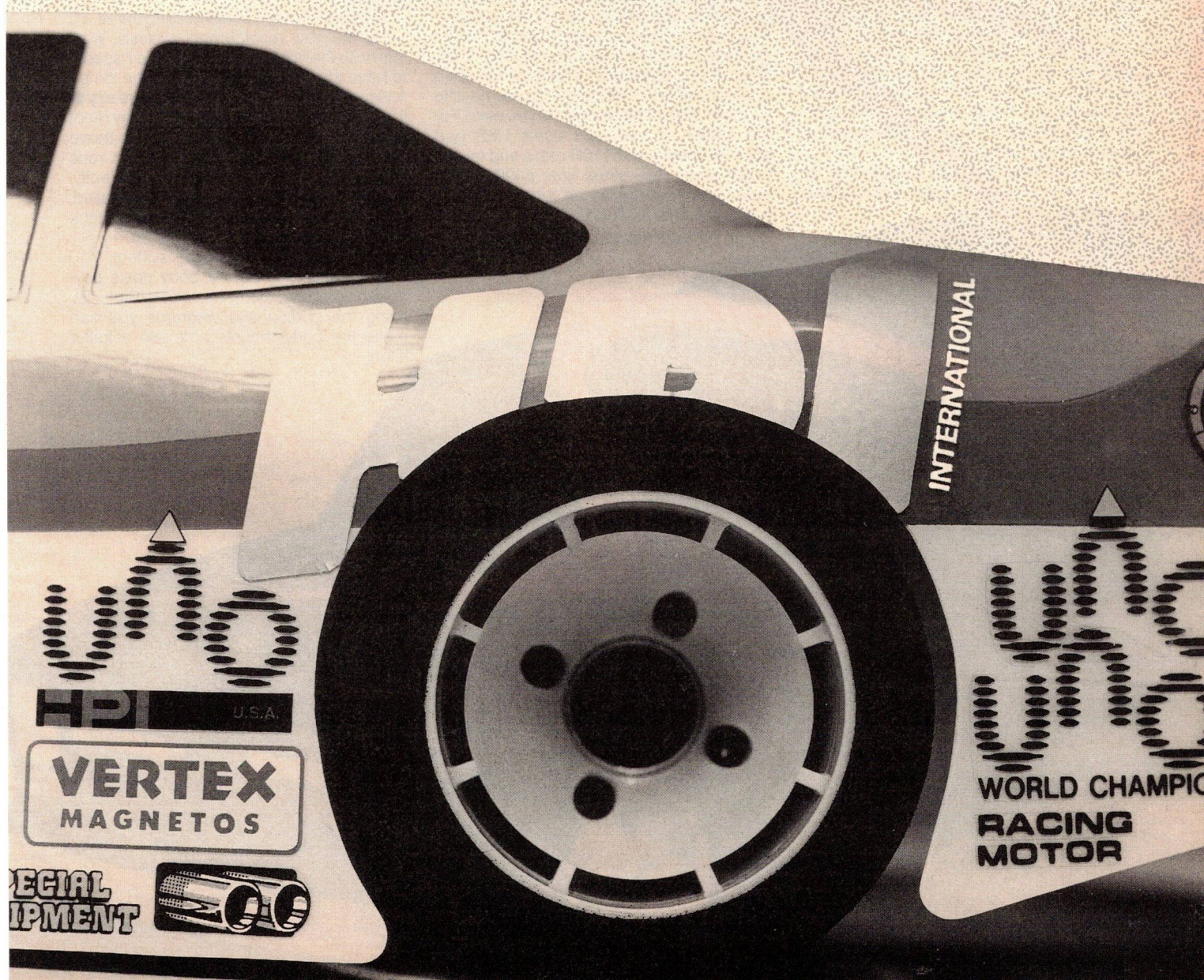


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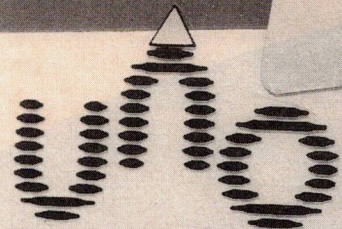
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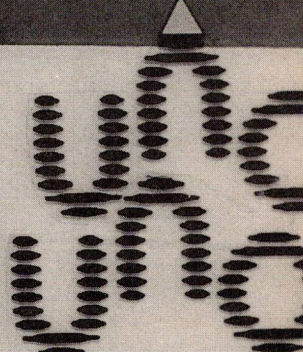


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THE TMS— RC10 CONVERSION

This month we will continue our two-part series on building a race car hauler. Last month in Part I we used the Parma scratchbuilder's kit to build a Richard Petty STP car hauler. In this article we will build a second car hauler using the TMS RC10 conversion kit and go over some hot new products from Custom Chrome Products, Thorpe and Hobbico.

The TMS RC10 conversion kit basically includes an extended fiberglass chassis plate, a shock tower and a Chevy Dually body with camper shell. TMS also provides an instruction sheet with information on what to change and remove for the conversion. For the final touch I added TMS aluminum wheels made for the RC10.

As we all know, the RC10 is a great offroad car and with all the conversion kits available

you can make it a lot of other great things too: the monster truck conversion kit, lowering kits, beltdrive, and the onroad conversion kit (I wouldn't be surprised if there was a boat conversion kit out there somewhere). All kidding aside, the RC10 now has one more terrific conversion to add to the list—the TMS RC10 Dually conversion part #203 for the fiberglass chassis or part #204 for the graphite version and part #1110 for the Dually body with camper shell or part #1111 for the Dually body without the camper shell. Now, like we said before, the kit comes with a chassis and the Dually body, but you need to specify which of these options you want. For the aluminum wheels I used TMS part #5110F fronts and 5110R rears and for the tires I used TMS street tires #490. As for radio gear I'll be using an Airtronics XL2P pistol grip with a Super Vortex ESC.

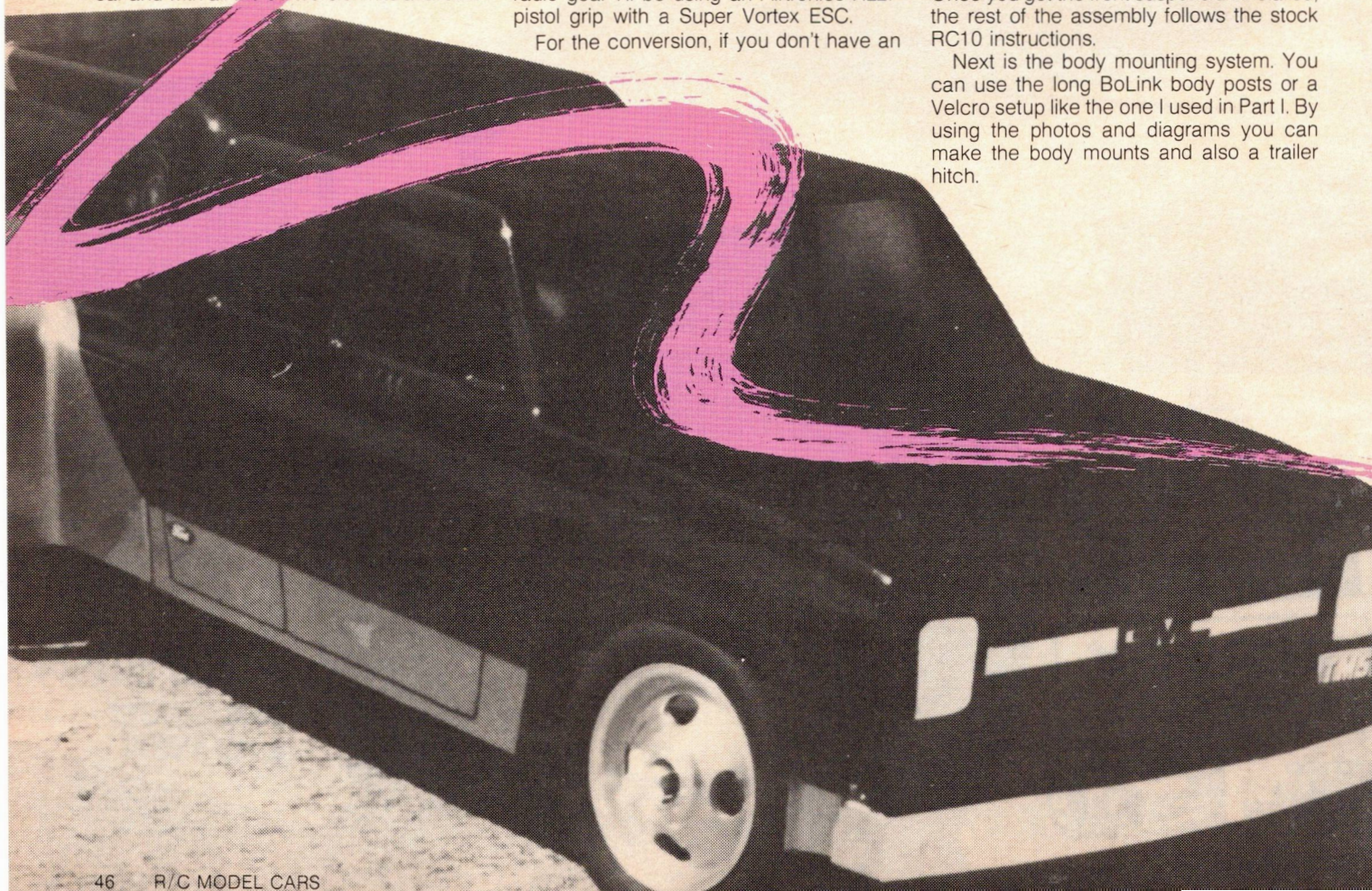
For the conversion, if you don't have an

RC10, I recommend getting the Associated RC10 basic kit #6000 with ball bearings. This way you will have less parts left over (for this project you won't need the RC10 chassis plate, the front shock tower and the wheels and tires).

The first part of assembly is to remove everything from your RC10 chassis, but leave the gearbox assembly intact. Follow the TMS instructions for what to remove on the front suspension, starting with the caster block. The best way to remove the shaded sections is to use a No. 11 X-acto blade and carefully score a line along the area shown, then take a pair of pliers and carefully peel back the area to be removed. This should make it come right off also clean up any excess with the X-acto blade. For the suspension block use your No. 11 blade and this time make a line along the area to be removed (as shown in your instructions) then use a Dremel or a coping saw to remove the excess material. When you are finished, the castor block and the suspension blocks should look like the ones shown in the photos.

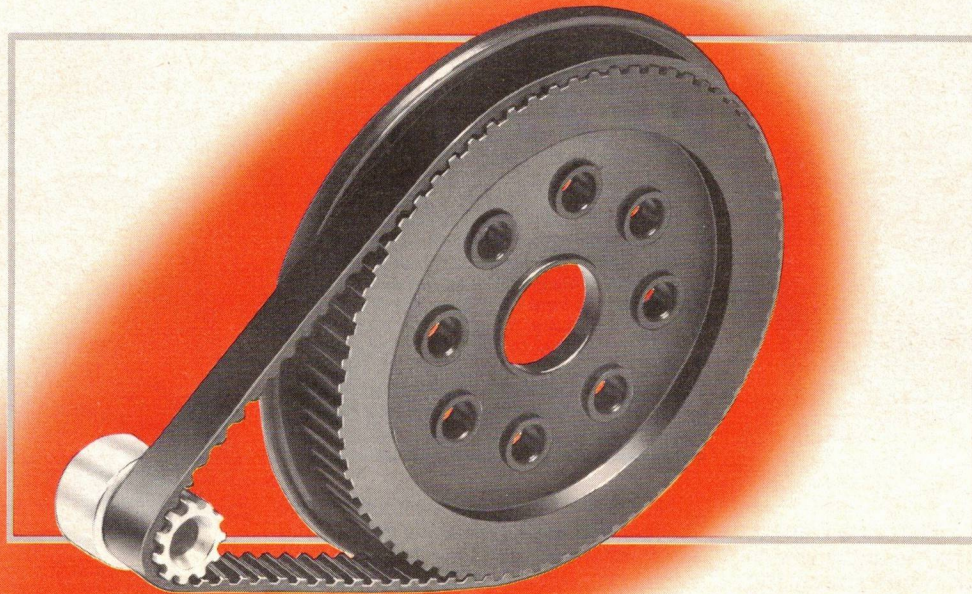
Now we can start reassembling our RC10 using the new replacement chassis. We'll start with the front suspension since it seems to have the most modifications. One thing I noticed—you need to trim the corners slightly on the rear of the a-arms where they meet the shock tower, this will help them to move more freely. Also the stock steering rods need to be cut to 3/4" in length to fit correctly. Once you get the front suspension installed, the rest of the assembly follows the stock RC10 instructions.

Next is the body mounting system. You can use the long BoLink body posts or a Velcro setup like the one I used in Part I. By using the photos and diagrams you can make the body mounts and also a trailer hitch.



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THE TMS RC10 TRUCK CONVERSION

1. This is what you get in the TMS chassis kit. 2. Wheels and tires from TMS complement the conversion. 3. Following the instructions, your suspension block should look like the one on the right. 4. And your modified caster block should look like the one on the left. 5,6. Here's the completed front suspension. 7. The completed chassis with Airtronics radio receiver and ESC mounted. Note the nice fit of the electronics. 8. Mount the front body mounts to the shock using the shock bolts. 9. The rear body posts mount just as the front ones do. Note where the trailer hitch is located. 10. The complete chassis with all components awaiting the mounting of the TMS Chevy Dually body.

MORE TRUCKIN'

In the May issue I modified a Blackfoot into a Bigfoot and after the article was finished I took the truck to the Piedmont R/C Truckers Club's first 1990 competition. In the Monster Truck Can-Crushing class the truck not only won first place but set a track record of 10.46. Later the next day I noticed the rear hex-shafts were completely rounded off. This was due to the size and weight of the tires, and to remedy this I decided to use the new Thorpe Telescoping Diff Kit. This kit has it all — Thorpe's tried and true diff counter gear and axle set and instead of dogbones Thorpe uses telescoping drive shafts like those used on offroad cars (like the JR-X2 which is a proven drive system). Making this modification now will not only prevent a breakdown during the race, you can improve the truck's handling by adjusting the diff for track conditions not to mention eliminating that troublesome stock diff.

Next, since I went to all the trouble to take the rear end apart, how about doing something different and great looking? Let's chrome the entire chassis on our Blackfoot! Now, thanks to Custom Chrome Products of Livonia, Missouri, you can get a complete chrome chassis kit for Blackfoot (part #CCP2611) as well as many other trucks. In upcoming issues we will show you the kits for the Midnight Pumpkin and King Cab. The chrome process CCP uses is unrivalled by anyone else. I took a set of their chrome Pumpkin wheels and compared them to another pair of wheels and it was no contest! CCP has one advantage: they use only factory parts in their chroming process which insures you the best of fit and quality of parts.

The next item to add is oil-filled stocks. The stock shocks work well but due to the size and weight of these IMEX wheels and

Continued on page 118

TRINITY

RETURN OF THE MAGIC MAN

While Tri-Rex is gone to the land of Bat-Ree to acquire the power known as Pushed from Jo-El the Magician, Son of Gary, the Kingdom of Powurr is under attack.

This is for you, Gear Gut!

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I don't know how much longer we can hold out.

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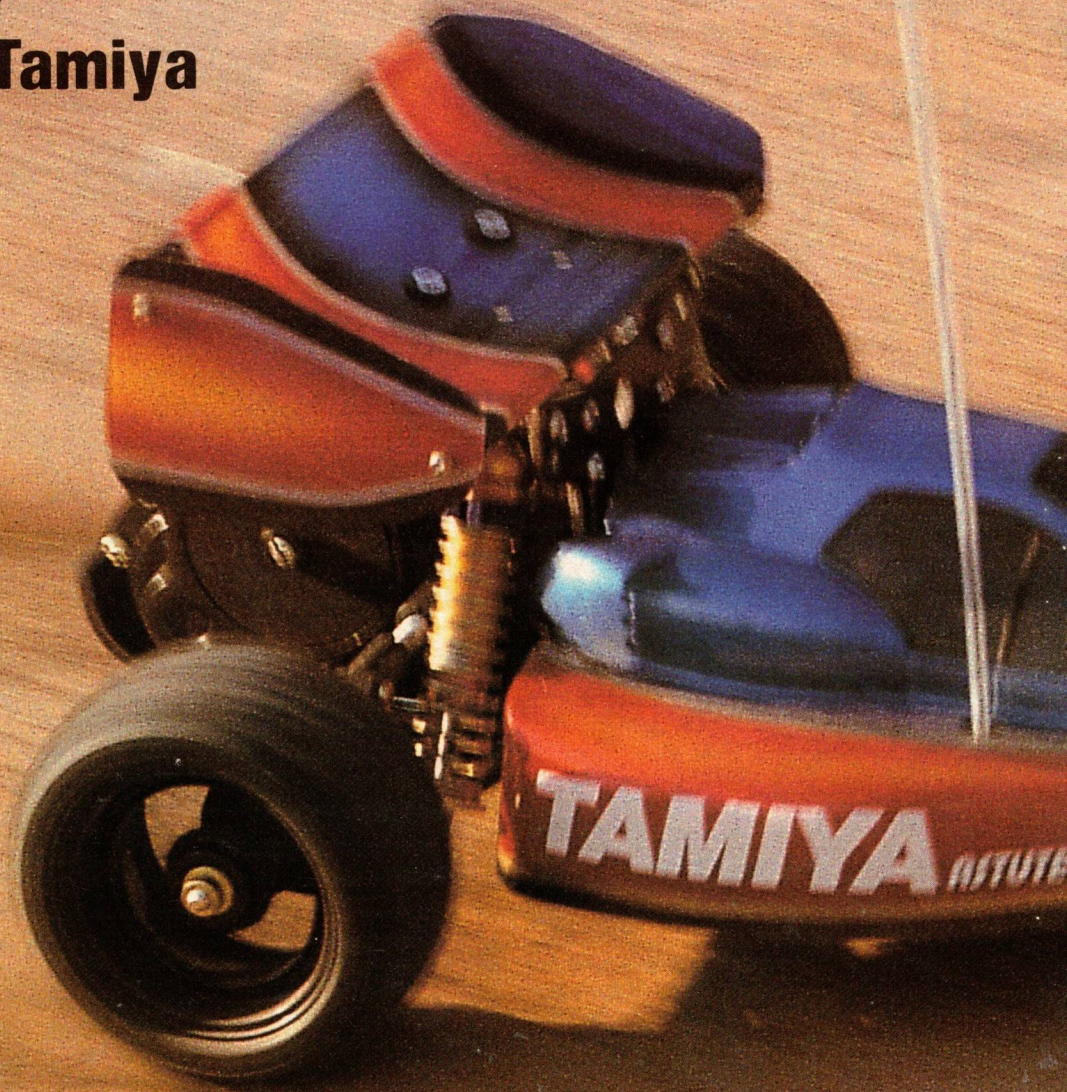
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ASTUTE

BY LARRY FLETCHER

**A wily
dirt warrior
from MRC/Tamiya**



Tamiya, imported by MRC (Model Rectifier Corporation), has long been the leader in R/C cars and trucks for backyards, schoolyards, and sandlots. But Tamiya diehards were always disappointed that they didn't make a competitive race car. Then along came their first serious race candidate, the 4WD Avante. It qualified as a race able car, but took a lot of maintenance and hasn't made a significant dent in the Schumacher Cat or YZ10 field. Soon thereafter came the Vanquish, a simplified version of the Avante and also a respectable entry to the starting grid. But alas, what about the two-wheel drive enthusiasts? Tamiya's latest venture is just that, a 2WD racer called the Astute. Webster defines "astute" as shrewd, keen, cunning, crafty, and wily. Aptly named, the sleek new Astute did not evolve from the tub chassis and oil-less shocks of the sandlot toys, but is a revolutionary design of a well-engineered race car. From the tip of the front axles to the ball differential, the Astute is a car that wastes very little on superfluous nonsense. It isn't perfect, and I'll highlight the weak points later, but as in high-performance driving where slow is fast, or in the art world where simplicity is beauty, the Astute comes closer to an efficient racer than anything Tamiya has yet produced.

IT LOOKS GREEK TO ME

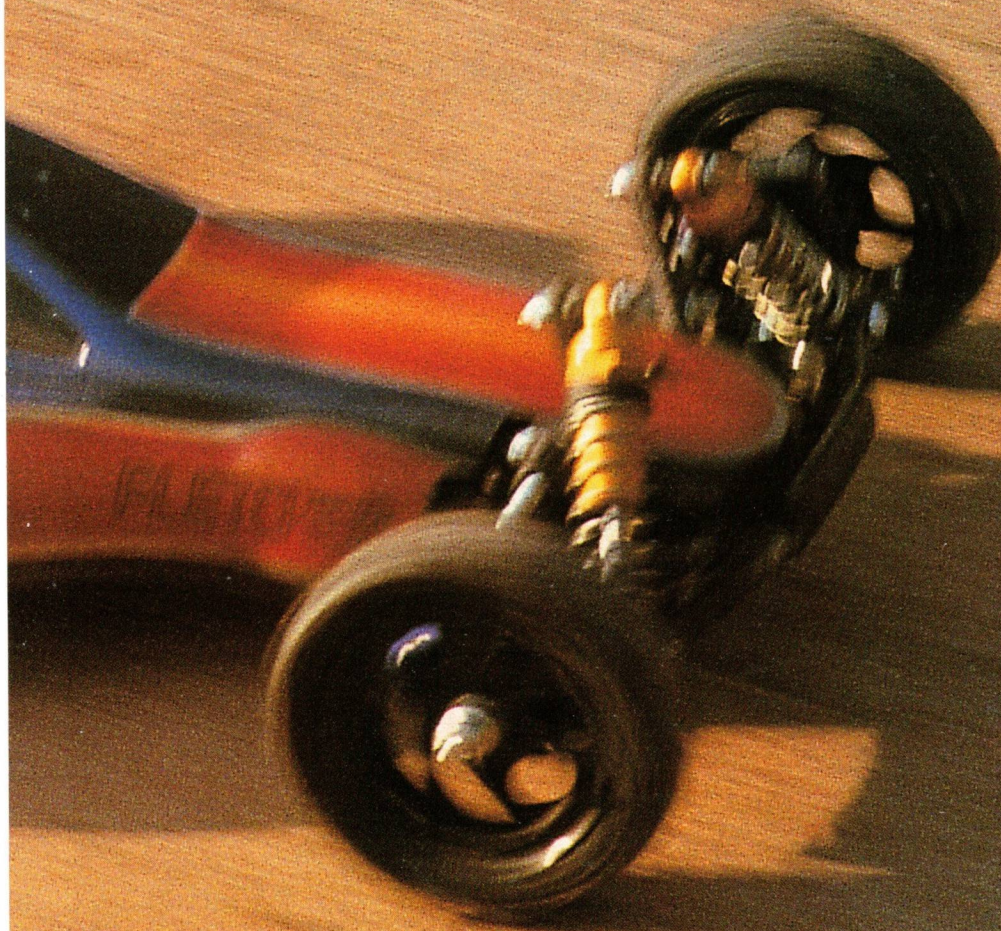
Enough of the fanfare, let's see what makes the Astute something special. For those of you who are new to the R/C hobby don't panic if the instructions look foreign to you... each page of the 32-page instruction booklet has Japanese, German, French, and thank goodness, English. Although this is a common and necessary policy of international companies, it takes some real concentration to keep from missing details. The best advice I can give is, "Take your time!" Read through the instructions first and you'll soon get the hang of picking out the pertinent parts. And it's always nice to know that if you're in Hamburg or perhaps St. Moritz and need a "ball thrust bearing" you can ask for a "druckkugellager" or was it a "butte billies." The illustrations are always first class with Tamiya products with proper part orientation being the key to easy assembly. The left column of each page has names and pictures of each piece of hardware used for the picture on the right, and if you aren't sure about similar parts just put them next to the pictures and compare.

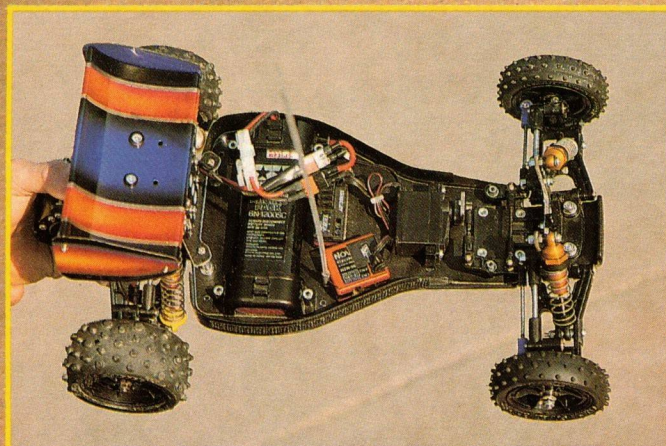
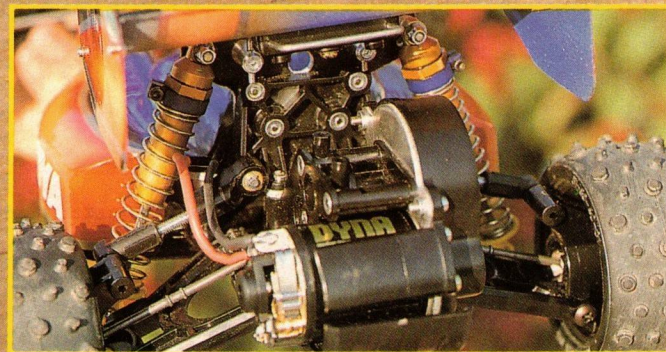
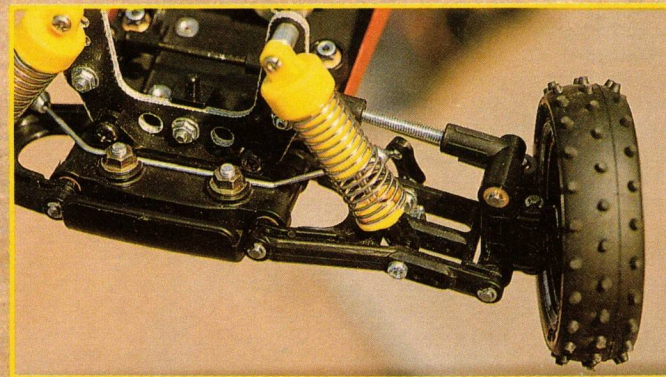
I'm not going to walk you through every step, as the instructions do that quite well, but here's the simplest hint you'll ever get that makes things a lot simpler. Take a

half-dozen small containers, like plastic cups, and label them A through E. Put the screws from Screw bag A in, you guessed it, the cup marked A and so forth down the alphabet. Almost every step uses a couple parts from two or three different bags and being able to quickly grab a 3x8 tapping screw from Bag B, then a 3mm washer from Bag D, and a 2mm Nut from Bag E saves a minute or two on each step. If you've the room, it's a good idea to lay out labels A, B, C, etc., for the plastic parts trees, as well.

Now that we've done the housekeeping let's look at the Astute's front section. The independent A-arms pivot on an oilite bushing at every hinge point. These can be replaced with bearings, but the bushings operate smoothly and the cost of replacing the bushings throughout the car, all 36 of them, can get expensive. If the winner's circle is what you're after the money is better spent on motors and batteries. The one place I did install bearings was in the steering bushings.

The upper steering block is supported by a large 4mm adjustable shaft and is virtually unbreakable. Also worth mentioning are the 5 and 6mm balls used for the steering arms. The steering arrangement is about the best I've seen, and gets the max out of even the slower servos. A front stabilizer bar runs be-





From top: The stock Astute ready to roll. The undercowling keeps the internal components clean. Next, the stock front shock assembly, with 4mm shaft for camber adjustment, plus anti-sway bar on the A-arms. Third down, Larry's modified rear assembly using Tamlya Madcap rear hub and Associated's long shocks. And last, the racing version of the Astute, with an Airtronics Super Vortex ESC, and Novak receiver.

tween the two A-arms, but for the life of me I don't think it adds much. I ran it on my car for a run or two but, after disconnecting it and not noticing any difference, I took it off. Two oil-filled shocks do the dampening up front and, although they are marginally adequate, they need to be longer for any track that has reasonably healthy jumps. I'll get into the aftermarket options later in the race section. The whole front assembly is secured to the chassis by four 3mm bolts and press nuts. The press nuts used here and on other sections of the Astute are low profile and clean, but they have a tendency to loosen with vibrations. Use a little Loctite 242 on each bolt and they'll stay where you want them.

Moving toward the rear of the car leads us to the wide open area for the servo, radio, and electronic speed control (i.e. ESC if used). The battery brackets are designed for standard stick packs and permit sliding the batteries in from one end. Because of the lexan undercowling, discussed later, nothing else is needed to secure them.

Included in the kit is a mechanical speed control with 3-speeds forward and 3-speeds reverse. The speed control servo fits up against the rear bulkhead and the speed control is suspended over the battery space. Three solid aluminum shafts support both the servo and speed control. As spoiled as I am with ESCs the arrangement for the mechanical setup is neat and worked just fine.

A FULL BALL DIFFERENTIAL

One of the things Tamiya has done with their recent cars that has made them raceable is the use of a ball differential. Without a good one a car just can't win many races. The diff spur gear has nine balls in the center and a series of shims, washers, and ball thrust bearings that, without the drawings, I can't verbally do justice. The gist of it is that by using more or less number of shims in the assembly you can adjust the differential tighter or looser as track conditions require. The drawback is that it takes major disassembly to make the adjustment and it isn't possible to do it quickly. For backyard use that doesn't matter, because it stays in adjustment once you have it right, but racing conditions change rapidly. I was fortunate enough to have some spare parts and I just

assembled one unit tightly and another a little looser. The actual swapping of the two only takes about five minutes. The power from the motor goes to the spur gear, then a counter gear, then to the differential spur gear. All are strong and have been working fine for my use in stock and modified classes. The differential mounts between the rear A-arms with the motor in the rear and an access plate on the bottom for easy removal of the differential. Six bearings are included for all the diff gears, the result being a very smooth action. Two spur gears and one pinion is provided with the kit. The power is transmitted through the diff. to outride shafts

and the familiar dogbones. At the rear axles the toe-in and camber can be adjusted with two separate threaded shafts. Being able to make these adjustments is highly desirable, but makes the rear hub assembly a little sloppy. The fix for this is in the race section later. The rear oil-filled shocks keep the rear wheels on the ground and three different mounting holes top and bottom permit easy adjustability.

I chose the Airtronics 94737 servo, what I consider the best in the business, with plenty of torque, and smooth as silk performance.

Continued on page 92



ROLLING AT THE ROCK

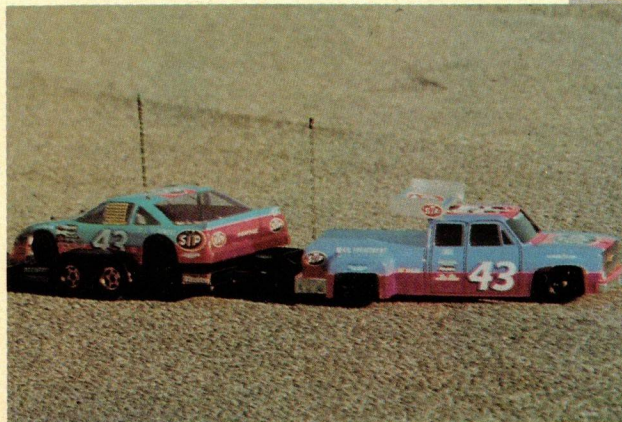
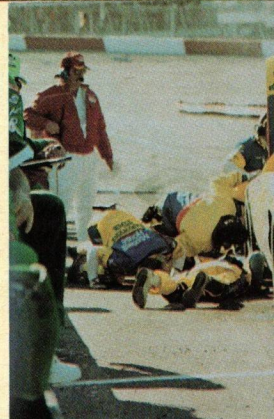
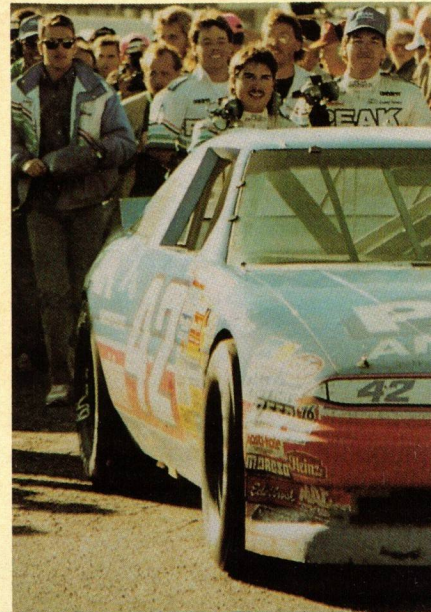
BY JACK WRIGHT

The 1990 Winston Cup NASCAR season has gotten off to a wild start! The excitement began in the first of the two 125-lap qualifiers for the Daytona 500, with King Richard Petty out in front, leading laps again with fans everywhere going crazy. The thrill of the season continued when on the last lap of the Daytona 500 the leader, Dale Earnhart, caught a piece of debris on the track, lost a tire and Derricke Cope eased by to win the biggest race of the season; his first win in Winston Cup and the one every driver dreams of winning.

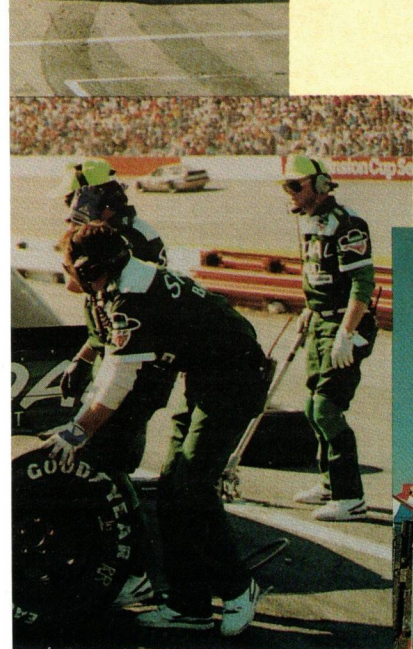
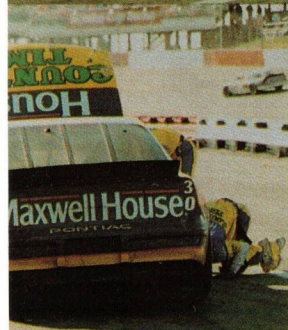
The next race was won by Mark Martin, his second win in Winston Cup and one of the most controversial wins in NASCAR history. Not bad for only two races into the season.

Then on to Rockingham, where Kyle Petty won the pole—his first with the Peak Pontiac. Also, don't forget the Unocal Bonus money—for the driver who wins the race from the pole

... which at the Goodwrench 500 was worth \$20,000+. As the green flag dropped the first car to go a lap down was the #28 car of Davey Allison. Davey had a fainting spell on Thursday before the Sunday race and his doctor felt it might be best if he sat this one out, so after one lap under the green flag Davey came in and Hut Strickland took his place in the #28. This way Davey still got those valuable Winston Cup points. Kyle was the one to beat all day. He lead the race from the start and only surrendered the lead during green flag pit stops and cautions. There were several drivers who tried to take the position from Kyle but all came up short. Drivers like Mark Martin and Ricky Rudd had mechanical problems and drivers like Ken Schrader, Sterling Marlin, and Richard Petty were all in backup cars after losing their primary car with wrecks in practice. Ken and Sterling still had a good run, finishing third and fourth. Other drivers had to struggle with



NASCAR racers rip it up at the Rockingham 500



the car setup all day; Darrell Waltrip, Rusty Wallace, and Dale Earnhart. King Richard was having a good run until lap 294 when a valve put the King out of the running—but don't you fear, win 201 is near for the STP Pontiac and the Petty team!

The race was under only eight cautions for a total of 35 laps and the only serious incident happened on lap 439 when Dick Trickle lost it in turn two and hit the wall. Then Ernie Irvan spun and hit the wall trying to avoid Trickle. Both drivers walked away but NASCAR still made both drivers take a ride to the infield hospital. Kyle Petty had the whole field lapped until a spin by Derricke Cope on lap 485, which brought out the eighth and final caution of the day. On the restart Geoff Bodine managed to get by Kyle and get into the tail end of the lead lap which gave him a second-place finish. Kyle not only took the checkered flag but he also took home the biggest one day NASCAR payday

in NASCAR history. Just think, this was only the third race of the year! Should be a great season of racing!

After the race was over I took my BoLink Gold out onto the race track for some quick racing shots. Racing down the straights and into the bankings was quite a test of the BoLink Gold! It didn't take long to draw a crowd so I had to cut it short to answer fan questions about the BoLink and the STP Richard Petty body. The fans were so surprised when they saw the car and the car hauler and some didn't even know that these cars exist! The more we can get these cars and our hobby in the spotlight the more interest we can generate in R/C. I would like to thank Richard Petty, Petty Enterprises, and especially Chuck Spicer of STP Racing—whose time and help made all of this possible. Also, readers, if you would like to see more NASCAR events and photos please write and let us know.



From top: Rockingham winner Kyle Petty is escorted to the winner's circle after a near-perfect ride; the Purolator-sponsored Chevy Lumina gets a complete going over during a green-flag pitstop; Brett Bodine's Quaker State Buick heads for its pit during a stop under the yellow; despite a full crew under the car, Michael Waltrip's mechanical problems sidelined him; the author's BoLink Pontiac replica and pull truck take a lap after the 500; Harry Gant's Skoal Bandit takes on fuel; the BoLink Eliminator in Petty colors under the Rockingham Speedway sign.

PREVIEW Ferrari

First Look at a New 1/10 Scale F.1 Car from Kyosho

Here's a first glimpse of the new Ferrari F189 Formula One car in 1/10th scale from Great Planes/Kyosho. The open-wheel racer is just now being released to the American market, so it should be showing up on your dealer's shelves soon.

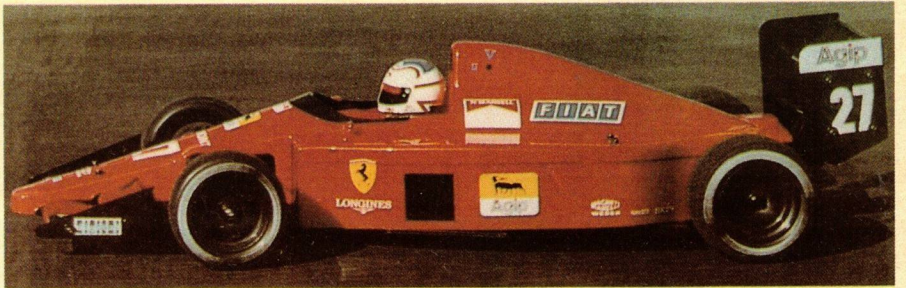
We've had a chance to go over a preview kit, which arrived without the instruction book—it's being translated from the Japanese as this is being written.

While comparisons with the Tamiya Road Wizard are inevitable, the Ferrari F190 is a bit bigger, with its double wishbone, all independent suspension front and rear a definite plus. Dogbone axles are used in back, and the kit also offers friction shocks mounted inboard to keep a streamlined profile.

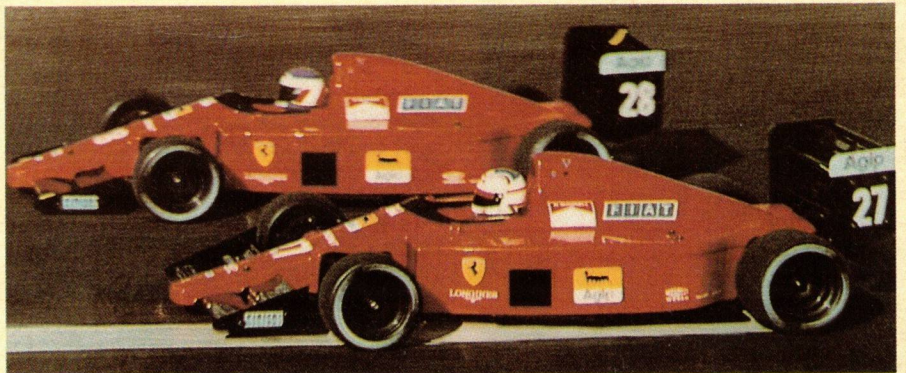
The Mega Outlaw stock motor that comes in the kit is mounted amidships, for better balance. The double-deck chassis is molded of resin plastic, and a rotary speed control is included.

The tires in the kit were semi-pneumatic slicks that look realistic when mounted on the wheels, but for asphalt, there are optional sponge tires available.

A detailed, nicely scaled lexan body is included, along with some Ferrari decals to complete the model. Now we have to find us some cans of Ferrari Red and get painting! As soon as the instructions arrive, we'll get cracking and have a complete review/track test for you, so stay tuned!



Performance of the suspension and aerodynamics on the F189 are an unknown quantity right now. As soon as we get a translated instruction book, we'll have it together and on the track for a full test.



Kyosho's new formula racer in 1/10th scale is 16.3 inches in length, with a 9.7-inch wheelbase, and the weight of the car is 2.9 pounds. A stock motor is included.

Kyosho's F189 Ferrari has quick-release body latches that eliminate the need for body clips. Front wing protects the suspension and provides needed downforce on front tires.



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GOLD ELIMINATOR 10

BY JACK WRIGHT

BOLLINK'S



NASCAR stock car racing's popularity is increasing with each new season. From sponsors to fans the excitement builds from race to race, but it wasn't always so. Stock car racing began in the South during the 1940s, and rumor has it that it started with the moonshine runners and slowly moved to the dirt tracks of the fairgrounds and then to Daytona Beach, but not to the Daytona Speedway we know today—the actual beach itself! This was the kind of racing in which the car you had not only had to make through the race but it also had to get you back home. Just put some tape on the headlights and you were ready to roll.

Well, today it's a different story; the cars are hardly what you drive to work and back. Today, stock car racing is very high tech and the only thing these racers have in common with the cars in the showrooms is that they have four wheels and the same body style.

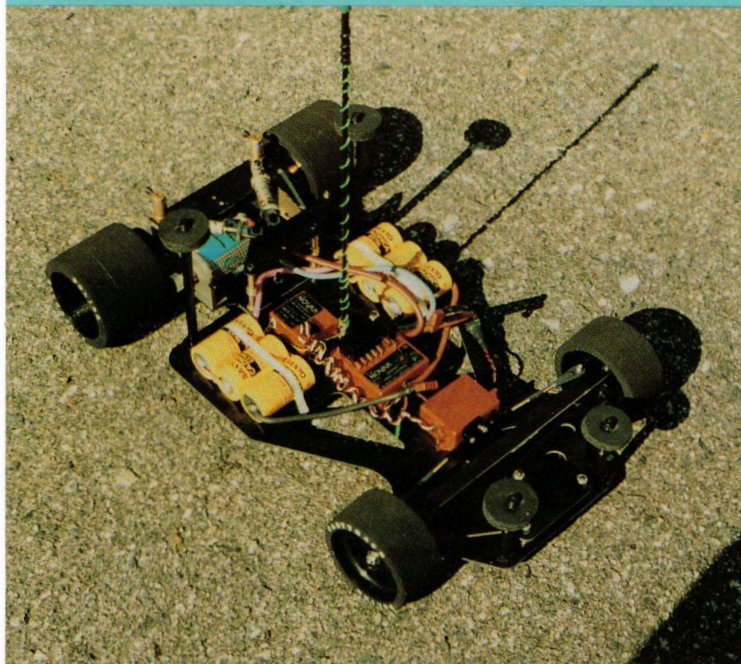
Radio controlled stock car racing is an ever-growing sport with enduros like Lake Whipperwill and the Velodrome in California adding to the action. Even capped radial tires are becoming more and more like the radial tires used in NASCAR.

BoLINK'S BEST

As we all know, the name BoLink goes hand in hand with this type racing, and here is their best entry yet! The BoLink Eliminator Gold Edition, from its anodized gold aluminum parts to the gold plated wheels it is one HOT car! The performance aspects of the car are quite impressive too! A graphite chassis, t-plate, five ball bearing rear axle,

step 13—it's parts bag 28G not 28C as indicated). Assembly was very easy and quick as long as you try not to take any short cuts. Having some thread lock on hand is a good idea. When reading through the instructions I thought the white nylon parts sure would look good if they were black to match the chassis, so I got out my Rit black dye and my dying pot (be sure to use an old pot if you don't your mom or you wife will KILL you—because it does mess up the pot!). Add just enough water to cover the parts and some of the black dye. I put it on the stove on high for

diff be careful not to over tighten the diff nut, because if you do you could pull the diff shaft out of the graphite axle and this could be disastrous. I had a customer who did just that but luckily by cleaning the threads on the shaft and using some Devon 5-minute Epoxy I was able to reinstall the shaft. Apply the epoxy to the shaft then put the axle in a vise and let it sit overnight. The diff in this kit is very smooth and easy to adjust for track conditions. The wheels and tires that are included in the kit are great and a much needed improvement over the ones supplied



BoLink's clear and understandable instructions meant the author had his Eliminator assembled in only 90 minutes. All nylon parts were dyed black.



Richard Petty autographed Jack's Pontiac body, so he just uses it to show off. He runs his Gold Eliminator with a Country Time Lemonade body.

front crossbar and axle, wing with aluminum mounts, 48-pitch gears, ultra-smooth ball diff, aluminum hubs and ball bearings throughout. Wow, see what I mean, HOT! Now all you need for this kit is a radio, speed controller, motor, pinion gear and saddle-type battery and we're ready to roll.

For this review I used a Novak 2X receiver, a Novak 1A servo, and a Novak T-1X speed controller. As for batteries and motor, I used a Parma stock motor and Parma's new assembled saddle pack SCE1700s. I would like to take the credit for this fantastic paint job but I can't; it's a pre-painted BoLink Richard Petty STP Pontiac body (and I can say fantastic for sure because John Cline of the STP crew who paints Richard's race cars said so). Also to make this project look more like Richard's car I used a set of BoLink's black wheels part #BL3071B (fronts) and part #BL3372B 2" (rears); and a mini-decal sheet from Autographics for the hood pins, window netting and other small details. These small details from Autographics makes a great car look even better—I would be lost without them.

The BoLink kit is basically the same as the standard Eliminator when you look in the box. All the parts are neatly placed in individual bags and are clearly marked as to what's what, and the instructions are very clear (although I did find one error on page 6,

about 20 minutes. KIDS: get your mom or dad to help you—don't try this alone. Stay with your parts while you are doing this and use a spoon or something to stir with so it won't boil over. After you let the pan cool for awhile, run cold water over the parts to get them clean.

As I mentioned before, the instructions are very clear, which helps make assembly quite simple (it only took me about 90 minutes). First we start with the front axle which is the same design as the Eliminator 10, except for the crossbar that attaches to the kingpins. It also uses the same system for adjusting the caster as the Eliminator 10. Next we went to the rear pod and t-bar. For this, BoLink uses a rocker ball for the t-bar to ride on—quite an improvement. BoLink has also included three different ride height spacers so you can adjust the ride height for different track conditions. The only change I made was in step 11 where the ball link threads into the shock plate for mounting of the stabilizer bar. In time this connection will work loose and possibly fall out, so to prevent this I put a 2-56mm brass nut on the exposed threads of the ball link after it was installed in the shock plate as shown in the photo. Also when installing the diff balls into the spur gear—use the outside row of holes and use only six of the eight diff balls, leaving one space between them. When tightening the

in the past. The compounds are blue for the fronts and greens for the rears, and they work quite well on cement ovals and carpet.

Also, before you install the batteries you should grind out the battery slots with a small file or a Dremel tool with a grinding bit as shown. This will prevent the chassis from cutting through the cell shrink-wrap and short out your pack.

Now that we've covered the assembly, let's get to the performance. For this I packed up the car into the BoLink carrier bag, grabbed my race case and headed to PC Hobbies in King, North Carolina. This is a great facility with enough pit space for 140 racers. The track is a 17-degree banked cement oval. I ran some practice laps to get the car set up (BoLink also gives setup tips in the instruction book).

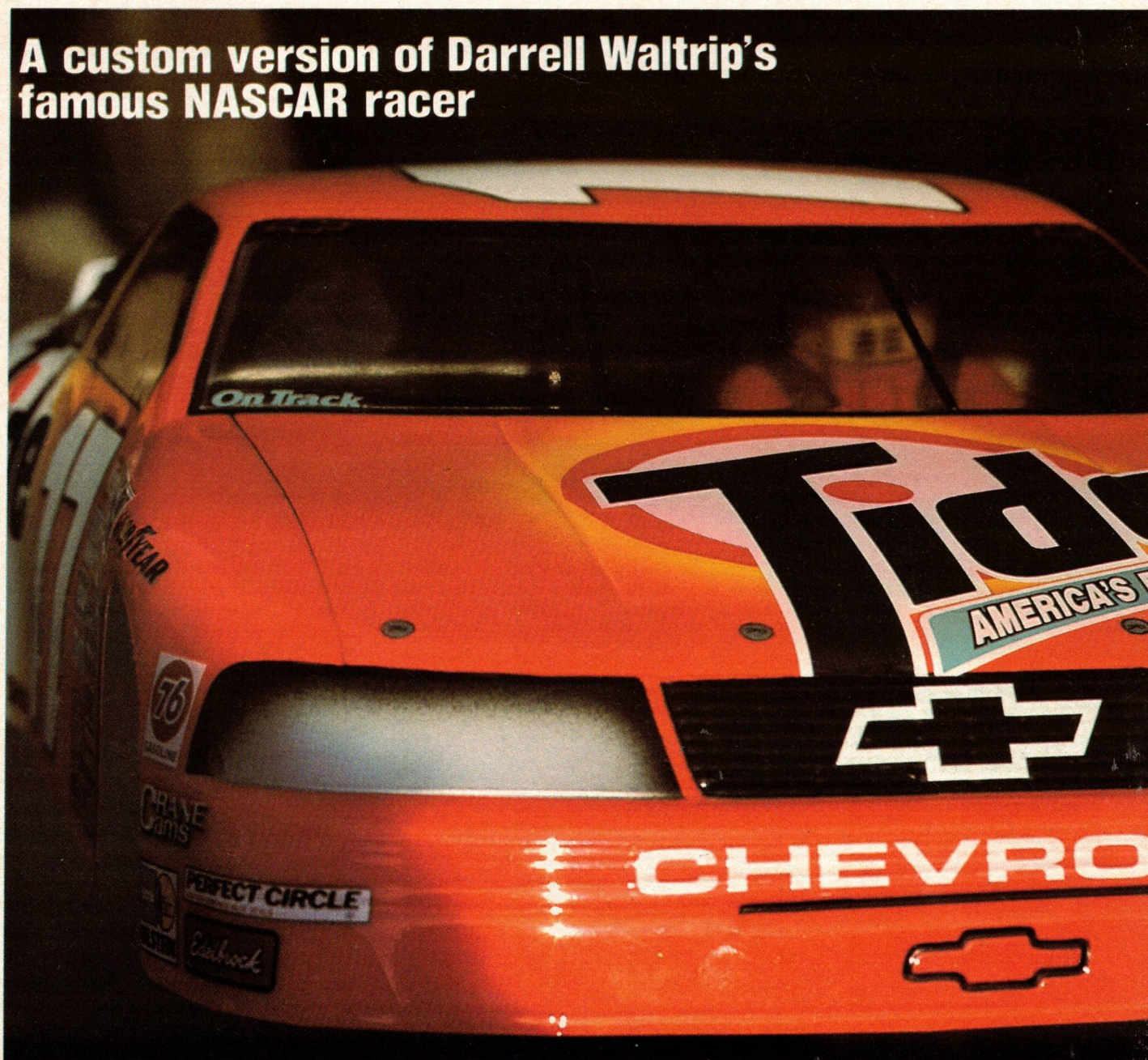
As you can see in the track photos, I don't have the Petty body on the car. At a recent NASCAR event here in North Carolina I had the pleasure of meeting Richard Petty and I had him autograph the car for me, so to do the review without wrecking the Petty body I made a '90 BoLink Pontiac body painted like Michael Waltrip's Country Time Lemonade race car, using Pro-Cut decals and Pactra Daytona yellow.

Since I'm not a very accomplished onroad

Continued on page 120

How To PAINT THE *Tide* CAR

A custom version of Darrell Waltrip's famous NASCAR racer





BY MIKE OGLE

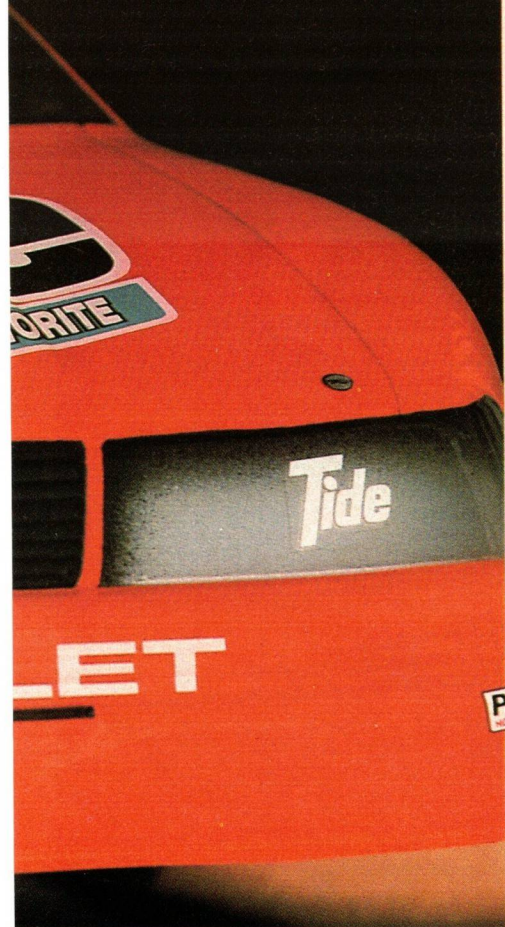
Without a doubt, one of the most popular and colorful cars on the Winston Cup/Grand National stock car circuit is Darrell Waltrip's Tide-sponsored Lumina. Ever since the Day-Glo orange racer hit the track, visibility for Darrell and for Tide hit new heights. No other stocker has ever been so singularly distinguishable from the rest of the pack.

Almost as quickly, R/C racers started copying the distinctive scheme on their own

personal cars. And why not? The bright (and very hip) colors stand out against any asphalt track, giving the R/C driver an easy-to-find in the pack, and therefore easier to drive, car.

You may want to do your own car in the Tide scheme, but maybe you thought it was too intricate, or too hard to figure out how to spray. Fear not, for this is actually one of the easiest paint schemes of any Grand National

Continued on page 100



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.



Sealed gearbox
VariLok
differential

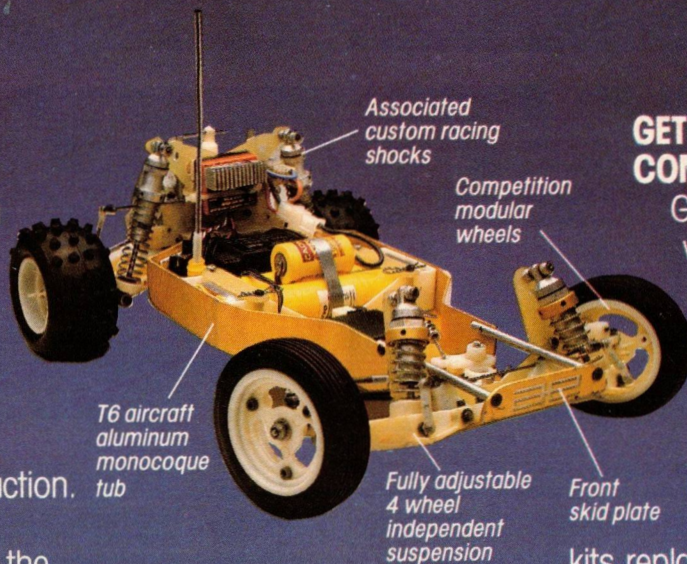
Smooth undercarriage for
maximum ground clearance

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.



T6 aircraft aluminum monocoque tub

Associated custom racing shocks

Competition modular wheels

Fully adjustable 4 wheel independent suspension

Front skid plate

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.

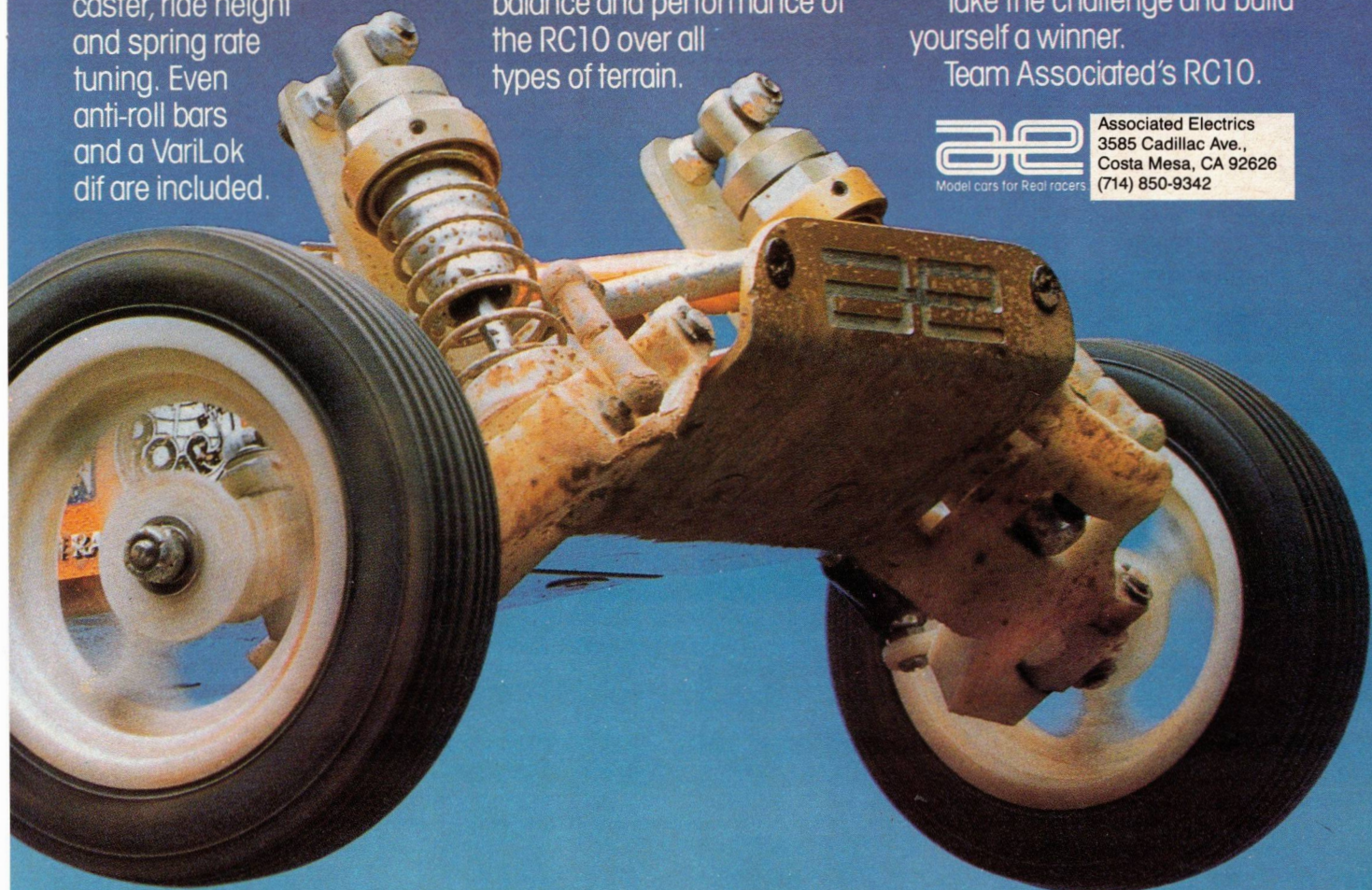
Complete RC10 kits, replacement parts and spares are readily available through model car racing's most extensive dealer network.

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 2 TIMES 1985-1987, 1989-1991

SLINGSHOT

Kyosho's 4WD dirt oval racer is a class act all the way

BY STEVE SAIK

Storming into the highly competitive dirt oval scene is the radical, tricked-out, Kyosho Slingshot 4-wheel drive. This mind-boggling beauty lives up to its name, as it can pound down some heavy horsepower as well as turn heads. If you're looking to enter into dirt oval excitement, then look no further! The Slingshot 4-wheel drive will send you flying on the oval.

FEATURES

Impressive features are standard in the Slingshot kit! The most important feature in any R/C car kit is whether it comes with ball bearings or bushings. Kyosho outfitted the Slingshot with full, high-quality ball bearings—a set of 15 of them to be exact—at critical rotating points. This feature helps wheel spin and the general smoothness of the car as a whole, as well as enabling it to run at higher speeds than it would with bushings. Featuring independent suspension with top-quality Kyosho Gold Shocks, the Slingshot performs great. Spring tension is adjustable, along with shock position, to suit desired dampening and suspension geometry. Another awesome feature is the chassis design; there are seven battery slots on the left side and four on the right. Balance may be adjusted by placement of battery packs to secure the desired turning characteristics. This is especially helpful if you wish to run the Slingshot on road—then you simply even the weight of the battery pack on both sides (in the case of a saddle pack). For dirt oval driving, place 6 or 7 cells all on the left side for maximum left turning on demand.

Made of cool-looking black fiberglass, the chassis is supported by another small fiberglass upper deck, a good place on which to mount the needed electronics. No electronics or motor are provided with the Kyosho Slingshot; but most high-quality cars on the market today do not include either of these items. To include a cheap speed control and motor would just add to the price of the kit, and most hobbyists would prefer to choose their own electronics separately anyway for a car such as this. Later on I will discuss which motors and speed controls work best with a 4WD oval R/C car like the Slingshot.

Power to all four wheels is via a belt pulling a one-way differential in the rear and a dif-

ferential in the front. Dogbones then transfer power to the bearinged outdrives, turning the wheels. An awesome aspect on this flying four-wheeler is the adjustable toe-in-camber linkages, the mark of a competitive car. In addition to all these many impressive features, plastic chrome wheels with race-proven black tires add up to a hot-looking R/C car.

Technical Data for the Slingshot is as follows: Length (chassis) 16.1", Width (chassis) 9.4", Height (chassis) 5.5", Wheelbase 10.9", Ground Clearance .71", Front Track 8.0", Rear Track 8.4", Weight (ready-to-run) 3.5 lbs., Gear Ratio 7.54:1.

ASSEMBLY AND CHANGES

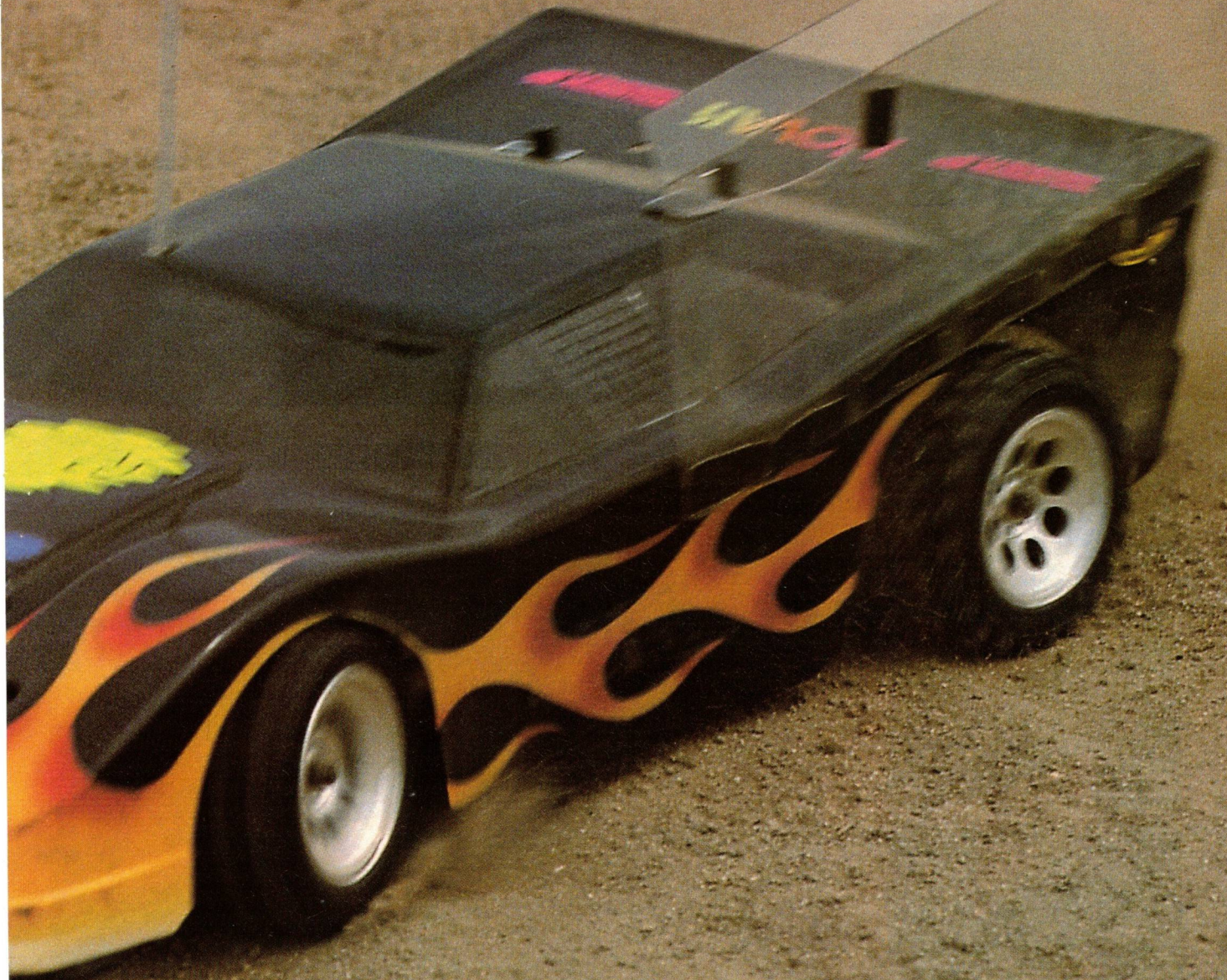
Assembling the Slingshot was quick and easy for the most part. Kyosho's directions were well written, leaving no doubt about any steps of the building process. A few modifications that I made during assembly should be expanded on. The belt tensioner (SSA-3) was removed, since it in no way helped the smoothness of the overall wheel spin. Actually, tension on the belt drive is unnecessary and should be even looser (or should have more slack than is provided). Other similar 4WD oval R/C cars make use of this principle, looser tension, the lack of which is my

only complaint with the Slingshot kit.

TRACK TEST

I charged up some batteries, put a Twister 15-turn modified motor in, along with a Novak T1-X (which is a perfect speed control for a 4WD car), and was ready to do left turns only. Excitement mounted as I put the Slingshot down on the track, and pressed the trigger down. It kicked up some dirt and took off around the oval. I was impressed; this baby was awesome to drive! It was dialed perfectly. You should note, however, that the suspension I ran was *not* set according to what the directions recommended. In the rear of the Slingshot, when shock absorbers were mounted in the positions which the directions indicated, the chassis scraped the ground. In moving the upper-mount screws to the lowest outside position and increasing shock tension, I was able to find a suitable ride height and suspension dampening. Front shock positions were left as the directions suggested, however, and provided

Continued on page 88



The 4WD Slingshot comes with high-quality bearings, Kyosho gold shocks, and a light fiberglass chassis.



At speed, the Slingshot is stable, predictable, and a nimble performer on the dirt oval.

KYOSHO'S

BLIZZARD





You don't need no snow!

BY JIM DAVIS

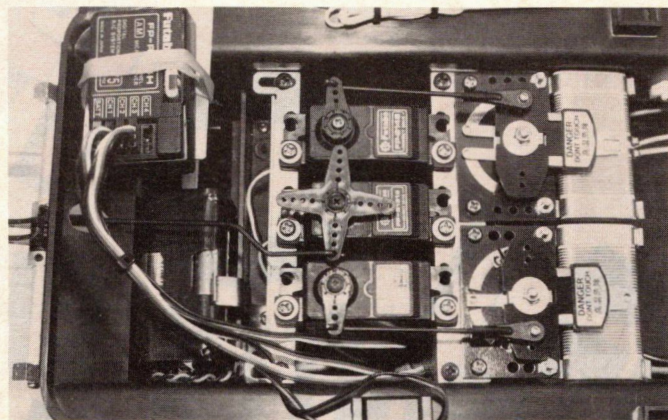
BLIZZARD (*bliz'erd*) *noun*. 1. A heavy snowstorm, 2. Delicious frozen dessert at Dairy Queen, 3. Fun radio control vehicle.

Due to popular demand, the Blizzard is back! The Blizzard I am referring to is Kyosho's 1/12-scale electric R/C snow cat vehicle. Don't get me wrong, I like to visit Dairy Queen once in a while to enjoy their Blizzard desserts (one of my favorites, actually!). As for heavy snowstorms, they are pretty to look at, but not fun to drive in. Unless, of course, you own a Kyosho Blizzard!

Just what is a snow cat, you ask? Snow cats, sometimes referred to as tractors, are the modern day equivalent of pack mules and dog sleds. They are used to push, pull, and haul just about anything in and out of the remote snow-covered regions of the world. They are used for Arctic expeditions, plowing mountain trails and roadways, rescue operations and any other task that no normal vehicle can perform in heavy snow.

Kyosho originally introduced their Blizzard snow cat a few years back and many R/C hobby enthusiasts lamented its demise when it was dropped from the U.S. market. I'm not certain, but I think it was still available in Japan. However, the Blizzard has been reintroduced as a direct result of consumer demand. Who says the manufacturers don't listen?

Continued on page 96



Bank of servos control various functions on the Blizzard. The servo at top is for steering, the center servo for blade lift, and the bottom servo controls speed.

Champions

Racing in Florida appeals to a lot of people, especially in February, and particularly by the people who are snowed in at home. And the fact that the West Coast Radio Control Car Club of Florida has a great track in Tampa helps. They also run a super race, which means that a lot of racers over the 350 limit, want to run, but can't. But 350 racers are enough. Besides racers from most of the states, the Schumacher team from England was here, as well as the LRP team from Germany, and Canadian drivers.

The track was changed to a new layout this year; more Georgia red clay was brought in, and during the practice days the track wasn't manicured very much, but on the qualifying and main events days, the club manicured and watered the track regularly. The park area gave plenty of room for pitting and with the weather in the 80s, it was ideal.

Everybody looks forward to this race. It's always a lot of fun to race with people you haven't seen for awhile. And for some people, it's the only outdoor race they're going to get to run in during the winter. This is a permanent track, so you can come as early as you want to get as much practice as you need.

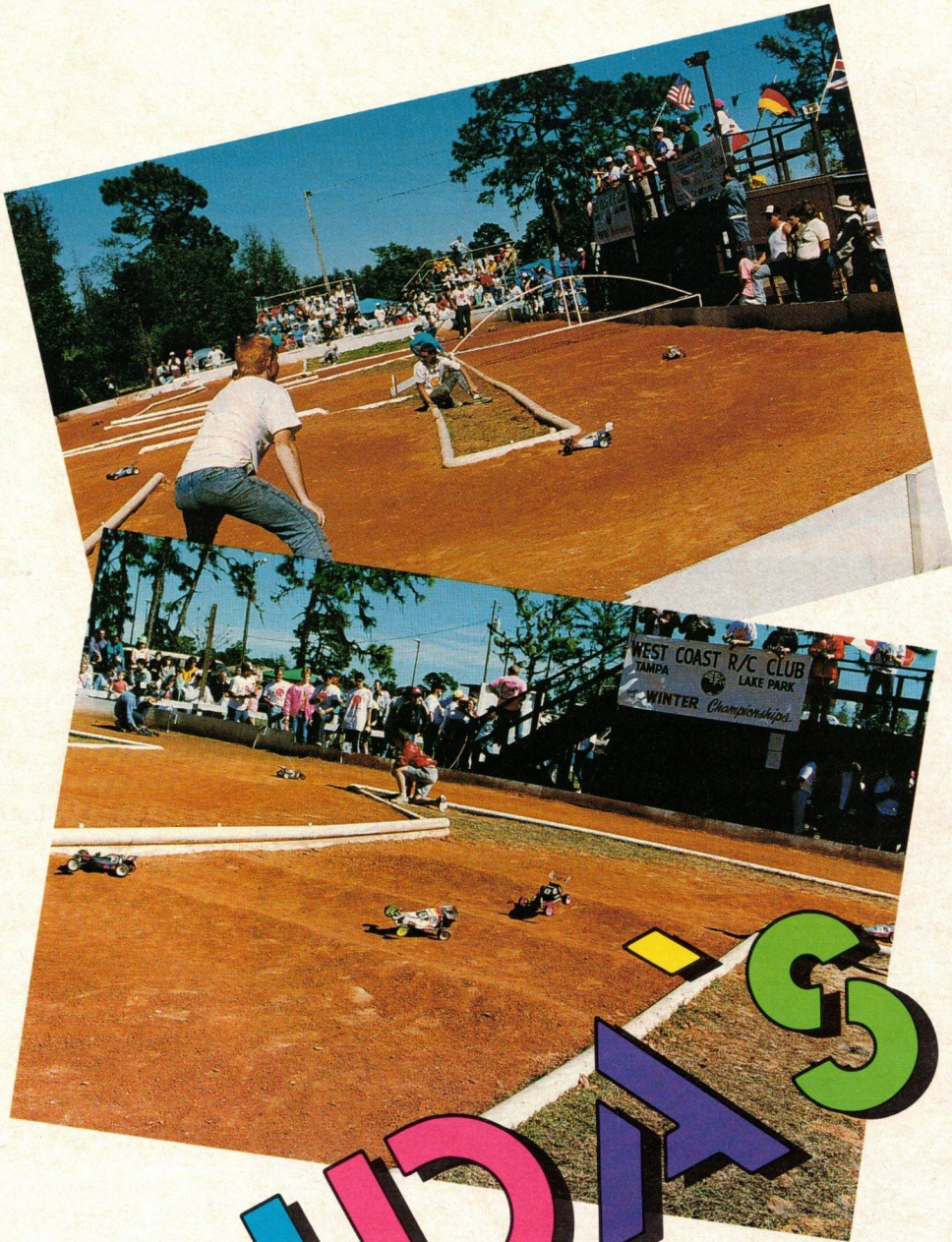
After practice it's time to get down to qualifying. Rick Hohwart and Gil Losi Jr. were having a great race for Top Qualifier honors in 2WD Modified, with Rick's 13 laps in 4 minutes and 0.4 seconds just beating Gil's 13-4.1 run. But then Rick Vehlow came along and beat them both with a super 14-4.16, the only 14 lap run in 2wd. Thomas Golson was TQ in 2WD Stock while Cliff Lett was TQ in 4WD Modified by a huge distance of over six seconds, with a 14-4.07.

2WD STOCK "B" MAIN

Barry Raborn took first in a close race over Joe Kolp Jr., with Gil Losi Sr. just a short way back to take third.

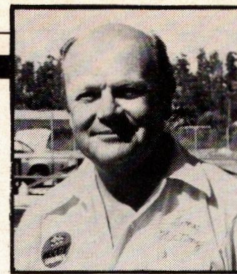
2WD "A" STOCK MAIN

Stock class is always one of the most competitive classes, because the motors are always so close in performance, the cars are close so everything is left to the driver.



WINTER CHAMPIONSHIPS

Offroad action in the Sunshine State



BY GENE HUSTING

“ Racing in Florida appeals to a lot of people, especially in February. ”



Lake Park in Tampa was the site of the Florida Winter Championships, where more than 350 contestants showed up to race.

When the horn sounded, all the cars shot down the straightaway into the tight r.h. corner at the end of the straightaway, and then towards the tight l.h. #2 turn. Freddie Rapuana was in the middle of the pack and Freddie had a clue what was going to happen next. He spent some time watching a lot of the races before his race, and he noticed at least half the time that the cars got tangled in turns one or two on the first lap.

So Freddie held back just a little at the start, and sure enough the five cars in front of him got tangled in turn two and Freddie took over the lead. Now it's nice to have the lead

of course, but to win the race you've got to go fast for four minutes, and not make any mistakes so no one can catch you.

Well, once Freddie had the lead he knew what to do. He was driving perfectly; making no mistakes. Michael Spehn and Carl Zaniboni were trying to catch Freddie, but in the meantime, Frosty St. Clair and Mike Meighen were also closing in.

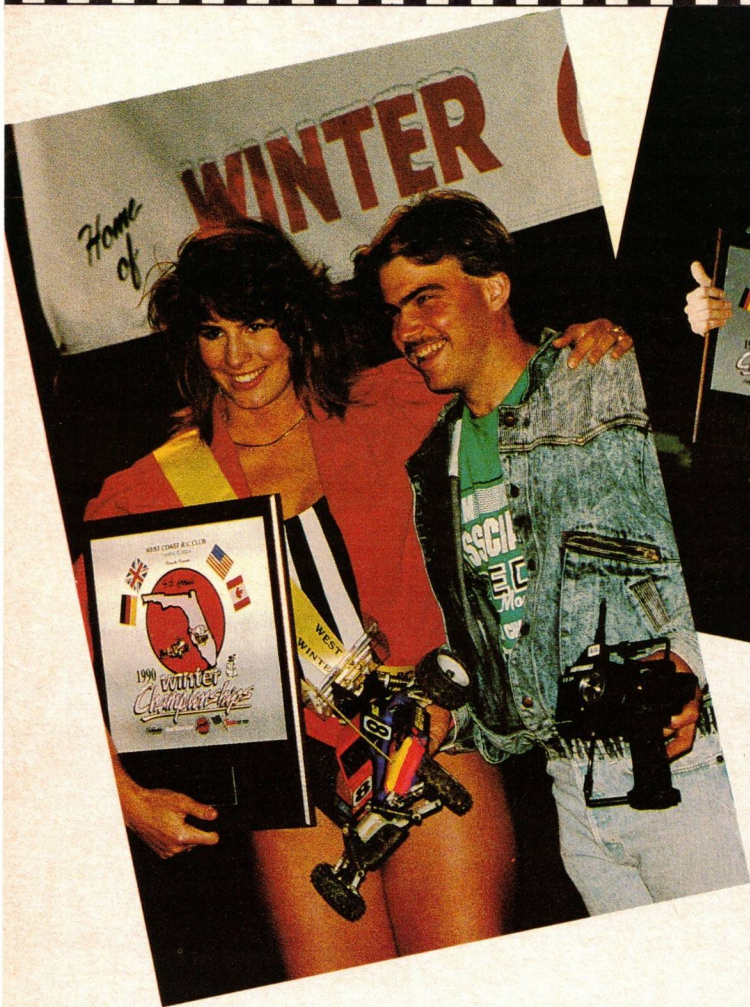
Frosty got as close as second spot, but then a tangle in traffic dropped him back. Mike Meighen then moved up to second with Carl Zaniboni holding down third. But nobody was going to catch Freddie who

went on to take the checkered flag.

2WD MODIFIED "B" MAIN

Steve Maurici drove around the pileups in turns one and two to take the lead, but the next lap Butch Kloeber went by him on the straightaway. But a couple laps later, Butch went a little wide in a corner and J.D. Beckwith took over first place.

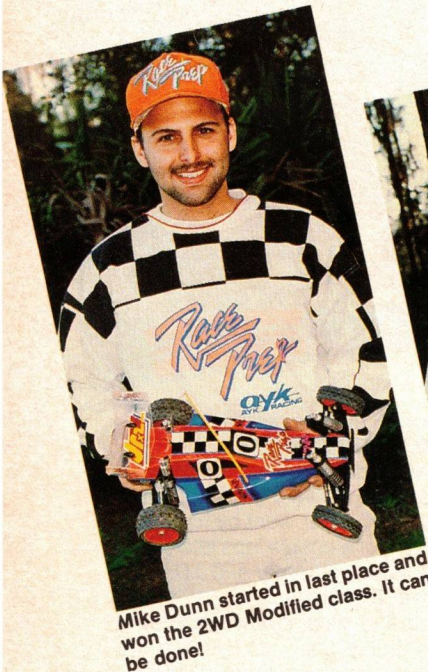
J.D. held the lead the next two minutes but then Darrin Stump got by to take the lead, then a lap later, in some great racing, J.D. regained the lead. But Darrin wasn't to be denied and he passed J.D. to win, with J.D. second and Steve Maurici third.



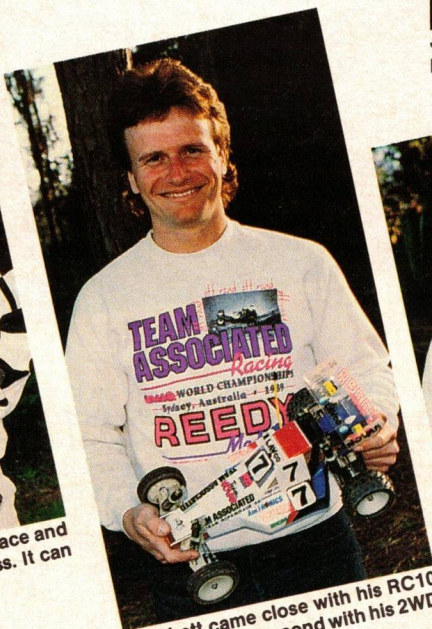
Jammin' Jay Halsey (far left) is presented his first-place award in 4WD Modified by Miss Lake Park. At left, Cliff Lett accepts his trophy for finishing in third place with his Reedy-powered Yokomo 4WD.



Jurgen Lautenbach, from West Germany, took second with his LRP-powered Schumacher racer.



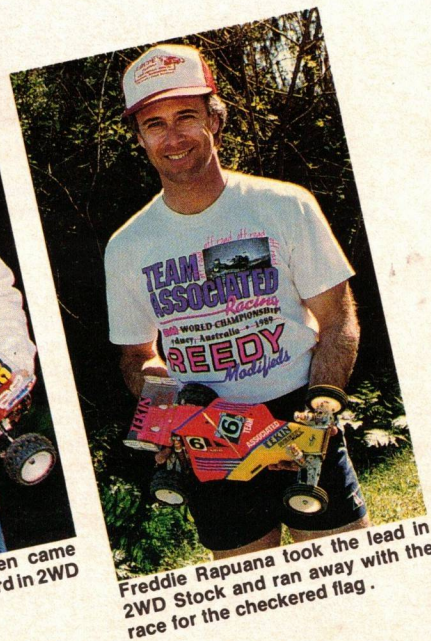
Mike Dunn started in last place and won the 2WD Modified class. It can be done!



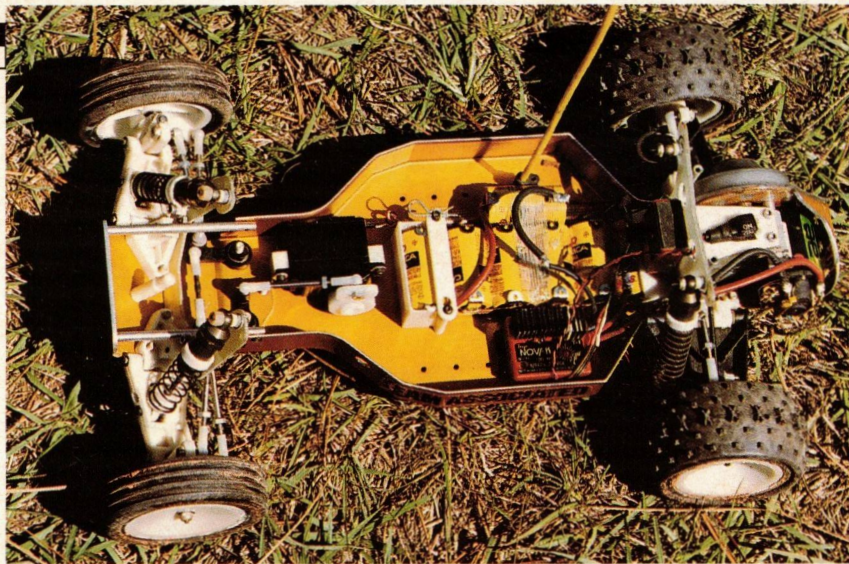
Cliff Lett came close with his RC10 and finished in second with his 2WD Modified racer.



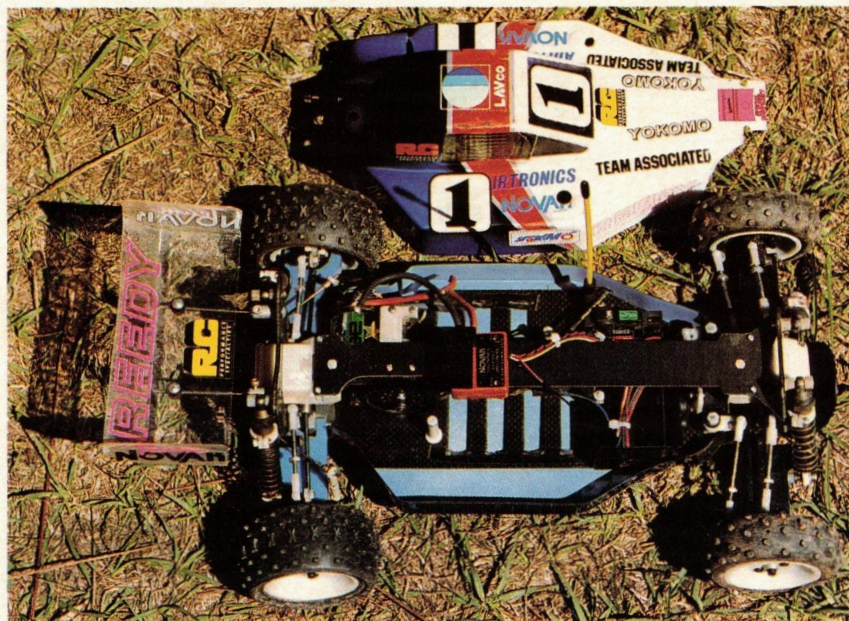
Rick Vehlow was TQ, then came from last place to finish third in 2WD Modified.



Freddie Rapuana took the lead in 2WD Stock and ran away with the race for the checkered flag.



Rick Vehlow's RC10 took TQ honors and featured RC10 graphite parts plus Reedy motors and batteries and a Novak speed control.



Cliff Lett was TQ in 4WD Modified with this Yokomo outfitted with Reedy motor and batteries, a Novak ESC, and an Airtronics radio.



Steve Dunn's JR-X2, a duplicate of Mike Dunn's car, featuring Race Prep motor and batteries, and a Novak ESC. Mike won 2WD Modified class.

2WD MODIFIED "A" MAIN

The most popular class was up next. The drivers were all introduced to the standing-room only crowd, the cars lined up, the horn sounded and we were underway. These cars had some serious horsepower as they went flying down the straightaway. Top Qualifier Rick Vehlow gave the first corner plenty of room, but in turn two Rick got punted and went upside down, dropping way back.

Jammin' Jay Halsey came through in the lead, with Mike Dunn about three feet back in second. Jay went a little too wide in the bank and Mike got underneath him and spun him out. While Jay and Mike were bumping, Cliff Lett went by to take first, with Mike now in second.

The two cars were now going down the straightaway, Cliff turned to go around turn one, but Mike turned a little too late and spun Cliff out. Mike now had the lead with Steve Dunn second and Cliff third.

Cliff got by Steve and closed right up on Mike's rear end and then tried a pass, but Mike closed the door. A couple of laps later Cliff tried another pass, but couldn't quite make it. Then Cliff cut a corner a little too tight and gave Mike some room.

Meanwhile, Rick Vehlow, who started first and ended up last after the first lap, was making his way up through the field. One by one he was catching and passing everyone in sight. He caught and passed Steve Dunn to take over third, but then time ran out. Mike took the checkered flag with Cliff second and Rick third.

4WD MODIFIED "B" MAIN

Jack Johnson held off Stephen Oberle, from Germany, to win the "B" Main.

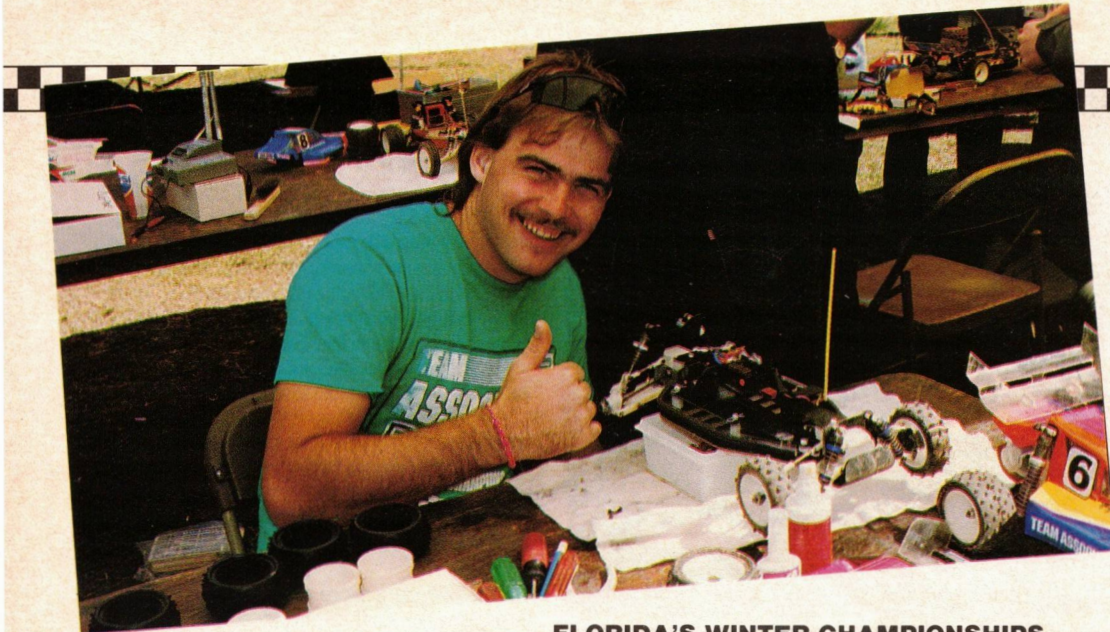
4WD MODIFIED "A" MAIN

These are the fast cars; time to let it all hang out. The drivers were again introduced to the crowd, cars lined up, the horn sounded and it looked like Butch Kloeber had the most power down the straightaway. Cliff Lett and Butch made it around turn one together, but they were both on a collision course going into turn two. Somebody was going to lose on this one. It was Butch. Cliff got the best of the deal and the lead.

When I saw Cliff with a comfortable six-foot lead, I thought it was all over. Especially after he qualified by half a lap over the second-place car. So Cliff had the lead, but in second spot now was Jay Halsey, with Jurgen Lautenbach, from Germany, in third. Jurgen gets better every time I see him run. Three fast drivers.

Jay wasn't pulling up on Cliff any, but Cliff wasn't pulling away from Jay either. Cliff held the lead for about five laps, then his car rolled over in the triple jumps and Jay took the lead. Cliff started to push now, trying to catch Jay, but then he rolled again, and Jurgen and Steve Dunn passed him.

Jay was going fast, but Jurgen was also running very fast. It was just a question of who would make a mistake. But neither driver was making any mistakes. Cliff finally caught Steve Dunn and moved into third, but Jurgen was too far ahead. Jay went on to take a well-deserved win, with Jurgen taking a strong second and Cliff in third.



Jammin' Jay Halsey has won more big offroad races than anyone, with the Phoenix Cactus Classic his latest win.

FLORIDA'S WINTER CHAMPIONSHIPS
Lake Park, Tampa

4WD MODIFIED "A" MAIN RESULTS

RACER	CAR	MOTOR
1. Jay Halsey	Yokomo	Reedy
2. Jurgen Lautenbach	Schumacher	LRP
3. Cliff Lett	Yokomo	Reedy
4. Darrin Stump	Yokomo	Reedy
5. Steve Dunn	AYK	Race Prep
6. Butch Kloeber	Yokomo	Reedy
7. Derek Furutani	Kyosho	Peak Performance
8. Rick Vehlow	Yokomo	Reedy
9. Ron Rossetti	Kyosho	Revolution
10. Phil Davies	Schumacher	Reedy

2WD MODIFIED "B" MAIN RESULTS

1. Darrin Stump
2. J.D. Beckwith
3. Steve Maurici
4. Stephen Oberle
5. Butch Kloeber
6. Kris Moore
7. Jim Dieter
8. Ben Sturnum
9. Jurgen Lautenbach
10. Steve Chamberlain

2WD STOCK "A" MAIN

1. Freddie Rapuana	RC10
2. Mike Meighen	RC10
3. Carl Zaniboni	JR-X2
4. Frosty St. Clair	RC10
5. Matt Ledger	JR-X2
6. Thomas Golson	RC10
7. Curtis Husting	RC10
8. Michael Spehn	RC10
9. Paul Wynn	RC10
10. Tracey Todd	RC10

2WD MODIFIED "A" MAIN

1. Mike Dunn	JR-X2	Race Prep
2. Cliff Lett	RC10	Reedy
3. Rick Vehlow	RC10	Reedy
4. Ron Rossetti	JR-X2	Revolution
5. Steve Dunn	JR-X2	Race Prep
6. Jay Halsey	RC10	Reedy
7. Gil Losi Jr.	JR-X2	Revolution
8. Jack Johnson	JR-X2	Revolution
9. Derek Furutani	RC10	Peak Performance
10. Rick Hohwart	RC10	Peak Performance

2WD STOCK "B" MAIN RESULTS

1. Barry Raborn
2. Joe Kolp Jr.
3. Gil Losi Sr.
4. Dan Louis
5. John Walters
6. Gary Fulp
7. Jim Myers
8. Greg Rhodes
9. Kenny Gillett
10. Harold Taylor

4WD MODIFIED "B" MAIN

1. Jack Johnson
2. Stephen Oberle
3. Dean Vince
4. Mark Neale
5. J.D. Beckwith
6. Mike Boekdrukker
7. Jonathan Morgan
8. Gen Sturnum
9. Rick Hohwart
10. Gil Losi Jr.



At left, the Peak Performance team is fast! Derek Furutani made both A mains in Florida, and Steve Chamberlain won the Stock 2WD ROAR Nationals last year, and the captain, Rick Hohwart (right), has won numerous big races, including the Nationals.

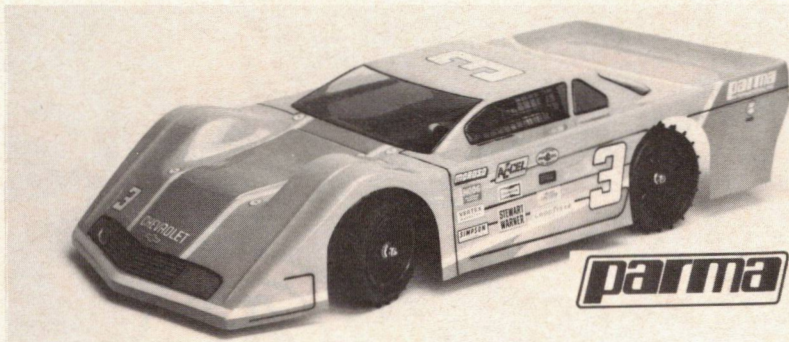


Rick Vehlow was the only driver in 2WD Modified to turn 14 laps, earning him TQ honors.



BOLINK E-10 REAR END KIT

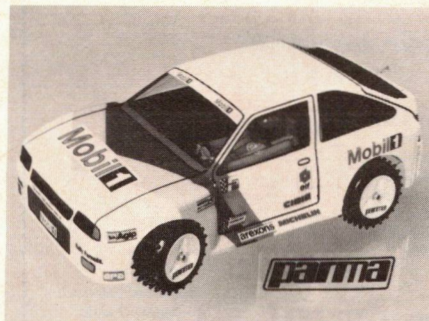
This new kit from BoLink will allow you to convert your Eliminator Sport to a complete E-10 car. The kit includes a T-plate, aluminum motor mount and axle carrier, shock plate and mounts, rear brace, and all necessary hardware. All you need to add is the BL-5171 shock kit, and you're in business.



CHEVY LUMINA BODY

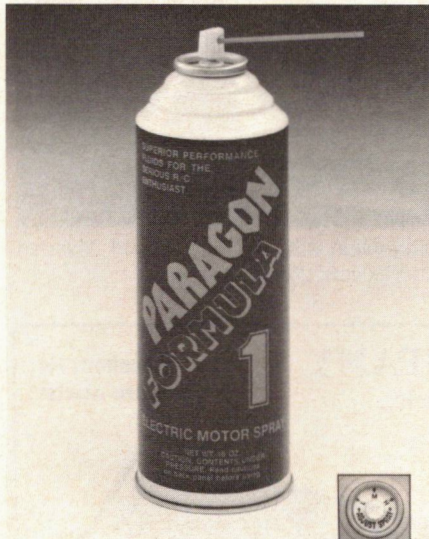
Parma's new 1990 Chevy Lumina body with

a wedge design will fit all offroad and onroad car chassis. Great for dirt oval racers.



1/10 GM ASTRA RALLYCROSS BODY

New from Parma is this 1/10th scale rally body that's wide enough to fit most offroad chassis. With its boxed flares and Eurostyling, the Astra is a hot choice for serious 1/10th offroad competition.



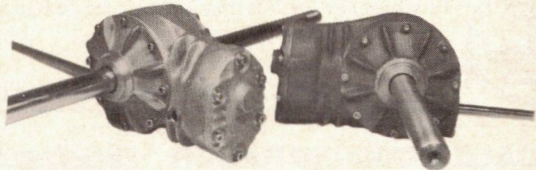
PARAGON FORMULA 1

Paragon's Formula 1 motor spray is a superior blend of high-quality solvents designed to remove dirt, grime, and brush deposits from your motor with a convenient spray. Formula 1 comes with an adjustable spray nozzle, and the spray is ozone-friendly (it won't deplete it). For a catalog, send \$2.00 for shipping and handling to: Paragon, Dept. MC2, 690 Industrial Circle So., Shakopee, Minnesota 55379.

NEW HEMI QUARTER SCALE QUICK-CHANGE REAR END

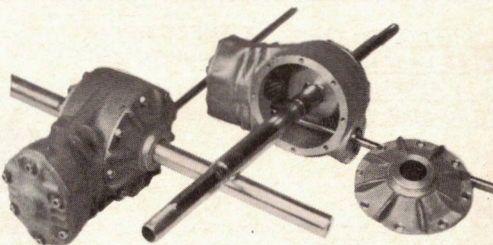
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Heat-Treated Fully Machined

- Two ring & pinion ratios
- Five change gear ratios
- Axles to your specs



- Heat-treated and machined cases allow close tolerances.
- All ball bearing construction provides smooth quiet operation.
- Hypoid-type gear lubricant assures constant bearing and gear lubrication.
- Ring and pinion gears of hardened steel come in 7.17 to 1 or 3.66 to 1.

- Brass change gears are hex broached, and slip fit to hex pinion and lower shafts, for quick gear changes.
- Five change gear sets are available. By reversing drive with driven gear ten ratios are possible.



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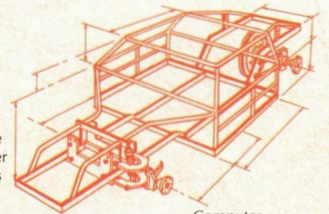
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The wheelbase on this modified is 27-1/2 inches, weight is between 25 and 30 pounds; the engine is a Kawasaki 20cc or 22.5cc. Wheel hubs, front and rear bumpers and nerf bars are aluminum.



Kits are not available, but you can get all the parts for this Tour Car from BIP. For more

information, write: BIP, 59 Payne Pl., Meriden, Connecticut 06450.

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- CAR BODY/RECEIVER: 4 EACH SIZE "AA" BATTERIES.
- DRIVING: 1 UNIT 7.2V-1200 mAh NI-CAD RACING PACK.

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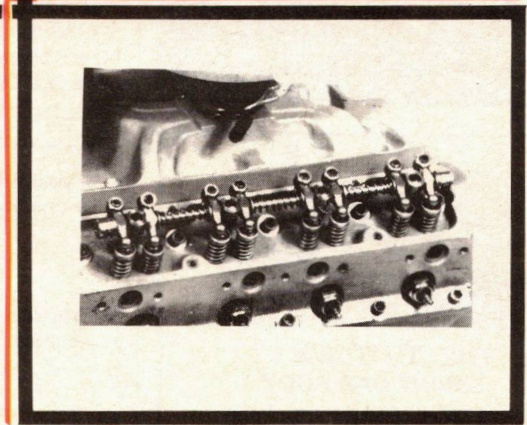
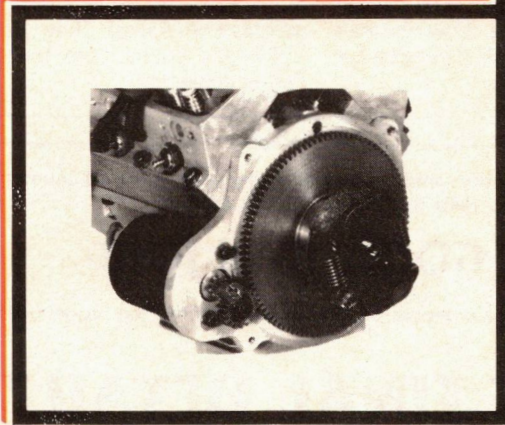
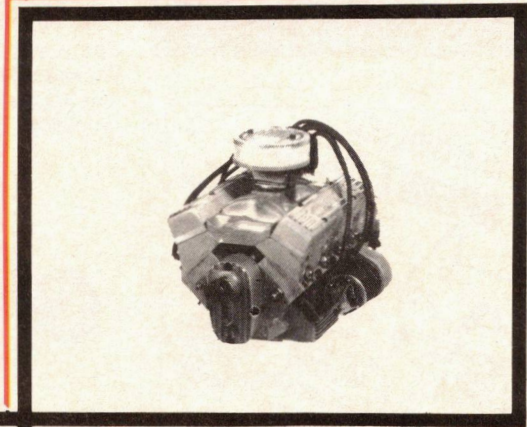
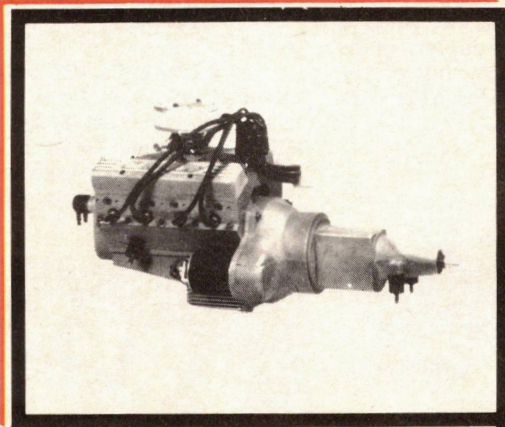
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- WATER PUMP
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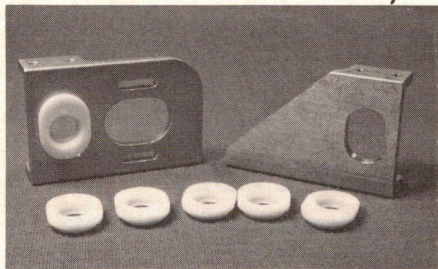
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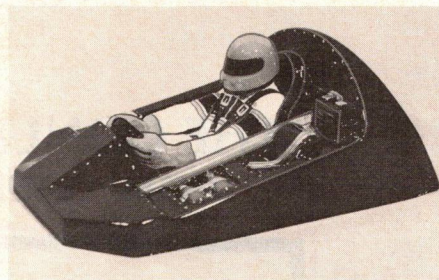
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- #932 ORANGE
- #933 ORANGE/BLUE
- #934 YELLOW



RETAIL \$18.00
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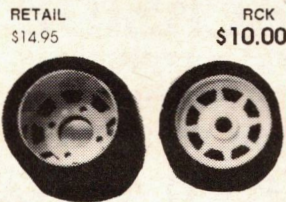
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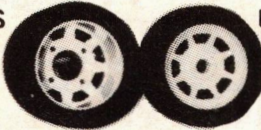
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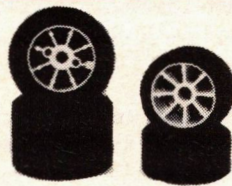
FRONTS

\$12.50 EACH

1/12TH PRO - CUTS MOUNTED

FRONTS

- #432 ORANGE
- #433 BLUE/ORANGE
- #434 YELLOW
- #435 GREEN
- #436 BLUE



REARS

- #530 BLUE
- #531 GREEN
- #532 YELLOW
- #534 GREEN/YELLOW

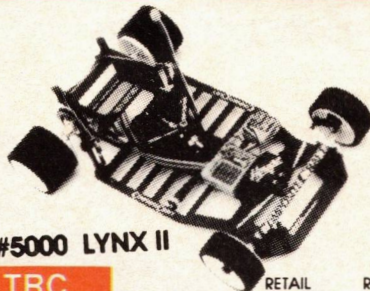
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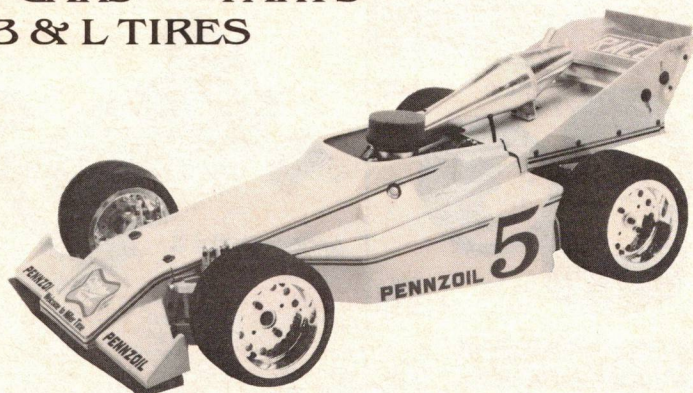




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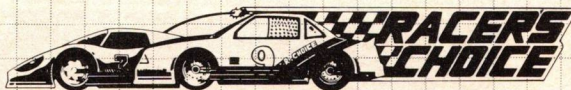
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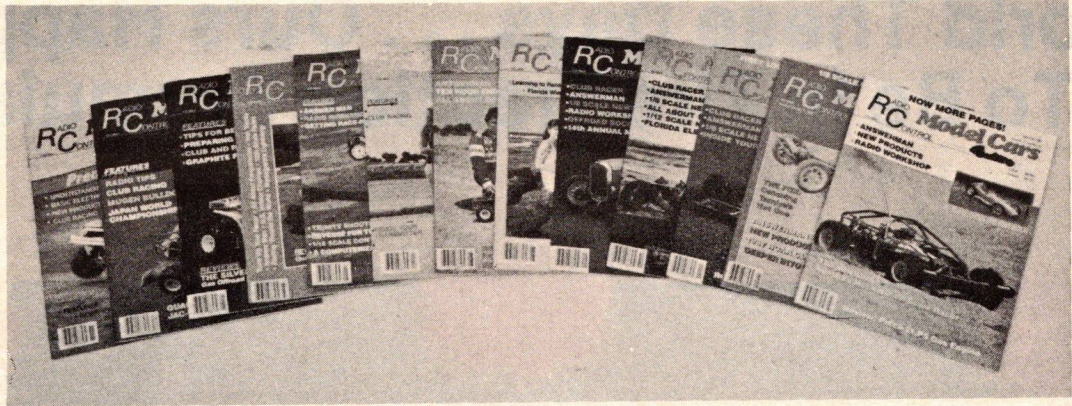
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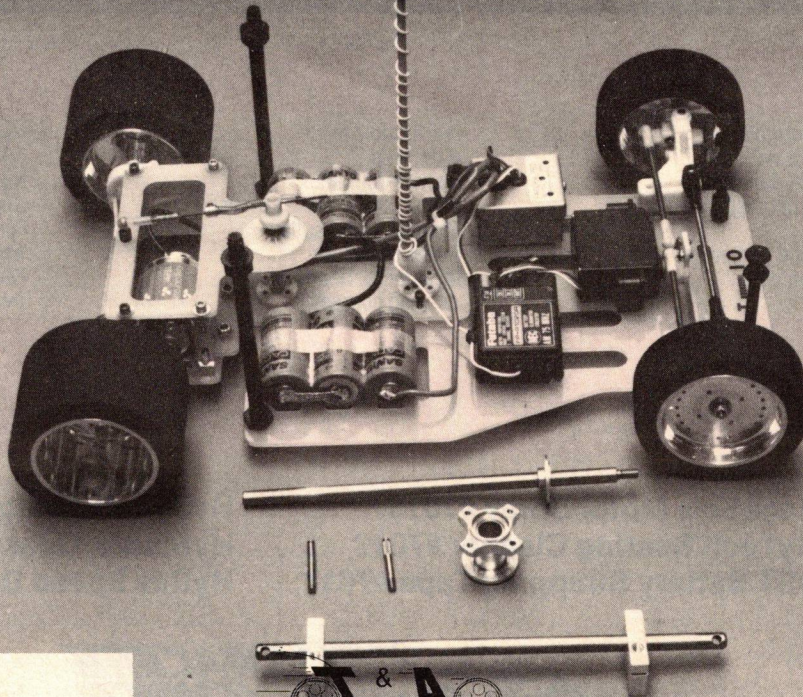
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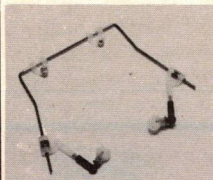
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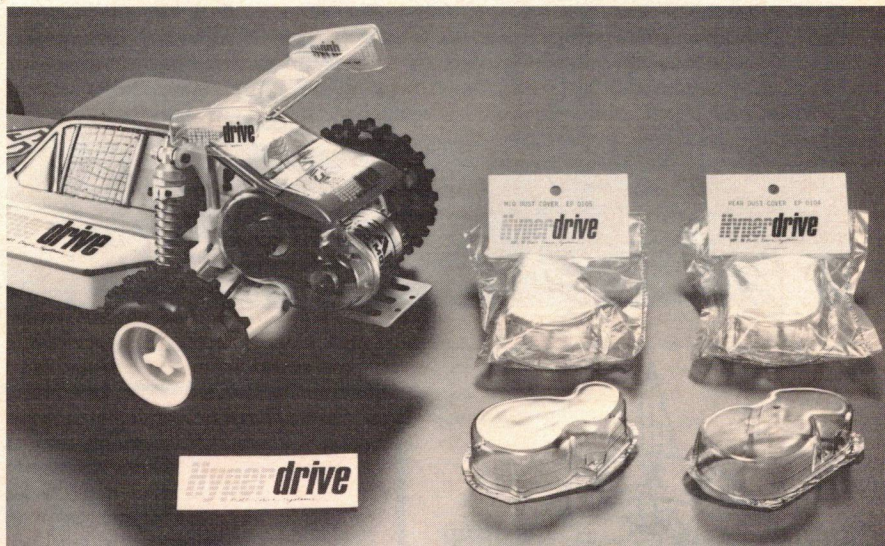


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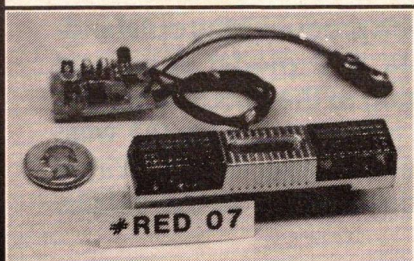
CALL 919-471-2060 12:00pm to 8:00pm E.S.T.



'56 CHEVY NOMAD

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NEW LIGHT BAR w/2 "Revolving" Lights



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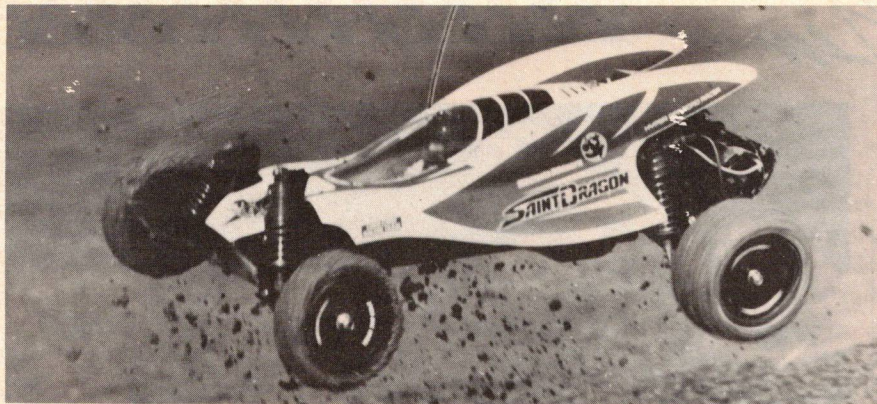
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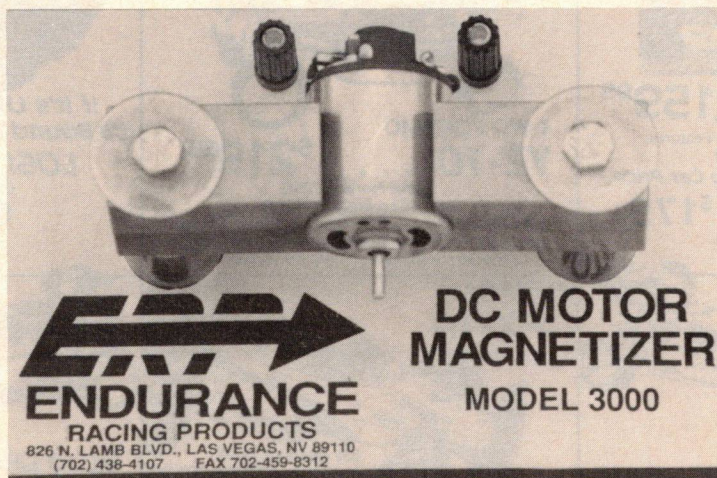
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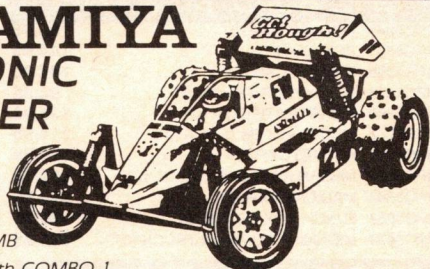


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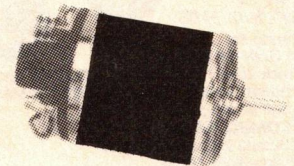
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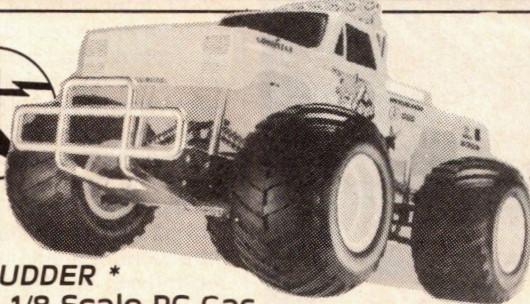
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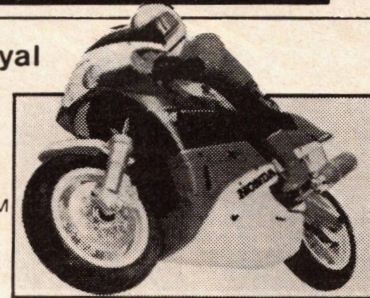
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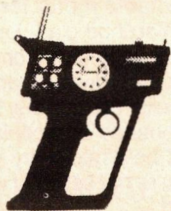
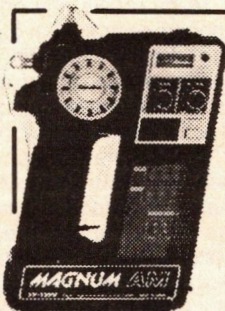
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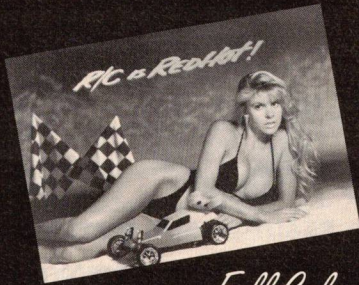
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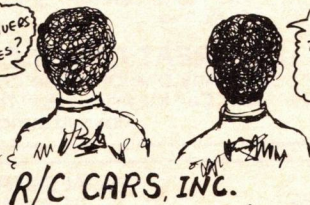
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good dampening in the front. With this change in the rear shock absorbers, the Slingshot handled like a pro on the very first test run. It had stability and could handle quick left turns without breaking the rear-end loose. I did, however, find that the spike tires supplied too much traction and slowed speeds on the oval. Taking a pair of cutters or nippers, the spike tips can easily be removed; and this seemed to help the speed a little without giving up traction. I would recommend this tire modification for hard pack or light dirt ovals where traction is more readily accessible. For high dirt where less traction prevails, do not cut down the spikes.

As is the case with many good R/C cars, I did not have to keep adjusting the suspension or other factors on the Slingshot to attain good performance. With only the few before-test changes called for, the Slingshot was one hooked-up car. "Fun to drive" doesn't even begin to describe driving on an oval with the Slingshot.

Remembering that it is up to the hobbyist's discretion as to what electrical items and aftermarket items he is going to buy for the Slingshot, there are a few suggestions that can be made. I recommend you use a high-quality speed control which can handle the high power demands of a 4WD car and/or modified motors. Many racers rely on the high output of a speed control such as the Novak T1-X. Don't take the choice of your electrical items lightly, because cheap electrical products won't guarantee high performance with the Slingshot or any other competitive car. Another item which deserves careful choosing is your motor. Motor manufacturers make 4WD stock and modified (open) motors for such applications as the Slingshot. Twister is one such company which makes an excellent 4WD stock motor and modified motors. Again, since it is your choice, buy a reputable motor for the 4-wheel application. You'll be glad you did.

One area where there's room for a lot of experimentation for the individual racer is in the choice of shock oils. You can buy heavier weights of oil to enhance dampening and performance. Don't be afraid to try varying weights of oils if you're not satisfied with the Slingshot's handling.

Other than deciding on your electricals, motor, and shock oils, there isn't much you need to do to the Slingshot. It's not a car that needs to be hopped up—this baby just needs to be driven!

Concluding, I found Kyosho's Slingshot to be an awesome 4-wheeling ovaler, sure to grab the competition's attention. My only dissatisfaction was with the tentativeness in wheel spin, due in part to the belt drive. I believe the Slingshot to be a good value and a hot performer right out of the box, without the necessity for expensive hop-up items to make it handle like a dream; because it already does, Kyosho made this car to perform!

Until next time, good luck on the oval! •

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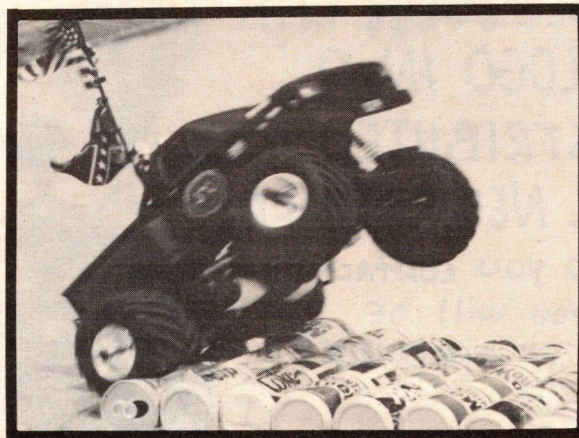
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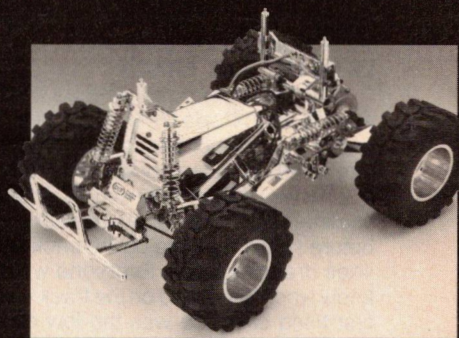
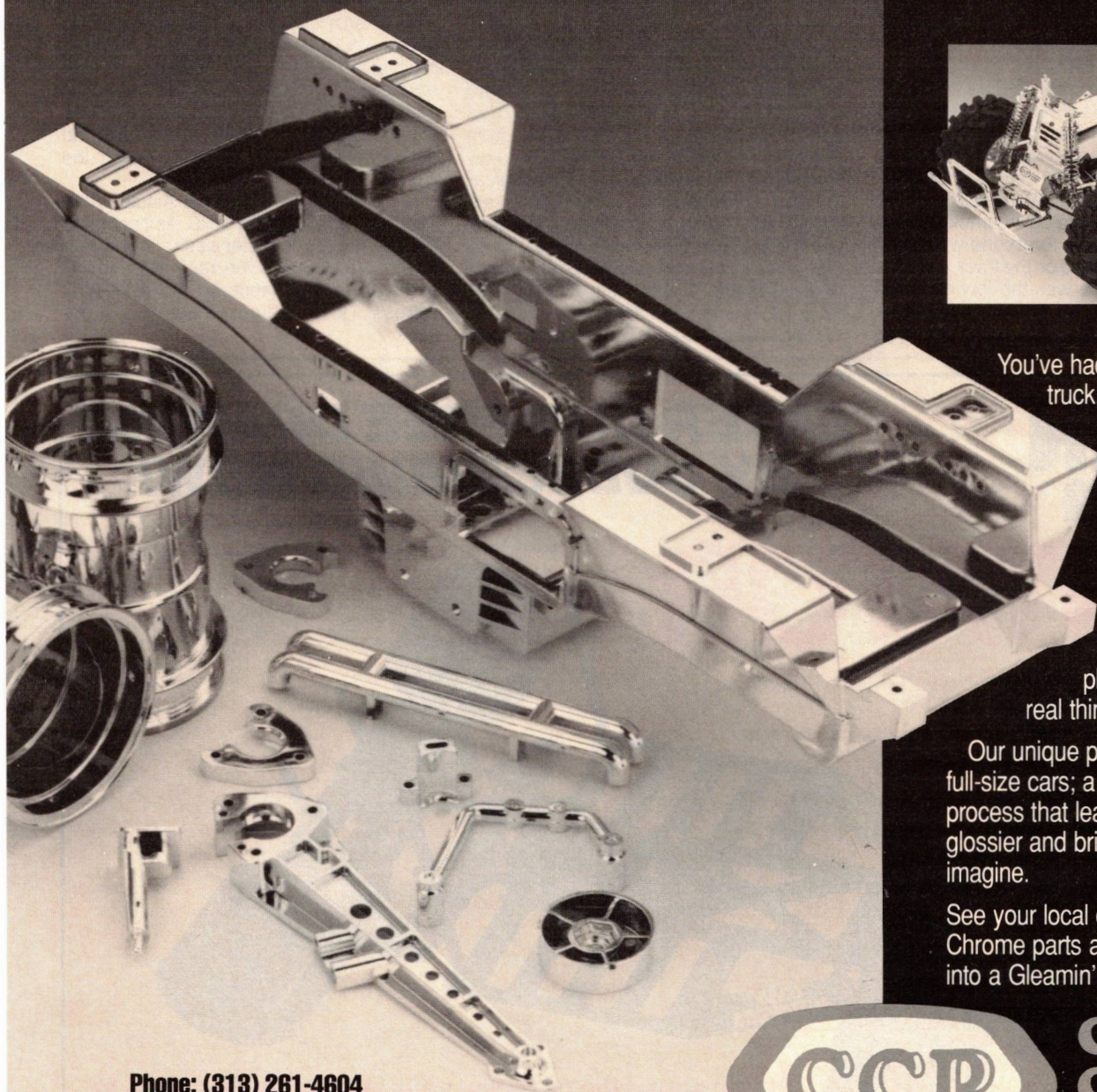
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After being sure the mechanical speed control did its job, I quickly dropped in an Airtronics Super Vortex ESC. I've had it for some time but haven't had a car suited for it. It's extremely small, with short attached heat-sinks, but its narrow and long dimensions don't fit well in the road cars I've been running. The Novak 27 band receiver was coupled with the Airtronics gear to round it out.

THE WORD IS SLEEK!

As impressive as many of the Astute features are, the first thing that catches your eye is the sleek body/wing combination. The undercowling not only helps keep the innards clean, but permits running the car without body clips. Tamiya uses velcro on both sides between the cowling and the inside of the body. I took off the body posts and not only does the body stay on perfectly well, but the stress points from the body post are eliminated. Along with good-looking wheels and the wing mounted firmly over the diff, we're ready to take a trial run.

LET'S HIT THE TRACK

Off to Radio Controlled Hobbies and Raceway (RCH) in Costa Mesa, California. This is one of the premier tracks in Southern California and Gary Demory keeps it groomed to a "T." It was Wednesday and the open practice time was exactly what was needed. Even before I put the Astute on the track its sleek lines drew attention. Everyone wanted to know who the new kid on the track was. The first thing of notice was the low center of gravity and the lack of ground clearance. Perfect for a flat track, but not for the large

jumps on the RCH track. In summary, the out of the box setup puts the car in the middle of the pack on the racetrack, and ahead of most on the school grounds.

TIME FOR THE TRICK STUFF

Now for the few tricks I've found to move it ahead of most and competitive with some of the best. The first move is to get some more clearance and shock travel. I called MRC to get a set of the high-capacity shocks, and after being promised a set I threw on a set of Associated long shocks in the rear and a short set for the front. I know I should have waited but patience isn't my strong suit. Anyway, with the shocks installed I still couldn't get the rear end to hook up the way I wanted. The culprit seemed to be the way the adjustable rear toe-in wouldn't stay tight. The threaded shaft used to adjust the toe-in fastens to an aluminum bracket. Every time I took a hard hit or landed hard from a big jump the bracket would bend. The solution was a call to Richard Sorenson, an MRC racer who clued me in to this secret; replace the whole rear hub assembly with the non-adjustable hubs from the Madcap. Richard said that was what Jamie Booth did, and he's one of the Tamiya sponsored racers from England. You can tell I don't care where my tips come from, as long as they seem logical. Yes, the Madcap is the newest entry-level 2WD from Tamiya. By replacing the hubs and doing a little bit of Dremeling, the sloppy rear wheels stay tight and have a couple of degrees of toe-in, which is just about right. Now with the rear end doing its job I started looking at the front-end. The first thing was to

replace the axles and blocks with the standard RC10 steering blocks. That change permits me to use any of the aftermarket tires and wheels available for the RC10. Needless to say they're endless and since each track varies, having a couple of different choices is very useful. While I was at it I changed the stock rear tires for a set of Losi X-pattern HT (high traction) rears. Let's see . . . so far I've changed the shocks, front and rear tires, front steering blocks, and rear hubs. Along with a full set of bearings, I headed back to the track. Actually I didn't change all these things the same day, but tried the car after each change.

RACE DAY

So . . . back on the track and flying! The initial impression of a friendly and forgiving car was now coupled with one that was fast. Along with a Tamiya Dynatech 19T modified it was time to try the Astute under race conditions. I was lucky enough to pick a race night when a lot of the nationally competitive racers where in Whipperwill, or somewhere like that, and I only had to contend with club racers. All night long the Astute stayed together and ran like it was made to race. The results were middle of the A-main and the car wasn't the reason it wasn't closer to the top.

In conclusion, the Tamiya Astute is the best car yet imported by MRC. As it comes in the box it goes together easily, and with a few modifications it's very race-able. Now if I can just get my hands on the new 4WD Egress! Till next time, I'll see you at the track. ●

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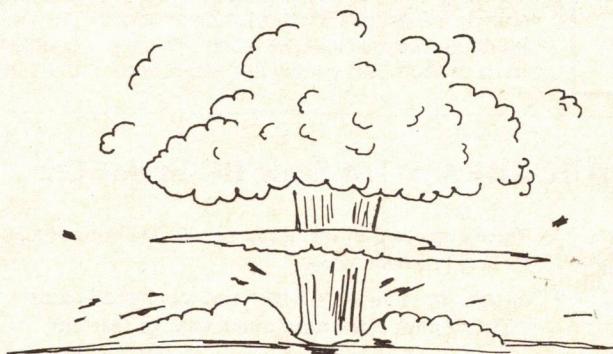
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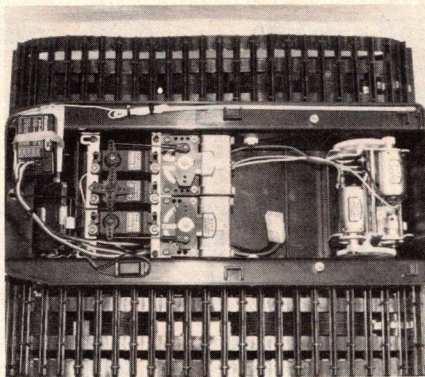


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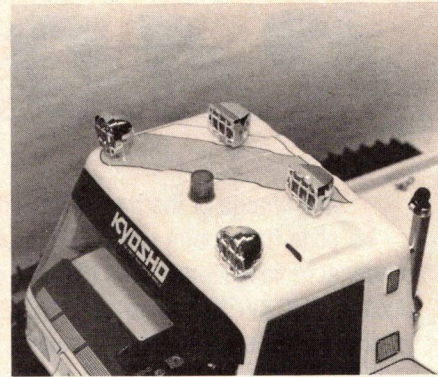
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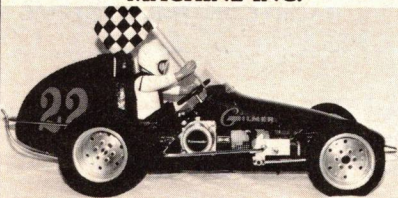
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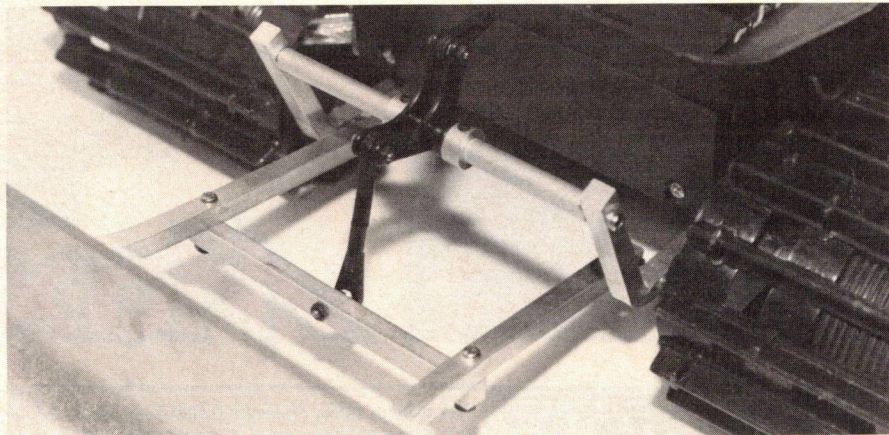


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Closeup of the plow's aluminum arms and hoist. Paddle treads can push the Blizzard through lots of intimidating territory.

THE KIT

The Blizzard comes in an attractive full-color box with neat inside packaging. Upon opening the box, however, I was just a bit disappointed! Inside I found the Blizzard chassis completely assembled! This takes some of the fun out of the building process, but does get you out driving in the backyard much sooner! Included in the kit are the snowplow blade assembly and the amber blinking light for the roof (these were optional items on the original Blizzard). A clear polycarbonate body is included, along with very sharp orange and yellow decals. A two-

channel radio is required (3 or 4 channel if you want to operate the blade) as is a 6-cell battery pack and a 9-volt battery for the blinker light.

ASSEMBLY

This part is easy! The factory has already assembled the chassis, suspension, gearbox, motors and speed controllers for you. The only assembly required is the snow blade, radio installation and painting and detailing the body. The average modeler will be plowing snow in 2 or 3 hours. Just a couple of tips: I cut a mounting hole in the chassis for the radio on-off switch. The in-

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structions show this switch mounted to the body, but that makes for difficult body removal. Second, use blue threadlock on *all* snow plow screws. The plow brackets tend to work loose. Kyosho supplies two linkage rods for the blade. One is for locking the blade in the "up" position for two channel use and one for attaching to a third servo for automatic control from the radio. Of course, you can also leave the blade off, if you wish. The rest of the assembly process is very simple as Kyosho's excellent instruction manual clearly details what few steps there are.

DETAILING

Again, this part is easy also! Paint the body on the inside white paint (don't forget to mask the windows!) and apply the colorful decals. Drill a couple holes in the body as indicated and install the chrome accessories and blinker light and you're off!

PERFORMANCE

OK, I've got my Blizzard assembled and running, now where's the snow? Unfortunately, the weather does not always cooperate. However, the Blizzard is capable of tackling any terrain and/or surface, so you can run it anywhere, anytime. Due to the small RS380 motors, the Blizzard is not very fast. But then, it wasn't supposed to be! The gearbox does have two speeds which are easily selected by changing two set screws. High gear is great for general running. Select low gear for plowing snow, dirt or gravel. Run time on a 6-cell battery pack is about 20 minutes due to the small motors. The original Blizzard had some problems with the tracks cracking in cold weather. While the tracks look just like the old ones, they are now molded out of a new material which better resists cold temperature breakage.

HOP UPS

If you like a little more speed, Kyosho's AP29 motors (KYOG1929) can be fitted with slight modifications. 05-size motors could probably be squeezed in with major mods for you speed freaks out there! If you want additional lighting, add Kyosho's optional fog light set (KYOC4427).

CONCLUSION

As there is no bearing kit available for the Blizzard, I would recommend lubricating all the shafts and bushings in the gearbox. Some lube on the road wheel axles wouldn't hurt either. The Blizzard is a fun vehicle whether you are pushing snow on the sidewalk, plowing dirt in the backyard or just chasing the cat around the house! I understand that sales of the Blizzard have been brisk. Due to the increased interest lately in monster truck activities, I am sure that a lot of Blizzards will not be left in stock. With a few modifications and a truck body mounted, the Blizzard becomes a presentable monster tank!

So, if you are looking for a vehicle to leisurely cruise over the snow drifts out back or a fire-breathing, car-crushing monster tank, get yourself a Blizzard! By the way, on the way back from the hobby store, drop by Dairy Queen and buy the wife and kids a Blizzard dessert. Maybe they'll forgive you for spending money on your hobby!

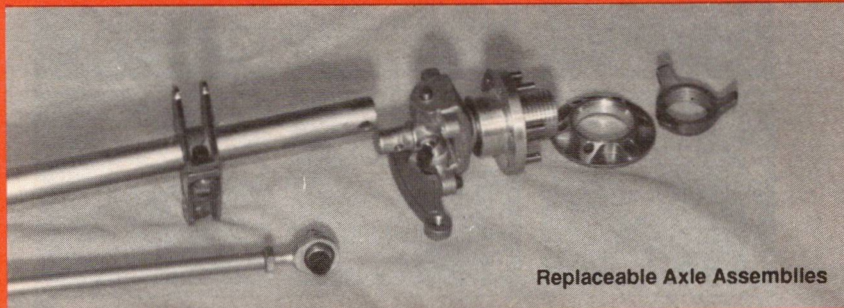
Jim Davis, c/o David J. Sproul, 603A Dianne Ln., Mahomet, IL 61853, (217) 586-2597, (217) 398-3630 x430.



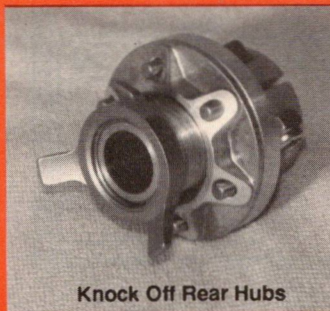
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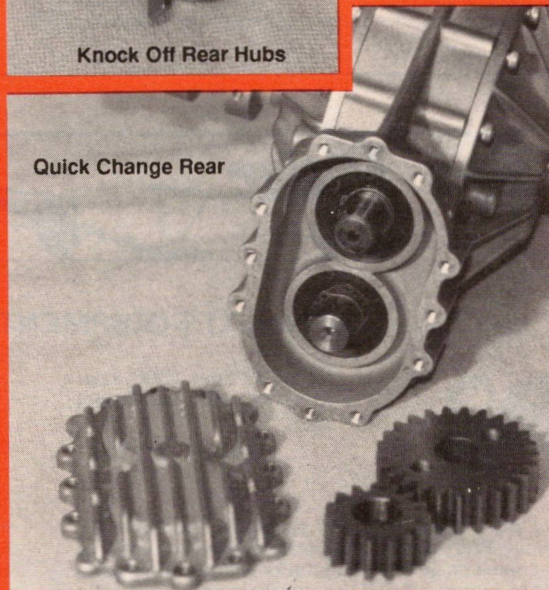


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car. Here's how to do it.

First off, if you've been paying attention to *R/C Model Cars* how-to-paint series, you know that the first step is to thoroughly wipe down the inside of the shell with denatured alcohol, cleaning out any dirt, dust or other R/C grunge and giving your masking tape a clean surface to stick to.

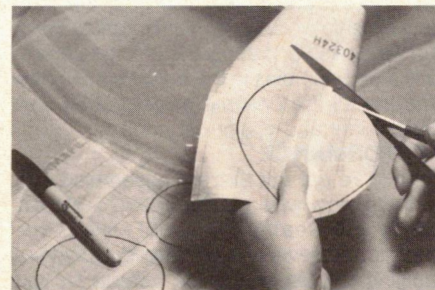
Next, mask out your windows with wide two-inch masking tape. You can use narrower width tape to do your windows, but the

larger tape covers seamlessly in one or two pieces, giving limited opportunity for paint to creep under it. While you're at it, you can also mask out small details like the grille and headlights. On second thought, after a careful scrutiny of the May issue's photos of the Tide car, you can see that it has *one* headlight blacked out, and one filled in orange with the number "17" on it. Details, details!

Now for the nitty-gritty of painting. Get yourself some Contact brand shelf paper



Thoroughly wipe out the inside of the body with denatured alcohol, then use wide masking tape and a hobby knife to mask the windows.



Cut a four-inch diameter circle from contact paper...



... and position it on the hood of the car.

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Continued on page 100

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New for 1990 are 2 new bodies to fit the Pro Puller chassis. The 5 motored modified tractor body is custom fitted to the Pro Puller chassis pan and gives the builder a unique finished product. The other body is an extended Chevrolet truck body that mounts with standard mounting methods. Both are optional at extra cost. Also available from Bennett Equipment are Black Magic Motors, Astro Flite Pullmaster Motors and Zeta speed controllers to round out a complete pulling package.

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them in your dust. Add new excitement to your driving. Almost nothing will stand in your way.

4-wheel steering...a new direction in R/C

You might expect a huge truck like this to be a little clumsy in the tight spots, right? Wrong! The all new four wheel steering lets the Clod Buster navigate the narrowest ditches, squeeze around fallen trees, maneuver on just about any terrain... wet or dry.

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The Clod Buster's engineering uprights are also super heavy duty, measuring more than a full 1½" in diameter. Now that's tough.

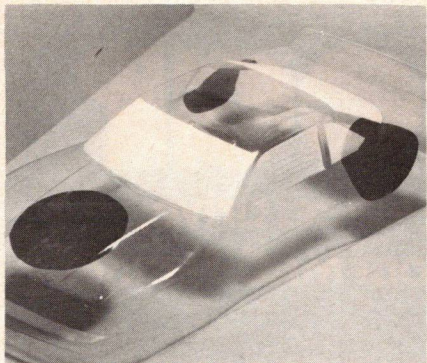
See the 4-Wheel Steering Clod Buster at your hobby shop, now... and let the competition steer clear.

MRC™  

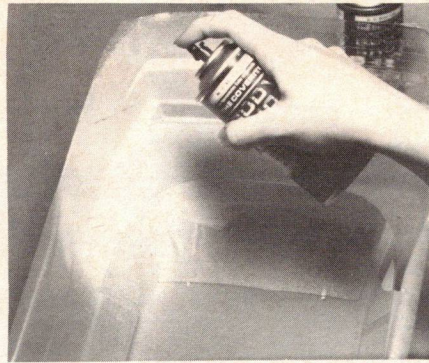
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(This is no illusion. It's an actual photo of the Clod Buster climbing over 1/10 scale off-road cars. Note the size difference.)

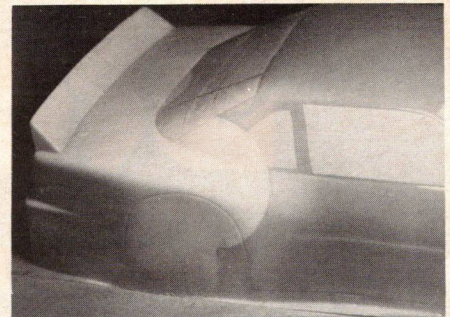




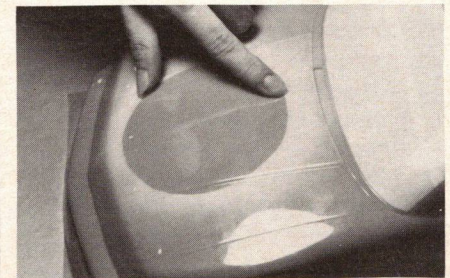
Cut out two three-inch circles from contact paper and stick on inside over the rear wheel wells and rear quarter windows.



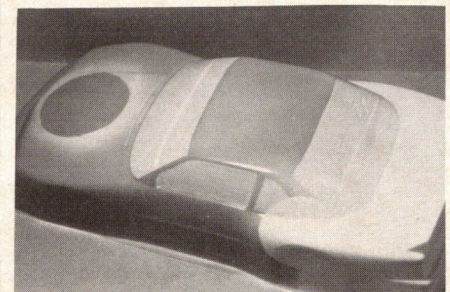
Spray around the edges of the circles with yellow—be patient and careful!



Here's what you should end up with after you've sprayed the yellow.



Remove the hood dot at this time, and shoot the entire inside with Day-Glo orange.



Peel out the remaining masking dots and the truck masking tape, then shoot the entire car white to finish the paint work.

(the sticky-back vinyl kind) and cut out three circles, one about four inches in diameter, and two about three inches in diameter. Peel these and place your four-inch circle right square in the middle of the hood of the car (see photo).

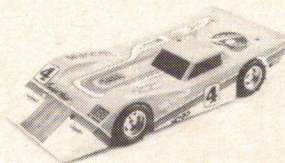
Now, take the other two and place them directly above each rear wheel opening, overlapping a little less than halfway at the top of the wheel well. Now, with your wide tape again, mask out the whole trunk of the car and everything behind these two "dots." Check the photo for comparison.

Believe it or not, you're done masking now. Simple, right?

OK, now that you've positioned all your masking, give a final good wipe to the inside of the shell with denatured alcohol. This takes up fingerprints and adhesive residue (from where you may have peeled up and repositioned things once or twice) that will catch and hold paint particles, giving a dirty look to the final job.

First off, we'll spray the yellow areas of the scheme. Take your airbrush (or spray can) and edge around your cutout circles with about an inch or so of yellow on the hood and a couple of inches on the sides. Just follow the contour of each circle, producing a fogged edge around them, and a hard edge (when unmasked) on the other side later.

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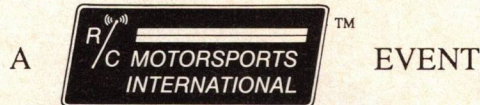
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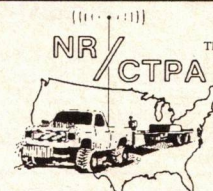
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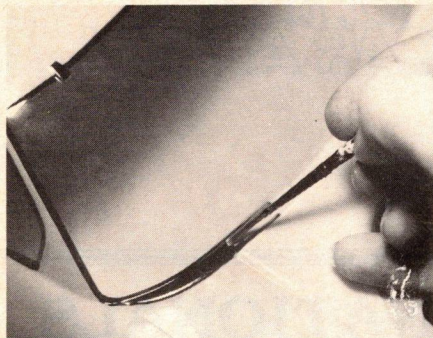
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Pre-Registration Entry Fee - \$20.00 Per Entry
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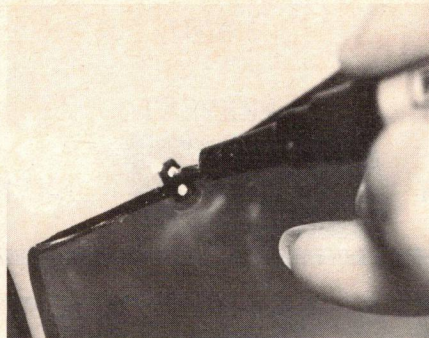
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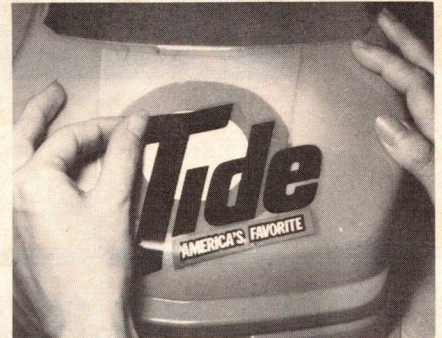
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Next, peel the circle off the hood and then spray the entire car in Day-Glo orange. If you use a fluorescent, such as Pactra's Fluorescent Orange, it will not need to be backed with white, which, coincidentally just happens to be the final color in the Tide car's scheme! So, you can cheat a step here by unmasking your circles and back end of the car (everything but the windows and grille) and spraying the entire car white.

That's it! If you used an airbrush to spray the yellow areas, it was a real breeze. If you used a spray can, the success of your paint job depends on how good a shot you are with the aerosol nozzle. I recently had the good fortune to come across a hot new product from Coverite—the body shop series of R/C paints for Lexan. The big advantage of the Coverite spray can is the smaller, finer spray that their special nozzle produces. It will help you do finer detailing like on the Tide scheme much better than the wider patterns that most cans produce. And, of course, you're less likely to get unwanted overspray, too.

Now, let's get into the small, concurs winning details. The "Tide" emblems and the number 17s are both available from a couple of decal manufacturers, Autographics and Parma. I used the Autographics version, which includes several other small decals you'll need such as the "Superflo" oil sticker on the rear fender. If, however, you want to be a real purist and do your own Tide emblems, you can cut them out of black and white sheets of Coverite's Presto or Monokote.

The dozens of decals that adorn the front fenders of most Grand National stock cars are a potential headache to collect and individually position correctly. Fortunately, both Parma and Autographics have produced a one-piece decal of all of these small sponsor stickers (called a Nascar "cluster"). I highly recommend it for all stock cars. Not only are all the proper emblems in place, but they are finely detailed and in correct proportion.

The window netting in the Tide car is black and should be detailed with a fine brush or Sharpie fine-point marker. Once again, the windows should be outlined in black, and the rivets in the window edges detailed with a Pilot silver fine-point marker.

Take a good look at the color photos of the Tide car in the May issue of *R/C Model Cars* or in a full-size racing magazine, such as *Circle Track*, for more possible details. And remember, these Grand National car's paint schemes are not nearly as difficult to paint as they may first seem. Now, go win a concurs trophy or two!

parma

Cyclone II MOTOR SERIES

THE NEXT GENERATION



CYCLONE II SUPER STOCK



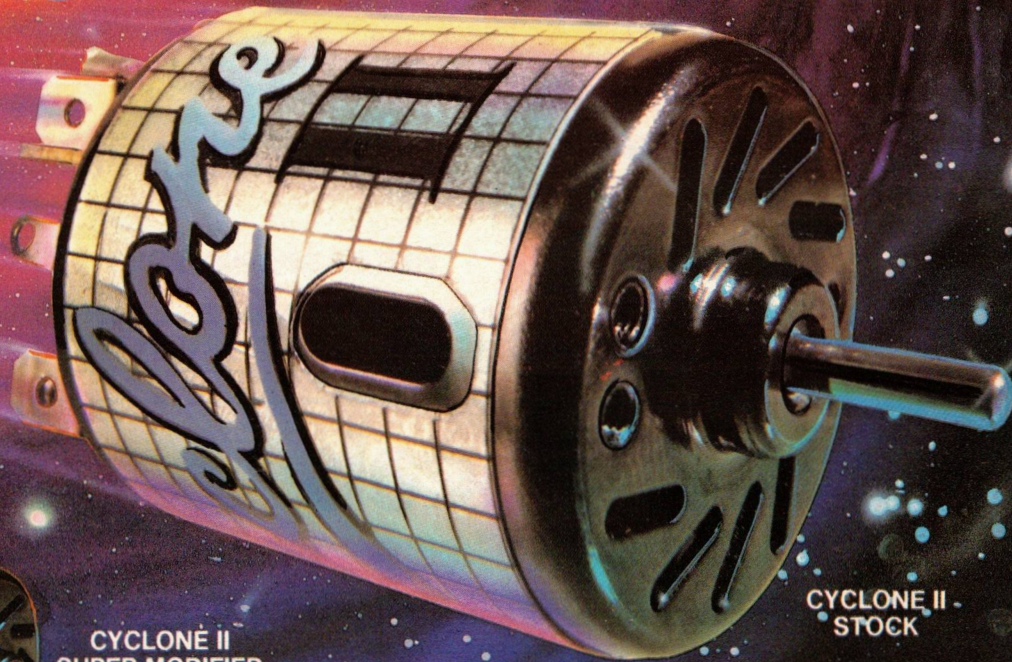
CYCLONE II ULTRA STOCK



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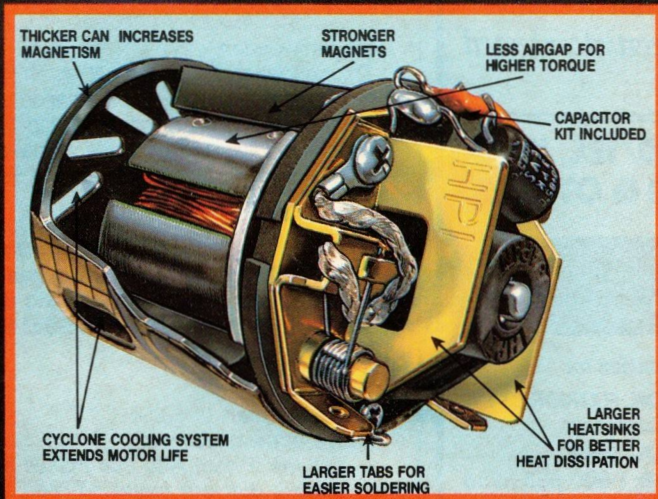
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Dear Answerman,

I love your magazine. Could you tell me which truck would be the best for the money, the Crusher, the Midnight Pumpkin, or the Monster Beetle? What engine would be the best for them?

David Gibson
Sugarland, Texas

A. That's a tough question, David. If your budget is limited, either the Crusher or the Midnight Pumpkin would be a good choice. However, I'm quite partial to the Monster Beetle/Blackfoot series because I've owned them and had nothing but fun

with them. The Monster Beetle is also heavily supported with tons of hop-up and aftermarket goodies, so there's almost no limit to what you can do to upgrade and improve this car. A good motor for all three vehicles would be a stock-type motor, which would be an inexpensive alternative to the standard kit motor.

Dear Answerman,

I recently purchased an R/C vehicle and I love racing and playing around with it, but it does not have the raw speed that I want. Could you please tell me what motor could

replace the RS360 motor, one with more speed but not necessarily more power, cause it's a '57 Chevy Street Rod? Thanks a lot for your help.

Lee Roy Manzano
Merced, Texas

A. Lee Roy, I'm afraid it's pointless to try and hop-up a toy-grade car such as yours, because there's virtually no aftermarket parts available for such cars. I hope you'll consider the alternatives which is buying a hobby-level car from a hobby shop that specializes in R/C cars.

Dear Answerman,

I would like to get into dirt oval modified racing. How much (if any) more will it cost after the initial \$80.00 for the motor? I already have an ESC and the right car.

Mike Dumstorf
Rochester, Minnesota

A. Mike, after the initial investment, the sky's the limit! But seriously, one factor I'd give consideration to would be tires. Dirt ovalers claim that tire choice is very critical and they run a wide variety of tires, ranging from the traditional spikes to the more exotic types like street treads and rubber-capped foam tires. The spikes work best on loose and soft dirt, while the special tires are used on hard packed dirt and asphalt ovals.

Dear Answerman,

I plan on buying the RC10L. What would be the best controller for the 10L without drilling holes in the car? What would be the good battery and charger?

Mark Skrainer
Rohmert Park, California

A. Mark, like many onroad cars, the 10L was designed to have its radio equipment (receiver, speed controller, and steering servo) mounted to the chassis using double-sided servo tape. That's right, no drilling! If you're an outright beginner, I'd recommend a durable battery like the Sanyo SCR and an automatic peak-detecting battery charger to prevent over-charging, which can lead to battery failure. By the way, check out Derek Arita's rad report on the 10L in the April issue of RCMC.

Dear Answerman,

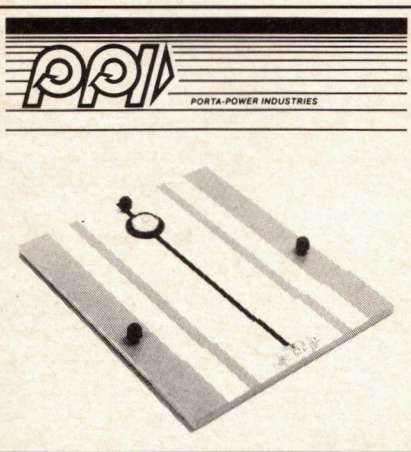
I'm wondering if you can tell whom I can get a hold of to get some information on a club or organization for drag racing 1/10 rules, specs, divisions, because we have no club where I live (45 minutes north of Santa Barbara).

Nick Quillen
Buellton, California

A. Nick, Bob and Jim's Raceway has established a set of rules for electric drag racing. Call them at (714) 684-6314 for more information.

Dear Answerman,

I have a few questions:
1. Tell me a company that makes two-inch shocks that are metal, oil-filled, and



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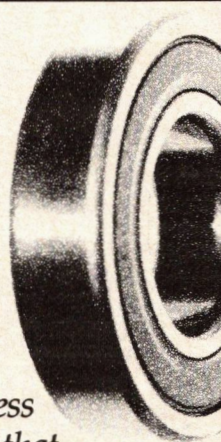
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adjustable and inexpensive. They have to travel at least 5/8 inches or more.

2. What's the difference between the Futaba G and J. I have an Attack FP-T2NBL and want to know which mine is.

3. What's the fastest onroad car (not a tether or drag) and if you can't answer that how does a BoLink Eliminator 10 rank against the 10L and Agitator Pro?

4. On the RC10, which chassis is more durable, the aluminum or the graphite?

Jacob Berryhill
Oscoda, Michigan

P.S. Your magazine is awesome!!!

A. Jacob, most oil-filled aftermarket shocks measure about three inches in length for the front units. At \$17.60 a pair, the Kyosho Baby Gold front shocks are probably the least expensive metal-bodied shocks available. Keep in mind, however, that the springs and spring-retaining collars that are standard on many shock kits are not included with the Baby Golds.

The "G" and "J" designations basically refer to the style of power connectors that are used for the Futaba radio systems. The G-style connectors are the old 3-prong plugs while the newer of the Futaba radio systems, including the Attack radios, use the J-style connectors.

The Eliminator 10, the 10L and the Agitator Pro are very closely matched in terms of performance and handling, because most 1/10-scale onroad cars share the basic flat pan chassis and floating rear end design.

The graphite chassis for the RC10 is pretty tough, but the channel design and improved bracing of the aluminum tub make it even tougher and more durable than the graphite unit.

Dear Answerman,

I just received my May issue of R/C Model Cars and was reading the Answerman department. There was a letter from Dwayne Taylor asking if there were adapters to fit Big Bear rims on a Blackfoot. You said there wasn't, but adapters are available from JG Mfg. Keep up the good work. I love your magazine.

David Trethewey
South Bend, Indiana

A. Thanks for the tip, David. I checked over two dozen aftermarket manufacturer catalogs for the adapter in question, but apparently I overlooked the part in the JG catalog. I'll pay more attention next time!

Dear Answerman,

My mom said I could get an RC10, but my friend keeps on saying the RC10 stinks. What do you think? I have a Turbo Aero and I've had it for two years. I'm 9.

Tom Beckerle
St. Peters, Missouri

A. Tom, if the RC10 really stunk, would the Answerman have three RC10s? I think your friend is sadly mistaken, because the RC10 is one of the best R/C offroad cars available.

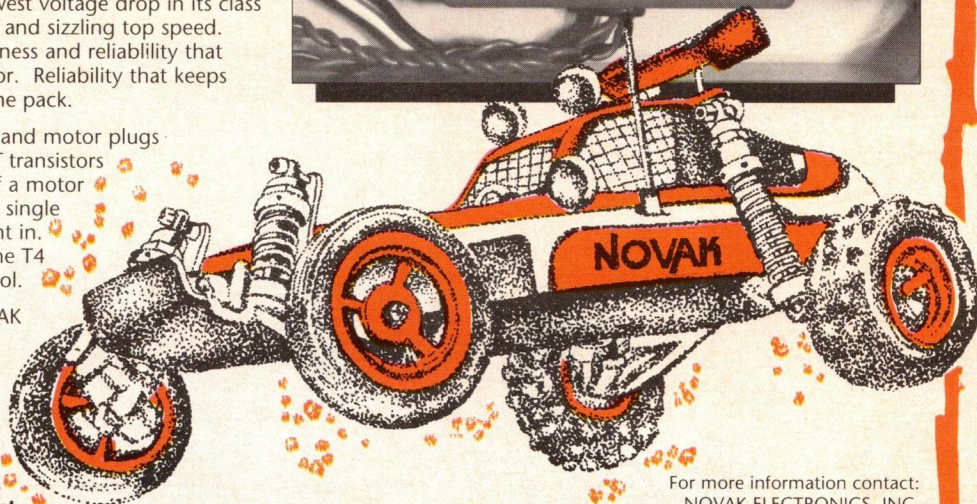
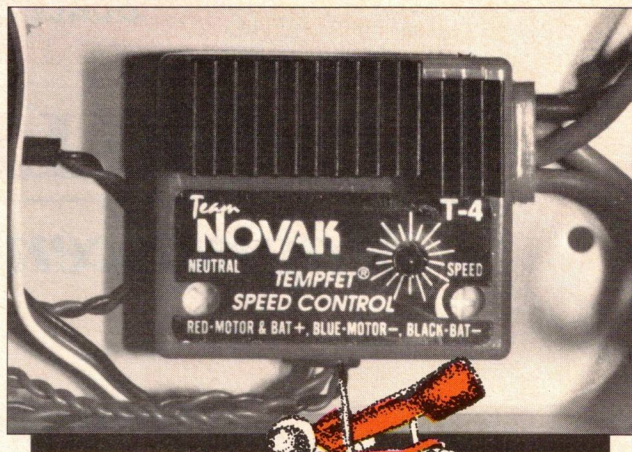
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THE MILLER RACERS

Magnificent Miniatures



BY FRANK GUDAITIS

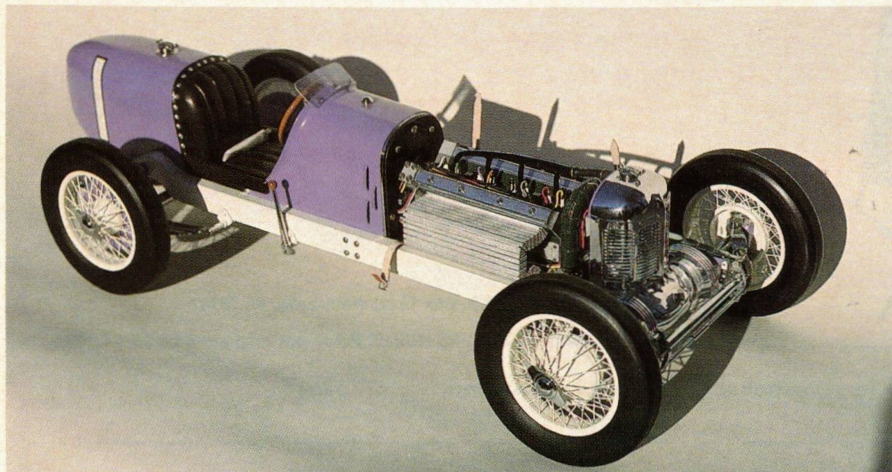
The two superbly detailed scale models shown on these pages are classic miniature examples of the work of America's greatest race car designer. The super-

charged red Miller 91 rear-wheel drive car is a 20-1/2" long exact scale model. It is one of a limited edition of ten which were made by Don Edmunds during the early 1980s. It is

considered by many to be the finest scratch-built model of a race car executed in this country. Edmunds' company "AutoResearch" also built full-sized midget and sprint cars out on the West Coast. The model is valued at \$15,000. It is interesting to note that this figure is five thousand dollars more than Miller charged for the full-sized 91 race car!

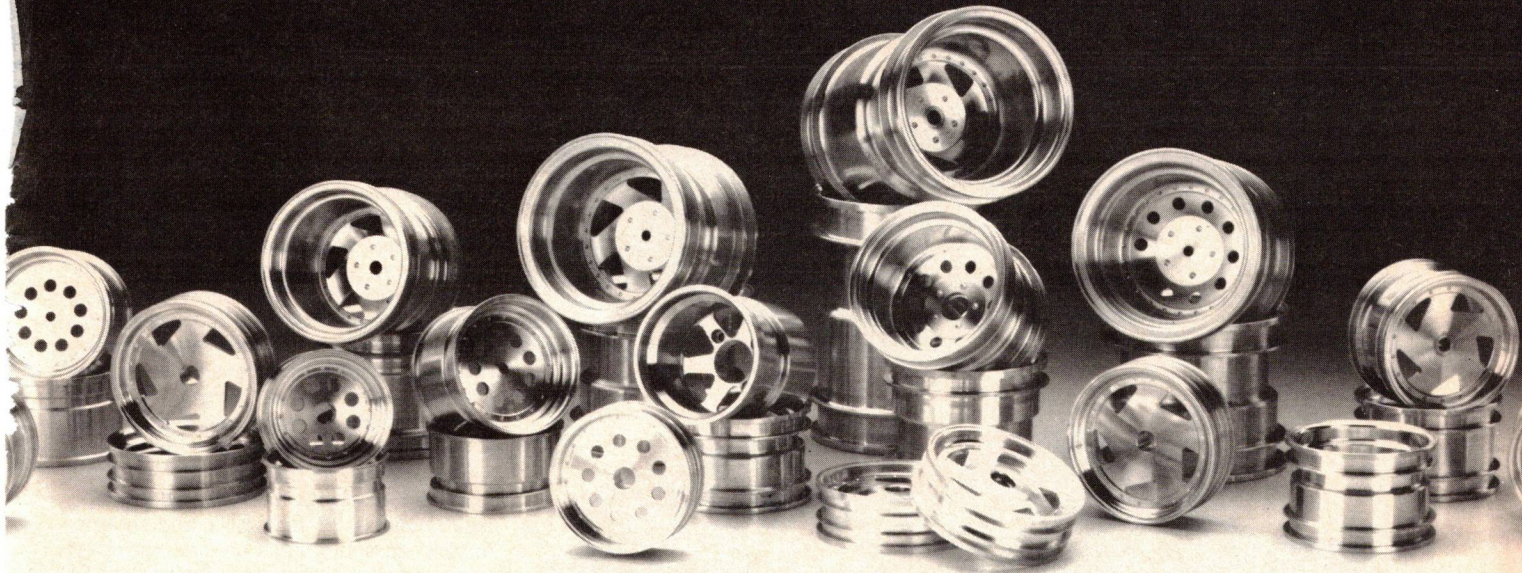
The light blue front-wheel drive Miller 91 is the last one of eleven which were made by A. Ferre of Paris, France. It is currently valued at \$6500. Conversely, the full-sized FWD Miller 91 was priced \$8500 higher than this 19-inch scale model.

Harry Armenius Miller was born in Wisconsin in 1875. At age 13 he left school for work as an apprentice in a small machine shop. It was the beginning of a lifetime to be spent in machine shops and foundries. By 1907, he had relocated to the city of Los Angeles. There he set up a shop in a backyard shed equipped with an old drill press and an ancient lathe. From this very humble start, the shop eventually grew into a world famous racing engine and race car manufacturing company.

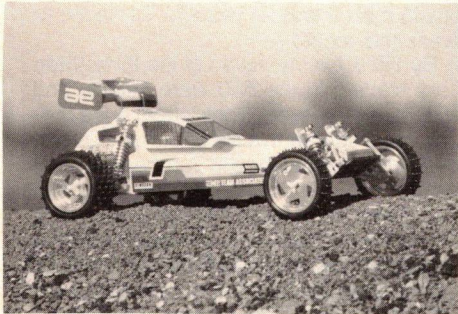


At top, the red Miller 91, a 20-1/2-inch long scale model made by Don Edmunds. It is valued at \$15,000. Above, a blue Miller 91 model of a front-wheel drive racer, as built by A. Ferre of Paris and currently valued at \$6500.

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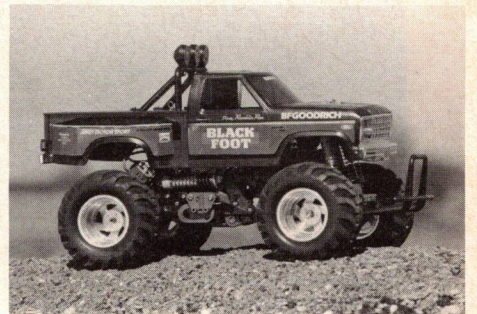
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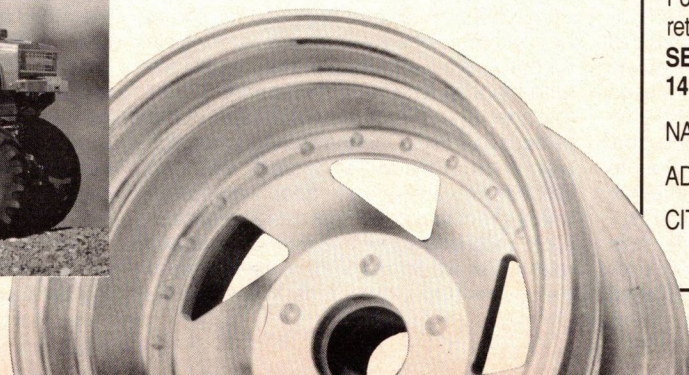
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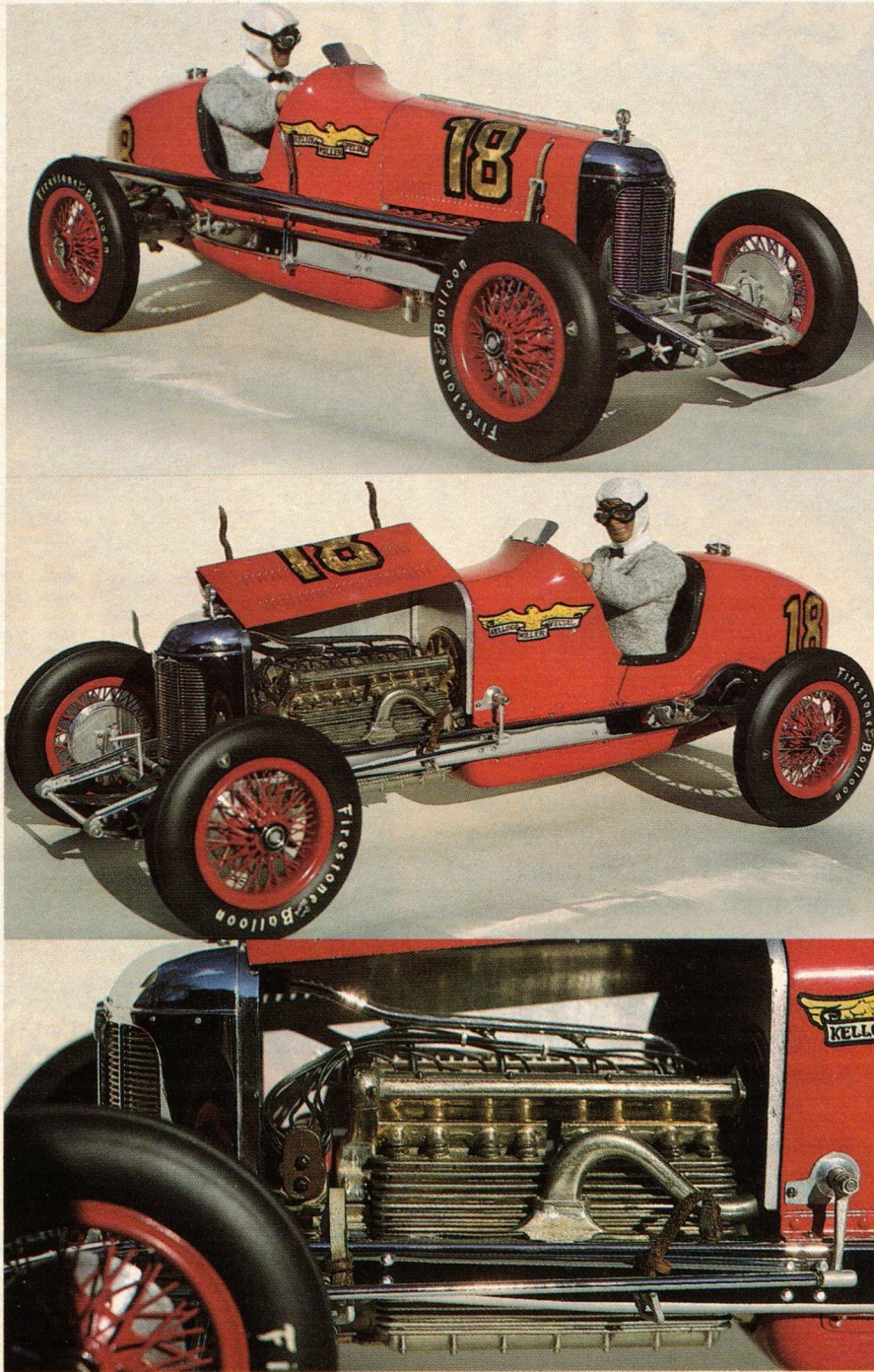
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MILLER 91 RACERS



The Miller 91 racers were record-setters, with one holding the top speed at Indianapolis (124 mph) for nine years. The driver, Leon Duray, one of the great Miller drivers, set a closed-course speed record of 148 mph, a speed that stood for 24 years. Two full-size examples of the Miller cars are on exhibit at the Indianapolis Motor Speedway museum. These scale models are from Kirk White's outstanding collection of miniatures.

If ever the words "awesome genius" applied to anyone, they certainly best described Harry Miller. His initial products were carburetors of his own design which were used with outstanding success by many big time racers during the early years of motor racing. As his reputation spread, he was asked to rework existing race car engines to improve their performance. From this work, he eventually began to design and build his own incredibly successful racing engines for boats as well as for race cars. During these

early years, Miller had the good fortune to hire two men who were greatly responsible for much of his successes. They were Fred Offenhauser, who became his shop superintendent (and later, manufacturer of the famous D.O.H.C. Offenhauser engine which was basically a Miller design), and Leo Goosen, who was a very capable draftsman and a talented mechanical design engineer. Most historians agree that without these two men Miller would never have been able to transform his highly original ideas and in-

ventions into very successful racing machinery.

By 1922, a Miller-engined car had won the Indianapolis 500 mile race. It was the beginning of the Miller domination of this great race for much of the twenties and beyond. The Miller company now found itself in the business of manufacturing and selling "off the shelf" high performance, full-sized race cars. These victories at Indianapolis and many other large tracks throughout the nation prompted Harry Miller to further refine and perfect his engines and cars. It was the kind of work he loved and did best. His 91 cubic-inch engines produced 154 brake horsepower at 7,000 rpm when first offered to the racing fraternity. Very soon thereafter, refinements increased this to 230 BHP, with further work producing 260 BHP at an incredible 8500 rpm. Remember that these cars only weighed fourteen hundred pounds. This means that at top rpm, there was one horsepower available for every five and one third pounds of total car weight.

Thus having lightened and improved his conventional rear-wheel drive designs as much as possible, he began to think about ways to further improve their performance. Road holding, controllability, and superior traction at high speeds on oval tracks led him to adopt the concept of the front wheel drive.

The result was a front-wheel drive race car powered by his supercharged straight-eight D.O.H.C. engine, and for the first time ever on a race car, the front transaxle was a DeDion suspension system. In the 1925 running of the Indianapolis 500, a front-wheel drive Miller 91 finished in second place. More orders were placed for these FWD cars in spite of the additional five thousand dollar price tag which they commanded. In 1928, Leon Duray, who was one of the great drivers of FWD Miller cars, turned one lap at Indianapolis at a speed of 124 mph, a record which remained unbroken for nine years. Several weeks later the same man established a world's closed-course speed record of 148 mph. It took 24 years for someone to break this record.

By 1929, twenty-seven of the thirty-three cars starting in the 500 were Millers, and twelve of them were front-wheel drive machines. Following this race, Duray took two FWD Miller cars to race in Europe, where he set a new International 1500cc record of 143.2 mph at Monza. This so impressed Miller's European contemporary Ettore Bugatti that he bought both cars on the spot. It is significant to note that more than a few of Miller's engine design features soon found their way into Bugatti products. The two FWD Miller cars remained in the Bugatti factory until 1960. Having learned of their existence, the noted automotive author Griffith Borgeson retrieved them after much dedicated personal effort. Both cars were completely restored to their original condition and one can be seen today in the museum at the Indianapolis Motor Speedway. It is worth a trip just to see this masterpiece by the best designer of the golden age of American auto racing.

Both of these very elegant scale models are from Kirk White's collection of outstanding miniatures. ●

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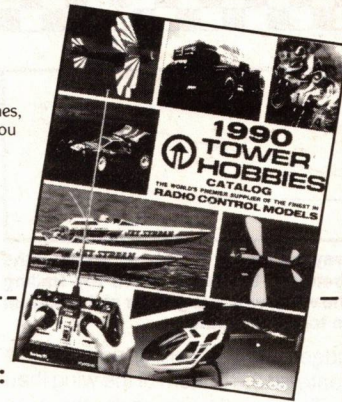
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CE1090	Mega Outlaw Stock-Reverse	24.95	14.99
CE1091	Mega 360 Monster-Reverse	24.95	14.99
CE1092	LeMans Red 4WD Precision Motor	79.95	49.99
CE1093	LeMans Gold 2WD Precision Mtr	79.95	49.99
CE1094	LeMans Blue On-Rd Precision Mtr	79.95	49.99
CE1095**	Pulsar Pro 2000 2 Channel	99.95	59.99
CE1096**	Impulse II 2 Channel/2 Stick	82.95	49.99
CE1097**	Impulse II w/Cycle RS Set	109.95	79.99
CE1098	Fet Peak Charger	139.95	114.99
CE1099	6 Cell DC Power Quick Charger	24.95	18.99
CE1100	Motor Checker Deluxe	129.95	94.99
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CE1101	JRX2 Off-Road Car Kit 1/10	299.95	164.99
CE1102	JR-XT Monster Truck Kit	339.95	194.99
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CE1103	1/10 Big Bear Datsun	117.95	79.99
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CE1107	1/10 Electric Black Foot 2WD	144.95	93.99
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Stock Number	MRC(Cont'd)	Retail Price	Now Only
CE1110	1/10 Nissan King Cab	\$259.99	\$169.99
CE1111	1/10 Super G	114.95	79.99
MAXTRAX			
CE1112	'The Wedge' 2WD Puller	299.95	269.99
CE1113	Eliminator Pullin Sled	399.95	324.99
NOVAK			
CE1114	T4 Econ Spd Ctr w/LED Fut-J	115.00	69.99
PARMA			
CE1115	Cyclone II-Roar Stock	25.00	18.99
CE1116	Cyclone II-Ultra Stock 17T	25.00	18.99
PRO-LINE			
CE1117	RC10 Monster Truck Conv. Kit	79.95	54.99
CE1118	JRX2 Monster Truck Conv Kit	79.95	54.99
PRO TECH			
CE1119	700 AC/DC Digital Charger	109.95	69.99
CE1120	701 AC/DC 4-8 Cell Charger	69.95	51.99
CE1121	702 AC/DC 6-7 Cell Charger	59.95	42.99
CE1122	707 AC/DC Peak Charger	89.95	69.99
ROYAL			
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CE1126	Clodbuster 4 Spoke Silver (4)	149.95	109.99
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TEKIN			
CE1128	ESC-300J Pro Temp. SC-Fut J	115.00	74.99
CE1129	ESC-600J Pro-X Temp. SC-Fut J	165.00	99.99
THORP			
CE1130	Blackfoot Diff. Kit-Complete	93.00	64.99
CE1131	Telescope Drive w/Diff-Blckft	105.00	69.99
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TOWER			
CE1133	Premium Fuel-10% Nitro 4 Gallon	58.95	34.40
TRC			
CE1134	Lynx II Elite On-Road 1/10	299.95	199.99
CE1135	Lynx Sport On-Road 1/10	225.00	149.99
TRINITY			
CE1136	Godzilla-2 Dirt Motor	80.00	44.99
CE1137	Torkzilla Oval Motor	80.00	44.99
CE1138	Monster Stock Motor	28.00	17.99
CE1139	Speedworks 350 2WD Motor	39.99	23.99
CE1140	Speedworks-Triad Motor-9T	59.99	34.99
CE1141	Speedworks-Triad Motor-10T	59.99	34.99
CE1142	Speedworks-Triad Motor-11T	59.99	34.99
CE1143	Speedworks-Triad Motor-12T	59.99	34.99
CE1144	Speedworks-Triad Motor-13T	59.99	34.99
CE1145	6 Cell Matched SCR Pack	45.00	26.99
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TWIN-K			
CE1148	Low-Pro Sponge Slick-B. Brute	35.00	24.99
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TWISTER			
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CE1153	Black Max Modified Motor	80.00	49.99
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CE1155	27T Pocket Rocket Stock	28.00	18.99
CE1156	1/10 Cyclone Car Kit	270.00	179.99

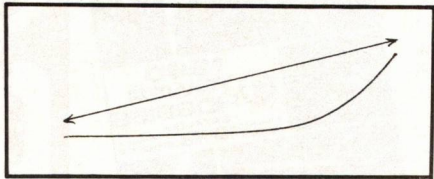
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TOWER HOBBIES



This cutaway of a typical R/C car wing shows the distance between the leading and the trailing edges of the wing, which is greater at the bottom than at the top of the wing.

leading edge and the trailing edge of the wing is greater at the bottom of the wing than at the top. Thus, air flowing under the wing has to move faster in order to "catch up" with the air that flows over the wing. This creates a low-pressure area under the wing and hence the downforce effect.

There are basically two types of wings used in R/C car racing: the single-element wing and the so-called bi-level wing. The bi-level wing consists of a single main wing

and a flap mounted at an angle at the trailing edge of the wing. The newest variation of the bi-level wing is the new airflow-adjustable wing from Bud's Racing Products. This new wing features an adjustable flap that can be set at the desired angle. This wing is perhaps the closest concept to the modern race car wing, which rely on the angle setting of its secondary elements (rather than the main wing) to determine the amount of downforce.

GURNEY FLAP

The Gurney flap is an element of the wing that's located at the trailing edge. The flap is usually set at an uncharacteristic 90-degree angle to the main wing. Full Gurneys, such as those used on Formula One and Indy Cars vary from one to two inches in height, although I've seen Gurneys on super-modified race cars that looked quite a bit taller.

The Gurney flap is essentially a turbulence strip that deflects the airflow over the top of the wing. The flap is widely used on winged

race cars because it enhances the efficiency of the wing without much added drag.

If you'd like to experiment with the Gurney flap, leave a little bit of polycarbonate at the trailing edge of the wing the next time you cut a new wing for your car. Or try gluing a one-quarter to one-half inch strip to your existing wing.

WINGLETS

The triangle-shaped flaps that you see on the front corners of many IMSA prototype cars are an offshoot of the wing. These winglets are really a series of little wings that help keep the front end of the cars down at speed. They may look rather amusing, but the winglets are very effective aerodynamic aids.

Winglets are rarely seen on R/C cars except on concours entries. But if they work on the full-scale cars, they gotta work on the little ones, right? Anyway, if you want to have winglets on your favorite GTP body, use the pattern shown to cut the flaps from a sheet of polycarbonate.

SIDE DAMS

As a wing moves through the air, the natural tendency of the air flowing over the wing is to "spill" over the sides of the wing and into the low-pressure area below, where the air is moving faster. This is called the vortex effect and it reduces the efficiency of the wing. To combat the problem, side dams are used on the wing to act as aerodynamic "fences" and keep the boundaries of air separated.

Dirt oval racers use one version of the air dam, this being a single dam mounted on the right-side of the body. This huge "billboard" dam works like the vertical fin on an airplane, giving the car exceptional stability on the straightaways. In the turns, the dam keeps the car from oversteering and, ultimately, spinning.

WHEEL DISCS

Deep-dish wheels generate a turbine-like effect when turned at a high rate of revolution, which results in a small degree of turbulence. To cut down the turbulence, flat circular discs are installed to cover the opening of the wheels.

Land speed record cars, such as those raced on the Bonneville salt flats, use the wheel discs almost exclusively. On the other hand, closed-circuit racers feel that the ability to change tires quickly outweighs the advantage of cleaner aerodynamics. But wheels discs are becoming the vogue in Indy Car racing when the CART open-wheelers hit the oval circuits.

Self-adhesive wheel discs are available from Paragon Racing Products. If you'd like to make your own, you can cut the circular pieces from a sheet of polycarbonate and glue them to your wheels/tires. Non-adhesive reusable wheels discs can be made by backing the discs with one-quarter inch thick styrofoam cut to fit snugly in the rims. Simply press the foam-backed discs onto the wheels. To facilitate disc removal, drill a small hole in the center of each disc to allow you to insert the "L" end of a small Allen wrench and pull the disc out. For a truly radical look, jazz up the discs with chrome mylar or other aesthetically stimulating trim material.



Use what the winners use . . . VRP!



VRP LUBRISPRAY (LS 508)

VRP Lubrispray, the only spray synthetic lubricant designed for R/C cars. We couldn't make it any simpler. Just spray it in . . . and win. With Lubrispray, lubricate the gearbox without disassembly. Lubrispray increases run time, pushes up your top speed and reduces the wear of parts. Look for the colorful pink, blue and black packaging at your hobby shop or call us. Don't waste your time, use VRP and get prepared . . . to win.

VRP LUBRIBEARING (LB 611)

A new ballbearing grease that goes on thin, seeping into all crevices and other moving parts. The carrier then evaporates leaving behind a thin layer of grease. This assures an accurate amount of lubrication that will not fly out, reducing drag, and wear and tear of parts.

VRP LOGO SHEET (LO 719)

A brightly colored 5" x 7" decal sheet in hot pink, blue and white.

VRP LUBRITOOOTH (LT 512)

For use on teeth of all gears, Lubritooth is a bonding lubricant that dries quickly forming a permanent lubrication. It is water based, eliminating the problem of drying out in the bottle. Lubritooth reduces friction between gears, therefore increasing efficiency.

VRP ELECTROFLO (EF 614)

Used instead of battery braid, Electroflo dramatically increases acceleration and run time. It's an easy to solder high-tech alloy that is also lighter than braid. Expect maximum power and increased efficiency while improving over-all pack voltage.

VRP LUBRIDIFF (LD 928)

A high-tech synthetic grease for use on all ball type diffs. Very high traction coefficient allows the diff balls to grip the rings without unnecessary tightening. Specifically formulated for R/C cars, the unique properties of Lubridiff allow the diff to work smoothly and efficiently.

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SLEDGEHAMMER RULES!

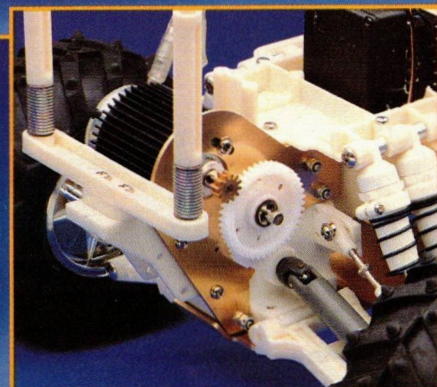
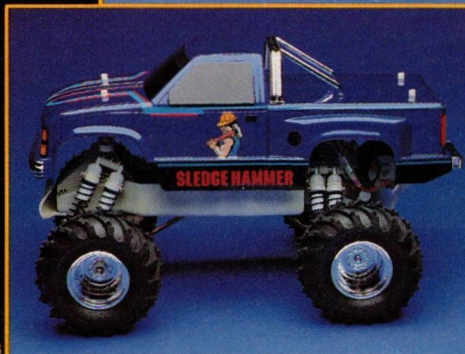
Sledgehammer definitely is not your ordinary truck. The 'Hammer proves its dominance with unmatched wheelie-popping fun and curb jumping abilities. It smooths out the roughest terrain with true four-wheel, independent suspension, and EIGHT high-volume, oil-filled, shocks. Unlike friction or toy shocks, these can be rebuilt and tuned for the optimum dampening effect. Turnbuckles, bolted-on ball connectors, and a giant servo saver are all standard equipment. The unique new high-clearance chassis combines the strength of polished T-6 aluminum and a specially-developed polymer tub for incredible durability.

Sledgehammer's drive line is also built tough with the new planetary metal gear differential and heavy-duty telescoping drive shafts. The T-6 motor plate works in conjunction with the finned aluminum heat sink to help keep the motor cool.

Model 1806 Sledgehammers are truly ready-to-run, with a powerful pistol radio system, and the ultimate accessory, a fully-proportional forward and reverse electronic speed control. With this kind of instant available power, Sledgehammer makes wheelie popping excitement an irresistible addiction. Just paint the body, add the decals, and you're ready to rock. For the enthusiast who has his own motor and electronics, and wants to experience the rewards of building it himself, Sledgehammer is also available as an easy-to-assemble kit. If you're ready to tame the ultimate monster truck, check out the Sledgehammer at your favorite hobby shop today.

TRAXXAS

12150 Shiloh Rd. Dallas, TX 75228



TWIN ENGINE TERROR.



Villain IV

SPECIFICATIONS

HULL	"Deep V" Offshore racing
WEIGHT	3.5 lbs. (w/o batteries)
LENGTH	31" Overall
BEAM	8.25" Overall
DRAFT	4.5"
DEAD RISE ANGLE	22 Degrees
MOTORS	Twin RS-540S With Aluminum Heat Sinks
DRIVE SYSTEM	Adjustable 2:1 gear Steerable Outdrives Counter-rotating Props
OILING SYSTEM	Built-in
PROPELLERS	Surface Piercing
TRIM ANGLE	Adjustable
SPEED CONTROL	Model 1501 - 4 Step FWD/REV Mech. Model 1508 - FWD/REV Electronic
RADIO	2-CH Stick Radio
BATTERIES	(1) or (2) 6-Cell
STAND	Mahogany (included)
APPROX. RUN TIME	8-12 Min. (2) 6-Cell 4-6 Min. (1) 6-Cell

Cruise quietly through a serene pond, or modify it to set the lake on fire. Villain IV combines the best of both worlds in one high performance off-shore racer. The twin 540 motors are linked with dual, 2:1 reduction, adjustable gear transmissions. The two steerable outdrive units are equipped for adjusting the trim angle so that optimum performance is extracted from the counter-rotating, surface-piercing, propellers. The sleek deep "V" hull is a true-to-scale reproduction of the actual Chaparral™ Villain IV. Its

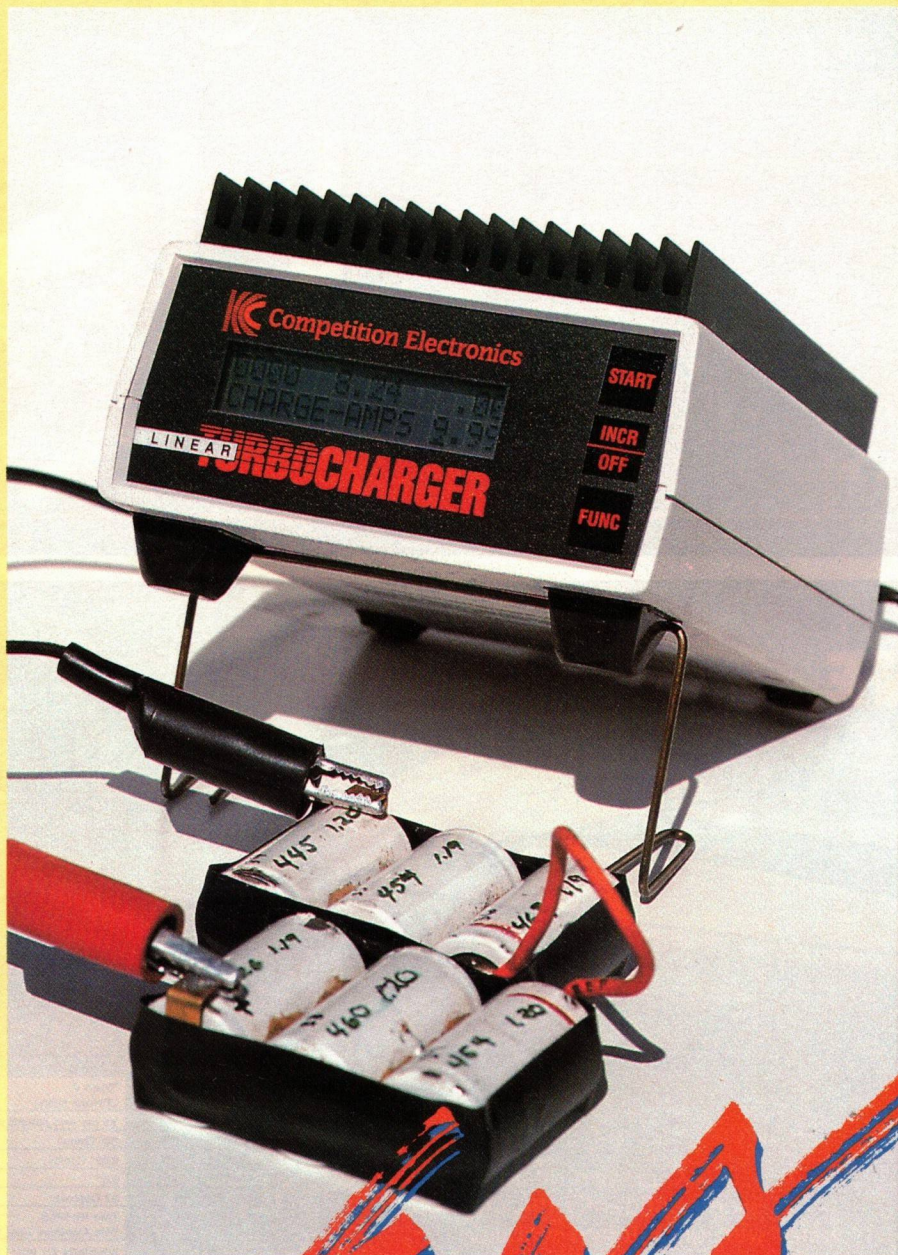
proven design allows it to slice confidently through rough water with unmatched stability.

The assembled Villain IV is completely ready-to-float with a two-channel radio system and heavy-duty FWD/REV electronic speed control. Villain IV is also available as an easy-to-assemble kit which accepts all other component two-channel radio systems. If mind warping speed is your intent, ask your hobby dealer about inexpensive modifications which allow Villains to reach radar-clock-ed speeds of up to 26 MPH (so far!).

TRAXXAS

12150 Shiloh Rd. Dallas, TX 75228

CELL MATCHING



BY DEREK ARITA

When Ron Bailey first introduced his now famous TurboCharger, I knew right away that, for an on-the-go racer like myself, this was the only way to go. After all, who could ask for anything more? You, that's who!

You just couldn't be satisfied with the TurboCharger the way it was, could you? Well, the fine people at Competition Electronics felt the same way—they are racers themselves, so they are always looking for the next edge that may make the difference between the "A" Main and the also-rans. They're out there with you and all of the other racers listening to all of the latest and the greatest tips from the Big Boys. And you know who they are.

Well, after a lot of listening and even more testing, Competition Electronics has finally come out with the answer to that son-of-a-gun, cell from hell, the SCE. And the answer is—may I have the envelope please—the new Linear Turbocharger.

Since the SCE has been introduced, experts in the field have been doing their darndest to find the secret that unlocks the door to the SCE's enormous potential. What is now accepted as general practice is to charge SCEs with a constant current or "linear" current. This is completely the opposite to that which was found to be the case with SCRs.

WOW!

MEAN^{ER} MUDDER

Imagine stomping on the competition with these car crushing features:

- ★ 4-wheel drive
- ★ high torque 19:1 gear ratio
- ★ double wishbone, 4-wheel independent suspension with oil filled shocks
- ★ massive dirt-digging 3 5/8" X 7" pneumatic tires
- ★ double-disc braking system
- ★ heavy-gauge all aluminum chassis
- ★ PVC pickup truck body
- ★ chromed bumper, roll bar, and functional muffler
- ★ pull starter.

The giant ARR 1/8th¹ scale gas-powered² monster from SKYWARD. Engineered for rugged running and unbeatable toughness. Built to perform.

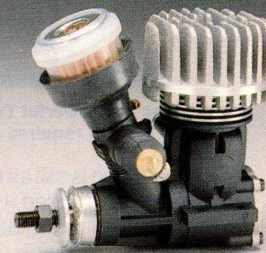
You've never seen a "meaner mudder" than this!

¹ Length: 25" (610mm), Wheelbase: 12" (305mm); recommended for 2-channel operation

² Model 8902 HE with SKYWARD 21 FSR engine; Model 8902 H without engine



SKYWARD 21 FSR



Engine size: 21
Displacement: 3.44 cc
Net Weight: 420 gr

Two stroke/ Glow plug
1.1 HP @ 25,000 RPM

ABC Construction
Double ball bearings
Schnuerle porting
Air filter included
Black anodized

Skyward engines are hand cast and machined for superior performance.

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We're pretty sure now that SCRs love to be "abused." The high, pulsating type of current used to charge these cells tends to create heat within the cell. This heat, it is believed, is what SCRs thrive on. We're all wise to the fact that two or three peaks will get a pack nice and toasty just before a heat race. It's that "toasty" feel that we're going for. Well, with SCEs, it's a whole different ball game. Heat those babies up and you might as well lay another fifty or sixty bucks down on the table because we all know that that pack won't be "toasty"—they'll be "toast"!

A linear output charger gives an uninterrupted charge current, which can be thought of as a flat line. The high peak pulse is gone and all you have is a nice even stream of current flowing into your cells. This type of current, used at a rate of approximately 3 amps, creates very little heat within the cell, but still fully charges the pack. Again, the experts feel that this is the type of charge preferred by an SCE. Now I know that this was all first grade stuff to most of you, but good advice bears repeating—just like a good hot dog.

So, let's not waste any more time. Let's do it with the Linear TurboCharger!

The one feature that has changed is the black heat sink that crowns this marvel. With the original T.C., the heat sink was about a third the size of the entire top surface of the unit. Now that the unit has a linear, or constant current output, the heat sink must have a greater surface area to dissipate more heat, so the heat sink itself now covers the entire top surface of the unit.

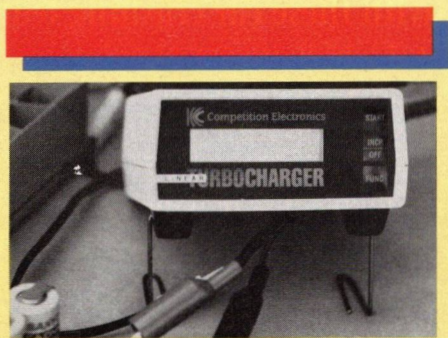
Now, let me quote from the Linear TurboCharger's instructions: "The Linear TurboCharger *cannot* use an automotive battery charger for a power supply. This is because the output of the automotive battery charger is pulsating dc, not constant dc. This unit requires a constant dc voltage input to give a constant current output."

Well, I cheated. I couldn't afford to go out and buy a power supply for the unit, so I kind of upgraded my old 10-amp, car battery charger. I added three 4700 micro-farad capacitors across the output of the car charger. This, I was told, would "fix" the output and make it as constant as possible. I wouldn't recommend this for you, but in my case, I got away with it.

The connections to the charger, from the T.C. to the power source are simple—plus to

CHARGE MODE

To run the charge mode, all you have to do is push a few buttons, set the charge rate (range is from 0.00 to 9.99 amps), then push the "start" button. What you'll see is "CHARGING BATTERY." The first line on the display will give you actual charge time in seconds, the pack volts and the charge current. After battery peak has been sensed, the unit will switch off.

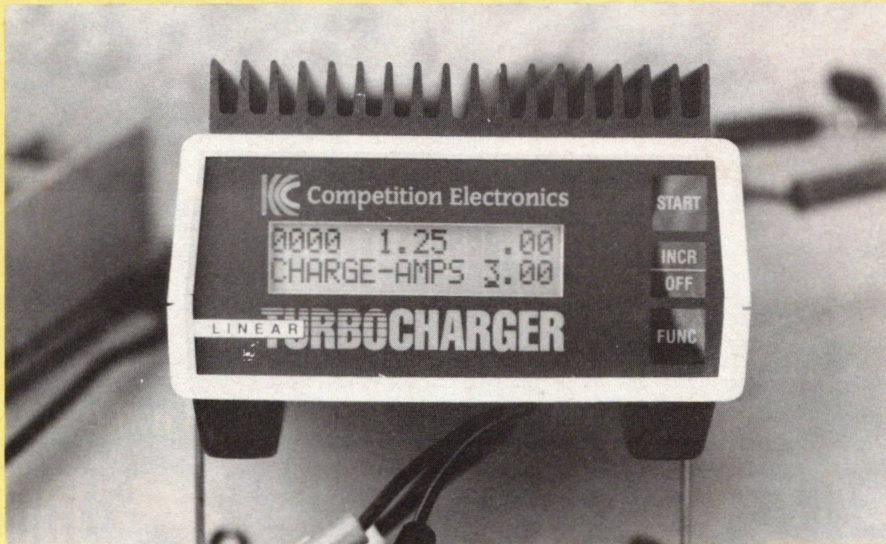


The original T.C. uses a square-wave, pulsed output. These pulses are what create some of the excess heat within the charging cells. How square the waves are depends upon the characteristics of your supply's output. Charging SCRs with this type of current is the only way to go. SCRs love it. On the other hand, the output of the linear version T.C. is a flat line of dc current. How flat the line is depends a lot on the particular output of your power supply. This constant, gentle current is what has found to be "best" for SCEs and you can pump SCRs with a little higher current to get them to an optimum racing temperature. Less heat is generated within the cells, therefore less abuse is thrust upon your SCEs. Keep in mind that SCEs were not designed with the R/C racer in mind. They are supposed to be charged at what we would consider to be a trickle—we're charging them at twenty to thirty times the recommended rate! Why, you ask? This is done in order to get the highest level of performance out of each cell. Try charging some of your SCEs at the factory recommended 170 mA, for 14 to 16 hours, then do a test run on your local track. Dead, dead, dead! Boy, will you be surprised.

Using a set of SCRs, I set the current at 9.99 amps and let-her-rip. After the first peak, the pack was warm, but not quite race ready, so I hit them again. After the second peak—ahhhhhh—nice and toasty and ready to hit the track. Simplicity is the key. When you're racing, all you'll be doing is setting the charge current once. From then on, all you have to do is push the "START" button. The function button allows you to charge 1, 4, 6 or 7 cells. Easy so far? Let's go on.

DISCHARGE MODE

The discharge mode is just as easy to set. The discharge rate is 10 amps. Note that the first version T.C. used a different discharge rate, but merely converted it to the 10 amp equivalent. This is no longer the case and the rate is an actual 10 amps. This mode proved to be an invaluable tool in my quest for the perfect set of batteries. Not only can you discharge a pack of 4, 6 or 7 cells, but you can also do single cells at the 10 amp rate. You know what this means, don't you? Cell matching!



Don't judge the powerful TurboCharger by its size! In cramped pit quarters, you'll be glad it is so compact. The TC requires a constant dc voltage input to insure a constant current output.

The package is still as neat and clean as it always was. A rugged, hard-plastic casing protects the delicate internal electronics that drive this simple piece of high technology. Thank God for small wonders! One of the TurboChargers best features is its size—2-3/4x6-3/8x4-1/2 inches. In a race situation, pit spaces can become very close and whatever you can do to give yourself more working space, the better off you'll be.

As you can see by the photos, the display and the controls also remain unchanged. I really like to believe that Mr. Bailey designed the operation of the T.C. with me in mind. What I mean is that there are only three buttons to work with. Again, in a race situation, I have enough trouble just remembering which heat I'm in—put a lot of buttons in front of me and you'll really see the meaning of the word, confusion!

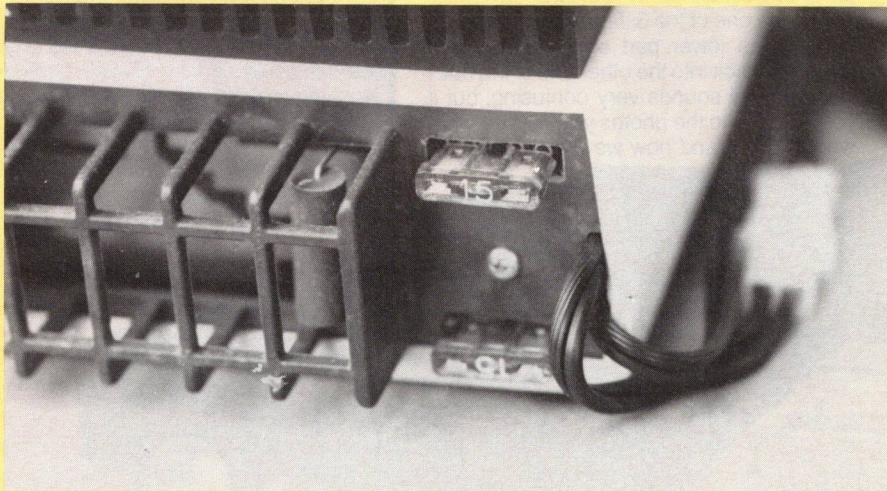
plus and minus to minus. The leads from the unit to your batteries must remain their original length. The voltage of your battery/batteries is read through these leads. Changing the length will add or subtract resistance which will, in turn, alter the voltage read by the T.C. If you have already made this mistake, put it back!

The display has not changed and remains easily read—if you're four feet tall. Actually, this was the only shortcoming of the T.C. Every time I used the unit, I had to prop up the front with a box or something else that was handy. My advice, be it ever so humble, would be to add some kind of fold-down stand. Do this and the unit will be perfect! End of article. Thank you very much.

What's that? You want to know how the Linear TurboCharger works? Well then—read on.

CELL MATCHING

When you hit the start button, "Discharging Bat" appears. "Discharge Done" will appear when the function has finished. Push the function button and the ten amp discharge time will appear. Push the function button again and the "Dischg Ave" or average discharge voltage will be displayed. This average voltage will tell you how "powerful" the cell or pack is. This is very useful when you want to get not only the longest running cells together, but also the highest voltage cells, which will relate directly to power.



The TurboCharger will automatically shut down if it starts to reach overheating temperatures, plus there's the circuit-saving reliability of 15-amp blade fuses too. A fan is a big help in keeping charging temps down as well.

In a race or practice setting, the discharge mode can also be used to determine how much comparative run time is left in your cells after the end of your particular heat length. When you get back to your pit, just connect the T.C. to your pack and discharge them. The time remaining will give you an indication as to whether you should gear up or not and your experience will tell you the number of teeth you can go up to. If you want to be competitive, this is a must.

CELL MATCHING CYCLE MODE

Well, you know the routine by now. Push the function button until you see "Cycle Cells." The number of cells you are working with will appear next to the words. You can cycle 1, 4, 6 or 7 cells.

When you hit the start button, the T.C. will go directly into a charge mode at a rate of 3 amps. It will double-peak the cell or cells, then go directly into the discharge mode without you having to do a thing. It's all automatic. When it's all done, just push the button again and you'll see the discharge time and then the average discharge voltage.

As a test of the unit, I cycled ten separate cells. Each one had already been discharged

closer. I was within plus or minus 3 seconds, consistently. I know what you're saying. "I bought matched packs so that I wouldn't have to go through any matching, myself." Well, guess again. It would be nice if cells stayed the same throughout their life, but that's just not the way it is. A cell's capacity may change over a number of cycles or one may even go bad. The only way to make sure that your pack stays a matched pack is to test the cells every now and then, especially if you're dealing with SCEs. Remember, the cells of a matched pack will "dump" all at the same time.

Have you ever noticed that some of your packs will go great for about three minutes, then they'll begin to slow down very gradually? This means that one or more of your cells is dumping before the rest and those bad cells are bringing down the others. In other words, a pack is only as good as it's worst cell. With this piece of equipment, you'd be

crazy not to check for every "worst" cell on the unit which has been considered, up until now, the standard of the industry. My results with the T.C. couldn't have been you've got. My personal packs were so mismatched that I ended up disassembling all of them and cycling each and every cell. The SCRs showed changes in times, but the SCEs were insane! Some of the cells had actually improved, but unfortunately most had gone down in varying amounts. Do you know how heart-breaking it is to throw away two packs worth of SCEs? Well, I do.

When cycling SCEs, it may be a good idea to test one of your practice packs before you go ahead and do your race packs. You may find, as I did, that the double peak during the cycle mode tends to heat up the SCEs a little bit more than you are comfortable with. I ended up charging a pack to its peak the day before, then going back the next day and performing the cycle mode function. This gave the cells a chance to cool off from the initial, full peak. Two, 3 amp peaks after that seemed to keep the cells from heating up beyond the safety zone. I applied this technique to single cells also.

SYSTEM SAFEGUARDS

If your T.C. should ever approach a condition of becoming overheated, it will automatically shut itself off and display a "Too Hot—use fan" message. I always consider it a rule to keep fans on anything that may overheat.

The Linear version has a temperature sensing, charge FET that will automatically shut the unit down if the power dissipation is too high. Once the unit has cooled down, you may resume normal operation.

During weeks of constant operation, I had absolutely no problems pertaining to heat. I did, however, have a problem with my hands. Somehow, I shorted the output leads together during a charge. All that resulted was a blown fuse and an operation to remove my heart from my throat. Boy! What a DWEEB.

The new Linear TurboCharger has proven itself to be as useful as it is convenient to use. Its many features make it a basic must for anyone who expects to be competitive in this growing sport. If you're a beginner and have plans to race on a regular basis, you're probably already stocking up on SCEs and I know that you're looking to replace that already burnt out timer charger that you started out with. If you're an experienced racer, you know as well as I do that a properly matched and charged battery pack can easily make that crucial difference.

Look ahead and save a little longer, because I guarantee that the Linear TurboCharger will fill every expectation that anyone could have. Don't be intimidated by all of the functions contained within this neat little package. Whether you use SCEs or SCRs, the Linear T.C. will give you the performance and the durability needed in today's field of competitive drivers.

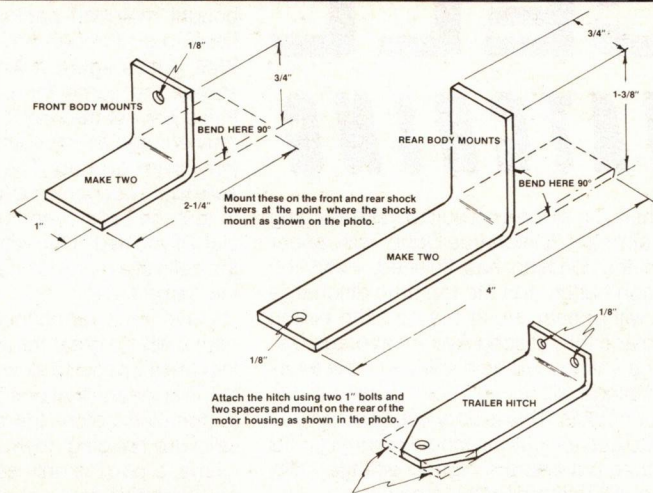
As for Ron Bailey and the crew at Competition Electronics, those guys are never satisfied. "What could possibly be next," you ask? How about the TurboMatcher! A simple device capable of charging and discharging six separate cells at one time. Not enough? How about adding to it, a serial port, computer output for the purpose of graphing your data via your computer's printer. (What'd he say? What'd he say?) Well, if you missed it this time, be on the lookout for the next report from those mad scientists in Rockford, Illinois. If it's new and it's innovative, you'll probably hear about it first from Competition Electronics!

TURBOCHARGER FEATURES

- Full alphanumeric display.
- Peak voltage charging of 1 to 7 cells, with a digitally presettable charge rate up to 10 amps.
- Discharges 1, 4, 6 and 7 cell packs and displays the 10 amp rate.
- Simultaneous display of seconds, battery volts, amps and messages.
- Automatic charge/discharge cycle mode for cell matching or pack checking.
- Linear or Pulsed output versions available.

Thanks very much to Mr. Ron Bailey at Competition Electronics. And remember, top drivers don't follow the crowd, the crowd follows them. Say "NO" to drugs and I'll see you at the front of the pack! Competition Electronics, Inc., 2542 Point O'Woods, Rockford, Illinois 61111.

tires I decided to install dual shocks on each wheel using four sets of Hobbico Duratrax competition shocks (part #DTXC3501) from Great Plains Hobby Distributions. These shocks are similar to the Kyosho Gold shocks but are about half the price. The shocks come assembled all you have to do is add the shock oil of your choice. Mounting the shocks is going to require some modifications. Starting with the front—you need four 3x27mm bolts, four 3x6mm bolts, fuel tubing, 3mm washers and six of the nuts used in Blackfoot (the ones used to hold the chassis together). First take the fuel tubing and cut off 1/4" and place it into the upper mounting hole of the shock. Then put the washer on the 3x27mm bolt and run the bolt through the fuel tubing already mounted in the upper shock mounting hole. On the other side of the bolt, use one of the nuts to secure the upper part of the shock in place. Next take the second shock this time using a 3x6mm bolt instead of a 3x27 use the same steps to install it through the upper hole as you did in the first shock (and don't forget the fuel tubing). Then thread the 3x6mm bolt into the other end of the nut you used for the first shock. As for the lower mounting—use the existing holes and screws in the control arms



a 3x27mm bolt as we did for the upper (this will be used to offset the shock so that the shocks will be parallel to each other), next place one of the nuts onto the bolt as before. Then take one of the 3x6mm bolts and put it through the lower part of the shock and thread this bolt into the other end of the nut. I know this all sounds very confusing, but if you will refer to the photos you will see what we are doing and how we are doing it.



(as shown in the photo). Repeat for other side. Now for the rear. We will use the stock location for the first shock but with the 3x27mm bolts. Unlike the front this time we have to install the bolt first. Mount a 3x27mm bolt from the backside of the shock mounting bracket, then install the fuel tubing through the upper shock mounting hole as before, then install the upper part of the shock onto the 3x27mm bolt. Next thread the nut on to the 3x27mm bolt to hold the shock in place. Then take the second shock, (don't forget to mount the fuel tubing as before) and use a 3x6mm bolt and a washer, mount it to the other end of the chassis nut. Mounting the lower portion the first shock bolts into the stock position and for the second shock use a 1/8" drill bit and enlarge the second hole in the rear swing arm. From the backside mount

Attention King Cab owners: At my local track in Stokesdale, North Carolina, I found that my stock King Cab spikes were too much on the hard clay oval, so I tried some different tire combinations. The only thing that really hooked up were the Midnight Pumpkin tires! The only problem, they don't fit the stock King Cab wheels without losing their tire sidewall height, and you can't mount Pumpkin rims on the rear due the hex hub Tamiya uses! But there is a way you can use many of the wheel and tire combinations available for the other Tamiya trucks using CRP's Rear Wheel Adapter for the Kyosho Ultima (part #1715). This allows you to mount rear Midnight Pumpkin wheels and tires on the King Cab. The fronts fit fine and without modifications. The wheels I used are CCP chrome Pumpkin wheels part #2509 fronts and part #2510 rears. Also, when using CRP's adapter you can also use IMEX's Jumbo wheels and tires.

ANSWERS

Each month I'll try to answer your letters and questions. In the April issue Steve Corbin, of Winslow, Arizona, wanted to know how he could convert his RC10 into a car crushing monster. Well, Steve, many companies make truck conversions for your car. First is the JG kit (part #A-17) basic which has just the wheels and body mounting system and part #A-22 deluxe kit which has all the above plus pinspike tires, lexan body,

and front wheel bearings. The other is the Advanced Engineering RC10 conversion part #341000. This kit has aluminum mini mags, Blackfoot tires, custom body mounts, and '34 Ford delivery body. Steve, I hope this helps answer your question. Maybe in a later issue we can do an RC10 monster truck conversion or maybe even a pull truck.

Attention Truck Clubs: Let us know about your club and track so other truckers in your area and nearby can find out where they can go to enjoy their trucks and keep the sport growing. Each month I'll feature a pull track of the month—so please send a photo and a little about your club's events.

Next month we'll bring you the first part of a two-part review of the Advanced Engineering's Full Pull 2 and Hobbico's Maxtrax Wedge. So until next time, Keep It Shiny Side Up!

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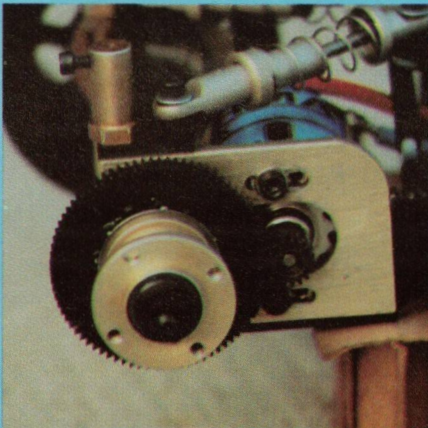


804-747-8308
Richmond, Virginia

Continued from page 59

BoLINK'S

driver I thought I would give you two drivers opinions on how the car handles. I handed over the transmitter to Paul, the owner of PC Hobbies, to see how he liked the car. With our first run on the track the car ran 6.513-second lap times with foam tires. This was running the car straight off the bench only using the recommended gear and chassis setup. Next it was my turn to hit the track, with my average being 8.250. Now back to the pits where Paul made some changes. First he took out a little brake, then repositioned the batteries (5 on the left side and 1 on the right) and added TRC's capped radial tires gold dot part (#1481) for the left front, (#1482) silver dot for the right front and (#1581) gold dot rears. Then it was back to



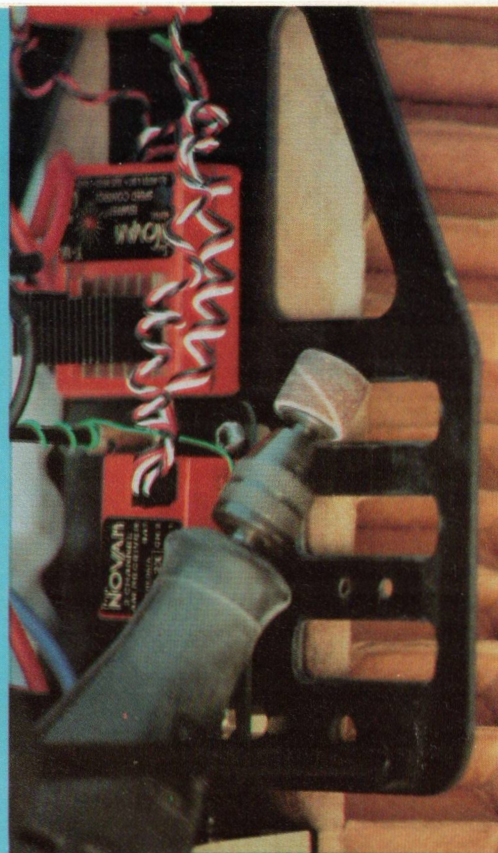
Aluminum rear and diff setup is identical to the regular Eliminator kit, with anodized gold aluminum parts, graphite chassis, and 48-pitch gears smoothing your way to victory lane.

the track with Paul at the wheel. With our changes he turned an average lap time of 5.145, or 1.368 a lap! What an improvement cap tires and some weight distribution changes to the left side of the car can make.

Well, now it was Joe Slow's turn (me) to hit the track. I turned an average time of 5.666 which is an 2.583 improvement.

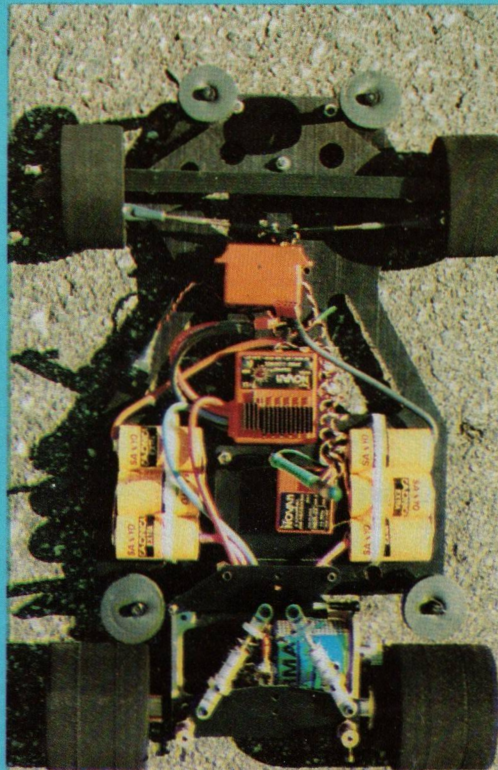
The statistics are courtesy of PC's lap counting system. They use a BoLink AMB interfaced into an autoscore racing program by B&B Software of California. This is just one of the great features of PC's track; the other is its 202 foot, 4-inch thick fiberglass-reinforced concrete track surface. As I mentioned earlier, it has a 17-degree banking in the turns and enough pit space for 140 racers. PC Hobbies will be the site of the 1990 Norcal North Carolina Oval Championships July 20th, 21st, and 22nd. For more information contact Paul or Mr. Ford the track manager at (919) 983-2514.

I asked Paul to give us his opinion of the BoLink Eliminator Gold Edition, and he said the car could use a little camber on the right front and other than that he thought it is a good-handling car and even better with the capped radial tires. Some improvements are needed, like a smaller wing, and higher gearing. As for my opinion, I think the BoLink Gold is a great car! It comes with lots of great options included in the kit. Of course we ran it directly from the bench to the track, so with



Using a Dremel tool to grind out the battery slots in the graphite chassis will prevent the graphite from cutting through the shrinkwrapped batteries and shorting them out. Graphite is a conductor of electricity!

a little time and practice you could have a real A-main contender on your hands. As for the Novak electronics they performed perfectly (as always). The Parma stock motor is an excellent performer and a very competitive motor. BoLink has really done their homework on the Eliminator Gold, so if you are looking into getting an onroad car don't overlook this one.



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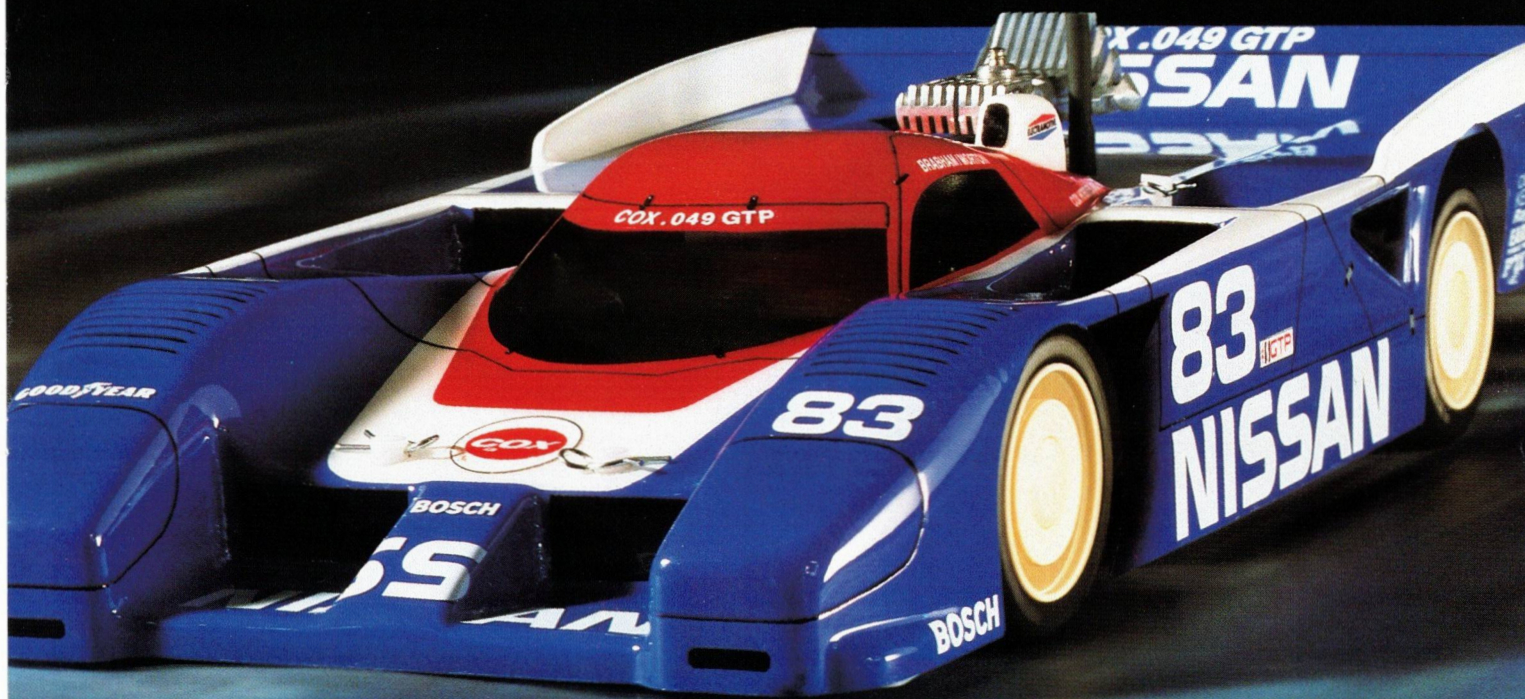
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