RADIO CONTROL MODEL CARS

OCTOBER 1995 • DISPLAY UNTIL OCTOBER 5

'95 WHAT'S NEW

REVIEWS:

Associated's RC10ST

BoLink's BoKart

Tamiya's Jeep Wrangler

Tekin's new 410K-2 Speed Control

12 CHEAP WAYS TO GO FASTER!

TESTING TRAXXAS' NEW TCP BUGGY

INSIDE DARLINGTON'S RC TRACKS

PORTLAND'S ROSE CUP RACES

CARS OF THE INDY 500 IN COLOR!



$2.95 CANADA $3.95

10 >

71486 01334 1

RHINO™

DIGITAL PEAK-DETECTION CHARGER

NOTHING CHARGES LIKE A RHINO!

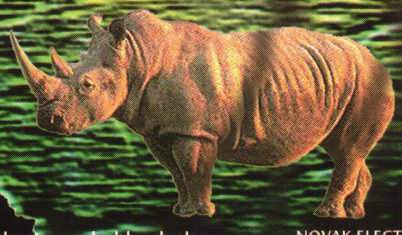
When you need that extra charge to help outrun your predators, make sure you pack a Novak Rhino Charger!

The Rhino Digital Peak-Detection Charger™, new from Team Novak, is an affordable way to harness all of your toughest charging needs. It's simple! Just adjust the charging current, press the Start/Stop button, and Novak's Digital Peak-Detection Circuitry automatically senses that the battery pack is fully charged. No maps, timers, computer keypads, or complicated instructions.



When the terrain is dusty and the weather is hot, don't worry about the Rhino. Inside, you'll find a cooling fan and a replaceable air filter to keep out the dirt.

So remember, the next time you set out on a grueling safari, you can be sure the Rhino will be charging.



NOVAK ELECTRONICS, INC. RACING TEAM

FUN LINE

• The Rhino Digital Peak-Detection Charger™ (Part #4470) is available at your hobby dealer.

NOVAK ELECTRONICS, INC. • 18910 Teller Avenue • Irvine, CA 92715

Sponsored By:

RCHTA
RADIO CONTROL HOBBY TRADE ASSOCIATION

Co-Sponsored By:

MRIA



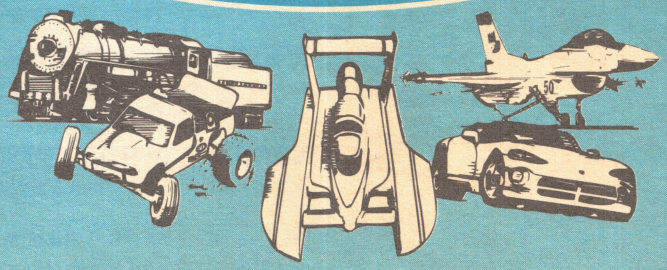
National Model & Hobby Show

(Formerly the Chicago Model & Hobby Show)

Largest Model & Hobby Show in The USA!

Size of 9 Football Fields

Model Trains
Scenery & Access.
Miniatures
Games
Kites
Rockets
Plastic Models
Die Cast Models
Tools
Collectibles



R/C Airplanes
Boats
Cars
Helicopters
Motorcycles
Tanks
& Trucks
Plus U-Control
Airplanes
and Much More!

Meet face-to-face with manufacturers and see the latest new products.

While you're there, stop by the gigantic 4200 square foot store where you can purchase some of the latest new merchandise.

Bring The Kids to the make and take areas and introduce them to the exciting, fun and educational world of models and hobbies!

Admission

Adults $6.00
Children 6 to 12 - $3.00
Children under 6 FREE

Show Hours

SAT., October 28th: 10am-6pm
SUN., October 29th: 10am-5pm

October 28 - 29, 1995

Rosemont Convention Center

5555 North River Road
Rosemont, Illinois 60018

For More Information
Call Terry at 708-526-1222

RADIO CONTROL MODEL CARS

c o n



COVER: TRAXXAS' new TCP buggy steps into the spotlight, along with Tamiya's Jeep Wrangler, Associated's RC10ST sport truck, BoLink's BoKart and Tekin's new keypad ESC. Add in coverage of the gas races in Portland, NORRCA's Offroad Nationals and the Indy 500 in color, and you have a package of good reading that can't be beat.

d e p a r t m e n t s

8 New & Hot

10 Readers' Page

12 Answerman

14 Big Tips

16 Racer's Edge

61 Drag Club List

72 Track of the Month

POSTAL INDENTIFICATION INFORMATION IS LOCATED ON PAGE 6.

OCTOBER 1995 VOLUME 11 NUMBER 1

t e n t s

f e a t u r e s

18 **12 CHEAP WAYS TO GO FASTER** Rick Eyrich
There's more than one way to make your RC car or truck go faster without digging deep into the old wallet—here's how.

20 **REVIEW: TRAXXAS TCP BUGGY** Chris Dvorak
Traxxas' tuneable 1/10-scale buggy features many options for upgrading as your ability or desires dictate. It can be a winner.

22 **PORTLAND'S ROSE CUP RACES** Richard Dowdy
Up north, they know how to put on a race! This 1/8- and 1/10-scale gas extravaganza takes place simultaneously with full-scale cars.

28 **DARLINGTON'S RC TRACKS** Rick Eyrich
There's more to this small town than a big NASCAR track—they have a bunch of great RC tracks too! Check 'em out.

36 **REVIEW: TAMIYA'S JEEP WRANGLER** Rob Tuck
Here's a scale-looking 1/10-scale utility vehicle that can be a lot of fun for backyard RC fans.

42 **REVIEW: ASSOCIATED'S RC10ST** Chris Kovachevich
An excellent entry-level offroad race truck that can grow with you.

46 **BOLINK'S BOKART UPDATE** Rick Eyrich
Reviewed initially in our April issue, we take another look after extensive running of the quarter-scale go-kart.

48 **UPSCALE GRAPHICS** Kevin Meyer
A new company appears with an eclectic line of sticker graphics for RC cars.

51 **PREVIEW: NORRCA'S VELODROME THUNDERS IN** Doug Adams
The big one is coming...NORRCA's three-day Dominguez Hills bash on the high-banked Olympic Velodrome. Here's what you can expect.

52 **NORRCA OFFROAD NATIONALS** Gene Husting, Rob Tuck
Team coverage of the summer's big SoCal blowout. This is where the action *really is!*

58 **REVIEW: TEKIN'S 410-K2 SPEED CONTROL** Rob Tuck
An innovative keypad speed control returns in a new, much improved form. We have a look inside.

68 **THE INDY 500: ONE DAY IN MAY** Richard Dowdy
The 79th running of racing's classic event is full of surprises even before the green flag falls. A pictorial report.



52

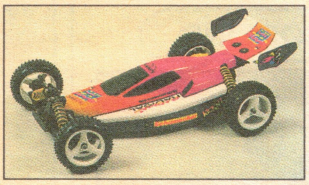
Schumacher USA

COUGAR 2000 '95 TEAM



NEW CAT 2000 E.C.

THE NEXT GENERATION



U499	COUGAR 2000 - 95 TEAM	SALE PRICE	$221.70
U498	CAT 2000 - EC -4WD EURO CHAMP	SALE PRICE	$329.70
U496	CAT 2000 - 4WD "OPEL CALIBRA"	SALE PRICE	$287.70
U1617	Schumcher Active Caster System RC10		34.95
U1618	Schumcher Active Caster System Losi XX		34.95

STORM 2000

THE NEXT GENERATION

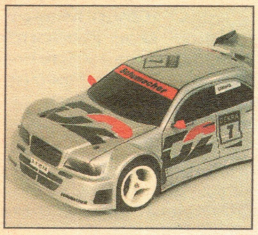


COMPETITION RACING TRUCK

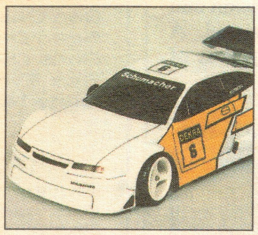
Low, mean, aggressive 1/10th scale racing truck ready to take on the strongest of competition. Two versions, electric and gas for serious racing.

U461	ELECTRIC STORM 2000 Competition Electric Racing Truck	SALE PRICE	$215.70
U486	NITRO STORM 2000 Requires engine & Installation set	SALE PRICE	$221.70

NITRO 10 MK3 & ELECTRIC TOURING CARS



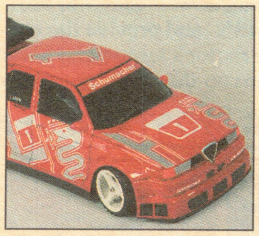
MERCEDES C-CLASS



OPEL CALIBRA



FORD MONDEO



ALFA 155

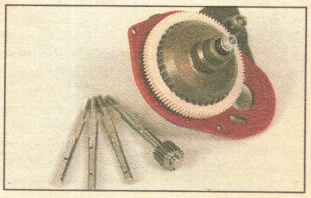


ESCORT COSWORTH

NITRO 10 MK3 SALE PRICE $119.70
Requires engine and Installation Kit

BOSSCAT - 4WD SALE PRICE $149.70
Includes Motor and Speed Control

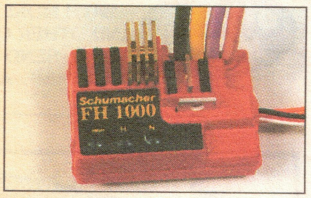
ALL KITS AVAILABLE IN BODY OF YOUR CHOICE



VISCOUS DRIVE UNIT & LAYSHAFTS

U1787	VISCOUS DRIVE UNIT - UNIVERSAL	$54.95
U1788	LAYSHAFT, VISCOUS DRIVE - CAT 2000	$ 9.50
U1789	LAYSHAFT, VISCOUS DRIVE - LOSI XX	$ 9.50
U1790	LAYSHAFT & COVER, VISCO RC10	$15.50
U1791	LAYSHAFT & COVER, VISCO Cougar 2000	$12.50

NEW FH1000 ELECTRONIC SPEED CONTROL



1. High Frequency 1000 Hz operation
2. Fully proportional forward and brake
3. Safe with 16T modified motors
4. Optionmal Heatsink G975 for motors down to 12 Turn
5. Temperature protected w/1.5 Amp B.E.C.
6. Set up LED indicator

G974 FH1000 ELEC SPEED CONTROL $35.99

BUY DIRECT !!

KITS 40% OFF

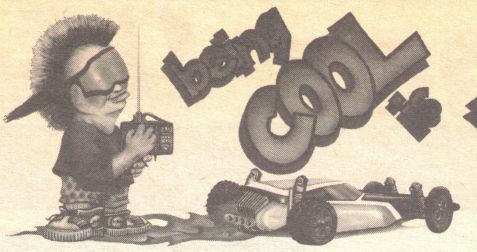
6302 Benjamin Road - Suite 404 , Tampa - Florida 33634

PH: (813) 889 - 9691 OR 889 - 9489

FAX: 813 - 889 - 9593

WE ACCEPT VISA AND MASTER CARD

VISA M/C

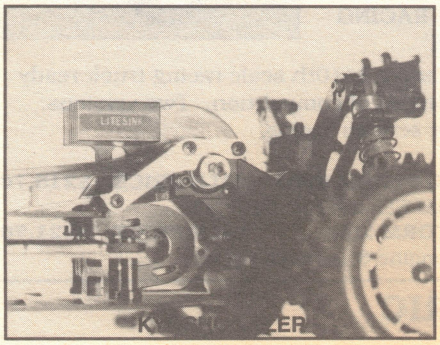


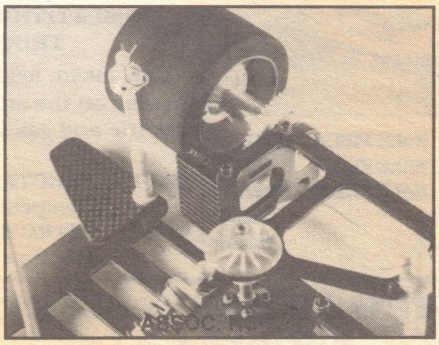
MORE TORQUE
HIGHER SPEED
LONGER RUN TIMES
EXTENDED MOTOR LIFE

LITESINK

LITESINKS ARE THE PERFORMANCE MOTOR COOLING HEATSINKS FROM LITESPEED, AND A LITESINK COOLED MOTOR IS THE HOT SET-UP TO GET MAXIMUM POWER AND PERFORMANCE FROM YOUR R/C CAR.

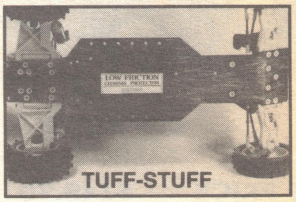
NEW • LIGHTER WEIGHT • MORE COOLING





HEAT drains motors of power. HEAT is not cool, but a LiteSpeed LiteSink is! NOTHING beats a LiteSink for removing unwanted motor heat! The race proven LiteSink design can lengthen run times by 20-40% and provide the option of gearing for higher top speed. A LiteSink will increase your motor's torque and speed. Experience the increased power of running a LiteSink and burn up the track, not your motor.

AVAILABLE FOR MOST POPULAR CARS AND TRUCKS



Low friction covering reduces drag & stops costly chassis wear.



The lowest resistance highest performance connectors available.



Special heat transfer gaskets seal out dirt and aid motor cooling.



TO RECEIVE OUR **NEW CATALOG** WITH MORE INFORMATION ABOUT THESE AND OTHER QUALITY LITESPEED PRODUCTS, SEND YOUR NAME, ADDRESS, AND (2) STAMPS TO:

LITESPEED® INC.
P.O. BOX 4765
SPOKANE, WA 99202
(509) 535-2717

Accepting resumes

QUARTER FLASH MOTORS, INC.



BURY THE COMPETITION!

20 % OFF



Dealer inquiries welcome.

QUARTER FLASH MOTORS • (602) 625-9274
16301 S. Santa Rita, #C • Sahuarita, AZ 85629

CONGRATULATIONS!!!

Drivers Representing QFM at the
1994 NORRCA NATIONALS

Paul Schwander
6th "A" Expert St. Trk. with **Undertaker "2" Motor**
10th "A" Expert Mod. Trk. with **12/2 Ultra-Mod Motor**

Alexi Quinitaran
5th "A" Handout St. Car with QFM's **Z cut Brushes**
5th "A" Handout St. Trk. with QFM's **Hollow cut Brushes**

Mike Evert
1st "A" Sportsman Mod. Car with **17/3 Ultra-mod Motor**

RADIO CONTROL MODEL CARS

P.O. Box 2459
Capistrano Beach, CA 92624-0459
Phone: (714) 496-5411

PUBLISHER
Mark Thiffault

EDITOR
Richard Dowdy

ART DIRECTOR
Scott A. McPherson

ADVERTISING DIRECTOR
Mark Thiffault

ACCOUNTING MANAGER
Jim Lenhart

OFFICE STAFF
Kay Bastnagel
Brett Thiffault

CONTRIBUTING WRITERS

Doug Adams
Del Bagshaw
Jeff Bates
R.C. Canon
Ben Chiu
Reed Deanfield
Chris Dvorak
Rick Eyrich
Gene Husting
Chris Kovachevich
Rich Lacharite
Vernon Lewis
Kevin Meyer
Don Redondo
Joe Ringeisen
Dave Sproul
Rob Tuck
Eric Wiens

RADIO CONTROL MODEL CARS MAGAZINE (ISSN1061-7213) is published monthly at the editorial offices, located at 34249 Camino Capistrano, Capistrano Beach, California 92629. Phone (714) 496-5411. CONTRIBUTIONS: All contributions are welcome. Address your submission to Editor, Radio Control Model Cars, 34249 Camino Capistrano, Capistrano Beach, California 92629. Please enclose postage with manuscripts, photographs and illustrations if material is to be returned. Radio Control Model Cars accepts no responsibility for unsolicited material. All photos should be packed carefully and marked PRESS PHOTOS—DO NOT BEND. All materials published in Radio Control Model Cars becomes the exclusive property of Gallant Models Inc., unless prior arrangement has been made in writing with the publisher. Gallant Models, Inc., assumes no responsibility for unsolicited material. Manuscripts and photographs accompanied by an SASE will be returned. SUBSCRIPTIONS: One year (12 issues) $25.00 per year, two years $47.00. Single Copies $2.95. Subscriptions outside the US (except APO & FPO) $33.00 for one year, two years $63.00. In Canada, one year $35.00, two years $66.00. Foreign and Canadian orders must be in money order form, payable in U.S. dollars. Copyright 1995 by Gallant Models, Inc. All rights reserved. Reproduction without permission prohibited. CHANGE OF ADDRESS: Six weeks are required to change your address. In the meantime, forwarding postage is paid by you, and lost copies cannot be replaced. Send old address at least six weeks before you move, and include new address. POSTMASTER: Send address changes to Radio Control Model Cars, P.O. Box 2459, Capistrano Beach, California 92624. ADVERTISING RATES: Rate card is available on request. Contact the advertising director at the editorial address, or call: (714) 496-5411 HOBBY SHOP ORDERS: contact Radio Control Model Cars at P.O. Box 2459, Capistrano Beach, CA 92624 for details. BACK ISSUES: Some issues are available. See the back issues ad in the current magazine or send $5.00 for each issue desired along with the month and year to editorial address. Magazines will be mailed second class, postpaid. FOREIGN ORDERS: write for details. SECOND CLASS POSTAGE is paid at Dana Point, California and additional mailing offices. Made in U.S.A.

MEMBER RCHTA RADIO CONTROL HOBBY TRADE ASSOCIATION

Easy & Affordable vs. Complex & Costly.

Which do you want your first heli to be?

For most people, easy and affordable are just ways to say "more fun." And that's why, compared to traditional helis, HyperFly is all three.

Flying a HyperFly is so easy that you don't need previous R/C experience. You don't need to learn how to hover, nor how to adjust collective pitch. For that matter, you don't even have to learn how to run a sophisticated heli radio, either.

Why should you? HyperFly doesn't require one.

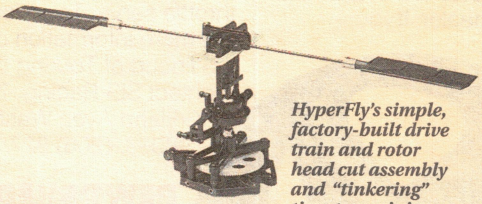
All HyperFly requires is a simple, economical 2-channel radio and the other items you see here. It's a stroke of design genius that cuts the price of heli fun by hundreds of dollars, yet still enables you to make HyperFly lift, loop, turn —even hover into a headwind.



Cuts the cost of heli fun by hundreds of dollars – requires only a standard two-channel radio, battery and charger.

And in the process of making HyperFly more affordable, Kyosho also made it simpler to enjoy — and as everybody knows, simpler is better.

"Simpler" is why Kyosho replaced the usual tail rotor assembly with a simple tail plate. Why the drive train and fixed-pitch rotor head arrive prebuilt. Why the blades bolt on without balancing or finishing — and why finishing the body takes only the time it takes you to slap decals in place.



HyperFly's simple, factory-built drive train and rotor head cut assembly and "tinkering" time to a minimum.

"Simpler" is also why you can have a HyperFly up and running in just 4-5 hours — far less time than you'd spend in getting any other R/C heli in the air.

That leaves you with more time to enjoy the fun of flying. And that's what HyperFly is all about.



With the switch down, HyperFly is ready for a handlaunch.

For the location of the dealer nearest you, please call **1-800-682-8948, ext. 095S.**

KYOSHO®
THE FINEST RADIO CONTROL MODELS

KYOSHO is distributed exclusively through GREAT PLANES MODEL DISTRIBUTORS COMPANY P.O. Box 9021 Champaign, IL 61826-9021

©Copyright 1995 – 3070359



Length: 33.5 in • Rotor Diameter: 22.8 in • Weight: 24.7 oz • Motor: LeMans AP29 (included) • Requires: 2-channel, aircraft frequency radio w/2 standard servos; 7.2V, 1100 mAh NiCd battery and charger

HYPERFLY™

The 2-channel heli that virtually anyone can afford and fly!

New & Hot



HOT BOOKS

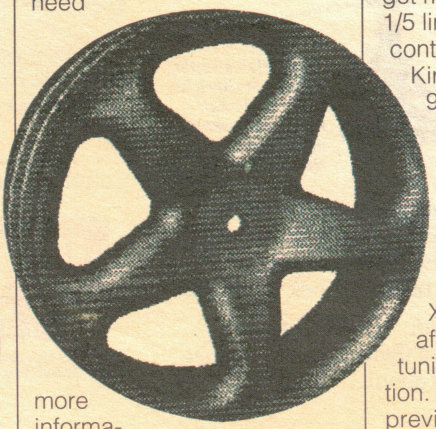
If you're looking for some good information on RC and the products that are available, then these two publications should help you out. Kyosho has a new full-line catalog in English, French and Spanish. Not only does it present excellent color photos of Kyosho's line of products, but the Catalog and Handbook also gives information on radios, motors and gas engines. It sells for only $3.99, and is available at your Kyosho dealer. If you can't find a copy, contact Great Planes Model Distributors, 2904 Research Rd., Champaign, Illinois 61821. (217) 398-6300.



Tamiya has their own full-color catalog/handbook, entitled "Tamiya Radio Control Guide Book" that is chock full of photos and driving hints. You can get a copy by visiting your Tamiya dealer, or contacting Tamiya America, 2 Orion, Aliso Viejo, California 92656.

NEW WHEELS

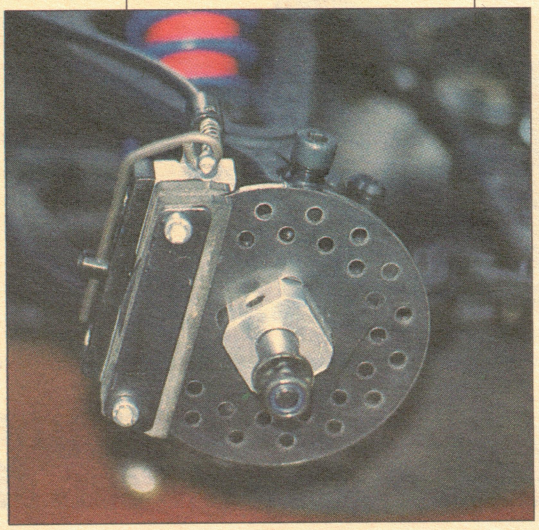
Team Losi has released some good-looking five-spoke wheels that fit all 2.2- and 2.15-inch rear tires, and 2.1-inch front tires. These wheels are molded of durable material and come in natural or bright yellow color. These wheels are available at your Losi dealer. If you need

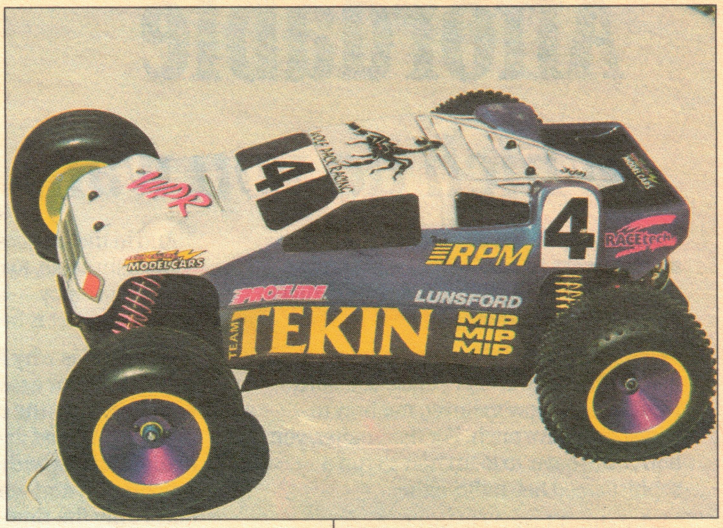


more information, contact Team Losi, 13848 Magnolia, Chino, California 91710. (909) 465-9728.

BIG DISK BRAKES

The FG (Franz Groschl) series of 1/5-scale cars take another technological step forward with the introduction of these precision-built disk brakes. Offering excellent braking characteristics, the FG disk brakes are low maintenance, and are operated through the throttle servo. To order, or to get more information on the 1/5 lineup of Touring Cars, contact SEI Racing, 727 Kirkland Ave., Washington 98033. (206) 827-7158.





REWORKED XXT

Contributing writer Rob Tuck has been doing some work on his already competitive Losi XXT, adding some aftermarket parts and tuning the truck for competition. He's given us this sneak preview of the XXT and plans on presenting a feature article in the November issue of *RC Model Cars* magazine.

HOT FLASHES: The 1/8-scale World Championships have just concluded, with a familiar name at the top: **Lamberto Collari** has won again! This is the fourth WC he's entered, and the fourth time he's won, driving a Serpent Excel with a Collari Nova Rossi engine. Two laps behind was top qualifier **Michael Salven**, also driving a Serpent Excel. The highest-placing American was **Ralph Burch**, who finished the race in tenth, driving a BMT, 100 laps behind...Region 12 Onroad Champs were held at the new Revelation Raceway in Montclair, California, with **Steve Hickman** winning the F1 class over David Jun, who TQ'd the class. **Mike Hickman** took the trophy in Touring Car class with a Yokomo YR4...Across the big pond, **Marco de Marchi** won the European 1/10 Onroad Championships held in Campagnano di Roma, Italy on the Mini Valley track...Just before the Fourth of July, Team Losi, led by **Allen Losi**, held the first annual Firecracker 100 at the Ranch Pit Shop in Pomona, California. The race, for 1/10-scale gas trucks, was won by **Vince Stolo**, driving an Associated RC10GT. Second went to Gil Losi Jr. driving a Team Losi prototype gas truck. We'll have a picture feature on the Firecracker 100 next month in *RC Model Cars* magazine.•

TSC P-12 / G-12

Ultimate Speed Controls



with QuickTUNE™ Setup

If you're really serious about winning, then you should get your hands on the **TSC P-12** or **TSC G-12**. TEKIN's highest performance duo. These hot new speed controls use an advanced design based on the 1994 World Champion 411-G2.

FEATURES:

- QuickTUNE Electronic Tuning
- Adjustable Torque Control
- Exclusive Log/Anti-log Response
- Easily Replaceable Wires

TSC 420-G2

- R/C Land Speed Record -
Over 105 mph !!!



with GoldFET II

Here's the speed control you need to handle your highest power needs like Twin Motors, Drag Racing, Insane Speed Runs, and others. It's the **TEKIN TSC 420-G2**. Holds R/C Land Speed Record at **105.6 mph !**

FEATURES:

- Special High-Current Construction
- External Replaceable Wires
- Super Low Resistance (.00125 Ohm)
- Thunderdrome ".05" Speed Record holder at Over 85 mph!

MICRO RECEIVERS

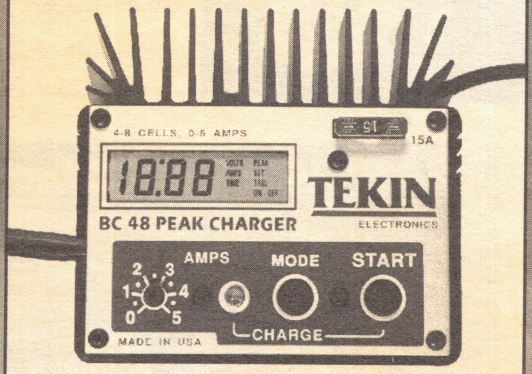


Size: 1.19" x 1.19" x .45"
Weight: .45 oz.

Tekin's Micro Receivers are much smaller and lighter than most stock receivers. Available in 40KHz AM & 20KHz FM versions.

The AM Receivers have a 50% narrower bandwidth, to reduce interference from other transmitters on nearby frequencies. They are the only available AM micro receivers with this feature.

BC 48 Digital DC Charger

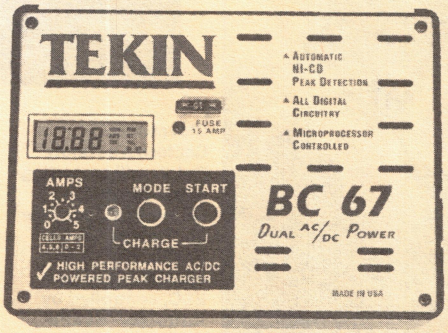


Enjoy affordable pro-style features with TEKIN's **BC48** DC charger. It runs off most 12 volt DC power supplies, charges 4 - 8 cells at 0 - 8 amps, and even charges receiver packs.

FEATURES:

- LCD Display to Monitor Charging Displays Volts, Amps, Time, and Final Peak Voltage After Charging
- 3 Built-in Optimized Charge Profiles

BC 67 Digital AC/DC Charger



If you want the pro-style features of the BC48, plus the option of AC/DC input power, check out the TEKIN **BC67**. Its built-in power supply provides steady charge current, even with the low voltages often found at tracks. The BC67 delivers solid, dependable performance. It charges 6 to 7 cells at 0 - 5 Amps, and 4 and 8 Cell Packs at 0 - 2 Amps.

SIMPLY THE BEST

1994 World Champions

TEKIN®

940 Calle Negocio, San Clemente, CA 92673
(714) 498-9518 ~ Fax: (714) 498-6339

Available Through Finer Hobby Stores

Readers' Page

READER PALS: WHERE HAS THIS SUMMER GONE? SEEMS LIKE I JUST GOT INTO THE RACING GROOVE, AND HERE COMES BACK-TO-SCHOOL SALES! YECHHH! OH, WELL, THERE'S STILL A LOT OF TIME LEFT FOR SOME GOOD HEAD-TO-HEAD COMPETITION, RIGHT? AND PLENTY OF NIGHTS TO SPEND WORKING ON OUR CARS, EH? IF YOU HAVE A CAR OR TRUCK THAT IS PRE-SENTABLE, YOU HAVE A CHANCE TO WIN SOME PRIZES; SEND YOUR PHOTOS TO ME, DEL BAGSHAW, READERS' PAGES EDITOR, BOX 2459, CAPISTRANO BEACH, CALIFORNIA 92624. IF YOURS IS PICKED, YOU'LL GET A COOL RC PRIZE. DO IT!



This month we start off with an RC10 Worlds car from Shaun Permar of Hatboro, Pennsylvania. Shaun's added a Novak 610 ESC, Reedy's Sonic 14-turn double motor, a Litespeed heatsink and SuperCon connectors, Pro-Line's Road Hog tires and a Mirage SS body. A six-cell Sanyo 1700 back powers the buggy, which is charged using Novak's Digi-Peak Plus charger. Shaun plans on getting MIP's CVDs, a Novak receiver and Lunsford tie rods. He's going to get a free subscription to *RC Model Cars* from Del.



Rainbow Riders Onroad Nationals entry the Onroad National Championships were held recently in Naples, Florida, sponsored by Rainbow Riders Performance Eyewear, and this car celebrates the race. With a Tekin 411G II speed control and 27-band Tekin receiver, Evan Shenfeld, president of Rainbow Riders is a front-runner with this fine car.



Cloverdale, California's Kenny Goldie will be getting a new Dahm's Slammer XL body for his Tamiya Toyota Pre-Runner. He's stuffed in a Futaba ESC, controlled by Airtronics' RV2PS radio. Kenny says his truck is like a Stealth bomber: fast and silent.



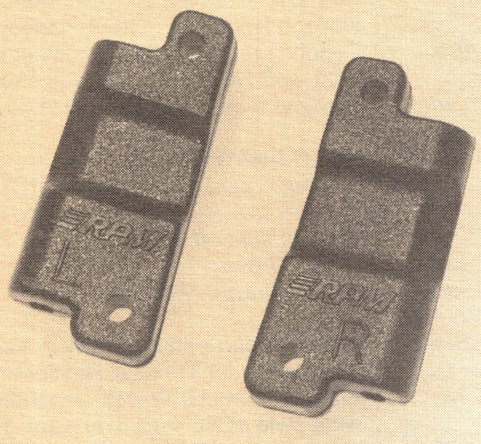
Both the Traxxas Blue Eagle LS-II and the TRX-1 have been modified using A&L's power clutches and dogbone conversion kits. Matched ESP 1700 SCR cells and Litespeed Super Con connectors power the vehicles. Losi Goldstep pins are used for rear traction, with Pro-Line's Edge and Quatro XTR tires are used up front. Motor Man's 13-single motor makes the LS-II move, while a Warlock 24-degree motor does it for the TRX. The two models were built and painted by D.J. Clark, of Deming, New Mexico. D.J. is available for painting, give him a call at (505) 546-4269. We'll send him a subscription to *RC Model Cars* so he won't get bored waiting for your calls.



Thomas Chui, from Calgary, Alberta Canada, is a thirteen-year-old RC enthusiast who runs a Tamiya Nissan King Cab around town. His truck is powered by a Slot Machine 2 motor, controlled by Novak's Rooster ESC, Futaba's S148 servo and Futaba receiver. Thomas wanted a KO EX-10 FM radio but Del was all out—so we're sending him a selection of RC products from his big warehouse of fun.

RPM

CUSTOM ENGINEERED R.C. PRODUCTS



#7062
RC10T2 3° Rear Mounts

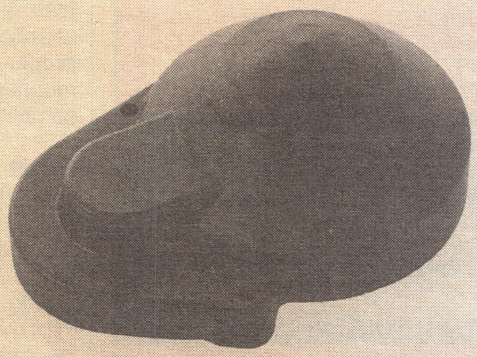
Same geometry as stock, but eliminating unneccessary mounting holes. Very durable, with better fits that remove arm slop. Includes thin black jam nuts for a firm mount.

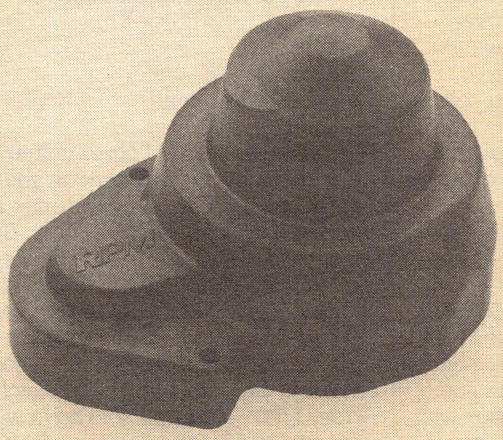
RETAIL $5.95

#8018
RC10T2 Gear Cover (Slipper)

For the stock Slipper with an 87 or smaller spur. Molded in durable black nylon. Won't crack or split out. Large access hole with a soft plug for easy Slipper adjustment.

RETAIL $5.95





#8022
RC10T2 Gear Cover (Hydra)

Extra clearance for use with the Hydra-Clutch and an 87 or smaller spur. Finish molded in black nylon. No trimming or drilling needed. Comes with mounting screws and our easy access soft plug.

RETAIL $5.95

RPM 14978 Sierra Bonita Lane, Chino, CA 91710

Send $2.00 for complete catalog and decals.

Timing Systems
like our
PRO TREE RC™
and
PRO TREE Junior
and our complete line of
Custom Timers
designed to your specs with accessories like our
Large Displays
ET
RACEAMERICA
TrackPak II™
Track Design 80-Page 'How-To' Manual only
$18.95
CA ADD TAX
Now with MORE Tracks! MORE Graphics! MORE Pictures!
RACEAMERICA
PO BOX 3469 SANTA CLARA, CA 95055 (408) 927-6064

Answerman

DEAR ANSWERMAN,

I'm thinking about buying an Associated RC10T2 truck and have some questions about it. Will a Reedy Sonic 13-turn double motor work in it? Also, will a Novak Rooster and a Novak Polaris 75 MHz receiver work with an Airtronics 2P Sport radio? Your magazine is terrific! Keep up the good work!

Garrett Simmer
Pittsburgh, Pennsylvania

A: Garrett, you'll have no problems with using the Reedy motor and the Novak Polaris receiver on the T2 truck. You're Rival 2P Sport must be on the 75 band and be an AM radio system. As far as using the Novak Rooster with the 13-turn double, I would not do it. The Rooster ESC is only for stock or mild modified motors and a 13-turn double is a bit much. I'd try the Novak buster which has the same one-touch setup feature as the Novak Rooster. Pay close attention to the ESC instructions on proper wiring and motor capacitor mounting and you should have a great combination. Thanks for the praise!

DEAR ANSWERMAN,

My name is Sang-Jae Lee and I am fourteen years old. After looking around for a satisfying hobby, I've decided on trying 1/10-scale offroad gas buggy racing. I'm looking to purchase a Pirate 10 4WD gas buggy; and since I'm a beginner, I have some questions. I'm facing a problem on what engine to use, i.e. with or without a pull starter. According to a hobby shop owner, the recoil equipped 0.5. engines have a significant difference in terms of race track performance (less power) over those without pull starters. I'd have to purchase a starter box for the non-starter-equipped .05 engines. So, which would you recommend and is the Pirate 10 an intelligent choice for a beginner interested in gas-powered 4WD buggy racing? Thank you very much.

Sang-Jae Lee
Gainesville, Florida

A: Sang-Jae, the OFNA Pirate 10 4WD gas buggy is an excellent full race RC vehicle; if you plan to seriously compete with it go with the .05 .12 CZ-Z engine. Yes, you'll have to use a starter box with the CZ-Z, but that's the price you pay for running a full-blown gas racing car. Since you're a beginner, seek out a good hobby shop for advice as well as any local RC offroad track in your area. You also might try contacting Ace Hardware Hobbies, 1863 El Camino Real, Burlingame, California 94010, or call their tech line at (415) 697-6099. Pirate vehicles are also distributed by Horizon Hobby and Great Planes Model Distributors. Between them, your local help, and *RC Model Cars* you should be ready to race your Pirate 10 in no time.

DEAR ANSWERMAN,

What I need to know is would the Traxxas Hawk 2 truck be a good RC truck to start off with?

Ben Crosier
Plattsburgh, New York

A: Ben, along with the Hawk 2, you also might consider Traxxas' Rustler and Stampede trucks as well, depending on what style of RC truck you want. The Hawk 2 is good, basic offroader while the Stampede is considered a monster truck. The Rustler is geared towards the racing crowd and would be more for one who wishes to compete. Of course, you can get any of the Traxxas trucks already assembled and ready to run. Traxxas seemingly has a RC truck for just about everybody.

DEAR ANSWERMAN,

I own a Tamiya 300ZX IMSA GTS 4WD sedan with the TA02-W chassis. After reading the May, 1995 RCMC, I was wondering if the bodies for both the Kyosho gas touring car and the Mercedes Benz (used on the Kyosho BMW touring car) would fit on my Tamiya. The front and rear track on the 300ZX measures at a little under eight inches and the width of the GTS body is 8-1/4 inches. The regular Tamiya and aftermarket sedan bodies are too narrow!

Help!
James Revilla
Walnut, California

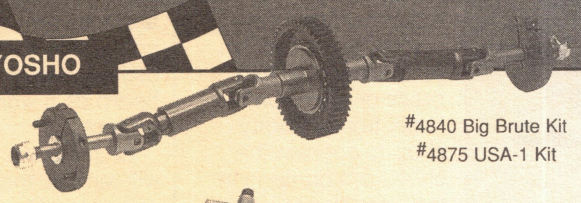
A: James, from what I could gather the Kyosho Bodies should work on your Tamiya sedan. Both the Mercedes and the BMW, plus the Skyline GT-R, Saro Supra, Opel Calibra and Alfa Romeo 4WD shells. Another thought would be to check with Dahm's Racing Bodies as they sell a wide M3 Extreme sedan body, which is designed for 1/10-scale gas cars. GPM Bodies, sold through Hobby ETC., also claims to have wider sedan bodies for the Tamiyas. Give them a call at (603) 595-8549. Check on the Kyosho shells through Great Planes/Kyosho; Box 9021, Champaign, Illinois 61826 (217) 398-6300, and Dahm's Racing Bodies, Box 360, Cotati, California 94931 (707) 792-1316. •

TOUGH STUFF

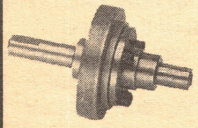
Whether you're pulling, racing or just having fun, THORP products give you more "TOUGH" for your money. You can count on Thorp's leading edge designs and high-quality machining to deliver long-lasting performance and reliablilty.

World famous Thorp Drivers Set the Standard for Quality

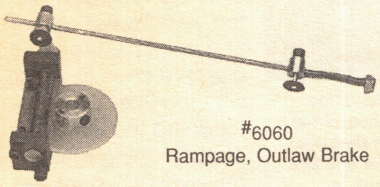
KYOSHO



#4840 Big Brute Kit
#4875 USA-1 Kit



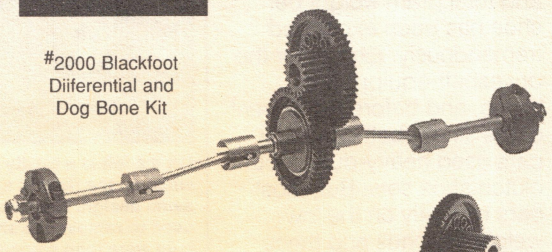
#6050
Rampage Ball Differential



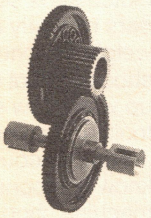
#6060
Rampage, Outlaw Brake

TAMIYA

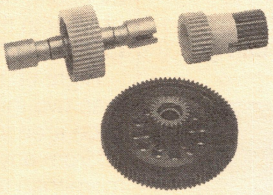
#2000 Blackfoot Diiferential and Dog Bone Kit



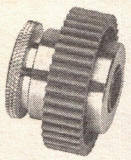
#2050 Super Blackfoot Differential Kit, 48 Pitch



#6000
Clodbuster Differential



#4985 King Cab
48 Pitch Gear Kit

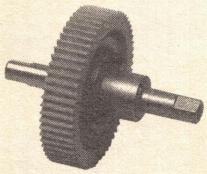


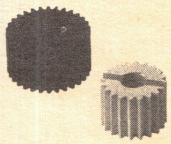
TRAXXAS



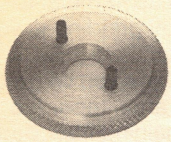
#5320 Adapter Kit

#5350 Blue Eagle/Nitro Hawk Ball Differential





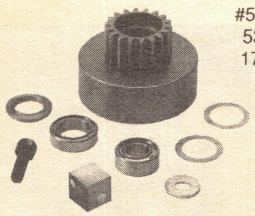
#5302 Idle Gear Set
#5309 3.0 Cheater Gear Set



#5361 Nitro Hawk
Aluminum Flywheel



#5311 Gear Set



#5364, 5360
5363, 5362
17,18,19,20
Tooth
Clutch
Bells

#5370 Nitro Hawk
Adapter Kit
O.S. CZ-R

TEAM LOSI

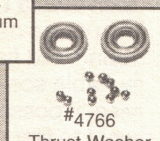


#5130 XX truck 64 pitch 2.62 ratio
#5140 XX car 64 pitch 2.22 ratio

ASSOCIATED



#4770 Gear Set
with Hard Aluminum
Top Gear

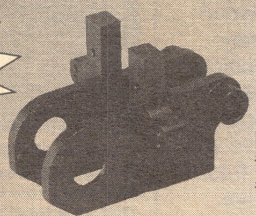


#4766
Thrust Washer

Dirt Burners!

THORP manufacturing

New Aluminum Gas Trans



Dealers Welcome!
Duratrax Gearbox Conversion
#4780 Associated Differential
#5120 Losi XX Differential

Send $2 for a catalog of these and Thorp's many other fine products

4054 E. Mission Blvd., Pomona, CA 91766 • Ph (909) 622-6518 • Fax (909) 622-2947

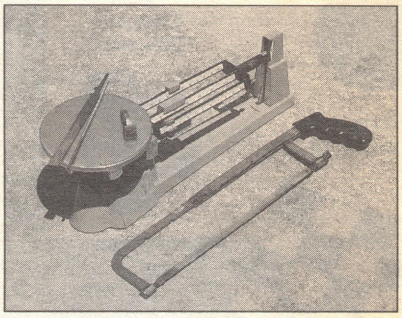
Big Tips

Q-SCALE CLUTCH SHOE LIGHTENING TECHNIQUES

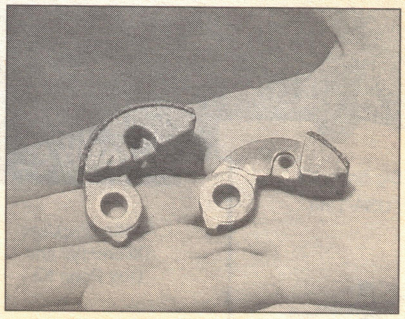
BY RICK EYRICH

Since the introduction of the single-belt drive Q-scale car several years ago, the area of clutch shoe shape, size and total gram weight per shoe has been expanded tremendously. Except for the driveshaft-equipped vehicles, and before the advent of the single-belt car, most cars used heavy-duty uncut clutch shoe sets. But, most cars now rely on the low-weight clutches and these shoes are not hard to make up with a few simple hand tools and some of your time.

Now, of course, if you know someone with a machine shop and can get the shoes milled down, by all means do it! Here we'll work with no machinery more high-tech than a Dremel tool. You'll also need a hacksaw, round and flat files, some suitable scales and a small vise, if possible. You may want to first practice cutting on some old dead shoes to get the hang of how much material you can remove with your tools. Always use fresh shoes for your car's drive setup. By "fresh" I mean clutch shoes with new fiber contact pads and spring mounting holes with no signs of wear in them.



These few simple tools are all that are needed to create your own lightweight Q-scale clutch shoes. A set of accurate scales are a must to achieve a balanced set of shoes, but beyond that the most you'd need would be a Dremel tool for quicker cutting.



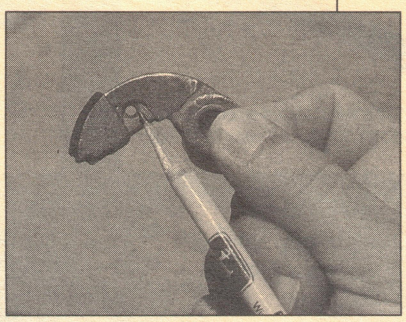
On the left is a totally stock clutch shoe while on the right is a half-cut shoe of the same design. A hacksaw was all that was used to remove the shoe material and the cuts were then smoothed with only a couple of regular files.

LET'S CUT!

Right off the bat, no more than two-thirds of the fiber shoe area should be ground off from any shoe. Cut off more than that, and you're asking for problems.

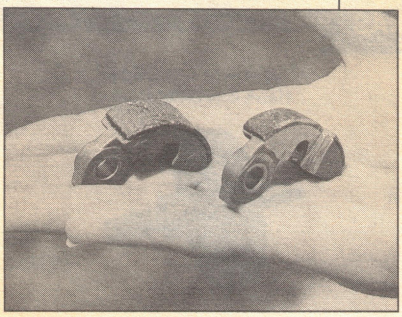
Separation of the fiber pad from the metal shoe itself is highly possible due to excess heat and the stress of the constant power-on, power-off conditions the Q-scale car is subjected to all the time. To avoid cutting off too much fiber contact pad material, mark out the shoe with a Sharpie pen prior to doing any grinding.

If possible, mount the marked shoe in a small bench-mounted vise to ease the major cutting portion of each shoe. Also, use some thin brass or aluminum sheet from a hobby shop to cushion the shoe from damage in the vise. Never, under any circumstances clamp a shoe in a vise with the fiber pad touching the vise jaws or cushioning material—you will damage it. Once the shoe is secured, you can use either the hacksaw or a Dremel tool to do the majority of the metal shoe removal.



Under no circumstances should any metal be removed from around the clutch spring mounting hole in the middle of the shoe. This area receives a ton of stress already and should be as thick as possible to prevent shoe breakage.

To get a good outline of the shoe to be removed, cut down through the fiber pad area first. Cut slowly and angle the saw so your cut is long and straight. Then, cut your 90-degree cut across until you meet with the first cut. Take the extra time and care at this point to not over-cut the fiber area, as a bad cut can ruin a clutch shoe. Remove the shoe from the vise and check your work so far.



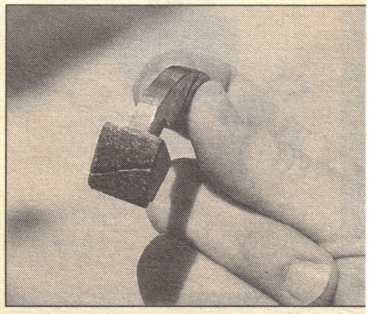
In this picture you can tell just how much material can be removed from just one side of the shoe. Once the opposite side has been lightened you can proceed with balancing the pair. Plus you can do the final smoothing and clean the fiber pads as well.

Make sure both sides of the remaining shoe material are even and straight. Use a coarse flat file to do this and use a piece of scrap cardboard as a work surface to protect the shoe.

At this point, some racers will remove the thin strip of remaining fiber pad on the cut area of the shoe. A Dremel tool works best for this. You should wear a protective face mask or glasses to avoid contact with the pad material.

Once the fiber portion of each shoe is removed you can consider grinding down the metal shoe area were the cutoff fiber pad had been. This can reduce the chance of the shoe metal from touching the outer clutch drum as the remaining shoe wears in. A worn pad can allow metal-to-metal grinding in your clutch.

Once you've ground the area, taper the remaining fiber pad's leading edges to ensure a smooth engaging clutch once the whole unit is back in the car.



This fully cut and balanced shoe is ready for installation in the Q-scale car. Nothing more than simple hand tools were used to make these clutches. If you have the tools and the time you can easily make these lightweight shoes.

continued on page 31

TEAM ASSOCIATED

PARMA PSE

PRESENTS

NORRCA

1995 Road Course Nationals

1995 Road Course Nationals

RADIO CONTROL MODEL CARS
GALLANT MODELS INC.

SILVERBOWL SPEEDWAY, RUSSELL RD. & BOULDER HWY., LAS VEGAS, NV

OCTOBER 14TH - 15TH

KIMBROUGH Products

KYOSHO USA

Andy's

MAXTEC DEVELOPMENT

TWISTER

PRO-LINE

JACO

DAHM'S RACING BODIES
DAHMINATE THE COMPETITION!

PROTOform

TECNOCRAFT

ROBINSON RACING

BBR SCALE RACING PRODUCTS

TEKIN

Racing

STEALTH BATTERIES

PARAGON Racing

Entry Fees: $45.00 for Sportsman Stock & TKS (includes 1 handout motor), $35.00 for all others.
Schedule: 11th-12th open practice, 13th controlled practice **(If necessary)** 10am - 6pm , 3 qualifiers on 14th, Mains only on 15th. 14th check-in 7am-9am , mandatory drivers meeting 9:30am, 1st qualifier 10am. October 15th track opens 8am, concours 9am, mains at10am. All Experts will run triple "A" mains.(1st =100pts, 2nd =99, etc., best two mains count, worst main will only be used as a tie breaker). **6 cell maximum all classes. 1700 MAH batteries are legal in Expert only. Pre-Entries close 10/7. Entries received after 10/7 will not receive a shirt. 8th Annual Team Cup Challenge:** The Team with the highest overall points will be awarded a silver cup for "Best Road Course Team" of 1995. Teams must pre-enter prior to the 1st qualifier. **Only Expert Drivers are eligible for Team Cup.** **GTP OR WSC BODIES ALL CLASSES EXCEPT FORMULA TKS & TOURING. Formula & WSC classes must have drivers & Touring Cars must have interiors. ENTRIES CLOSE OCTOBER 12TH, NO EXCEPTIONS! NO PHONE OR FAX ENTRIES!** **NORRCA 909-944-5381. STEVE STROBL 702-458-6758. Mail entry form with check to NORRCA 1651 W. Foothill Blvd. #225. Upland, CA 91786.**

1995 PAVED ROAD COURSE NATIONALS ENTRY FORM

(for a confirmation letter, enclose a self addressed stamped envelope)

NAME_____ PHONE # _____ Shirt Size ____ **1 Shirt Per Driver**
CAR#_____ NORRCA # _____
(1) SPORTSMAN STOCK___ (2) EXPERT STOCK ___ (3) SPORTSMAN MOD. __ (4) EXPERT MOD. __
(5) FORMULA TKS __ (6) EXPERT FORMULA TKS __ (7) 1/12TH EXPERT STOCK __ (8) 1/12TH EXP. MOD. __
(9) TOURING CAR SPORTSMAN MODIFIED__ (10) TOURING CAR EXPERT MODIFIED __
FREQUENCIES 1._____ 2._____ 3._____ FREQUENCIES 1._____ 2._____ 3._____

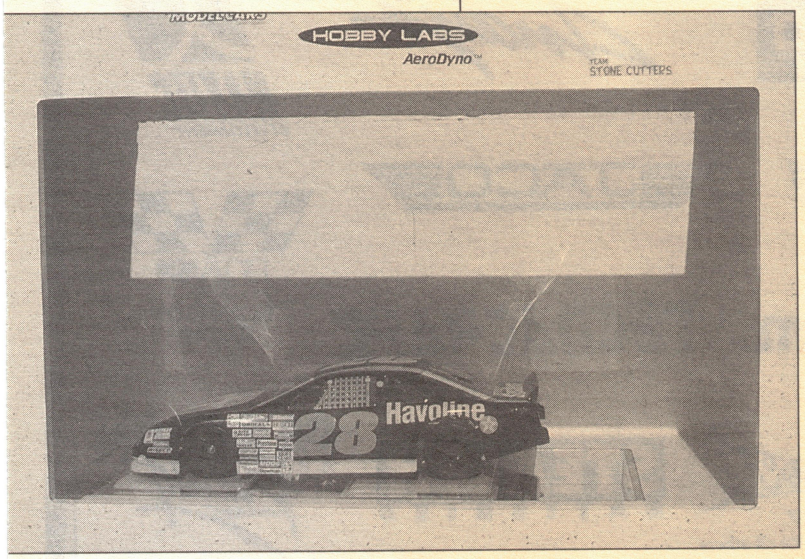
Racer's Edge

THE AERODYNAMICS OF RC RACE CARS AND TRUCKS: BASICS

BY BEN CHIU

At *Radio Control Model Cars* we strive to bring you the latest in RC technology. That's the purpose of this column. In the months ahead, we will bring to you cutting-edge research while exploring concepts and ideas that can help you gain an edge on the competition. If you learn something new, good. If it makes you think, better. If it helps you win more races, great! Nothing would make us happier.

This month we will cover aerodynamics as it applies to RC racing. It is well known by every full-size auto manufacturer and racing team that good aerodynamics can improve fuel economy, increase top speeds and enhance road handling. Just what does that have to do with RC racing? Obviously, just as with full-size cars and trucks, the overall effects of aerodynamics varies with the class of RC racing that you compete in. Also, it should be understood that these advantages are of more significance for racers who are competitive (near the very top of their class), but just for the sake of argument, let's make a couple of assumptions. First and foremost, you must be able to drive well. (After all, no matter what car you drive and how much money you spend on equipment, if you can't drive, your chances of winning are slim to none.) Second, let's say that most RC race car/truck chassis can be track tuned enough to handle a track and are well maintained. Now if you and your hottest competitors have the best motors and batteries that money can buy (I know you spec class guys are moaning, but bear with me here. This is just a top end/worse case example), and each can be geared properly. Without bringing a wild card racing variable known as luck into the scenario, quite simply, the car or truck that has the best balance between road handling and lowest drag (as you'll see later on, there is a relationship between these two characteristics.) will be faster. Unfortunately, aerodynamics is the one area of performance that is either only partially understood, or largely ignored by the vast majority in the RC world. Quite frankly, we want to change all of that.



The author's wind tunnel for 1/10- 1/12- and 1/8-scale cars and trucks is capable of generating winds up to 125 mph. It can measure drag, lateral stability, front and rear down force. It will be used for a series of studies of RC bodies' aerodynamic qualities that will appear in *RC Model Cars* magazine.

SEARCHIN' SAFARI

During my research, I've found that gathering reliable information on RC racing aerodynamics was, well, like trying to nail Jell-O to a tree. As with other leading edge ideas and technology, this area is vastly unexplored. Fortunately, there has been tons of research done for full-size vehicles and race cars. With RC cars and trucks being small versions of the real things, and considering that many of the tests conducted for full-scale cars were done on scale models at one time or another, a lot of this information can be applied to RC racing. However, there are some attributes of RC race cars and trucks that are unique to RC due to the current designs. We will concentrate on these variances, but will also discuss the concepts and phenomenon that both have in common as well. This is because, as you will eventually see, aerodynamics need to be viewed as a whole system. Changing one aspect of a design will, in most cases, alter characteristics elsewhere along the car.

To aid in our research of this broad subject, I've designed the Hobby Labs AeroDyno™. It is a 1/12-through 1/8-scale wind tunnel that is capable of measuring lift, drag and lateral stability. I designed the AeroDyno out of necessity simply because there are no commercially available wind tunnels out there that are powerful and sensitive enough to provide what we needed.

Before we get into that, let's cover a few basics that you'll need to understand to fully grasp the concepts and information that we'll explore. While we will discuss concepts that apply to open wheel cars and trucks (Formula 1/Indycar, buggies, monster trucks, sprint cars, dragsters, etc.), we'll look at Superspeedway cars first. We've decided to choose SS cars for two reasons. One is, we wanted to illustrate one of the more simple (as you will see it's still quite complicated) aerodynamic structures because it will be easier to understand. The second reason is because wide open throttle SS racers stand to gain the most from this information.

RACING DRAG

Let's start by stating that, as you probably have already gathered, the reduction of excess drag is our objective. Excess drag is any drag that does not contribute to the stability of the vehicle. (As you will discover, since most racers don't design and manufacture their own car and truck bodies, drag reduction in RC cars for the most part is actually an exercise in lift reduction.) It should also be stated that it is impossible to achieve zero drag. Anytime a body is moved through air (which in scientific terms behaves like a fluid—we'll get to that.), drag is produced. In order to reduce

continued on page 32

BRP INC.
MODEL RACING PRODUCTS

REALISTIC RACING AT A REALISTICPRICE!

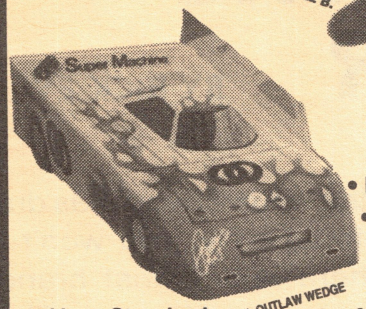


#100 STOCK CAR

OVAL OUTLAWS
SIMPLY FUN!
IN 1/18TH SCALE



NEW! WINGED SPRINT CAR
#102

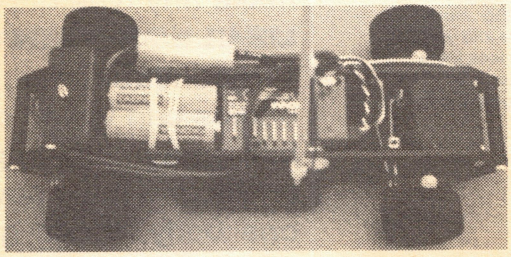


#101 OUTLAW WEDGE

- Uses Standard Radio Equip.
- Uses 4 AA Ni-Cad's (not included)
- Powerful Mini Motor
- Mounted & Trued Tires
- Tough Clear Body
- Runs 20-25 Min. Per Charge! Just think—a *FULL RACE WEEKEND* on one charge!

- In Your Basement
- In A Parking Lot
- In Your Garage
- At The Track
- Pure Driving Fun!
- Simple Chassis Design
- Easy to Assemble

ONLY $49.95
DIRECT FROM BRP
SUGGESTED RETAIL $59.95



TO ORDER: Fill out below, send Check, M.O., or include VISA info. Or contact your Hobby Dealer.

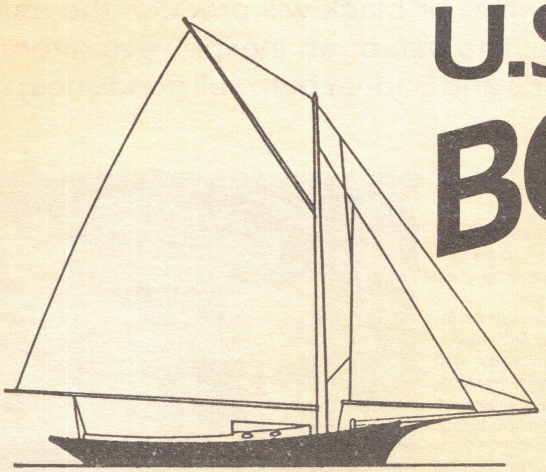
Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone ( ) _____
VISA Card No.: _____
Expiration Date: _____
Signature _____
(as appears on card)

____ #100 Stock Car ($49.95) _____
____ #101 Outlaw Wedge ($49.95) _____
____ #102 Sprint Car ($49.95) _____
____ #355 Ball Diff. Kit ($18.00) _____
____ #440 4-Cell Batt. Pack ($15.00) _____

Quantity Total..... $ _____
Shipping & Handling..... $ 5.00
Ohio Res. Add..... $ 2.75 tax
Grand Total Enclosed ..... $ _____

DEALERS CALL FOR SPECIAL INFO

1575 LOWELL STREET, ELYRIA, OHIO 44035
PH (216) 284-0270 • FAX (216) 284-0271
For Catalog and Decals, Send Large Self-Addressed 52¢ Stamped Envelope with $2.00.



U.S. BOAT & SHIP MODELER

THE **COMPLEAT** MODEL NAUTICAL PERIODICAL!

Ph: (714) 645-8830

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

SUBSCRIBE NOW (Starts with next published issue).
U.S. Only (includes APO and FPO): One year (4 issues) — $13.95
Two years (8 issues) — $26.75
Overseas (also Canada and Mexico); One year only — $23.00 includes postage and handling. Payment must be in U.S. funds, drawn on U.S. bank. Calif. residents add 7¾% sales tax.

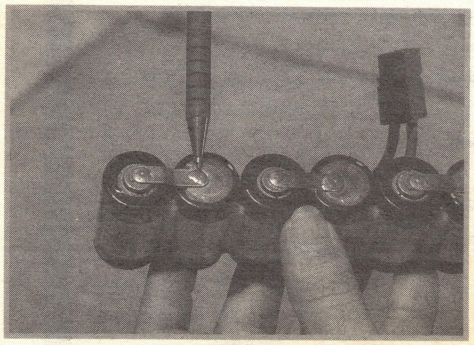
Name _____ Sig. _____
Address _____
City _____ State _____ Zip _____
Visa or M/C No. (Add 5%) _____ Exp. Date _____

BACK ISSUES AVAILABLE - Limited supply, $5.00 per copy. U.S. add 75 cents per copy, outside U.S. add $1.50 per copy for shipping.

BOX 2459, CAPISTRANO BEACH, CALIFORNIA 92629

12 CHEAP WAYS TO MAKE YOUR RC CAR FASTER

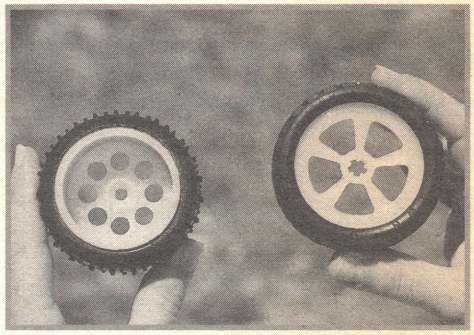
BY RICK EYRICH



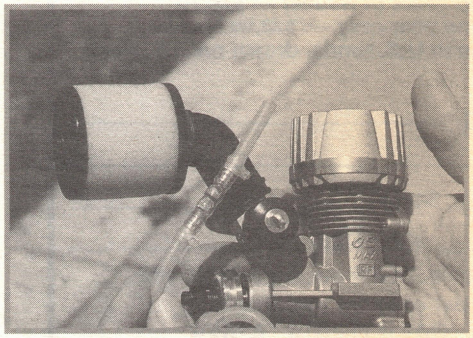
This heavy brass tab has far less resistance than the factory-installed steel cell tabs used on most packs. These tabs hold the packs together much better and you'll have less false peaks while charging the cells.



Bearings should be maintained on all types of RC cars. A good lube should be applied to cleaned bearings prior to re-installation in the rims, axles or gearboxes of your car.



Sometimes a simple thing like a tire change can slow your car. The smaller profile offroad tire on the left will increase your speed, while the taller one (larger diameter) on the right will decrease speed.

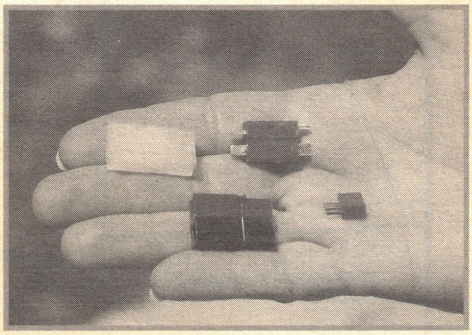


Air and fuel filter maintenance of gas RC cars is vital to top performance and speed. Always check and/or clean the air filter after each day's running and the fuel filter after each gallon of fuel—or sooner.

I guess my use of the word "cheap" has drawn your interest. Unfortunately, you won't find any information here about what brand of motors or batteries to use. Nope, you'll only find out about simple, inexpensive ways to make any type of RC vehicle run better.

USELESS PAINT ON YOUR BODIES

It sounds strange, but in many cases, Lexan bodies can weigh down your RC car. If you use spray cans to paint your polycarbonate shells and have several colors and coats on one body, it can get heavy with paint. Try using lighter coats and avoid super-heavy sprayings of one color. Many times RCers will lay on ample paint coats to make the main color opaque. In many cases, a single spraying of white or black will produce the same results. The use of an inexpensive airbrush (Testor's and Badger both sell good ones) will



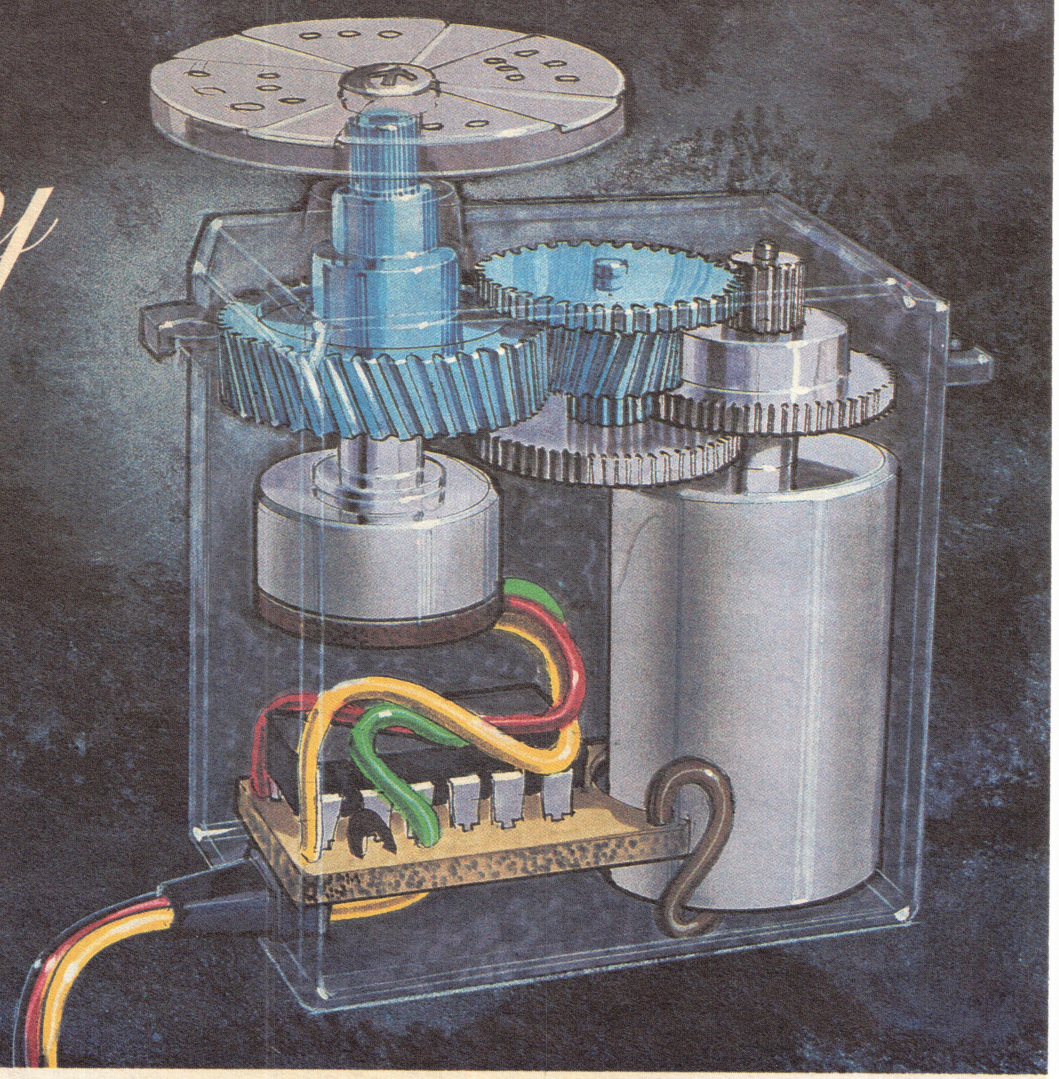
Aftermarket battery connectors can do two things to speed up your car: improve runtime and decrease resistance in the ESC leads. Deans, Powerpole and others all make excellent connectors that will perform better than the Tamiya connector like the one the upper left.

not only save you body weight, but save money on paint needed as well. The use of bottled paints and an airbrush also reduces the amount of overspray you'll have, which makes your better-half happy when you don't give her car a metalflake paint job when you do a body.

Another side benefit is that your bodies will be less prone to cracking or flaking paint

continued on page 34

Beauty in the Beast



Let's face it. Servos are not exactly eye-catching beauties. They are used and abused with scarcely a second thought. Nothing more than a beast of burden.

But when you realize that a servo is the last link between you and your model, beauty takes on a whole new meaning. That's why every Hitec servo comes with our own custom-designed I.C. to provide strong standing torque, a very narrow dead band and improved stability under low voltage conditions. Precise, heavy duty gears are used throughout the gear train to improve the neutral position with minimal backlash. When you combine all this with the latest in SMT circuitry, you have a servo that won't cut out on you when the going gets a little rough.

In the eye of the beholder, beauty takes on many forms. We think you'll find our entire line of quality servos a sight for sore eyes.

Most Hitec servos are available either individually or in packs with other popular connector types that cover the spectrum of R/C applications. See your dealer today and ask to see the complete line of Hitec servos.

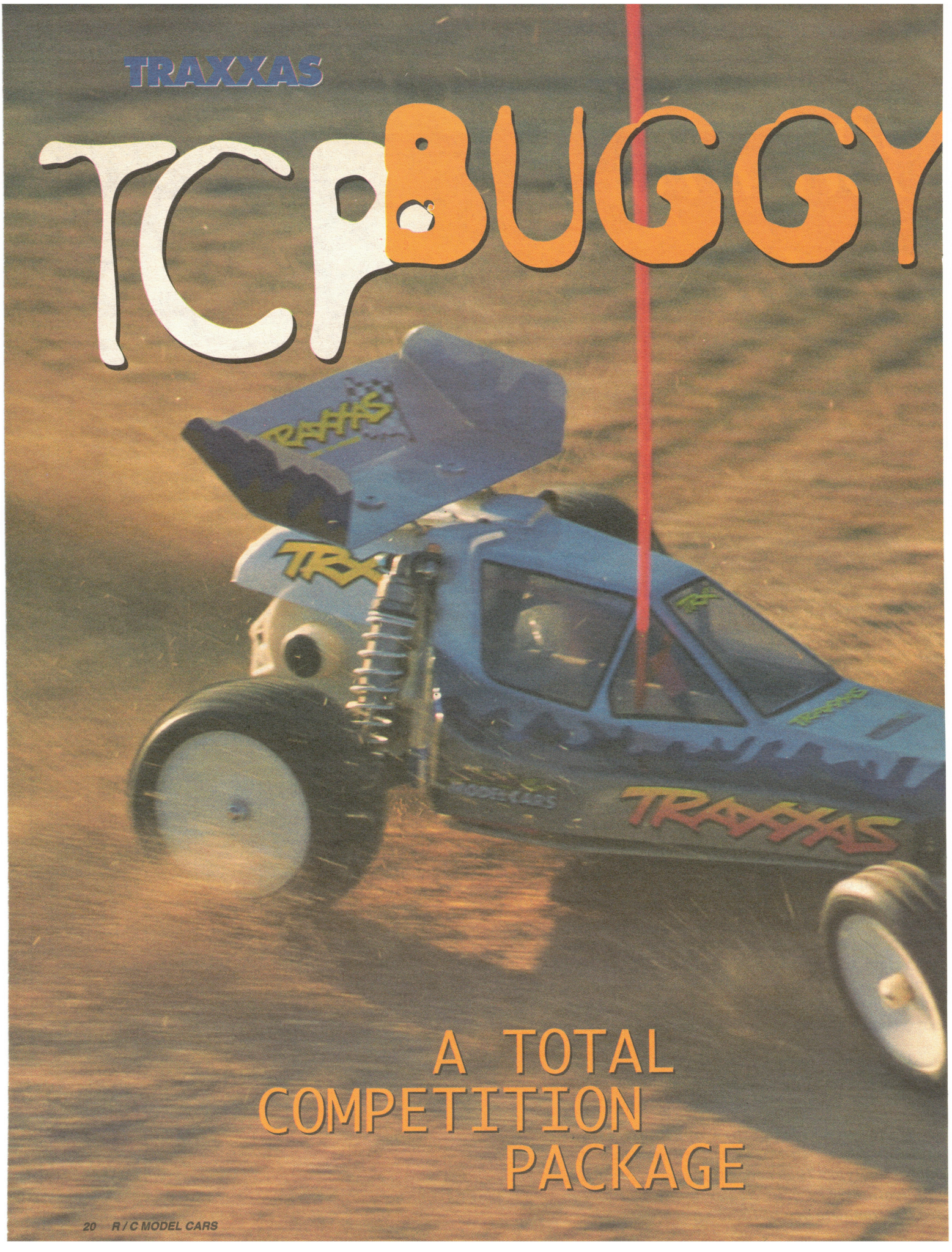
HITEC #	DESCRIPTION	TORQUE@ 4.8 volts	SPEED@ 4.8 volts	BEARING	SIZE LxWxH	WEIGHT	AVAILABLE PACKS
HS-80 HS-80MG	Sub micro Metal gear	31 oz/in 31 oz/in	.15 sec .15 sec	NONE	1.1x0.6x1.1	.62 oz .76oz	RCD924 3 servos
HS-101 HS-101MG*	Mini servo Metal gear	24 oz/in 24 oz/in	.20 sec .20 sec	NONE	1.3x0.6x1.2	.93 oz 1.07 oz	RCD920 3 servos
HS-205BB HS-205MG	Super mini Metal gear	44 oz/in 44 oz/in	.20 sec .20 sec	TOP BALL BEARING	1.3x0.6x1.3	1.1 oz 1.3 oz	none
HS-300	Std. Sport	42 oz/in	.19 sec	TOP NYLON	1.6x0.8x1.4	1.57 oz	RCD905 4 servos
HS-422 HS-425BB*	Std. Pro Ball Bearing	43 oz/in 43 oz/in	.20 sec .20 sec	DUAL OILITE DUAL BB	1.6x0.8x1.4	1.55 oz	RCD910 4 servos
HS-605BB HS-605MG	Ultra Torque Metal gear	77 oz/in 77 oz/in	.16 sec .16 sec	DUAL BALL BEARING	1.6x0.8x1.5	1.73 oz 2.12 oz	RCD605 3 servos
HS-615MG	Super Torque Metal gear	107 oz/in	.21 sec	DUAL BALL BEARING	1.6x0.8x1.5	2.12 oz	none
HS-700BB HS-705MG	Giant scale Metal gear	133 oz/in 161 oz/in	.22 sec .27 sec	TOP BALL BEARING	2.3x1.1x2.0	3.5 oz 4.0 oz	RCD915 3+1 servos
HS-75BB	Retract servo	90 oz/in	.50 sec	TOP BB	1.7x0.9x1.0	1.3 oz	none
HS-725BB	Sail Winch 4 Turns	161 oz/in	1.62 sec 360 deg	TOP BALL BEARING	2.3x1.1x2.0	3.8 oz	none

*Denotes servo only available with Hitec/JR connector. All other servos available with FUT "J", AIRT and Hitec/JR connectors. Please specify connector type when ordering. All servo packs come with switch harness.

hitec®

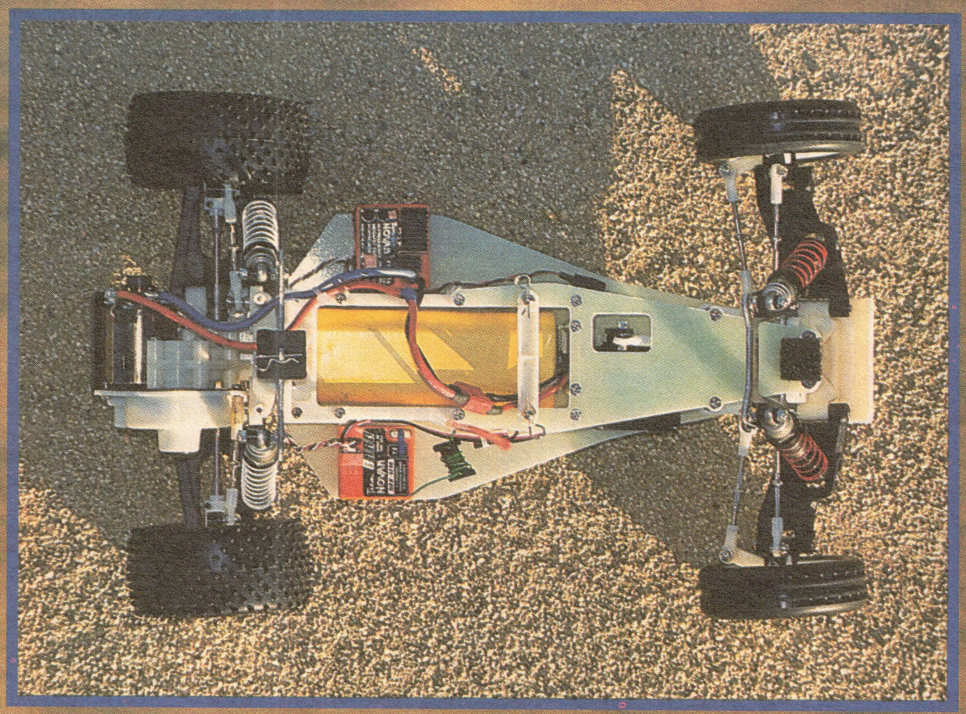
RCD®

Hitec R/C USA Inc. • 10729 Wheatlands Ave., Suite C • Santee, CA 92071
(619) 258-4940 • FAX (619) 449-1002

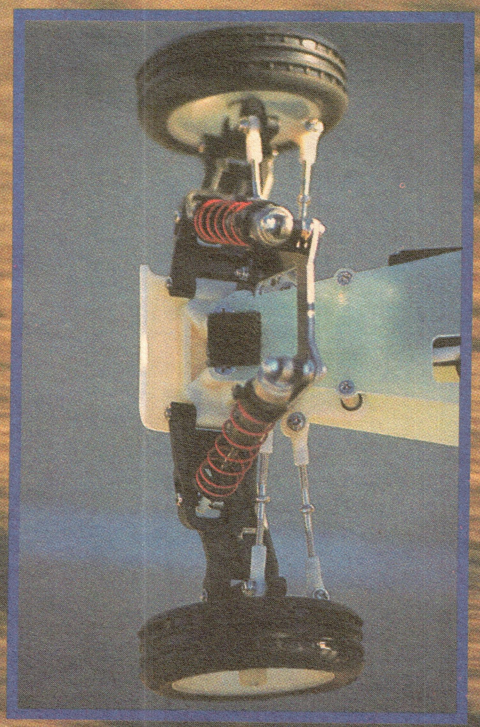

TRAXXAS
TCP BUGGY
A TOTAL
COMPETITION
PACKAGE

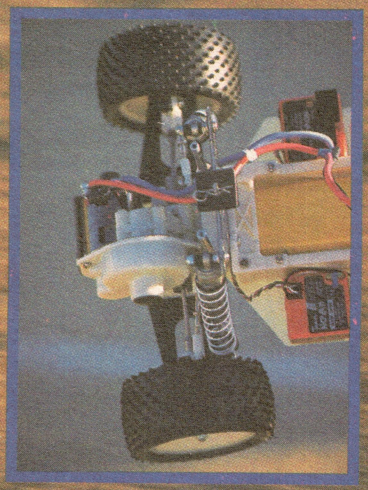
Traxxas Corporation continues to amaze with their worthy RC product releases. The Sledge-hammer monster truck, Nitro Hawk gas racing truck, SRT racing truck and the TRX-3 have all won over a devoted group of RC enthusi-asts. The newest vehicle in this lineup is a 1/10-scale buggy that is equally tunable for smooth tracks with tight corners, or a track with rough conditions. The short front arms, me-dium shocks and a set of metal driveshafts are

continued on page 43







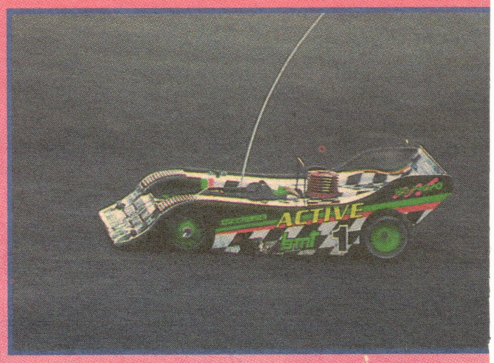


■ CLOCKWISE FROM TOP: The TCP's chassis is based upon the chassis Traxxas uses on their most recent buggy, the TRX-3. This two-tier fiberglass chassis uses Traxxas' patented Zero-Flex design that remains stiff for predictable track response. ■ Our test TCP uses the optional (included) long big-bore shocks and Pro-Line front tires. Traxxas supplies 25- and 30-degree caster blocks for the front steering setup. ■ In back, Pro-Line's XTR Stubbies were mounted on the 2.2-inch rear wheels, and hardened metal dogbones were installed. Traxxas' dependable, externally adjustable ball diff with slipper clutch is standard equipment on the buggy.

BY CHRIS DVORAK

Second in concours went to this Fred Moore-painted 1/8-scale racer entered by Kit Car's Dave Bressel.





Ralph Burch was top qualifier with his Speedline-sponsored BMT, but a clutch bearing destroyed his chances of winning the A-main.

Northern Gas

PORTLAND'S R

BY RICHARD DOWDY

What better way to spend a weekend in June than to join our friends in Portland for the annual Rose Cup Races? The Portland Scale Racers club, in conjunction with the Rose Festival Committee, puts on a well-run event every June that includes 1/8- and 1/10-scale gas racing simultaneously with Trans Am and SCCA full-size cars racing on the Portland International Raceway.

Practice time on Saturday on PSR's course laid out in the Trans Am paddock area at Portland International Raceway.





Heat racing was close and exciting for the more than 100 entrants in 1/8 and 1/10 scale.

Saturday's Rose Cup concours competition brought out a lineup of colorful 1/8 and 1/10 cars.

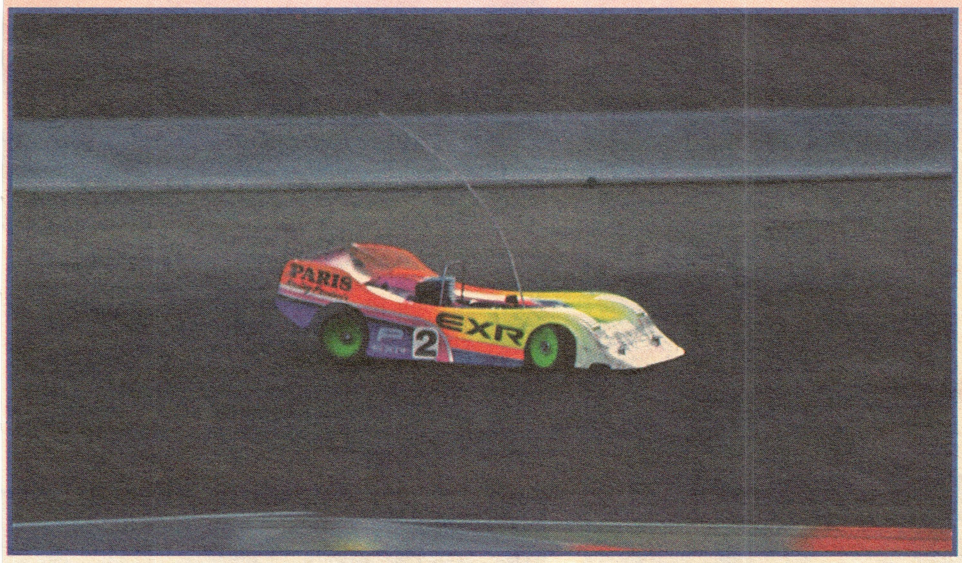






■ LEFT: Right to left: Ryan Crabtree's winning concours car; Dave Bressel's second-place finisher; and third place, Scott Kimbrow. ■ RIGHT: Mike Swauger picks up a pair of A-main first-place trophies from Ken Marcum.

Mike Swauger's 1/8-scale winning car.

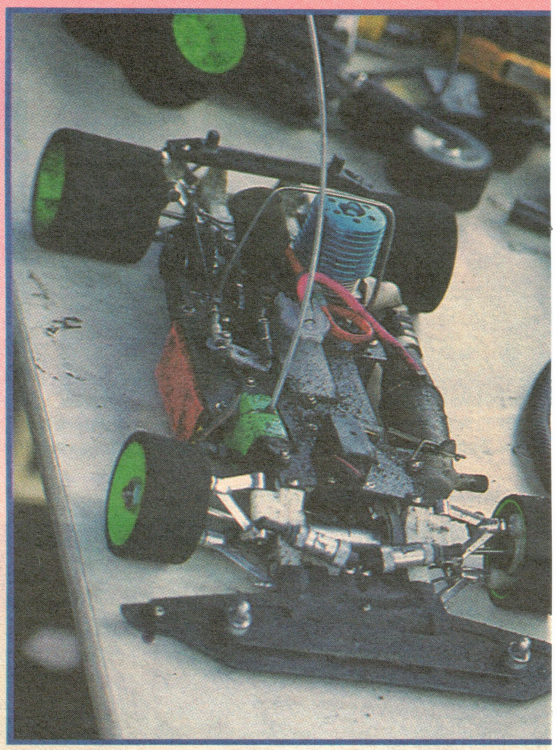


ISF CUP RACES









■ LEFT: Ralph Burch (left) and Mike Swauger battle it out in the 1/8 A-main's early moments. In background at right is Byron Bressel, who ultimately finished second after leading the early laps. ■ ABOVE: Swauger's winning 1/8-scale car after the battle, still dirty, awaiting Ron Paris' loving touch. ■ BELOW: Motor meister Ron Paris drove up from Southern California for his first taste of Rose Cup racing. With his engines powering the A-main winner in two classes, you can guess he was satisfied with the weekend's work.





The start of the 1/8-scale A-main; this was just one of the three starts...rain interrupted the race action periodically.

The major sponsorship of the Rose Cup RC races was shared by Kit Car of Portland and Speedline Distributing from Texas.

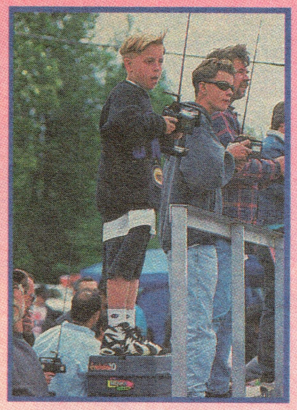
This year, unlike the '94 race, which had conflicting dates with the McCoy gas race in Southern California, a host of big-name racers were attracted to the Rose Cup, meaning that PSR members along with Seattle's SARCAR contingent had their work cut out for them; Sacramento's Ryan Crabtree showed up, while Southern California's Mike Swauger joined big-timer Ralph Burch to contest against locals such as Byron Bressel, Brian Bodine, Wes Zook and Chris White.

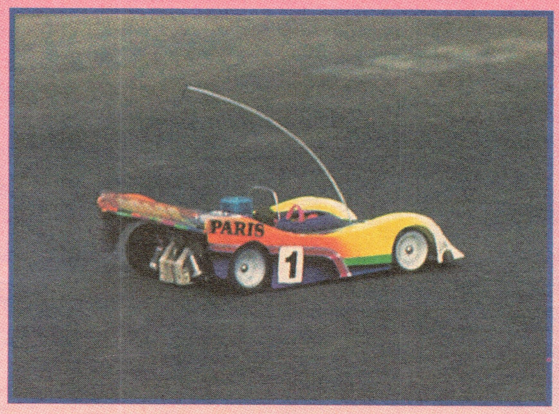
EARLY QUALIFIERS

Friday's qualifying round found Burch and Swauger at the top—Burch dominating 1/8 while Swauger was TQ'ing 1/10 (and second to Burch in 1/8). On Saturday,

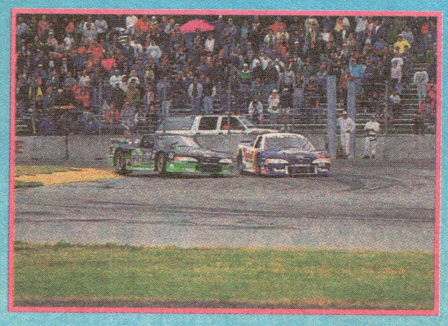
continued on page 45

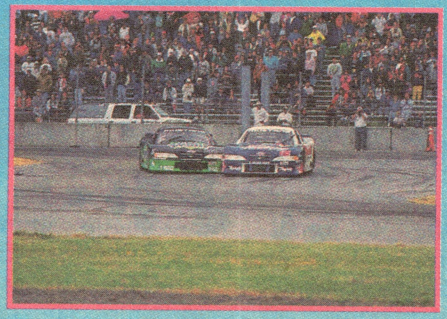


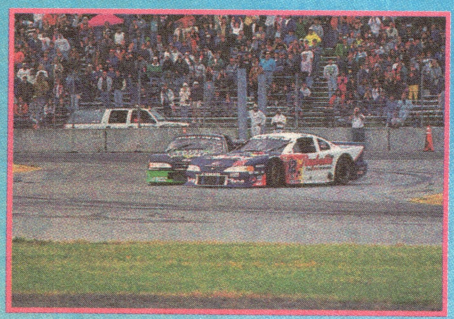


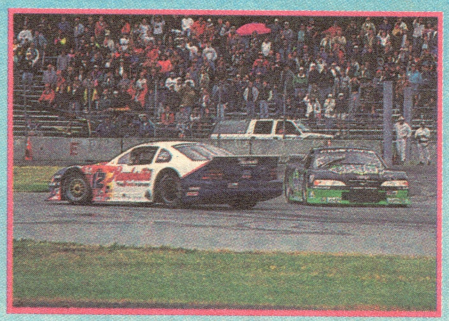


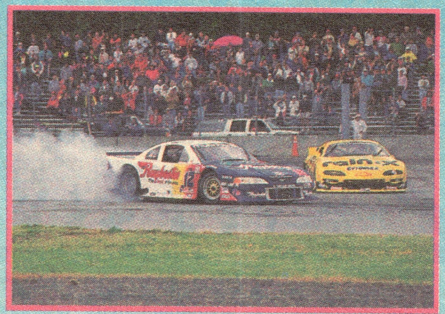
■ LEFT: Twelve-year-old Travis Schreven won the 1/10 C-main with a spirited run. ■ CENTER: Travis does his thing with the help of a toolbox on the drivers' stand. ■ RIGHT: 1/10-scale top qualifier Mike Swauger makes it two for two—a 1/10 victory and 1/8 too.











Last lap action in the Trans Am race, turn one: Tom Kendall slips his Mustang inside of second-place Dorsey Schroeder's Ford and punts him out of the way to take second away. Schroeder wound up in fourth.



On the winners' podium, Kendall explains to winner Ron Fellows how he got inside of Schroeder and nudged him into a spin.

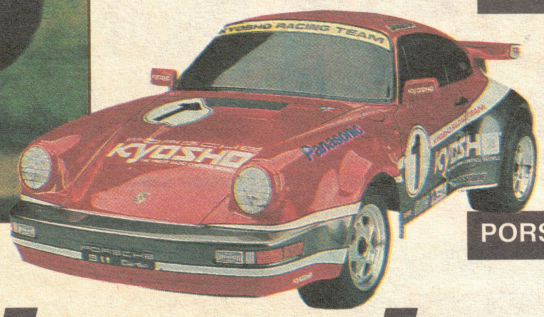












Get real...get nitro.

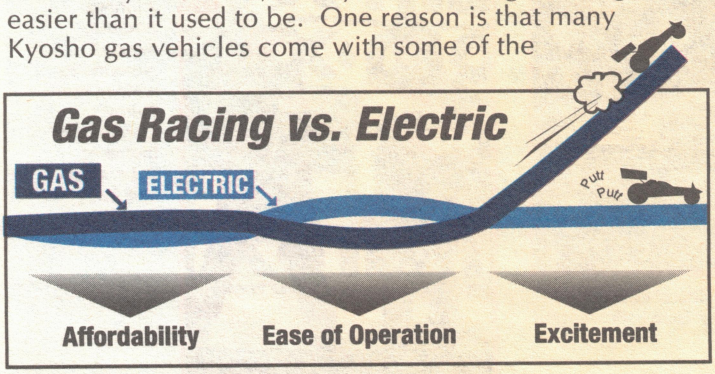
The dirt, the power, the speed, the roar, the nitro fumes. It's not clean, it's not quiet and gas power is definitely not for anyone who's afraid of getting dirty. Yet nothing is more real. Nothing comes as close to actually being behind the wheel.

Not only more real, but Kyosho makes gas racing far easier than it used to be. One reason is that many Kyosho gas vehicles come with some of the finest engines in the world—O.S. Engines, which are notoriously easy to start, maintain and keep going.

And the vehicles themselves have been made more affordable, especially compared to the rising cost of constantly replacing batteries and motors, and easier to assemble—some even come preassembled.

Gas racing has come a long way, too, with plenty of places to run and lots of tracks for competition.

Plus, no one offers you more choices in gas than Kyosho. If you want it, we've got it. So if you really want to get real, there's only one way to go...go nitro.



For a free brochure and the location of the dealer nearest you, please call **1-800-682-8948, ext. 093P.**

KYOSHO®
THE FINEST RADIO CONTROL MODELS

Distributed Exclusively Through

GREAT PLANES®

GREAT PLANES MODEL DISTRIBUTORS COMPANY
P.O. BOX 9021, CHAMPAIGN, IL 61826-9021

© Copyright 1994—3070347

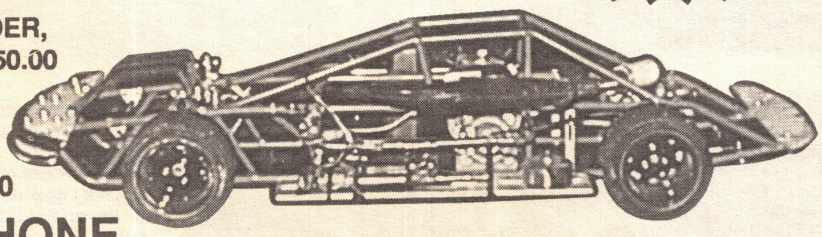
WCM CORP. CHECK OUR LOW 1/4 SCALE PRICES

ZENOAH G2D PARTS
PISTON RINGS $3.00 ea.
GASKET SET $7.50
WYK 4 CARB 5/8 BORE $56.00
PISTON $12.35
CARBURETOR $33.00
BIG MANIFOLD $20.00
CYLINDER $45.18
2HP CYLINDER $58.00
28 GRAM CLUTCH $30.00
ALCOHOL CONVERSION FOR 2HP ENGINE (CARB AND MAINFOLD) $95.00

RIGHT & LEFT HAND METAL ROD ENDS $4.65
3" FIRM HOST TIRE $19.95
3" FIRM STAG TIRE $19.95
QUICKFILL FUEL BOTTLE $7.00
3" SOFT HOST TIRE $19.95

QSAC APPROVED

GRAND NATIONAL (TOP QUALIFIER AT QSAC NATIONALS)
COMPLETE STOCK CAR PACKAGE (ASSEMBLED READY FOR RADIO) $895.00
4-WHEEL INDEPENDENT SUSPENSION ADD $100.00
OUTLAW STOCK CAR
COMES COMPLETE WITH A 2HP CYLINDER,
BIG CARBURETOR AND TUNE PIPE $1450.00
(THIS BABY IS BAD)



LIMITED SPRINT CAR
ASSEMBLED READY FOR RADIO $895.00

(903) 322-4869 TELEPHONE
(903) 322-3643 FAX

GENUINE WCM PARTS WCM INC.

RT. 2 BOX 207A, BUFFALO, TEXAS 75831

LightZ products

P.O. BOX 24910
TEMPE, AZ 85285
(602) 894-6908
FAX: (602) 968-5058

WORLDS FASTEST R/C CAR!

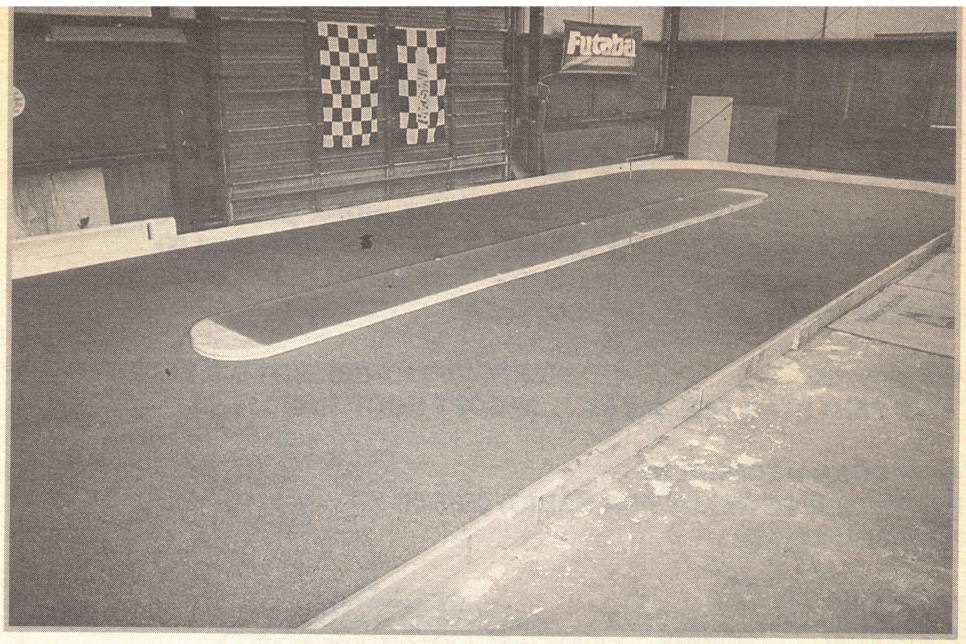
105.6mph!

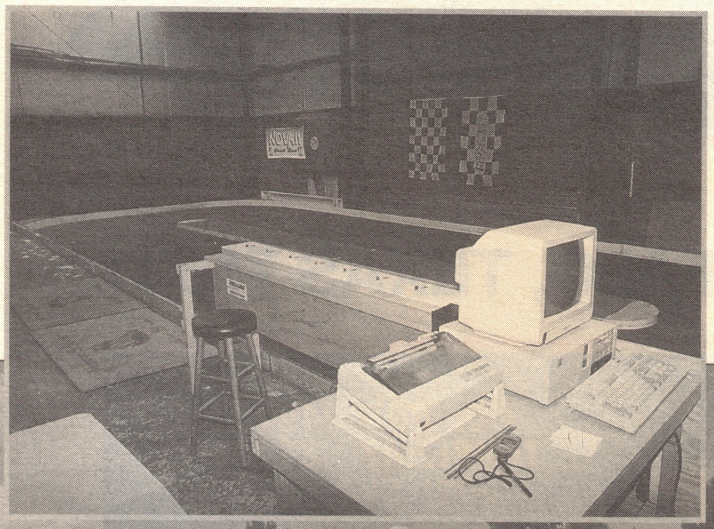


ONCE AGAIN!

CONGRATULATIONS TO A. D. RIGMAIDEN, WHO SET A NEW I.E.D.A. ALCOHOL FUNNY CAR RECORD AT THE SEMINOLE NATIONALS, MARCH 4, 1995 USING A LIGHTZ FUNNY CAR CHASSIS.

1.950 at 65.5mph!



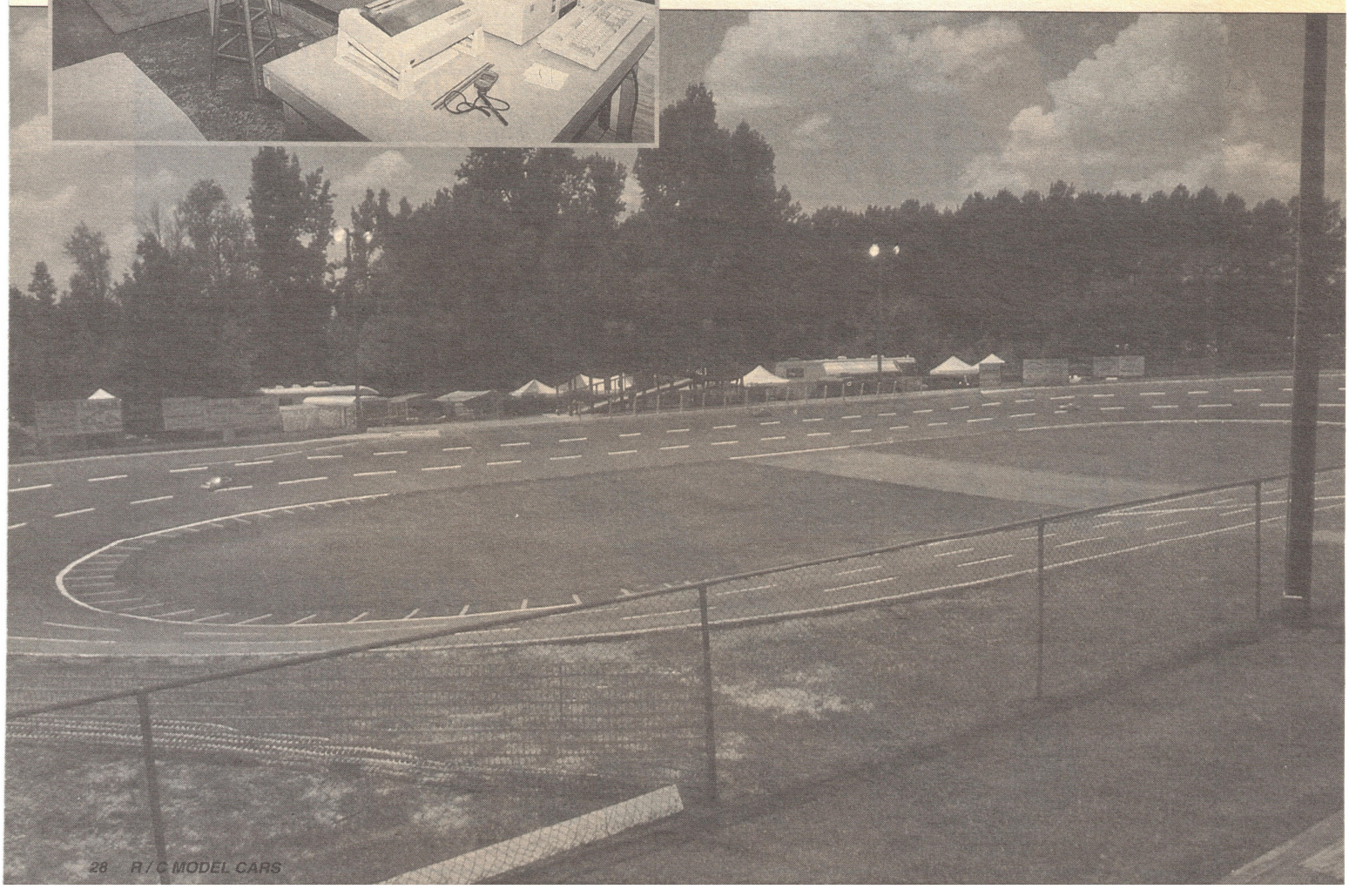


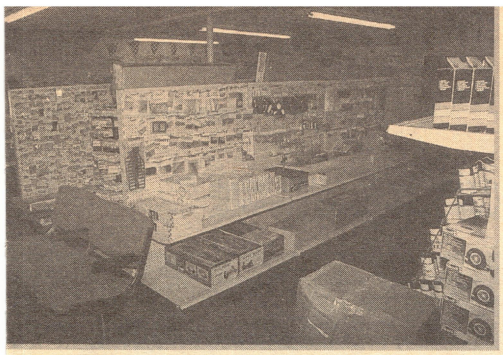
The indoor carpet oval track at Gerald and Gwen Pollard's establishment features BoLink Legends car racing on Saturday nights. A counter/computer scoring system is used on the 75-foot track. The computer is also used on their IEDA-sanctioned outdoor asphalt drag strip.

By definition, Darlington, South Carolina, is a small town. Look at any good road atlas and you'll note that the Pee Dee area of South Carolina has a population at 7,300 folks, give or take. And yet, this community can, along with historic NASCAR Superspeedway, also boast of having three separate RC car racing facilities. Let's face it, this is truly a racing town; and we RCers are a major part of the racing competition around Darlington.

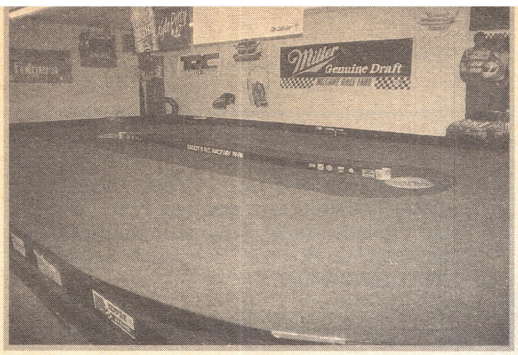
Besides two indoor carpet ovals, there's also an outdoor RC dragstrip and a huge high-banked oval. Racers are also lucky in that each of these RC racing establishments is unique unto itself in

continued on page 49





Hobbies & More carries a full line of 1/10-scale drag cars, BoLink Legends and nearly any other RC vehicle you can think of. The Pollards also have a printing service that has done work for the IEDA and other local RC tracks.



The second indoor track in Darlington is the Bandit RC carpet oval. Racing is held on Tuesdays and Sundays and have classes for NASCAR/NASTRUCK pancars, gearbox cars and BoLink Legends.



Rose and Bryan's shop also carries enough bits and pieces for any RCers' needs and then some. The Howles have worked hard to promote RC cars through programs in schools, car shows and several feature stories in the Darlington/ Florence area newspapers.

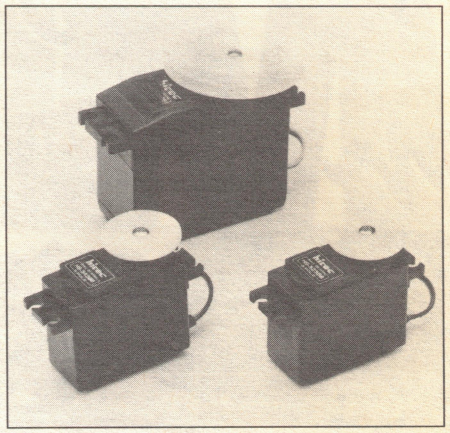
Big Time RC Racing in Darlington

BY RICK EYRICH



Big cars, big speeds and a very big RC track; that pretty much tells it all when you think about the Darlington RC Raceway. Built in 1989, this quarter-scale version of the historic NASCAR oval can produce Q-scale car straightaway speeds over 80 mph. ■ INSET: Darlington RC Raceway's David Tedder (left) and Calvin Stogner (right) know all of the ins and outs of running a RC track. The smiles you see on their faces are in part from having just completing their first QSAC National Championship Series race held over the 1995 Memorial Day weekend.

AWESOME '95 WHAT'S NEW PRODUCTS

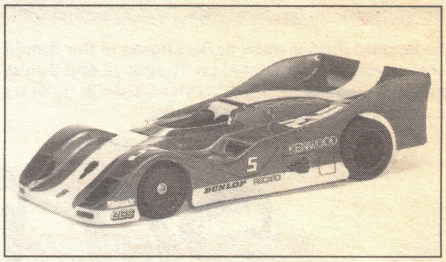


HITEC SERVOS

The line of Hitec/RCD servos includes the HS-525BB ball-bearing servos that uses a five-pole motor for precise positioning and a top ball bearing for smoother operation. The HS-525 servo has the speed and accuracy you need for offroad and onroad 1/10-scale cars and trucks. The HS-545BB Hi-Torque servo is ideal for 1/10-scale monster trucks has a little more torque than the HS-525BB servo. From Hitec, 10729 Wheatlands Ave., Suite C, Santee, California 92071. (619) 258-4940.

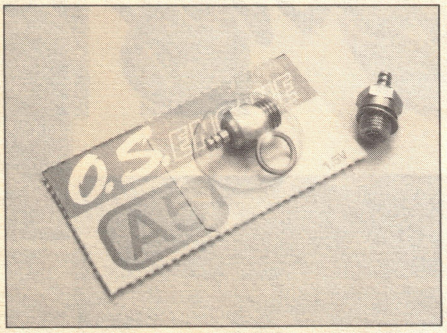
PRO-LINE'S F1 TIRES

Pro-Line has introduced a complete line of mounted and trued tires for Tamiya's F1 series of cars, that are ready to be bolted on and raced. You can choose from Green, Blue, Pink, Purple and White compounds for virtually any track condition you might face, from asphalt parking lots to indoor carpet tracks. The tires come pre-mounted on 1.41-inch composite wheels, both front and rear. You'll find them at your Pro-Line dealer. Write for more information: Pro-Line, Box 456, Beaumont, California 92220. (909) 849-9781.



1/12-SCALE PORSCHE BODY

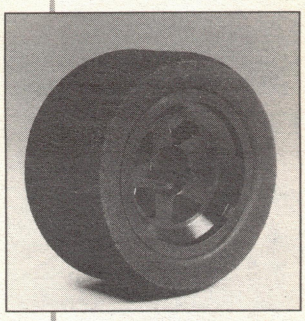
Parma's K-8 Kremer Porsche body in 1/12 scale is modeled after the Derek Bell car that finished sixth at this year's LeMans 24-hour race. It will fit all current 1/12 electric onroad chassis. The body is available in .030 clear Lexan and lighter weight .020 Lexan. From Parma International, 13927 Progress Pkwy., North Royalton, Ohio 44133.

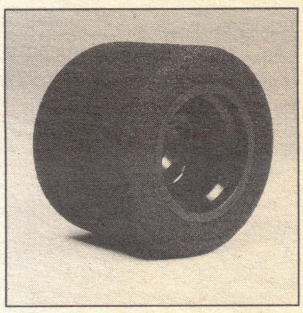


GLOW PLUGS FOR O.S. ENGINES

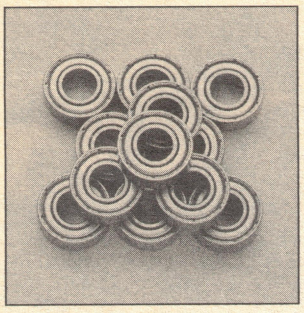
Distributed by Great Planes, these O.S. glow plugs are now available for general sport and high-performance applications. The A5 plug is recommended for two-stroke engines, especially those in 1/10- and 1/8-scale buggies. The A5 is designed for constant on and off throttle operation and provide longer plug life. The A5 element stays lit for instant acceleration. The R5 plug is recommended for high-rpm onroad use, and offers high-rpm durability and allows further closed needle valve setting for higher power and faster response. From Great Planes Model Distributors, 2904 Research Rd., Champaign, Illinois 61826. Phone: (217) 398-3630.

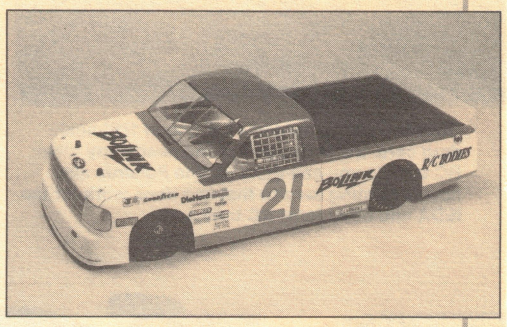
TRAXXAS BALL BEARINGS





A complete set is available for Traxxas' Stampede and Rustler trucks. You get more speed and run time with these bearings by reducing rolling friction. Visit your Traxxas dealer. Traxxas Corp., 12150 Shiloh Rd., Dallas, Texas 75228. (214) 613-3300.







BOLINK TRUCK BODIES

Join the fun by racing in the new Supertruck oval series. To get off on the right foot, choose these new bodies from BoLink RC, 420 Hosea Rd., Lawrenceville, Georgia 30245. For a catalog, send $3.00 to BoLink.



HOBBICO 6-VOLT CHARGER

The Hobbico 6-volt charger provides powerful, efficient charging for Hobbico's 6-volt sealed lead battery, and swell as other 6-volt lead-acid batteries. The wall plug-in unit delivers six volts of DC output at 150 mAH while an LED charge indicator assures charging is in process. The charger comes with a six-foot long cord, complete with alligator clips. Great Planes Model Distributors, 2904 Research Rd., Champaign, Illinois 61826.

BIG TIPS CONTINUED FROM PAGE 14

Now weigh both cut shoes and note how closely they are to your needed final weight. Further filing and grinding can now be done and you should follow these procedures pretty closely. Never, repeat never remove any metal from around the spring mounting holes. Tale some extra time to round off and smooth any and all rough edges on the shoes, as this can prevent any cracking or breakage under a heavy drive load like a two hp cylinder and alcohol fuels. And periodically wipe down the shoes with alcohol to prevent the fiber pads from getting gunked up with hand oil and metal filings.

FINAL CLUTCH SHOE WEIGHT

For those using the extra-wide clutch shoes (see photo), you can use the shoe's remaining trailing edge to balance the two shoes.

Drill a 3/16-inch diameter hole through the entire shoe, taking care to center it in the remaining shoe. Now you can use either a hand reamer or the Dremel tool to file off material to further reduce the shoe's weight. Small chainsaw files will also work, and they are also great for many jobs on RC cars. They're sold in sizes including 1/8, 3/16, 1/4 and 5/16 diameters. They'll cut right through all types of materials and leave a semi-smooth finish as well.

As a final touch, use crocus cloth, emery cloth, or a polishing disc in the Dremel tool to smooth and shine up the cut shoe's metal surfaces. Now go back and re-weight each shoe and note the difference if any in the weight between the two. You must have both shoes as close to the same weight as humanly possible! Unbalanced clutch shoes can damage crankshaft bearings on single-belt cars and jackshaft bearings on dual-belt cars, so match them closely.

Use the scales or an RC aircraft prop balancer to equal the weight of the clutch shoes. These prop balancers will need some modification for Q-scale shoe balancing in the form of an arbor mount. Use the Zenoah clutch arbor and some fuel line to mount the clutch set to the balancer, and go from there. Patience at this point will be very beneficial for your car's driveline reliability and performance. Taking the extra time to final-balance the clutch will pay off over time.

There'll be no undue chattering, noise, slippage, or premature failures if the job is done right.

CLUTCH MOUNTING AND UPKEEP

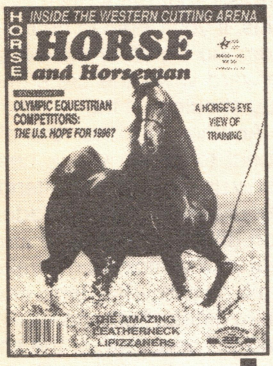
Here are a few things to do prior to installing your newly lightened clutch shoes on the car's drive system: Lightly sand the shoe's fiber area with a 320-grit wet/dry sandpaper. This will further clean the fiber surface and you'll avoid any slippage or shoe glazing as well. Install the clutch spring on the shoes before you mount them to the arbor itself. Lay the assembled clutch on the arbor and check the clearance between the engagement spring

DISCOVER A RARE BREED OF FUN.



Informative and entertaining, HORSE & HORSEMAN magazine will teach you the ropes of horse ownership. Novices and experts at every level will enjoy stories of real-life equine adventures and countless advice from renowned experts.

Covers everything you need to know about buying, foaling, breeding, riding, shoeing, trailing, showing and much more! Take advantage of this special offer and subscribe today!



HORSE
and Horseman

PO Box HH, Capistrano Beach, CA 92624

❑ 1 year (12 issues) : **$15**

❑ *Payment enclosed* ❑ *Bill me*

Name _____

Address _____

City _____ State _____ Zip _____

California residents add $1.16 state sales tax; foreign orders send $10 shipping in Money Order form, payable in U.S. dollars..

NEXT MONTH

In the November issue of RC Model Cars :

Reviews
- Kyosho's Gas-powered Spider
- BRP's Drag Conversion
- Parma's Dodge Ram Truck
- Associated's 10T Truck, Pt. 5

RADIO CONTROL MODEL CARS

ON SALE OCTOBER 5 AT NEWSSTANDS AND HOBBY SHOPS

and the arbor mounting bolt. Many times a clutch problem or noise is nothing more than a clutch spring banging into the 10mm bolt head on the arbor itself.

Apply a small, repeat, *small* amount of light grease to each clutch bolt before slipping them into the shoes. This light grease will prevent any chances of a slow clutch engagement and will also prevent any rust or oxidation on the bolts. Once the shoes are back in the car's drive setup, you'll need to frequently inspect and maintain them to insure you never have any DNFs on raceday. Lightened clutches, by their description, are not made to sustain heavy-duty Q-scale RC car use for very long periods of time. As a rule of thumb, you should eyeball the clutch after every 1-3 racedays and remove and check them after 4 or 5 racedays.

Failure to keep proper tabs on a modified clutch assembly will always end up with a damaged drive system. Another good idea is to use low-pressure air to blow out the clutch drum area between races. This keeps excess track debris and spent clutch fiber material from collecting around the shoes. This in turn can increase your car's drive system life span. Plus, if you begin to hear a noise coming from the clutch or the car starts to creep forward while the car's engine is idling, you should pull the clutch and inspect it.

Another hint that the clutch may be about to cause you a headache would show up as the car is entering the corners. Should you notice a sudden push condition (the car refuses to turn) or it seems that your vehicle won't brake properly or it stalls on yellow flag laps, check the clutch. Many times a light shoe will crack, the fiber pad will separate, or the shoes can even break up all together. Remember, whenever you modify something by lightening a part, you'll need to keep a close eye on it from then on. But with the increased performance gain found with these modified clutch sets, the extra amount of maintenance is small in comparison to the net gain you'll achieve with their use. •

RACER"S EDGE CONTINUED FROM PAGE 16

drag, we first have to understand it.

Drag is categorized as either parasite drag or induced drag. Parasite drag is composed of form drag (the shape of the body, antenna, wing, any protrusions, etc.), skin friction and airflow interference between body components (such as where the front bumper meets the hood, and where the hood meets the windshield). Again, since most racers use pre-made bodies from manufacturers, there isn't much that we can do about most parasitic drag. It is mainly the job of the body designer to make parasitic drag as small as possible. This isn't to say that parasite drag should be ignored if you aren't a body designer. Parasite drag increases at the rate square of the airspeed. In other words, if you double the airspeed, drag will increase four times. Triple the airspeed and the drag will increase nine times!

The other type of drag is induced drag. Anytime lift is produced, it also produces induced drag. As racers, we can to a limited extent reduce some parasite drag by performing common sense things such as using an internally mounted antenna or flush body mounts. However, we have much more control over induced drag. With the help of the AeroDyno, I'll prove it to you.

The assumption that airplane and car aerodynamics were one in the same turned out to be a lethal one for some early modern-era race car drivers.

MAY THE FORCES BE WITH YOU

Aerodynamics is the study of the interaction between a moving body and the atmosphere it moves through. Aerodynamic forces are the forces that act upon the moving body produced by the interaction with the atmosphere. The size and direction of these forces depends on the relative velocity (speed) of the air and the body. It shouldn't surprise anyone that the study of aerodynamics in the early days was strictly for aircraft. In fact, up until the late 50s, the information gathered for airplane aerodynamics was used for road vehicles too. (This fact is quite apparent if you look at road vehicles from this time period. The resemblances between the cars and airplanes were not just coincidences.) Unfortunately, the assumption that airplane and car aerodynamics were one in the same turned out to be a lethal one for some early modern-era race car drivers. Airplanes and cars do share some common aspects. The forces exerted on an airplane wing and a car in forward motion have some similarities. Each has weight, thrust, lift and drag acting upon them when they are in motion in the air. However, a car can generate negative lift. This is the proper aerodynamic term for what many of us refer as down force. (While the term down force is generally accepted today, later on, you'll see why negative lift describes the action better.)

The main difference between today's car aerodynamics and those based on airplane aerodynamics from the 50s is the ground. It seems like a real fundamental mistake, but that's the way it happened. Scientists and designers have had wind tunnels for years, but it wasn't until auto manufacturers and race car teams started using wind tunnels that anyone discovered the missing piece of the puzzle. It turns out that if you take a symmetrical airfoil (an airfoil that has the same shape on either side when faced directly into an airflow produces no lift) and place it near the ground, it will generate lift while it won't when it's away from the ground.

BACK TO BASICS

To understand why this happens, let's take a look at lift. In 1738, a Swiss mathematician named Daniel Bernoulli, published a major work on the behavior of fluids called "Hydrodynamica." Bernoulli's theorem says that the sum of the kinetic energy in an air stream and it's pressure is constant. "The faster a fluid moves past an object, the less sidewise pressure is exerted on the body by the fluid." What this means to us is that a drop in pressure will result if the airflow is sped up. For example, let's look at the wing of an airplane. The air passing over the top of the airfoil has a longer distance to travel than the air passing under it. In an attempt to reestablish equilibrium (even pressure), the air going over the top of the wing speeds up to meet the air passing under the wing at the trailing edge of the airfoil. Since the upper airflow sped up, it drops in pressure creating lift. We know that lift causes induced drag, so this not only explains drag, but in a nutshell illustrates the basis for all aerodynamic improvements in moving bodies including ships in addition to aircraft and automobiles.

THE AIR DOWN THERE

In the past, text books on aerodynamics considered air, theoretically, as a gas that has no internal friction. In reality, we now know that air is viscous. When air moves relative to a surface, it displays internal friction. Particles of air closest to the surface of a body are captured by it. This causes the relative velocity of these particles at the surface to become zero. (Contrary to what some manufacturers would have you believe, wax will not get these particles moving. However, if your body surface is rough and pitted, wax may reduce skin friction parasite drag.) The successive layers of air nearest to the surface are also slowed down by the viscous friction. The velocity of these other layers varies with the distance from the surface. As the distance from the surface increases, the particles of air are progressively less affected. Air that is far enough away from the surface moves almost freely. This area that is practically unaffected by the viscosity is known as the external flow.

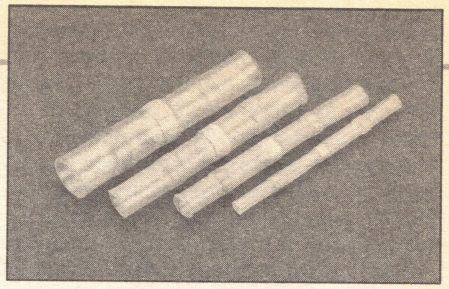
THE BOUNDARY LAYER

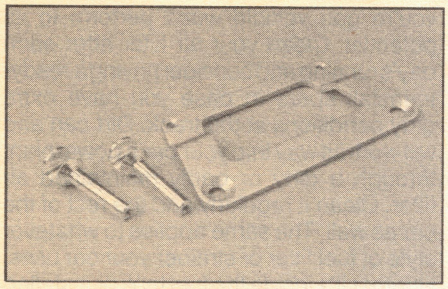
The air that is affected by the body in motion are known as the boundary layer even though it is comprised of many sublayers. Within this relatively thin layer of air surrounding the moving body air there is a sharp variation of velocity. The velocity gradient ranges from zero at the surface to the local airflow velocity outside the boundary layer. There are two types of boundary layers that can exist. The type is determined by the variation in velocities within the boundary layer. When the fric-

AWESOME '95 WHAT'S NEW PRODUCTS

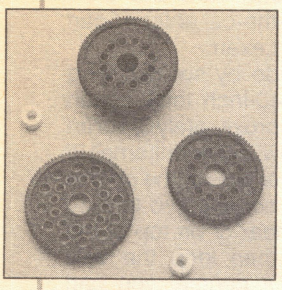
used on other manufacturers' models. Traxxas Corp., 12150 Shiloh Rd., Dallas, Texas 75228. (214) 613-3300.

PROSPLICE ELECTRICAL CONNECTORS
Great Planes' ProSplice Quick Solder Tubes make electrical connections easy and quick. Just place a stripped wire in each end of the ProSplice tube and then apply heat with a heat gun or flame. The heat shrinks the tubing, melts the solder, seals the joint against moisture and oxidation and provides a strain relief on the wires. ProSplice tubes are a perfect solution for attaching radio leads to batteries, making custom servo adapters, splicing wires and securing wire to metal terminals of motors and power switches. Ideal for use at the workbench or trackside, you can get them from your Great Planes dealer. Great Planes Model Distributors, Box 9021, Champaign, Illinois 61821.





BUMPER POST FOR RACING KART
The popular Kyosho Q-scale racing kart has spawned a host of new products, including this Bumper Post set that includes an aluminum skid plate and body posts to stiffen and strengthen the front end. From Kyosho/Great Planes, Box 9021, Champaign, Illinois 61826.



TRAXXAS SPUR GEARS
Now you can get a complete selection of spur gears from Traxxas, including 78-, 81-, 84- and 87-tooth spurs. These gears are efficient 48-pitch for smooth operation, and are pre-drilled for installing the pegs for Traxxas' slipper clutch. The inside diameter is standard 3/8 inch, allowing the gear to be

▪ VACU-FORMING ▪ ▪ VACU-FORMING ▪
▪ POLISHING ▪ POLISHING ▪ POLISHING ▪
▪ DIE CUTTING ▪ DIE CUTTING ▪ DIE CUTTING ▪

MANUFACTURE DIRECT

AIRCRAFT
- Canopies
- Wheel Parts
- Cowls

DIE CUTTING
Custom Dies Made

CARS
- Car Bodies 1/8 to 1/4 scale
- Sprint Cars (Bodies)

MARINE
- Boat Hulls
- Nitro and Gas

METAL POLISHING
Brass and Aluminum







JPK ENTERPRISES

TELEPHONE 702-870-0216
5000 W. Oakey - E8 Las Vegas, NV 89102
FAX 702-870-8378

▪ R. C. HOBBIES MFG. ▪ ▪ R. C. HOBBIES MFG. ▪

RC CARS DECALS!
RADIO CONTROL MODEL CARS
FULL-COLOR FOR YOUR CAR, ONLY $2.50
RC Model Cars
34249 Camino Capistrano
Capistrano Beach, CA 92624

Venom Racing Cells
"The Deadliest Cells Available"
1700 SCRC Batteries
350-359..$42.00 370+..Call for avail.
360-369..$47.00 Sportpacks..$32.00+
Buy 3 or more and save $2.00/pack!
Resumes being accepted.
Available at:
Bob's American Raceway (908) 446-3737
Transit Speedway, Buffalo, NY (716) 684-7368
Also: Trinity cars & parts, Super Critical mods, tuned stock motors, foam tires, caps, etc...!
Watch for new products!
Thanks:
Bob Lake, Charlie Masters.
Venom Racing, 63 Cambridge Way, Fairport, NY 14450 (716) 398-2272

tion between two adjacent sub-layers is high, the velocity change within the boundary layer becomes excessive and causes the area to become turbulent. When the friction between one layer and the next is low, the sub-layers between the boundary layer slide one over another smoothly even though they are traveling at different velocities. This is called laminar condition. As with most moving bodies, RC cars have boundary layers that laminar in some areas and turbulent in others. Needless to say, turbulent layers cause more drag than laminar ones.

Well, due to size constraints, I'll have to end here. I know this is a lot to absorb, but stick with it and you'll get it. Let me leave you with this: as RC racers, many of us must conform to rules that specify which bodies we must run. There isn't a whole lot we can do to change their overall characteristics. However, since all bodies aren't created equal, it just stands to reason that some bodies would exhibit more favorable racing aerodynamic characteristics than others. In the upcoming months we will explore this premise as well as other drag reducing concepts and lift reducing tricks. Stay tuned. Have fun and be fast!

Have a comment? Write to me here at the magazine or on the Internet at ben.chiu@patchbay.com •

CHEAP FIXES CONTINUED FROM PAGE 18

because of a too-thick situation brought on by excess paint coats.

RE-SOLDERING STICK BATTERY PACKS

If you currently use pre-made stick-type battery packs, try reassembling them with heavier connecting tabs to reduce their resistance and increase their amp output. First strip off the pack's shrinkwrap and then detach the cells from each other. This usually means pulling off the machine-welded tabs from each of the cell's negative/positive ends. Clean up the welds with a flat file and pre-tin the areas with solder. At this point, you'll need to decide if you're going to cover the separated nicad cells with shrinkwrap. I highly recommend it to prevent any chance of a grounded cell ruining your cells. While you're at it, buy some heavy-duty battery tabs from Bolink or Dean's for the cells.

Reassemble the pack with the heavier tabs and re-attach your plug lead and you're done. Of course, you can have the cells checked and matched, re-matched, etc., but there again you're getting away from the main idea of cheap. Good, inexpensive cells are plenty strong enough for most RC car situations; so keep it simple and only go for the better tabs and soldering job.

BALL BEARING UPKEEP

Read any issue of *RC Model Cars* and you'll likely learn of a bearing upgrade for some type of RC car. Okay, now you've got the bearings in your vehicle and you clean them sometimes with motor spray—now what? Well, you have at least two avenues to try: submersion or shield-removal cleaning and lubing. A cap off a can of motor cleaner spray will work as a container to soak your bearings in, and any good contact cleaner, motor spray, or paint thinner will work.

Drop the bearings in the cup and cover them with about 1/2-inch of the cleaner of your choice. Shake the cap every few minutes and you should notice fine sediment around the bearings. Change the liquid until no further gunk shows up and the bearings are clean. Dump the liquid and replace it with a light oil like Marvel Mystery Oil and let them sit overnight. Then lay them out on some paper towels before re-installing them in your car.

Clean your air filter after each day's running and consider having a ready-to-install spare in case you have extra dirty conditions at the track.

Be forewarned that you'll need nerves of steel for the second bearing maintenance procedure. Removing the side bearing shields for cleaning and lubrication is much more time consuming, but there's no better way to service a ball bearing then this method. Tiny wire clips retain the shields in place, so use a fresh X-Acto blade to remove them and the shield from only one side of the bearing. Spray the inner bearing with cleaner and use your oil of choice to coat the balls prior to re-installing the shields.

TIRE PROFILES

Have you ever changed a set of tires on your RC car and then noticed a decrease in top speed? That loss of speed may have occurred because of an increase in the diameter of the newly mounted tires on the car. Don't laugh, there can be a major difference in the outer size of two different tires. This is much more common with offroad RC cars, and even more likely on those that have been modified from racing trucks to monster trucks, and buggies to trucks.

This can also work the opposite way as well. You may notice that the car's now slow off the corners, but runs great at top speed—which means you put smaller diameter tires on the vehicle. Either way, you may need a change of pinion/spur gearing after you've switched tires on your car to achieve the speed you had prior to the rubber change.

CHECKING THE TOE

This fix is again more for the offroad RCers or any car with fully independent suspension. In many instances, we RCers will tend to put too much rear wheel toe-in on our cars to make them track straight over bumpy terrain. Try reducing the rear A-arm toe-in a degree and see if the car's still stable over the bumps on the track. Also, do not overlook the toe-in/toe-out on the front of the chassis either.

Excess front wheel toe can scrub your car's speed, and it can make you believe you need more rear toe-in as well, which will only increase the total drag/scrub on your RC car. Experiment with toe-in/out until you have the minimum front and rear toe and the car remains stable and easy to drive.

GAS CAR FILTER MAINTENANCE

One vastly overlooked loss of power on gas RC cars involves the engine's air-fuel systems. Without proper cleaning of the air filter/cleaner and fuel strainer/filter, you're gas vehicle won't perform to its potential. Clean your air filter after each day's running and consider having a ready-to-install spare in case you have extra dirty conditions at the track. Dirt can and will work its way into your car's powerplant through a dirty or badly maintained air filter. Clean it regularly and the rest of the car as well. The same applies to whatever style of fuel filter or strainer your car uses, whether it's inside the fuel tank or installed in the fuel line itself. A good rule of thumb is to either clean or replace the filter after 1-2 gallons of fuel has been run through the engine—or sooner.

INSIDE ANTENNA USAGE

A radio antenna tube sticking up through an RC car body can cause a slight air drag on some faster onroad cars and drag cars. A simple inside-the-car antenna can be made from sheet Lexan.

Cut a one-inch wide by six-inch long piece of .030- or .040-inch thick Lexan and bend one end approximately 3/4 of an inch from the end. Now, either drill small 3/16-inch holes on either side of the strip at equal intervals. Use some servo tape to attach the antenna near or on top of the car's receiver and then loop the wire around the holes. Of course, you can cheat and buy one from Parma, but in any case, remember to recheck your radio range after switching to the inside-the-body style of antenna.

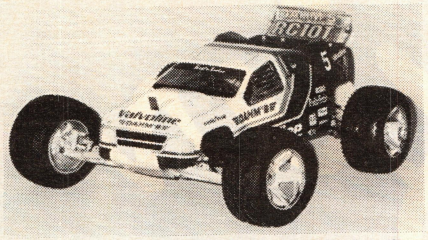
PRACTICE, PRACTICE, PRACTICE

One no-cost method to a faster car only requires your time and some freshly charged battery packs. By practicing at the local track on non-race days, you can go faster—if your time is used correctly. Work on each section of the track separately by repeating a turn or jump section several times from every possible line on the track. That way you're know which lines will work should you need to pass another car on that particular part of the track. Also practice your starting-grid-to-first-corner lines as well, as many races are determined there. Under no circumstances race any other cars—just race the track.

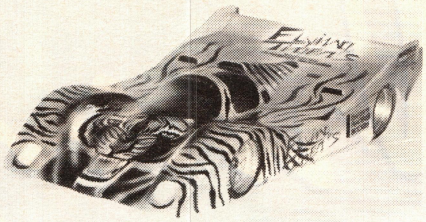
continued on page 43

DAHM'S™

CLEAR LEXAN RACING BODIES



D046 SLAMMER™ Fits **RC10T, Rustler & Stadium Blitzer**! Super Low, Narrow, High-Performance Body! Includes Spoiler & Grill Decal.



D054 LOLA - Fits **RC10L, Evolution 10,** & Most Others. Low Profile Improves Handling & Increases Top Speed! ROAR & NORRCA Approved!



NEW! D017 TORNADO II™ fits **RC10L, Evolution 10,** & Most Standard Width Cars. Fine Detail, 3-D Side Panels, 2" Spoiler, & Grill Decal.



D040 SLAMMER XL™ Fits **Losi LXT, XXT, Blue Eagle, LSII, Nitro Hawk, Ultima Outlaw,** Associated **RC10T, RC10T2,** & **Stadium Blitzer**. Excellent Motor Cooling, Superior Aerodynamics, Excellent Handling, & Free Grill Decal!

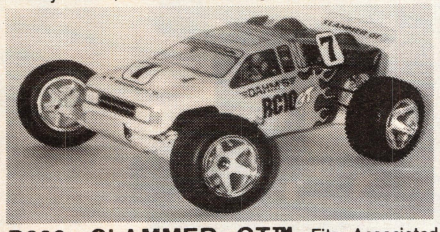


WINTERNATIONALS WINNER !!!

D042 SPICE GTP Fits 10th Scale Gas Cars like Serpent, BMT, Parsec, PB, & Delta. IFMAR World Champ Art Carbonell Wins the 1994 & 1995 Florida Winternationals with his Spice/Serpent! ROAR National's Winner Dave Campbell Wins 2nd Place at Winternationals with his Spice/Delta!



NEW! D016 TORNADO II™ High Performance Racing Body for Narrow Super Speedway Cars like **RC10LSS.** Super Detailing, Advanced Aerodynamics, & 3-D Side Panels that can be Shaped for Superior Handling. Front Spoiler, 2" Rear Spoiler, & Grill Decal! NORRCA Approved

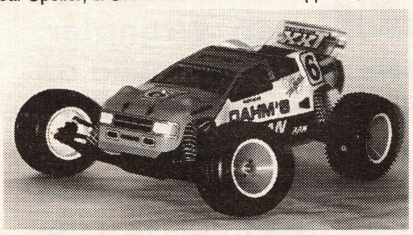


D038 SLAMMER GT™ Fits Associated **RC10GT**. Specially Designed to Improve Handling, Increase Top Speed, & Improve Motor Cooling. Includes Grill Decal and Adjustable Rear Spoiler!

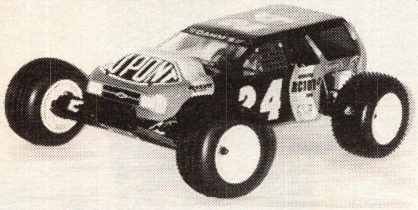


D021 M3 EXTREME™ Super Handling Touring Sedan Body & wing for 10th Scale Gas Cars like **Serpent Impact, BMT 931, PB, Parsec,** & **Delta**!

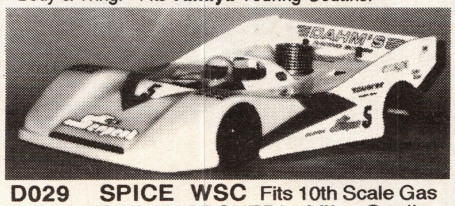
D020 M3 EXTREME™ Highly Detailed Body & Wing. Fits **Tamiya** Touring Sedans.



NEW! D200 SLAMMER X™ High Performance Racing Truck Body for **Team Losi XXT**. Features Front and Rear Molded-in Spoilers, Optional Rear Spoiler, Grill Decal, Cooling Vents, and 3-D Side Panels that can be Shaped to Fit Your Truck like a Glove! Complete Instructions included.



D049 COMMANDO EXP™ Fits **RC10T, RC10GT, RC10T2, Stadium Blitzer, Losi XXT, LXT, Tamiya Prerunner** & **Nitro Hawk.** Free Grill Decal.

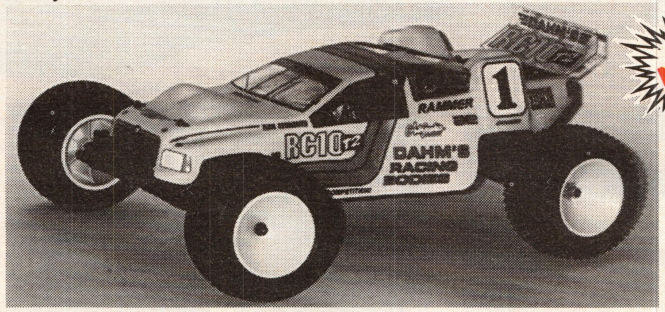


D029 SPICE WSC Fits 10th Scale Gas Cars. ROAR APPROVED! Mike Queller TQ'ed & Won the "Enchantment 100" with His Spice WSC/BMT. - a Winner First Time Out!



D080 BUGGSY™ Fits **RC10T2, RC10T, Nitro Hawk, Clodbuster,** & **Stadium Blitzer**

D056 BUGGSY™ 8th Scale Fits **XXT, LXT, Inferno, Mugen, Pirate, Burns,** & **RC10GT.**



NEW!



NEW! D203 RAMMER™ Exciting, Aerodynamic Racing Truck Body for **Associated RC10T2 & RC10T.** Rammer's Narrow, Low, Profile Design Features a Molded-In Rear Spoiler, a 2" Adjustable Spoiler, Fine Detailing, Cooling Vents, 3-D Side Panels that can be Shaped to Hug the Frame, & Dahm's Decals.

D201 & D202 MC/SS STOCK CAR™ Super Aerodynamic High Speed Oval Racing Body for 10th Scale Narrow Cars like the **RC10LSS**. Race Winning Styling, Super Detailing, Adjustable-Functional Spoiler, & 3-D Side Panels that can be Shaped for Superior Aerodynamics! Instructions Included! D201 - .030 Lexan, D202 - .040 Lexan ROAR & NORRCA Approved

THE MOST IMPORTANT, AND LEAST EXPENSIVE CHANGE YOU CAN MAKE TO YOUR CAR TO IMPROVE PERFORMANCE AND APPEARANCE, IS TO PUT ON A NEW DAHM'S LEXAN BODY. DAHM'S RACING BODIES ARE WORLD FAMOUS FOR THEIR LOW, SLEEK STYLING, AND SUPERIOR AERODYNAMIC CHARACTERISTICS. YOU CAN COUNT ON DAHM'S RACING BODIES FOR THE HIGHEST QUALITY, NEWEST AND MOST INNOVATIVE DESIGNS, FINE DETAILING, AND RACE-WINNING PERFORMANCE!!!

WANT TO KNOW WHICH BODIES FIT YOUR CAR? CALL US AT: **707-792-1316 FAX: 707-792-0137**

SEND $2.00 FOR DAHM'S LATEST CATALOG, OR SEND $4.00 FOR CATALOG AND DECALS TO:

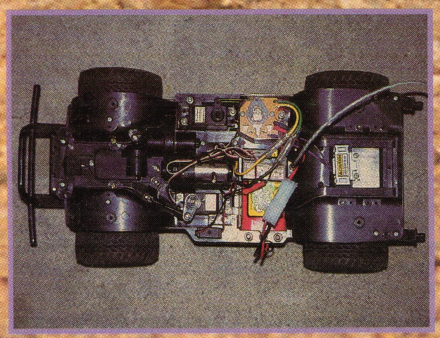
DAHM'S RACING BODIES (Dept. C) P.O. BOX 360, COTATI, CA 94931 USA

TAMIYA'S

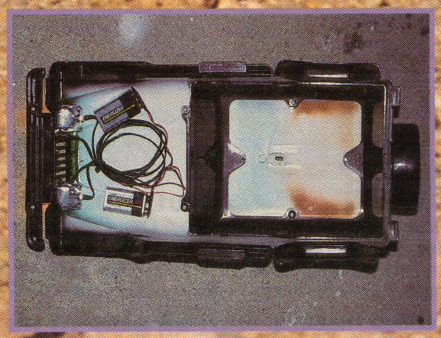
Jeep Wrangler

OFFROAD SCALE

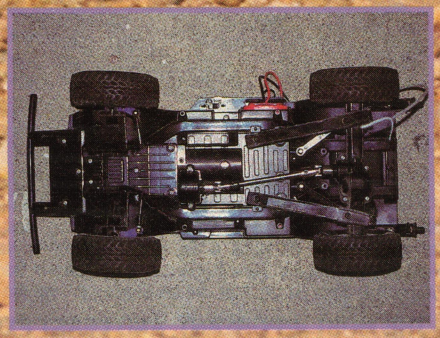
One of Tamiya's most scale-like kits is their very realistic 1/10-scale 4WD Jeep Wrangler. The model is based on the Mitsubishi Pajero (better known as the Montero here in the U.S.). The full-size Jeep Wrangler is one of the most popular vehicles in the world, and the model should be equally well received by those in the RC community looking for a realistic fun vehicle. The first time I saw this kit was in an advertisement. It looked very real, and I wanted to know more. *cont. on page 50*



The Jeep's chassis layout is typical Tamiya—room for everything required, with no wasted space. Mechanical speed control mounts in well at left.



Headlight setup in body shell is simple and straightforward. RAM lights are powered by a 9-volt battery.



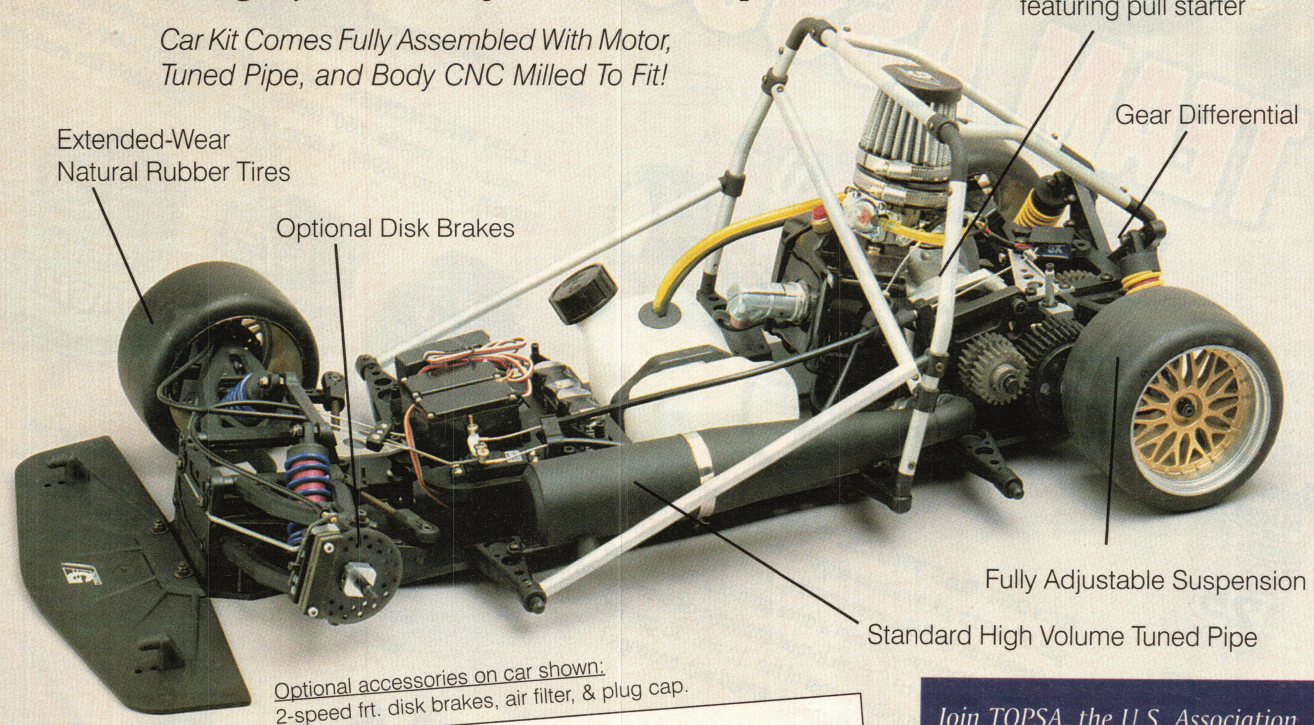
Underside of chassis showing driveshaft that powers rear wheels. Front wheels are driven entirely by gears.

BY ROB TUCK

So *simple* your grandma could do the maintenance... but *she* wouldn't have the *guts* to drive it!

Introducing 1/5 Scale by FG Modellsport.

Car Kit Comes Fully Assembled With Motor, Tuned Pipe, and Body CNC Milled To Fit!



Optional accessories on car shown:
2-speed frt. disk brakes, air filter, & plug cap.

Join TOPSA, the U.S. Association for one-fifth / one-make racing. Call (206) 230-3478 today!



FG Modellsport's BMW M3 GTR

SEI Racing is proud to introduce to the US the fantastic sport of 1/5 scale-one make racing! All car kits come fully assembled with high hp Zenoah spec motor, tuned pipe, many other standard features. FG Modellsport™ cars have been raced in Europe for years and have a proven track record of reliability. FG cars reach speeds comparable to 1/8 and 1/10 on-road gas cars...and do it with style, *at a price everyone can afford*. If you've been looking for the next level, this is it!

NOW WITH OVER 10 BODIES AVAILABLE!

FG offers a full range of up-to-date parts and accesories to keep you on the edge of technology. Options include: detail kits (mirrors, antennas, etc.), front and rear disk brakes, racing air filters, multiple compound tires, selectable gear sets, conversion kits between models, and much, much, more.

For free information about FG's exciting line of cars and accessories call the 1/5 experts at (206) 827-7158.

SEI RACING
Sole U.S. Distributor

SEI Racing • 727 Kirkland Avenue • Kirkland, WA 98033
Phone (206) 827-7158 • Fax (206) 828-6577

World famous 1/5 scales by FG Modellsport®
RC racing the way it should be.℠

Advertising by: Ad/Solutions (206) 333-4206.

SPEED SECRETS 1995

1995 TEAM ASSOCIATED



ALLEN WRENCHES. Precision-ground replaceable tip with color-coded aluminum hex handle. .050" (#6964), 1/16" (#6965), 5/64" (#6966), 3/32" (#6967), 2.5mm (#6968), 1.5mm (#6969). Replaceable tips available now.







RACING SILICONE SHOCK OIL. This 100% pure silicone oil has reliably proven not to thin out in hot weather or thicken in cold. 2 oz. bottles, 15 wt. (#5427), 25 wt. (#5428), 35 wt. (#5429).

RC10GT GAS TRUCK. It's the most advanced 1:10 gas off road truck available anywhere. Racers can make adjustments for Ackerman steering, there is a totally new lay-down transmission with a drive ratio of 2.60:1 for gas engines, a new HTC (high torque capacity) differential, and the truck accomodates most of the .12 and .15 gas R/C engines. (#7050 *with bushings*, #7060 *with bearings*.)

REEDY MOTORS. Turbo-Cooling with "M" wet magnets in the Mach I and II stock motors and Sonic series introduces consistency, economy, long life and speed: stock and modifieds as they were meant to be!



TEAM ASSOCIATED

3585 Cadillac Ave.
Costa Mesa, CA 92626
(714) 850-9342 fax (714) 850-1744



COLOR MUFFLERS AND MANIFOLDS. These great colors help the racer to customize his RC10GT. Polished and anodized, these mufflers and manifolds (pull start and non-pull start available) provide that finished look! *Muffler, black* (#7740), *silver* (#7741), *blue* (#7742), *purple* (#7743).

IFMAR WORLD CHAMPIONSHIPS
TWELVE
TEAM ASSOCIATED



NEW!

New for 1995! R/C CAR RACING '94 VIDEO. Join us for some of the most exciting races of 1994! Featuring the highlights of such races as the Reedy International Race of Champions, the ROAR Off Road and &Truck Nationals, the IFMAR 1:12 World Championships in Paris, the IFMAR 1:10 World Championships in Germany, and the first ever NORRCA Electric and Gas Truck World Cup. (#6976.)

NEW!

NEW 1:12 STEALTH DIF. This diff (#4455) for the 12L series cars reduces the overall weight of the rear axle and reduces the rotating mass of the diff and axle assembly. The improved diff action gives you quicker acceleration. The new bolt-on rear wheels (specially designed for this axle) can be changed without readjusting the diff. The axle uses the diff technology developed for the legendary Stealth transmission. Rear *wheel, white* (#3609), *black* (#3609B), *florescent yellow* (#3609Y).

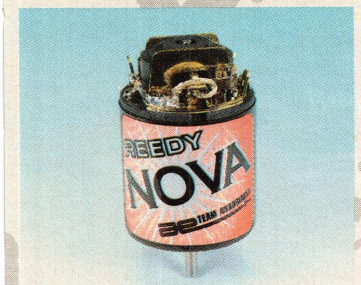
REEDY

12 IFMAR WORLD CHAMPIONSHIPS

WORLD CHAMPIONS TOOLBOX

ASSOCIATED ELECTRICS, INC., 3585 Cadillac Ave., Costa Mesa, CA 92626
(714) 850-9342 FAX (714) 850-1744

Nova Motors



Designed specifically for off road racing, Nova motors give you winning performance and long life at an inexpensive price. Hand wound. Custom assembled. Diamond trued armature. Dynamically balanced. Dual ball bearings. Adjustable timing. Heat sink holder. Three winds available.

#575, 14 turn double #576, 13 turn double #577, 12 turn double

Mach I & II Stock Motors



Turbo Cooling feature creates a path of cooling air over the brush and commutator assembly, giving you a cooler and more efficient motor. 4.95 "M" wet magnets. 27 turn armature with Turbo Cooling. New can with cooling vents, and more! Mach I is a ROAR legal 24° motor. The Mach II is a NORCCA legal 36° motor.

#556, Mach I #557, Mach II

Sonic Series Modifieds

TORQUE!

Newest in the line of Reedy motors is the Sonic, with Turbo Cooling features adding to the life and performance of the motor. A new can/magnet setup combined with an all-new large commutator and lay-down brush system provides the torque and power needed for today's racing. Hand wound and precision assembled.

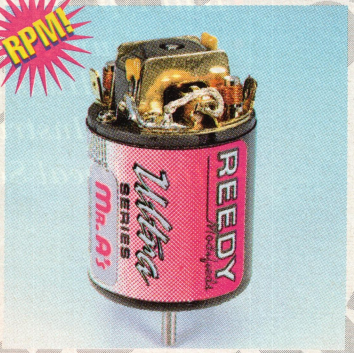


#525-540

Ultra Series Modifieds

RPM!

World Championship-winning MR. Series motors provide the RPM and performance necessary to win 1:12 on road and 1:10 off road IFMAR World Championships. Each MR. Series motor contains the Ultra Torque Magnet for broader power band. It is resistant to high temperatures, providing a consistent, stronger-running motor during the second half of the race when other magnets start to fade due to heat.



Nova Battery Pack

OFF ROAD!



Nova batteries are developed around the race-proven Sanyo SCRC battery. Cycled and matched, Nova batteries give you the punch you need for high current, four minute off road racing. Sanyo SCRC-SP. Cycled and capacity checked. Matched by capacity. Available in both 6-cell and 7-cell.

#636, 6-cell SCRC #637, 7-cell SCRC

Reedy Ultra Pack

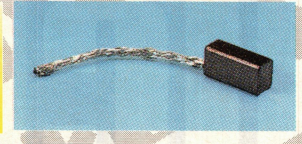


Today's on road racing requires top of the line batteries. The Ultra series SCRC and SCR are matched both for capacity and voltage to give you the power to win. Available in both 6-cell and 7-cell.

#606, 6-cell 1400 SCR
#607, 7-cell 1400 SCR
#634, 6-cell 1700 SCRC
#635, 7-cell 1700 SCRC

MR. Series Brushes

Fit all standard upright Yokomo-type brush systems.



#730, Silver On Road Brush
#732, Competition On Road Brush, Modified and Stock
#737, Competition Off Road Brush
#738. Stock Motor Brush

Sonic Series Brushes

For use in motors with lay-down brush systems.



LAY DOWN!

#760, Competition Off Road
#761, Competition On Road and Stock Motor Brush
#762, Silver On Road Brush

Reedy Modifieds

Reedy Modifieds technology is responsible for winnning 12 IFMAR World Championships, more Championships than all the others combined.

REEDY Modifieds

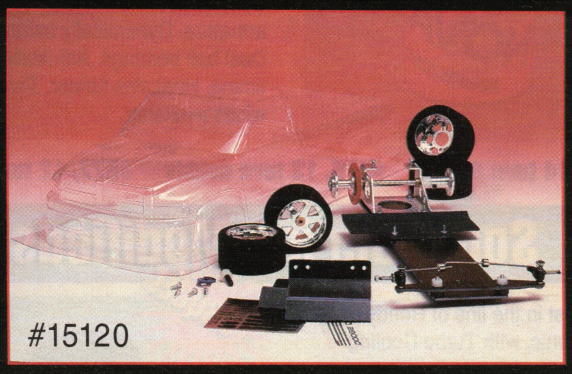
"The Truck of the Year."

"Dodge Ram has created a new standard by which full-size pickups will be judged."

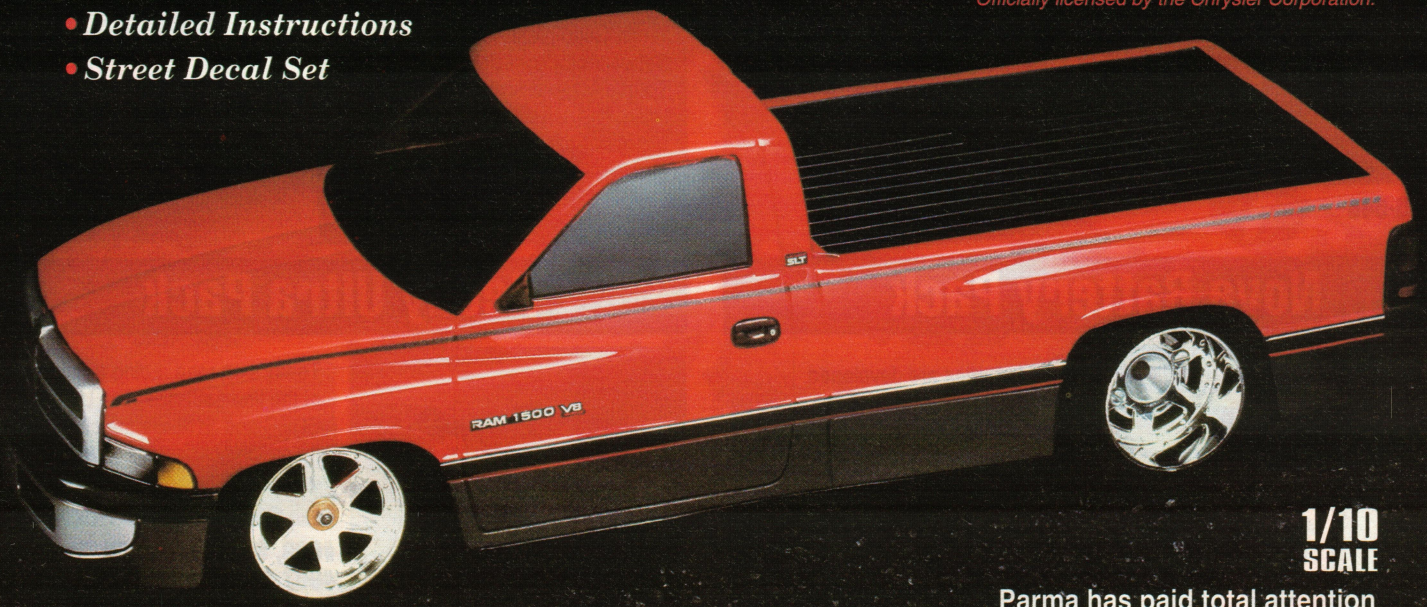
- *Motor Trend*

This Incredible Scale Reproduction Includes:

- Clear Lexan® Body
- Black G-10 Chassis
- Chrome Spoke Rims
- High-Grip Foam Tires
- Ball Type Differential
- Aluminum Rear Pod & Wheel Hubs
- Detailed Instructions
- Street Decal Set



Officially licensed by the Chrysler Corporation.



1/10 SCALE

Parma has paid total attention to detail and ease of construction. Now you can create your own personalized version of this great looking pickup by choosing decals from V6 to V10 and a paint scheme of your choice.

Radio Control Kit

MOTOR, BATTERIES, RADIO & ELECTRONICS NOT INCLUDED.

DODGE RAM TRUCK

By Parma International Inc. 13927 Progress Parkway • North Royalton, Ohio 44133

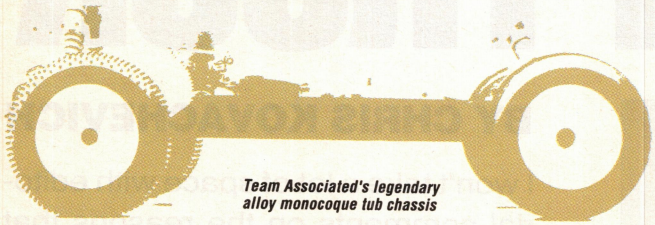


NOBODY KNOWS GAS RACING LIKE THE TEAM.

A lot of people would like you to think they created the whole concept of RC gas racing.

But with over 25 years of experience racing RC gas cars and winning two IFMAR Gas World Championships, Team Associated knows gas racing.

That's why the Team built the RC10GT.



Team Associated's legendary alloy monocoque tub chassis

Our RC10GT is the real thing, designed and engineered by the same racers that brought you the original RC10 and the RC10T.

While it might be enough for some to simply drop an engine and a fuel tank into an electric truck, the Team takes this kind of powertrain transfusion seriously. The RC10GT is a completely integrated package created to take maximum advantage of gas power yet versatile enough to accommodate all popular .12 and .15 size engines.

The most advanced, high performance vehicle of its kind, the RC10GT features competition proven, four wheel suspension with precision, coil-over shock dampening. Our World Famous Team Associated Stealth ATC gearbox is also adapted to the RC10GT, to get all that nitro power to the ground and our race-ready disc brake gets it all slowed down in a hurry.



IFMAR World Champion factory drivers Brian Kinwald and Cliff Lett teamed with Curtis Husting in designing, track testing and racing our RC10GT prototypes.

Like all our kits, hardware and materials are nothing but the best. And because Team Associated understands RC racers, and their budgets, the RC10GT is available with either bushings or ball bearings and for both pull and non-pull start engines.

Enjoy the sound and power that makes gas RC racing come alive. The RC10GT is the ONLY RC gas truck with Team Associated's proven performance and reliability. Because no one knows RC gas racing like the Team.

Quick-fill 75cc fuel tank lets you race as long as you want with simple 2 second pit stops.

All terrain tires developed by Pro-Line specifically for the RC10GT

Wide track, long throw suspension, molded from durable, dyeable virgin nylon



The RC10GT is available in several Sport and Competition versions for most .12 or .15 engines. We highly recommend the .12 size for scale performance and reliability.

RC10GT

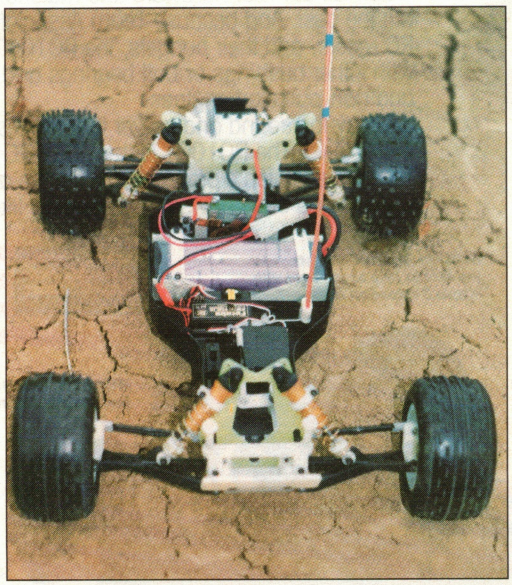
Associated Electrics 3585 Cadillac Avenue, Costa Mesa, CA 92626

© 1994 Associated Electrics

TEAM ASSOCIATED



RC10ST SPORT TRUCK



All geometry for the suspension is the same as found on the race-winning Associated Team Truck. Heavy-duty fiberglass shock towers are furnished for extra strength.

BY CHRIS KOVACHEVICH

I won't take a lot of space with editorial comments on the reasons that our sport needs to attract new racers, which in turn creates the need to make products available to these newcomers that can be upgraded as their desires and skills improve.

The bottom line is that we as racers are our own worst enemies when it comes to the subject of hop-up parts, even though our driving abilities may or may not support the need for these items.

Team Associated has responded to this need with entry-level ve-

continued on page 44

ENTRY-LEVEL EXCELLENCE

CHEAP FIXES CONTINUED FROM PAGE 18

PROPER GEAR MESHING

It's a good idea to check your pinion and spur gears regularly. Inspect the gear teeth for any signs of damage and check the spurs for straightness and that they run true. Check pinion-locking screws and replace any that look even slightly worn.

Clean the gears with a stiff bristle toothbrush (no wire brushes, please) and some plain old soap and water. This will remove any debris that might have imbedded itself in the gear teeth and will prevent any binding once the pinion/spurs are back in place. Also be sure that no tight spots are anywhere on the gears by turning them 360 degrees while watching the gears as they mesh. There should be a slight gap at all times between the spur and pinion.

A SHINY BODY IS A FAST BODY

While a coat of wax, furniture polish, or even rubber preservative like STP's Son of a Gun will make your car's body shell shiny, it will also be slicker air drag-wise. Of course, this will be a minor help, but there is another factor: if you're prone to bumping into walls, houses, rocks, or other cars, a slick body will slide-off some obstacles easier that a non-coated one. This will increase your shell's lifespan greatly—including any decals you've placed on the outer shell as well. I prefer Lemon Pledge myself, so if I use too much my wife will think I actually did some housework.

AIR OUT YOUR CHASSIS

If you notice excess heat in your car's motor, ESC, or battery pack or when running, make sure there's enough outside air crossing over these components. Small air defectors made from Lexan will help, as will raising the body slightly on the chassis. Try cutting air holes in the front or rear of the body shell.

Of course, mounting the ESC high on the chassis' rear shock tower will help cooling, but you might want to drill a couple of air holes on either side of the ESC in the tower so air can pass through the tower and away from the ESC.

BATTERY CONNECTIONS

Many folks will tell you that hard-wiring your car's battery, ESC, and motor leads is the best way to have maximum DC power. They'll also tell you it's a pain sometimes too. Having to de-solder ESC wires from packs and motors means having a hot soldering iron going at all times—which is the main pain. As for myself, I only go halfway with this process. I'll hard-wire the ESC to motor leads, but I stick with a good snap connector for the ESC-to-battery-pack leads. And if you're using the Tamiya-style connectors on your packs, an upgrade to an aftermarket brand of connector is a real cheap way to increase performance.

Powerpole and Deans make excellent replacement DC power connectors that you'll only have to solder on one time to the ESC/battery wires. You may also want to use these low-resistance connectors between the ESC and the motor leads, as this can make motor removal and cleaning much easier on racedays. Either way, the aftermarket connectors will increase your car's speed and runtime and will not melt down or weld themselves together under normal conditions.

WRAP UP

Hopefully through this article I've been able to help you to make your RC cars quicker and more dependable. I want to get you thinking about how YOU can make your cars better through good, solid, information—that's *RC Model Cars* job, now and always. ●

BOCA BEARING
Miniature Bearings Specialists
For R/C cars, trucks, boats, planes & helicopters

Largest Inventories of Miniature Bearings for Remote Control Models
- 3 Complete Product Lines
  - Premium Ultra-Seal frictionless sealed maintenance-free bearings
  - Econo-Power bearings, precision engineered for strength and durability
  - High Speed, high heat engine bearings
- Huge Inventory of Standard U.S. and Metric Bearings
- Low Prices, Fast Delivery
- Toll-Free Number for Easy Ordering
- Dealer Programs Available

NEW
ULTRA SEALS
FRICTIONLESS SEALED MINIATURE BALL BEARINGS
Available in Metric & Inch sizes

Gives you the Winning Edge
"SECRET WEAPON"
A new line of miniature bearings built to the highest tolerances in the industry. Available in all the most popular inch sizes

FREE
$1.00 Trade Up Bearing Coupons
Trade in your worn out wheel bearings for $1.00 Coupons.
Coupons good towards purchase of ULTRA-SEAL or SECRET WEAPON 4 Pcs Wheel Kits.
Send us as many bearings as you like, along with $3.00 for catalogs and details for redemption.

QUALITY BEARINGS GREAT PRICES!
VISA MasterCard

BOCA BEARING
SEND $3.00 FOR CATALOGS
7040 W. Palmetto Park Road, Suite 2304MC, Boca Raton, FL 33433
407-998-0004 • Fax: 407-998-0119
Call Free • Canada • Mexico • USA • 1-800-332-3256
FAX Free • Canada • Mexico • USA • 1-800-409-9191

8 TRACK RECORDS FROM THE DEMON!



New Demon Motor Drops are race proven by drag racers, oval racers and on-road racers — 8 Track Records in six states! One drop on each brush will increase RPMs, lower the motor's amp draw and increase torque. Motors run longers and cooler, with reduced wear on the comm. Demon Motor Drops can be used on Stock or Modifified motors with the same results. For unsurpassed horsepower and performance, ask for the Demon!

T.M. R/C RACING COMPONENTS

T.M. R/C Racing Components - 49679 Leona Drive
Chesterfield, MI 48051 - Phone (810) 949-3506 - Fax (810) 949-3506

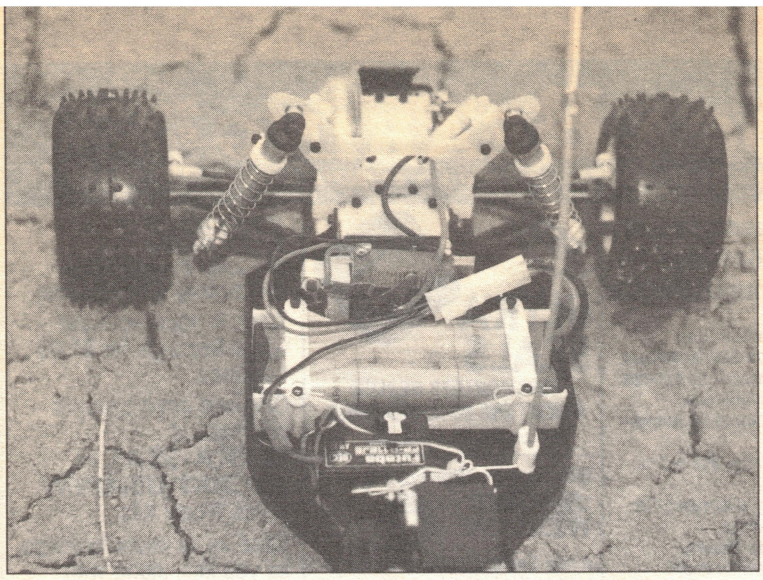
TCP BUGGY CONTINUED FROM PAGE 21

provided for top speed on smooth, fast tracks. For rough, choppy track surfaces the long front arms and long big-bore shocks with slider driveshafts in the rear would give you a more stable buggy, with more suspension travel to absorb these track conditions.

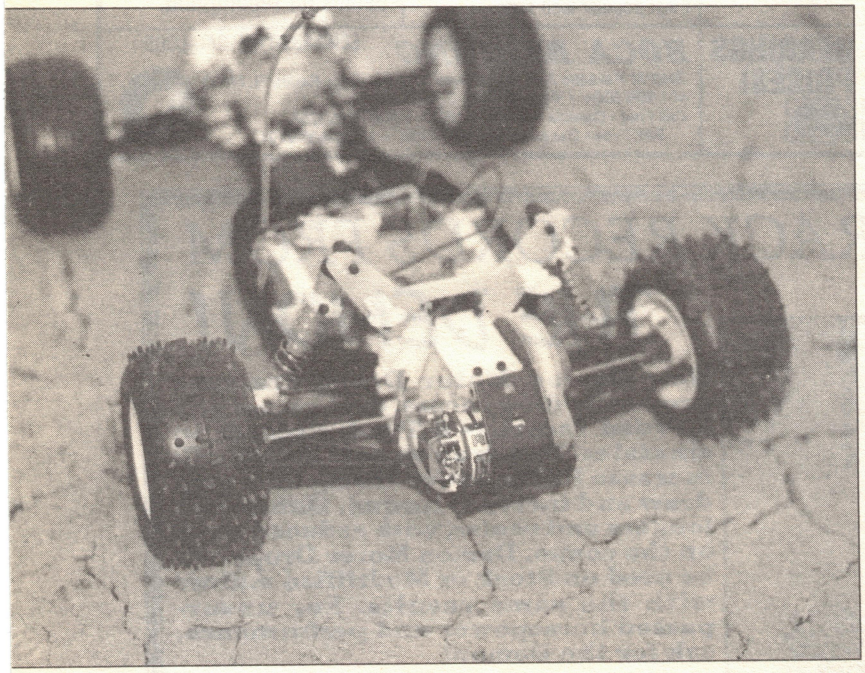
HAVING IT YOUR WAY

The Total Competition Package allows you to tailor the handling characteristics not only for track conditions, but to your own personal driving skills. This long-arm,

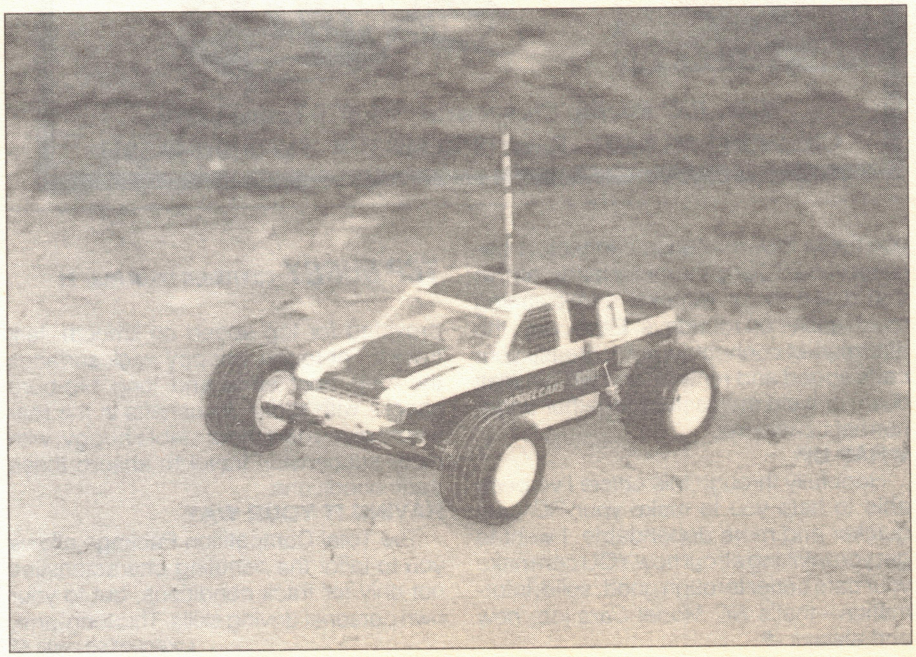
continued on page 45



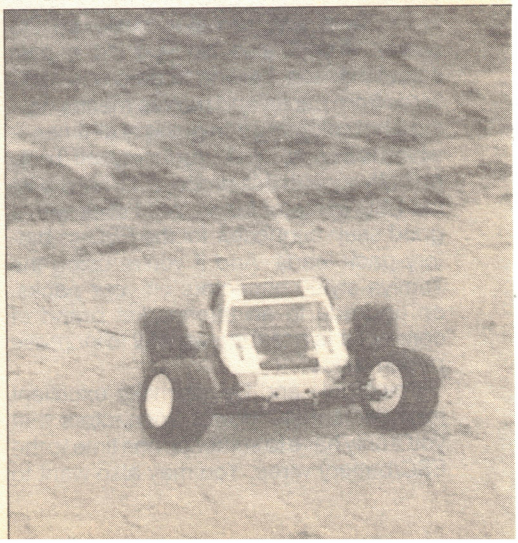
The supplied mechanical speed control is a forward-only with brake design and works well. Although not as simple to hook up and maintain as the electronic speed controls, it serves the entry-level user well and is included in the price of the kit.



The included Reedy Stock motor performed well and was supplied with capacitors and wiring, allowing it to be installed without any extra purchases.



Good horsepower is evident by the "roost" as we accelerate during our test session. As you can plainly see, we tested the RC10ST under less than ideal "track" conditions. A vacant lot is certainly closer to the use of this vehicle by the entry-level racer than a groomed, prepared race track!



hicles in both the offroad and onroad categories of our sport, without compromising their current state-of-the-art features in handling and driveability. These vehicles allow a new racer to get a good, solid start in our hobby and install hop-ups as finances and abilities dictate.

If an entrant begins with a good-handling, versatile vehicle that performs and handles well out of the box, he has an excellent platform from which to modify and continue to ascend in ability.

FOR THE BEGINNER

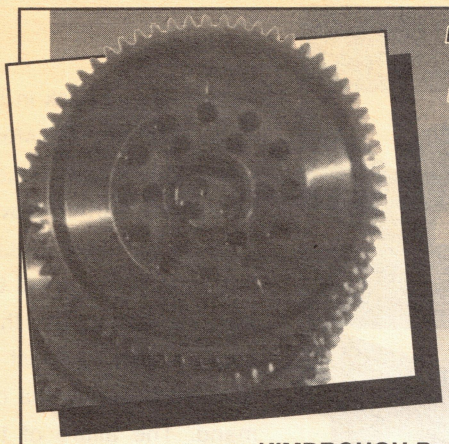
The RC10ST is designed and marketed as a kit for a beginning racer. To this end, Associated has included many features and parts from the current model Team Truck (the top of the line), including their state-of-the-art Stealth transmission.

These parts are current production items and are the same parts used on the vehicles that are winning in national events—not a re-issue of parts from a dated and no longer competitive design. In addition, a fully functional and quite good mechanical (forward-only with brake) speed control is included in the kit along with a Reedy stock motor and a charging harness. The inclusion of these two items allows the new hobbyist to need only a radio system and battery pack to have a fully operational vehicle at a street price of around $225.00!

The total dollars spent on a fully functional offroad-ready truck are not that much more than would be spent on the department/toy store vehicles; toys that don't have a parts network in place and frequently require weeks of waiting, if a part is available at all.

The story behind how I came to build this truck is a result of my son Jason's employment at the Hobby Haven store here in Independence, Missouri. A young hobbyist came in with his grandmother, wanting

continued on page 59



TOUGH GEARS for GAS TRUCKS!

FOR HYDRA-DRIVE....
#245- **64 T**, 32-Pitch for Losi HYDRA-DRIVE.....$3.00
#246- **66 T**, 32-Pitch for Losi HYDRA-DRIVE.....$3.00

FOR ASSOCIATED GT...
#247- **62 T** For Associated RC10-GT.....$3.00
#248- **64 T** For Associated RC10-GT.....$3.00
#249- **66 T** for Associated RC10-GT.....$3.00

High-powered gas trucks need a gear that's up to the task... and Kimbrough's 32-Pitch gears are the toughest! Made of super-strong 4/6 Nylon, these gears will withstand temperatures 50 to 100 degrees higher than other manufacturer's gears. Don't take chances... get Kimbrough Gears!

KIMBROUGH Products

KIMBROUGH Products • 1322 Bell Ave., Unit 1-C • Tustin, CA 92680 • FAX: (714) 258-7426

TCP BUGGY CONTINUED FROM PAGE 43

long-shock setup would be more forgiving and easier to keep the buggy on its wheels. The TCP kit includes two sets of front and rear wheels.

The kit comes with either a set of Pro-Trax play tires, or for serious competition, a pair of Pro-Line front #8115 tires and rear #8086 Flat Stubbies with foam inserts. Both types are equal to the tasks they are designed to tackle. I installed the Pro-Lines, our normal tire of choice for competition purposes.

CHASSIS, ETC.

Now let's take a look at the rest of the car. The chassis material is G-10 fiberglass as seen on the earlier TRX-3 buggy and the SRT Traxxas truck. This dual-plane design ties the front and rear together with the Zero-Flex design. The front bulkhead provides the caster kick-up and ties the upper and lower chassis plates together.

Traxxas includes 25-degree and 30-degree caster blocks for tuning the turning and handling characteristics of the TCP. The bellcranks are supplied with plastic bushings that can be easily upgraded to bearings. The posts that the bellcranks pivot on also tie the chassis plates together, as does the battery box. The rear battery box connector ties the battery box sides into the rear bulkhead which completes this bridging for one very stiff chassis.

The rear bulkhead supports the rear shock tower between it and the battery box connector and houses the wing mount tubes. Rear camber links are fastened here also. The transmission houses a very smooth ball differential with a final drive ratio of 2.14 to 1. Traxxas' large-bore shock absorbers are some of the smoothest you'll find with two different pistons to pick from and hard anodized Teflon-coated bodies. 100% silicon shock oil comes with the TCP. The Traxxas exclusive No-Breakage Guarantee backs up any unfortunate breakage of suspension parts. That's a good deal!

I assembled the buggy with the long front shocks and arms for a stable setup to start with. I opted for the hardened-metal driveshafts on the transmission, as our local track has small jumps not requiring a lot of rear travel. I installed my electronics (Novak's NER-3 FM receiver, 410-1c ESC), charged a battery and made some quick checks on the differential adjustment with the slipper clutch locked down. Once the adjustment was made for non-slip, smooth operation, I backed the slipper clutch off for about two feet of initial punch off slippage. The steering servo was trimmed to point the front wheels straight ahead at neutral. Now track-ready, I headed for some bumps and jumps.

SPECIFICATIONS

Scale	1/10
Length	14-15/16 inches
Width	9.6 inches
Wheelbase	10.5 inches
Weight (with batteries & Electronics)	3-1/2 pounds
Chassis	Double deck, fiberglass
DRIVETRAIN	
Type	Sealed gear
Primary drive	Pinion/spur
Differential	Adjustable ball
Final Drive Ratio	2.14:1
Gear ratio range	5.56:1 to 13.84:1
SUSPENSION	
Caster	25 or 30 degrees
Rear Suspension Travel	Up to 60mm (2-1/2 inches)
Front Suspension Travel	Up to 48mm (1-7/8 inches)
Length 380mm	(14-15/16 inches)

TRACK TEST

The TCP buggy really took the track in stride. I was using the Pro-line tires which gave very good traction front and rear. The TCP buggy was well balanced with good steering response and excellent rear traction. After a few battery packs were run I could see the TCP was a good choice for many hours of trouble-free fun.

The inclusion of a variety of extra parts that will aid in tuning for track conditions, as well as entry-level and advanced parts, add up to a versatile, user-friendly offroad racing buggy that is a good value. Combine this with Traxxas' No-Hassle suspension parts guarantee, and you wind up with a product that you can depend on to provide hours of competitive fun at a low price.

PRODUCT SOURCE

Traxxas Corp., 12150 Shiloh Rd., Dallas, Texas 75228. (214) 613-3300.

Pro-Line, Box 456, Beaumont, California 92223. (909) 849-9781. •

PORTLAND CONTINUED FROM PAGE 25

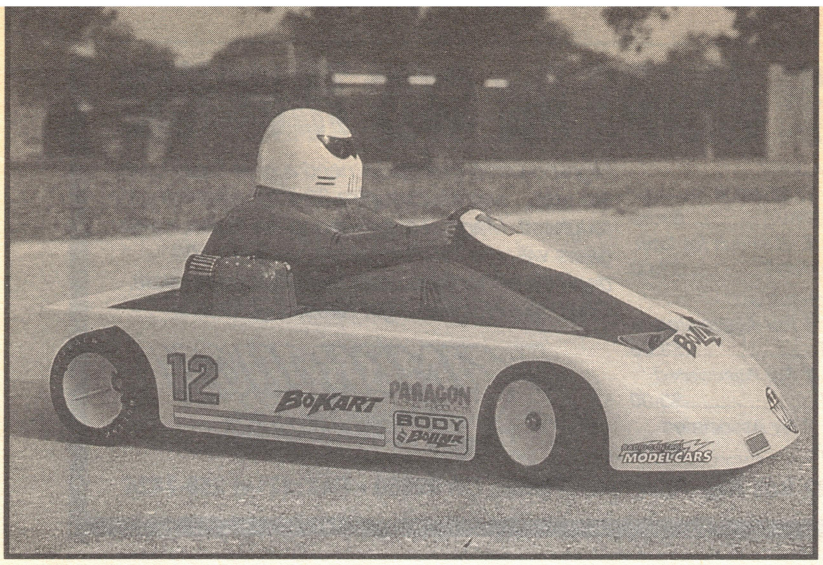
qualifying was completed, setting the stage for Sunday's mains. This year, 1/10 electric class was eliminated, which reduced the overall field and helped to speed up the program. The combined 1/10 and 1/8 gas entries totaled more than 100 participants.

In concours competition, the winning paint job belonged to Ryan Crabtree, of Sacramento, California. The second-place trophy went to Dave Bressel of Kit Car and the third place trophy was won by Scott Kimbrow.

THE MAIN EVENTS

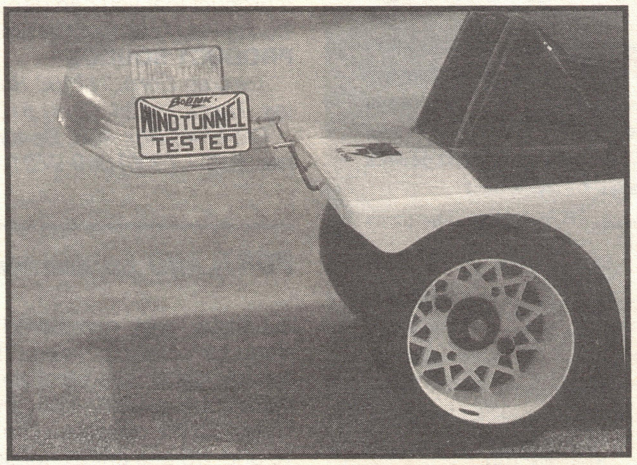
Sunday the threat of rain hung as dark as the clouds that scudded across the sky. Intermittent showers had disrupted Saturday's qualifying, and everyone had their fingers crossed, hoping that nature would hold off until after the mains had been run. As luck would have it, when the RCers took their scheduled break to watch the full-size Trans Am race, it began to pour. Midway through the extended pace laps for the Trans Am race, the rain let up and the RC guys began breathing a little easier. Though it was damp, the temperatures were in the mid-60s, so the weather wasn't uncomfortable for spectators or

continued on page 47



BOLINK UPDATE: BACK TO THE BOKART

BY RICK EYRICH



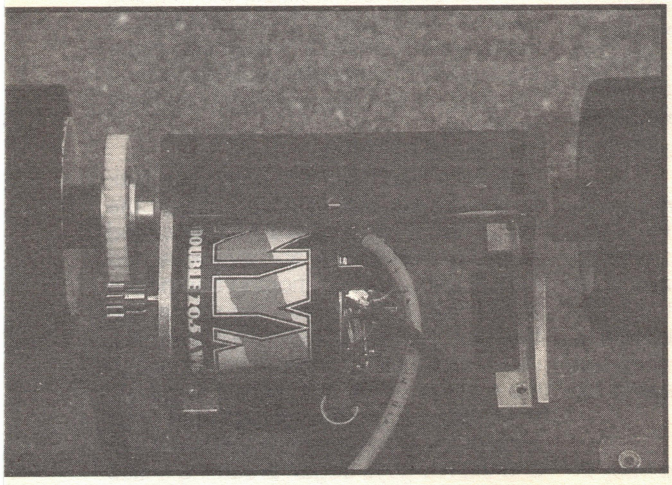
A BoLink six-inch wing was attached to the rear pod top plate. Air coming down the body's upper surface is now directed slightly upward by the wing to increase traction on the BoKart's rear tires and frame.

First reviewed back in the April '95 issue of *RC Model Cars*, the unique BoLink 1/4-scale BoKart has proven to be a big seller. BoLink has been pumping out the Kart kit—along with their Legends cars—as fast as possible to supply the demand. The allure of the BoKart most likely stems from a combination of the simple, basic chassis layout and the originality of the copy of a driver/Kart body shell. Throw in BoLink's vast selection of accessories for the kit and you have an RC vehicle that has proven to be a real winner. So, this update will focus on all the changes made to the reviewed BoKart since the April issue's full test. We'll relate how the BoLink has held up and advise you on what personal switches were done (needed or otherwise) on the 1/4-scale racing Kart.

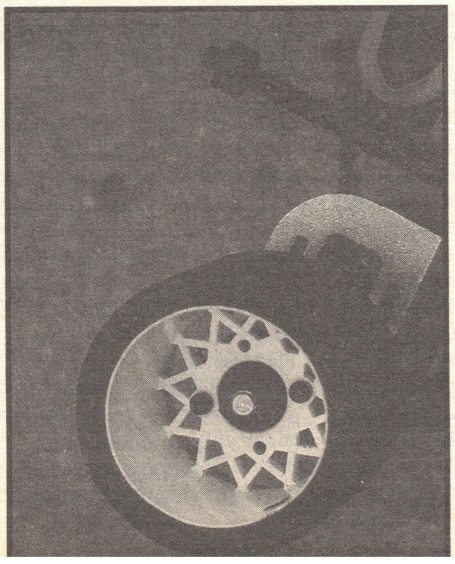
WHAT BROKE

Two pieces have been replaced on the BoKart since the April, '95 initial testing. One part was a front body-mounting post that snapped on impact with a concrete wall. The other change was centered on BoLink's twin Lexan battery retainers. Repeated battery pack removal finally took its toll on the holders and each one developed cracks. I simply eliminated both mounts and made two homemade pack holders out of some scrap Kydex plastic. Other than those two areas, the BoKart remained complete

continued on page 60



The two main chassis changes done to the BoKart were a ball bearing set and a new powerplant. A BoLink bearing set went on the axles and motor pod, as did an Onyx modified motor for more power and speed.



TRC black dot foams were also added to the Kart's rear axle, and provided excellent traction on my local surfaces.

competitors.

Portland Scale Racers club had set up their track smack in the middle of the Trans Am paddock area, and all day long, a parade of drivers and mechanics stood along the fence marveling at the high-speed RC cars.

Jeff Devlin, of SEI Racing in Kirkland, Washington, drove down to Portland with a pair of his German-made 1/5-scale touring cars, with which he delighted the crowd by running some exhibition laps. He had a very interested Tom Kendall in his pit checking out the German cars, and Jeff signed up a few new devotees from the contingent of full-size Trans Am crews who happened by.

As usual, the gas cars attracted a big crowd of onlookers—their high-pitched engines and the speed of the cars enough to get anyone interested in racing hooked on the sound and smell. The racing action itself was riveting, all the way down to the E-mains.

In the "lesser" mains, one race of note was the 1/10-scale C-main that was won by a real up-and-comer: 12-year-old Travis Schreven, who drove standing on his toolbox, won a squeaker by less than a second ahead of Tom Bryant and Randy Johnson, who themselves diced it out for a close second and third finish.

In the 1/10 B-main, a determined Ron Smith held out over Mike Pickett and Travis Karson, who were breathing down his neck for most of the 20-minute race.

The 1/8 scale races offered their own high-speed brand of excitement. The hard-fought B-main had the crowd on its feet as Ryan Crabtree, driving a Picco car with sponsorship from Paris Racing, and Steve Tsuruda battled back and forth after Terry Reeves' BMT-Active car relinquished an early lead. Crabtree beat Tsuruda by less than a second.

BREAKING FOR THE BIG BOYS

The full-size Trans Am race at 1:30 caused a break in the RC competition so that everyone could get to the grandstands for the big cars' race of the day. This race was a wild affair that began in the rain and continued through a dry period. On the last lap, with Ron Fellows leading, a barging Tom Kendall in third place bumped second-place Dorsey Schroeder out of the way in turn one, dropping Schroeder to fourth and moving Kendall up to second. It should b noted that such a display of rough driving was never seen this weekend on the RC track.

BACK TO THE RC TRACK

The 1/10-scale A-main preceded the 1/8 A-main, and pitted TQ Mike Swauger against Brian Bodine, Jim Rose, Steve Tsuruda and Eric Vasutin, among others. Though rain interrupted the race several times, causing a number of restarts, Swauger had little trouble dominating the race, finishing six laps ahead of second-place Eric Vasutin, who managed to stay ahead of Brian Bodine.

The 1/8-scale A-main began, ran a couple of laps, and was halted due to rain. After everyone retreated to their shelters, the rain let up as the squalls passed overhead and once again the cars were fueled and prepared for a restart. No sooner had the flag gone up, but the rain returned again, sending cars fishtailing around the course, out of control. The race director again halted the race and we retreated once more to the tents.

This break was short-lived, as the sun came out, drying the track quickly. By this time most of the Trans Am teams had packed up the transporters and were lined up alongside the RC track waiting for the main track to open so that they could leave the circuit. This built-in audience was enthusiastically cheering on the 1/8-scale drivers as the cars once more took the track in a valiant attempt to complete the 30-minute race.

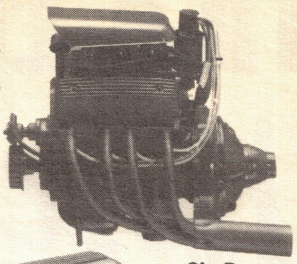
When the race was again started, TQ Ralph Burch had finally cured his sick car's tuning problems and was in the hunt for the lead, held by Davey Preston, driving a BMT. Though he drove a good race, a clutch bearing did in Ralph's BMT and he finished several laps down in fourth place.

Portland's Byron Bressel took the lead and looked strong, with a good chance to

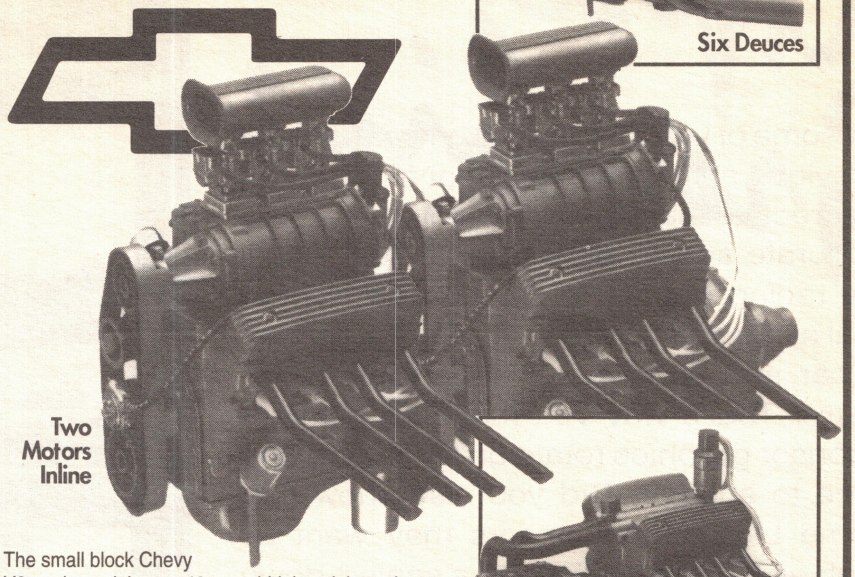
continued on page 49

The Classic

Build Two Complete Motors!



Six Deuces



Two Motors Inline

Front Draft Blower

The small block Chevy V8 engine celebrates 40 years! Lightweight and ease of parts interchangeability from both factory and aftermarket sources have made it a natural choice for high speed thrills since 1955. Blowers and fuel injection are still the most popular and effective means of achieving maximum horsepower and torque.

Small Block Chevy

This 1/10 plastic scale kit includes all parts necessary to build two injected and blown motors that can be built together as a twin engine model or as two separate motors with your choice of induction ranging from blown with three carbs or injection, six carbs and a scoop, to a nostalgic front draft blown version. Detailed instructions and a wiring kit are also included. Looks excellent as a display or in radio controlled cars, trucks & boats when additional realism and powerful looks are desired!

Chevy V8 Motor #10419 $17.95

America's Choice!

PARMA INTERNATIONAL

Parma International Inc. 13927 Progress Parkway • North Royalton, Ohio 44133 (216) 237-8650

STICK 'EM UP!

Upscale Graphics

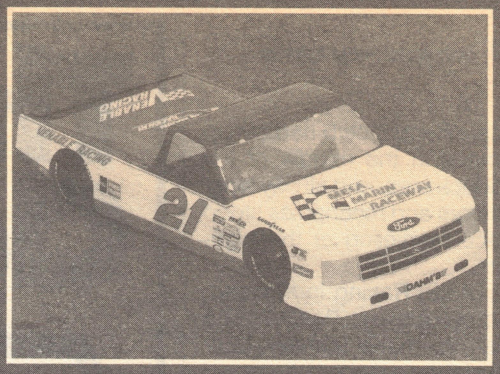
As some of you may know from reading my previous articles, I'm a decal freak. I can appreciate the time involved in producing accurate scaled-down duplicates of real life racing decals. Did you know that on real stokers, a sponsor may buy a spot on a car and sub-lease it to another company? That's why you may see different sponsor graphics rotate on a car from one race to another. Did you also know that some big-name sponsors may want as high as $10,000 to license a scaled-down version of their logo?

Since I've been writing for this magazine, my intent has been to bring some light to those gray areas that beginner RC modelers may encounter. Today's first timers will carry on and contribute to the longevity of this hobby. So excuse me if some of my writing seems trite to the veteran hobbyist. As the number of newcomers grows, so do the products from which to choose. Just as I have tried to help those new to the RC hobby, I would also like to help promote those new to RC manufacturing.

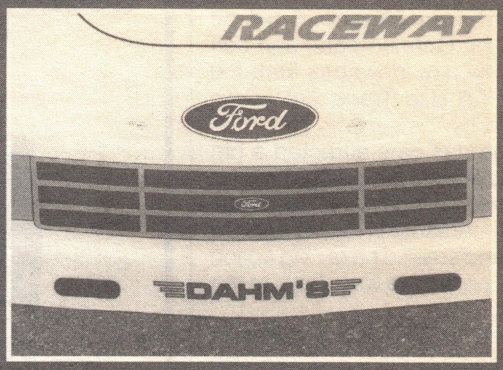
During a telephone conversation with Ira Dahm, of Dahm's Racing Bodies, it was suggested that I contact Upscale Graphics about its latest decals for 1/10-scale NASCARs and NASTRUCKS. (It's really cool that just as camaraderie flourishes between RC racers so does it exist between RC manufacturers.) When I spoke with Roger Long, owner of Upscale Graphics, he was eager to talk about his busi-

continued on page 60

BY KEVIN MEYER • Photos by John Davis



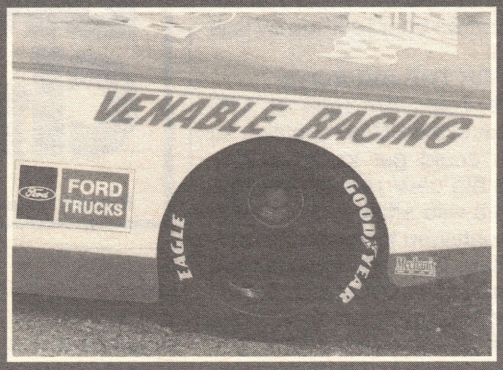
Dahm's Tornado II is a popular RC racing truck. The Venable truck raced only as an exhibition vehicle, so you can bet this one will stand out in the crowd. Don't expect to see this one on the real Supertruck circuit.



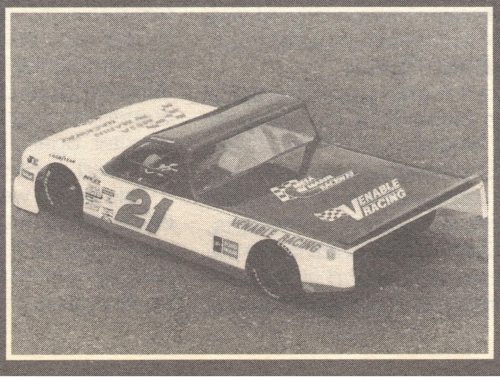
Very fine detail on the grill. Nice work! There was a lot of time and effort put into making this truck as accurate as possible.



Credit must go to Upscale's graphic artist for the great art work needed to reproduce these decals.



For a no-hassle, no-bleed paint line, Dahm's Pro Mask is the answer. I haven't found anything better.



No guesswork on the decal placement. The decal sheet includes everything necessary to make a perfect replica of this SuperTruck. Along with the Venable truck, decals for the Ortho truck are also available.

LOCKMANN Precision
TOP ALCOHOL, TOP FUEL & TOP FUEL UNLIMITED Dragsters

THE ULTIMATE IN R/C PERFORMANCE MACHINES...Handcrafted in Southern California!
17344 Eucalyptus, Unit 1-B • Hesperia, CA 92345 • (619) 947-3684 • FAX: (619) 947-3689

PORTLAND CONTINUED FROM PAGE 47

win the marbles. As he led, Mike Swauger was relentlessly dogging Bressel, first about a half-track behind, but soon only a couple of turns away. With nine minutes down, Burch took the lead away from Bressel, then flamed out and Swauger took the lead, with Bressel in second. Burch got his car restarted and went back into the hunt, eventually passing Bressel as he set his sights on Swauger. Burch's car lost its top-end speed, allowing Scott Kimbrow to get by and into third. At the end, it was Swauger in the lead, Bressel in second and Kimbrow in third with Ralph Burch in fourth, followed by Chris White and Josh Alton.

The Portland PSR club and Seattle's SARCAR members joined to dismantle the track in short order, and trophies were handed out to an enthusiastic crowd.

RC Model Cars magazine wishes to thank Dave Bressel of Kit Car, along with Rose Festival Committeeman Mark Karson, Kerry Camp, Terry Reeves and the rest of the RC competitors for their tremendous hospitality and friendship. From Portland's Competition Racing Association, Ken Marcum and his crew handled the PA, scoring and trophy handouts—and did an excellent job with each of those tasks. And PSR members, who along with the SARCAR guys, made us feel right at home, our sincere thanks. See you in '96!

1/10 A-MAIN

1. Mike Swauger (TQ)	30:14.84
2. Eric Vasutin	39:11,11
3. Brian Bodine	30:14.54
4. Jim Rose	30:15.79
5. Mike Fox	29:38.73
6. Steve Tsuruda	30:15:45
7. Mike Stanton	30:05.04
8. Robert Andreotti	21:54.85
9. Fred Silva	18:29.87
10. Stew Keene	0.36.11

1/10 B-MAIN

1. Ron Smith	20:04.37
2. Mike Pickett	20:15.99
3. Travis Karson	20:10.54
4. Bob Carlos	20:13.90
5. Allen Strohmeyer	20:00.24
6. Lenny Ledoux	20:02.46
7. Ron Gustin	19:27.53
8. John Mason (TQ)	20:07.59
9. Chuck Johnson	20:19.09
10 Richard DeMars	20:13.12

1/10 C-MAIN

1. Travis Schreven	15:04.37
2. Thomas Bryant	15:05.51
3. Randy Johnson (TQ)	15:05.55
4. Ryan Welch	15:08.68
5. Mike Godson	15:00.60
6. Ron Medcalf	10:24.50
7. Ray Sabado	11:01.06
8. Art Bunch	3:33.85

1/8-SCALE A-MAIN

1. Mike Swauger	Picco	25:14.43
2. Byron Bressel	BMT	25:11.45
3. Scott Kimbrow	Picco	25:08.55
4. Ralph Burch (TQ)	BMT	24:34.70
5. Chris White	BMT	25:04.44
6. Josh Alton	Serpent	25:06.72
7. Gary Trudeau	Parsec	25:02.03
8. Wes Zook	BMT	23:54.14
9. Davy Preston	BMT	9.31.81
10. Eric Davis	Serpent	2.29.95

1/8 B-MAIN

1. Ryan Crabtree	20:04.02
2. Steve Tsuruda	20:03.80
3. Jim Walls	20:00.12
4. Terry Reeves	20:08.74
5. Dave Clark (TQ)	20:01.26
6. Brian Bodine	15:39.94
7. Steve Curry	20:12.50
8. Dave Ehrlich	9:06.96
9. Gary Gundesen	5:19.32
10. Stew Keene	3:22.11

VELODROME CONTINUED FROM PAGE 51

If you've ever wanted to race your 1/10-scale car or SuperTruck on a fast, high-banked Velodrome, this is your chance. Don't think you can't do it—it's easier than you think. And to make it even easier, NORRCA is opening the track on October 6 for open practice from 9:00 a.m. to 2:00 p.m. This gives you the opportunity to acclimate yourself to the track and to set up your vehicle.

There's still time to enter your car or truck in the NORRCA '95 Super Oval Winter Fest—contact NORRCA at (909) 994-5381 or mail your check for $40.00 with the class you wish to run, and your racing frequencies. Classes include Sportsman Stock, Expert Stock, Sportsman Mod, Expert Mod, Sportsman Stock NASTRUCK, Sportsman Modified NASTRUCK, Superspeedway and the Speed Run. The speed run entry costs $25.00, and you must be entered in another class to enter the speed run. Pre-entries close September 15, and entry after that date will cost an extra $10.00. Mail your entry to NORRCA, 1651 W. Foothill Blvd., #225, Upland, California 91786. This is one race you won't want to miss. •

DARLINGTON CONTINUED FROM PAGE 29

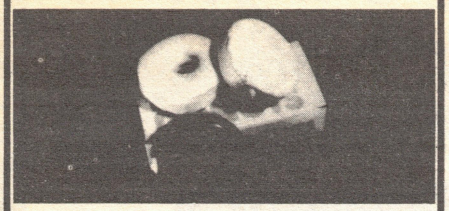
one way or another. So with that in mind, let's take a look at each of the area's tracks in detail.

STRAIGHT BY DAY, AROUND BY NIGHT

Gerald and Gwen Pollard opened their shop, Hobbies & More, 1-1/2 years ago and shares its large area with the couple's regular printing business. Besides the full-service hobby store, Hobbies & More has two 1/10-scale race sites: an indoor carpet oval and an outdoor asphalt drag strip. Gerald Pollard's long background in RC includes both cars and aircraft, but his current interest centers on 1/10-scale IEDA drag racing.

The Pollard's on site asphalt dragstrip is a clear indication of their commitment to the IEDA-style electric drag car style of competition. The strip originally was constructed with concrete; but after some big time headaches locating a paving contractor, the present blacktop surface was laid down. As Gerald put it: "Pavement

GLAZE BELONGS ON
DONUTS



NOT YOUR MOTOR'S
COM AND BRUSHES

PREVENT GLAZE, CARBON BUILDUP AND FLASHOVER.

USE AERO-CARS CONDUCTA MOTOR DROPS!!
AC-3003
ADD POWER AND SPEED. INCREASE MOTOR AND BATTERY LIFE.

Send $2.00 for
information and decals
Aero-Car Technology, Inc.
P.O. Box 336
Western Springs, Illinois 60558

contractors want to do parking lots, not 1/10-scale drag strips. Luckily we finally found APAC. They did a great job on our dragstrip."

The strip utilizes a top-of-the-line RaceAmerica timing tree, computer scoring, AC hookups and pit tables. Drags are run on alternate Sundays, with an average turnout of 30 racers signing up to compete. This past May, the Pollards hosted their first IEDA event: The Southeastern Regionals.

Along with the straight-line crowd, Hobbies & More hosts indoor BoLink Legends races. The carpeted oval measures 75 feet around its inside line and scoring is done by a remote counter and computer combination. The BoLink Legends cars have been very popular for the shop's Saturday night competitors (more on these cars later).

The Pollard's also have an outdoor offroad track on the drawing board and hope to have it up and running sometime in the near future. So as you can tell, there's likely to be another RC track in the Darlington area before too much longer.

SMALL TRACK, CLOSE RACING

Located between Darlington and Interstate 95/Florence, Bandit's Performance RC and Models also boasts an indoor RC oval. Owners Rose and Bryan Howle first began racing RC cars on a local parking lot and it evolved into Bandit's three years ago. Bryan, a civil engineer by trade, has a long history in scale racing that includes slotcars and RC cars and was for a time, a HyperDrive team driver. Both of the Howles not only enjoy RC cars, but also working with the non-RC public to make them more aware of our sport.

To this end, they've worked hard to achieve relationships with the local chamber of commerce and also though promotional RC car events. Bryan has also done several RC car demonstrations with "Banana Man" Dan Moynihan, in the Southeastern portion of the U.S.

The Howles' indoor carpet oval hosts races on both Tuesday and Sundays with classes for NASCAR/NASTRUCK pancars, gearbox cars and the BoLink Legends. The track record for a four-minute race is 96 laps; so you know a good-handling car is very important on this tight track. Again scoring is handled using a counter/computer setup, and there's food, restrooms and plenty of parts available for any type car you may compete with.

And due to this large amount of RC car products and other race car related stuff, the Howles are currently looking for a larger location to move into —soon.

BIG AND BAD-NUFF SAID

To the best of this writer's knowledge, the Darlington RC Raceway (formerly TBS Speedway) was the first purpose-built high-banked RC track designed with quarter-scale racing in mind. Modeled after the full-sized NASCAR oval just a few miles down the highway, this asphalt RC oval first opened in 1989. It's also an excellent 1/10-scale oval as well and has hosted several large events in both scales since it was built.

In talking with two of the track owners, Calvin Stogner and David Tedder, I found out some interesting things. For one, many RCers don't realize how much time and effort it takes to get a large RC oval ready for just one event. For this past summer's QSAC National, Stogner spent on average 6-8 hours per day for the two months prior to the race, working on the raceway. Plus, Calvin and David's track has a situation that many track owners don't have to worry about—i.e., a Winston Cup track right down the road.

How can this be a negative, you ask? Well, if you try to schedule an RC race on the same weekend that the NASCAR guys are running, you have a serious people problem. All of the motel rooms are taken, and those you do find 100 miles away are twice the usual price. But both Calvin and David were quick to say we RCers need to make these stock car fans much more aware of our RC racing through promotion and, most important, exposure. And once you've seen their high-banked RC track, you will be impressed.

Spectators have two large grandstands for viewing; there's a concession stand underneath the scoring tower and permanent bathrooms on site as well. Full computer scoring, AC hookups and an extra large drivers' stand make the racers comfortable, too. You only have to ask anyone who's witnessed any racing at this big fast oval how exciting it is — for both the competitors and fans combined.

WRAP UP

So there you have all the poop. Three RC tracks and a dragstrip to boot. Four totally different ways to go RC car racing in Darlington, South Carolina, and another on the drawing board. In a radius of less then ten miles, you can either drag race, run on a tight carpet oval, or fulfill your "need for speed" on one of the quickest RC tracks anywhere in the country. Sounds to me like the most likely place for any hardcore RC car nut would want to relocate to once he/she retires.

TRACK ADDRESSES

Hobbies & More, 1570 South Main Street, Darlington, South Carolina 29532 (803) 393-0355.

Bandit's Performance RC Hobbies, 2037 S. Main St., Darlington, South Carolina 29532. (803) 393-3333.

Darlington RC Raceway, Box 896, Hartsville, South Carolina. 29551. (803) 383-0131. ●

JEEP WRANGLER *CONTINUED FROM PAGE 36*

I attended the Pasadena hobby show where Tamiya was scheduled to be an exhibitor, and I was not disappointed. The kit was on display, and it looked to me as realistic in person as it did in the advertisement. I once worked for a Jeep dealer, and was very familiar with the detail of the real thing. Tamiya's model looks as if they hit one with a shrinking beam.

WHAT'S IN THE BOX, WHAT'S EXTRA?

I received the kit about three weeks later to review. It was packaged well, and the box picture looked great. In reading the box, there are some additional parts that can be purchased specifically for this kit. Options include: bearings, sport-tuned motor, an electronic speed control, heavier silicone damper (shock) fluid and a lighting kit.

The chassis is a pliable plastic, and the body is made of styrene—not clear Lexan, as is the norm with most RC vehicles. The body comes unpainted, finished in white. No primer or prep is needed to paint the body. To paint the body at least five colors are needed and they are not included with the kit. I chose to paint the body Testor's British Green Metallic and the top with Testor's Light Earth. Other colors needed are for the turn signal lights, stop lights, running boards, and, if desired, the rims.

The kit does include a resistor-type speed control, but does not include radio, servos, or battery.

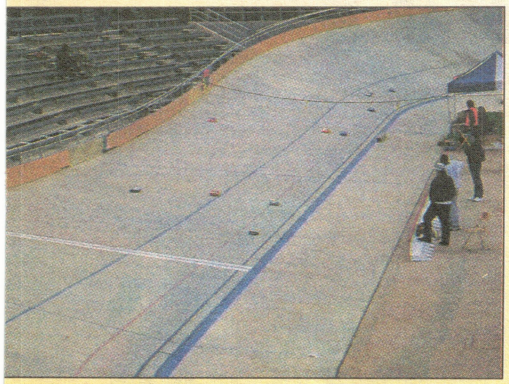
RADIO CHOICE

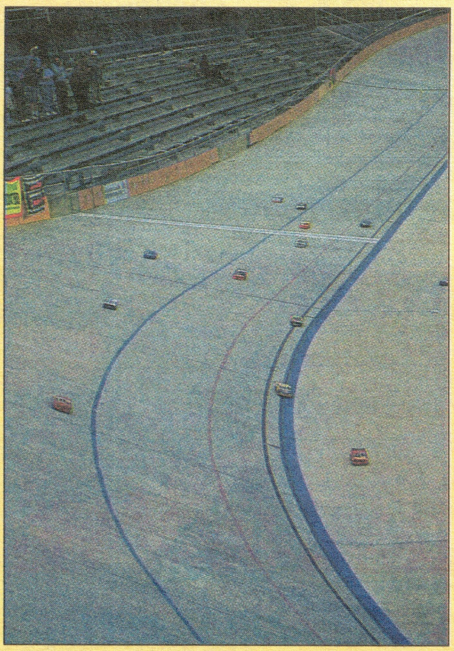
For the control functions, I installed a Futaba Magnum Sport and two Futaba FP-S148 servos. I also added a Dynamite

continued on page 56

NORRCA's VELODROME SPECTACULAR





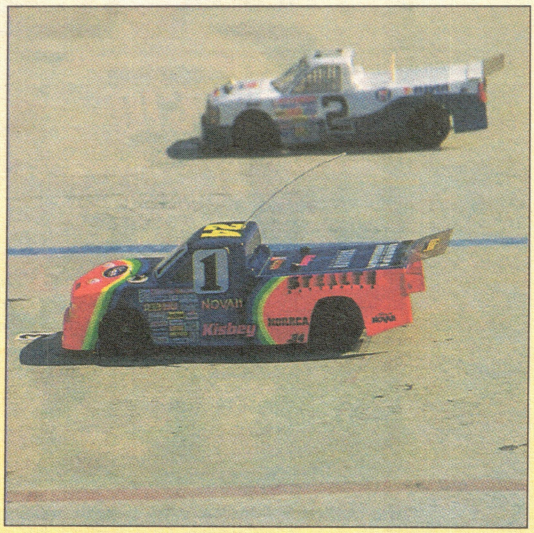


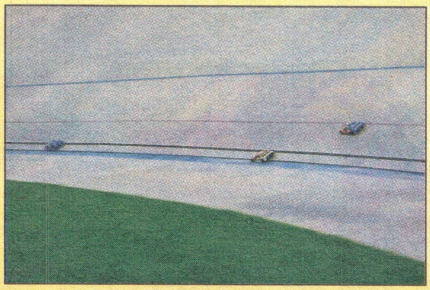
BY DOUG ADAMS

This fall's event will be a classic confrontation between top teams and drivers in several high-speed classes. NORRCA's J.R. Sitman has put together a program that features something for everyone, including Superspeedway, Sportsman and Expert events, plus the eagerly anticipated and always exciting Speed Run, where just about anything goes in the quest for ultimate speed.

The October 6, 7 and 8, race presented by NORRCA brings Southern California's most exciting RC race back to the Dominguez Hills Velodrome in Carson. Site of the 1984 Olympic bike races, the Velodrome boasts world-class amenities and plenty of pit space for competitors. Hotels are nearby for out-of-towners, and there's food at the track that is actually palatable.

continued on page 49





CLOCKWISE FROM TOP: ■ Action on the backstretch at the Dominquez Hills Velodrome. ■ NASTRUCK Supertrucks will be racing in stock and modified classes at the Velodrome Super Oval. ■ Superspeedway Enduro racing means lots of high-speed pitwork with lightning-fast battery changes. 100-lap races are popular with spectators, but the intense racing takes its toll on cars and drivers alike. ■ Race action. ■ Down the front straight cars vie for position. At the Winter Fest in October, there will be 20-car heats and mains.





SoCal track owner Jim Blauvelt being interviewed for Orange County cable TV, which covered the racing activities on their news program.

SoCal Raceway hosted the 1995 NORRCA Offroad Nationals with 420 entries. Everybody got a piece of this 2-1/2-foot cake, courtesy of track owner Jim Blauvelt.



Miss NORRCA, Celeste Lichtenberger, presents the trophies for Top Qualifier and first place in the Factory Truck class to Mark Pavidis, left, and Greg Dennett in second place. Both drivers used Reedy Modifieds in their RC10T2 trucks, as well as Pro-Line tires and the new LRP SC digital speed controls.



Team Losi's Greg Hodapp won the 2WD Factory Class with his Maxtec-powered Losi XX car, using a Tekin speed control and World Class batteries.







■ LEFT: Daren Westman (left) helps Mike Reedy in rebuilding the motors at the track. Mike is helping Colin Macrae, and in the foreground is Jurgen Lautenbach, the owner of LRP speed controls in Germany, over here to help Team Associated with LRP's new ESCs. ■ CENTER: During practice there were as many as 24 drivers on the drivers' stand, with room to spare. ■ RIGHT: This is the straight section right in front of the drivers' stand. To the right is a series of jumps that gave many drivers problems.

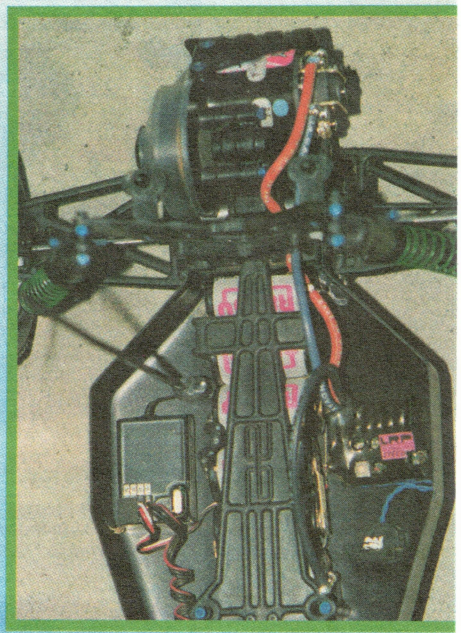
FAST TIMES AT THE 1995 NORRCA OFFROAD NATIONALS

BY GENE HUSTING

SoCal Raceway, in Southern California, hosted the 1995 NORRCA Offroad Nationals, with sponsorship by Novak and Associated. SoCal is a favorite track of drivers in Southern California, and the 420 entries kind of back up that claim.

The track is quite big, for an indoor track, and usually has monstrous jumps that all the local drivers like. However,





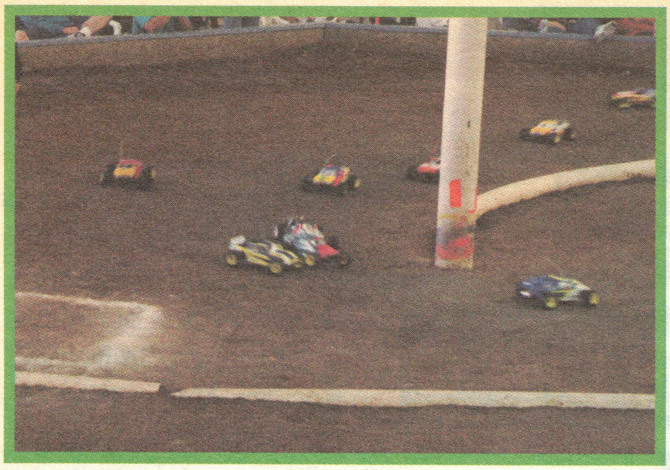
■ LEFT: Factory Modified Truck A-main drivers, from the front/left: Brian Kinwald, third; winner and Top Qualifier, Mark Pavidis; Miss SoCal; Greg Dennett, third; Rick Hohwart, ninth; back row, left: Scott Brown, eighth; Mark Francis, seventh; Jason Ruona, sixth; Greg "What am I looking at?" Hodapp, fifth; and Barry Baker, fourth. ■ RIGHT: The new cases for the LRP speed controls weren't ready yet, so they were just black taped to keep them clean. You'll notice the tape is covering the mosfets which is okay in this case, because these speed controls don't waste power heating up the mosfets. They don't even require heatsinks.







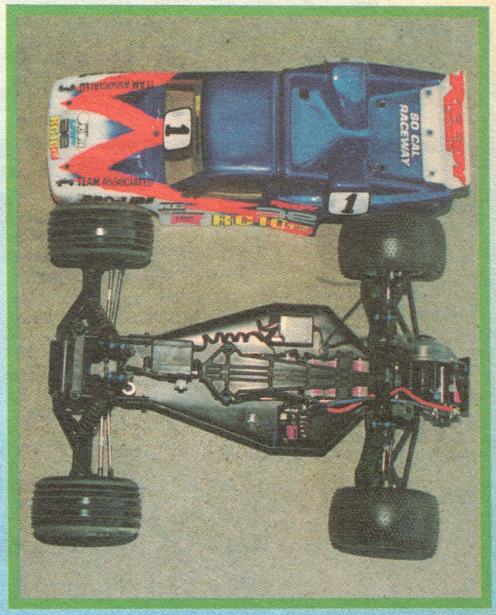
■ LEFT: Mark Pavidis is busy trimming his tires, a boring job that must be done for every set of tires you run. However, at this race, the drivers were only allowed two sets of tires, so this job wasn't as tough. ■ CENTER: This is between the second and third turns where the track gets a little crowded. ■ RIGHT: These pit tables were along the parking lot wall, and one day it rained all day long. If you race outdoors you know how frustrating this is. Inside here, nobody cared.





■ LEFT: The races start with the cars on the back straightaway, and then they go into a sweeping left turn, and then a very slow tight turn around this pole, which creates a lot of problems. ■ RIGHT: The track has a large pit area to the left here, as well as a pit area along the back straightaway, and a full hobby shop area.





■ LEFT: Factory 2WD Modified drivers, from left: Mark Francis, eighth; Scott Brown, seventh; Dean Karns, tenth; Scott Hughes, third; Greg Hodapp, first; Miss So Cal; Brian Kinwald, second; Matt Ledger, ninth; Mark Pavidis, fourth; and Rick Hohwart, sixth. ■ RIGHT: Mark's RC10T2 uses Reedy Modifieds, Reedy/Orion batteries, Pro-Line tires, Airtronics radio, and LRP's ICS Digital speed control, which was also used by most of Team Associated.

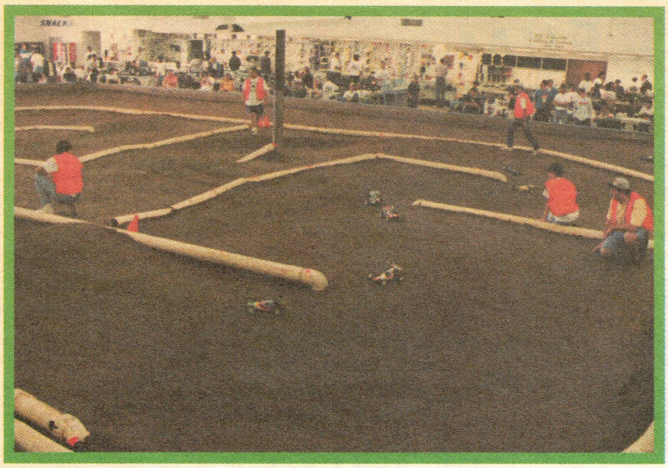
FAST TIMES AT THE 1995 NORRCA OFFROAD NATIONALS

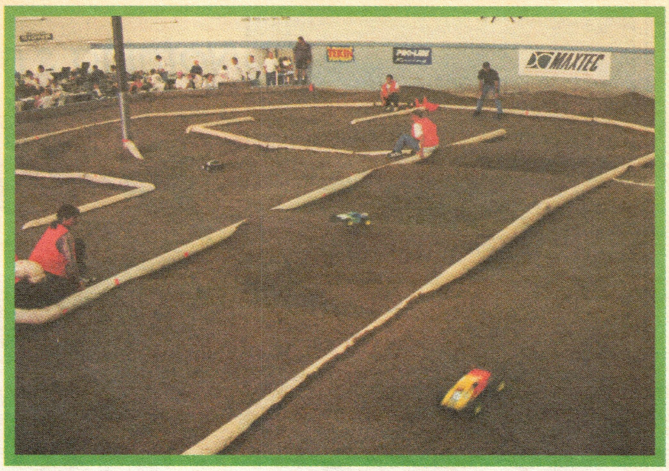


The 4WD A-main winners.

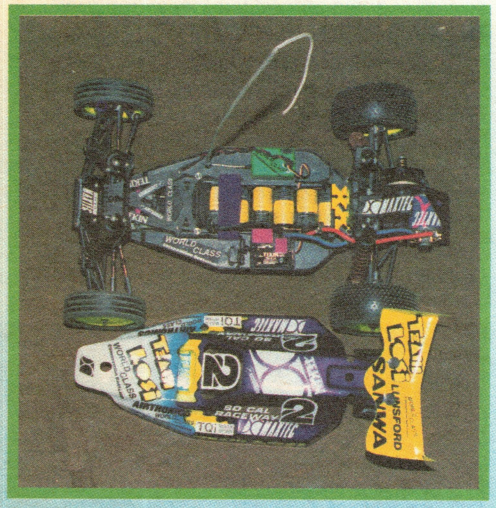


The Expert 2WD Modified winners.





■ LEFT: This is another slow, tight section that becomes very crowded. Passing here is difficult. ■ RIGHT: Another view of the double-double jumps which were quite tricky.



Greg Hodapp's Losi XX uses Maxtec motors, World Class batteries and Tekin speed control.

for this race there were fewer jumps, and the height of the remaining jumps were shortened to give the out of town drivers a better chance.

There was one other big change that track owner Jim Blauvelt tried, that worked perfectly. Jim re-packed the track after a full day's racing, which removed all the heel holes in the track, and made the track super smooth and hard. It was hard enough that you could now walk on it, without making any heel holes.

Another unexpected great thing happened. After a couple days of practicing, with over 20 drivers on the drivers' stand from morning to night, the familiar "Blue Groove" started to appear, and the traction started to go way up. The drivers petitioned Jim to leave the track alone for qualifying and the mains, which he did. The track just kept getting better and better.

J. R. Sitman, the owner of NORRCA, has been trying to find a way to cut down on the high cost of tires. J. R. contacted Team Losi and Pro-Line and asked them their thoughts on limiting each driver to just two sets of tires (two pair of front and two

continued on page 61

A NATS-EYE VIEW

The 1995 NORRCA Offroad Nationals proved to be as exciting as the hype surrounding the event made it out to be. Team Losi was back to attempt to de-throne Team Associated in the Factory Class honors, and Brian Kinwald was here to defend his National Champion Title. Also present: Gene Husting from Associated, Kevin Orton from Tekin Electronics, Kelly Lunsford of Lunsford Racing, Bob Novak and Tyree Phillips from Novak Electronics, Chuck Kimbrough, Kimbrough Products, Eric Soderquist from Maxtec and Eustace Moore of MIP fame.

On hand in the factory pits were Jack Johnson, Gary Kyes, Gil Losi Jr. and Pops Losi rounding out the upper crust of Team Losi. In the Associated pits were Mike Reedy, Cliff Lett, Mark Pavidis, Scott Hughes and Rick Hohwart.

All were there as a show of support to their respective teams. In the Losi camp, team manager Jack Johnson was busy taking notes and advising his team.



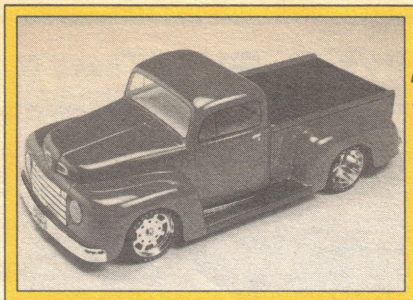
Matt "Ironman" Lee ran in five classes, a tough grind for anyone to simply finish. Matt came from Oklahoma City to compete, and was TQ in 2WD Stock, and won the race. In fact, he made the A-main in every other class he ran in.

In the Expert Class, a young man named Sohrab Tavakoli swept Stock truck, Modified truck and Modified buggy classes. He finished with a perfect 200 score by the second A-main and bowed out of the third Stock truck and Modified car A-main to allow other competitors to score higher. Congratulations to Sohrab for not only capturing two National Titles, but for having the humility to allow his fellow racers the advantage of scoring higher to increase their chances of taking over second and third places.

Greg Hodapp took top honors in the Factory Mod 2WD class, followed by Brian Kinwald in second and Scott Hughes rounding out the top three.

In fact, Team Losi captured the first-place spot in every expert category, and in the Factory 2WD class, resulting in an excellent weekend for the team. The only notable exception was in the Factory Modified Truck Class. Brian Kinwald was running a close second to Mark Pavidis and being followed by Gregg Dennett. The top three were no more than two truck lengths apart. They began to come up on lapped traffic, and as they did, they ended up with

continued on page 72

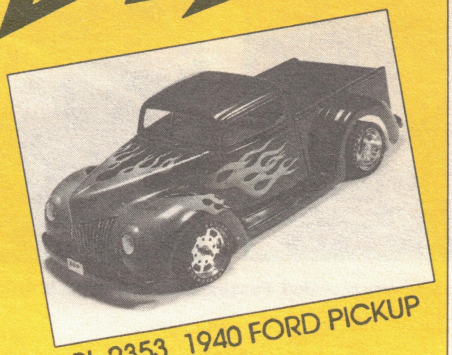


Nothing's more FUN than BoLINK®

BL-2277 '49 FORD CUSTOM PICKUP



BL-2342 '53 CHEVY CUSTOM PICKUP



BL-2353 1940 FORD PICKUP

CLASSIC PICKUPS!

For a catalog send $3 to: BoLINK® R/C Cars (RCM), 420 Hosea Rd, Lawrenceville, GA 30245 (404) 963-0252 FAX (404) 963-7334

JEEP WRANGLER CONTINUED FROM PAGE 50

Piranha battery pack.

I wanted to capture the realism of this kit, and since I could add a lighting kit, I also got hold of RAM (Radio Controlled Models) for the headlights and driving lights.

ASSEMBLY

The instruction manual is very well conceived in usual Tamiya fashion. They tend to have very detailed manuals that include life-size pictures of the parts required for the assembly operation at hand.

Although detailed, I would recommend the kit for ages 13 and older. Under that age, I would suggest getting some parental help.

The chassis is sturdy plastic, and is well-designed. The instruction manual suggests the user reads the manual thoroughly before assembly. I gave it a good once-over and started.

Assembly went smoothly; I separated all of the parts in the parts bags into bins. Then, looking through the manual, I labeled the parts appropriately. The full-size drawings help make identification much easier. Paying attention to the orientation of the parts in the manual's pictures goes a long way to prevent making mistakes.

Every step was easily assembled. I had no real problems putting this kit together. I found that the chassis was thoughtfully laid out, and all of the components were attached to or installed in it very easily.

I was also impressed with the instructions giving the proper lengths and positions for the steering assembly and the speed control.

When I got to the shocks, I decided after assembling the first one, that they needed heavier shock fluid. Tamiya has heavier fluid available, but I opted to use Team Losi's 425 Orange shock fluid. I have always had good luck with it, and it was the right weight for the shocks.

I also decided to install MIP Blue Seals in the shocks in place of the supplied Orange seals. The MIP seals won't swell and interfere with the operation of the shock. The seals supplied are fine, but I would recommend changing them often. The MIP Blue seals are also smoother than the rubber seals, allowing the shocks to work with less resistance.

The shock positions are not adjustable, but do not need to be with this kit. They work quite well in the factory position with the addition of the heavier shock fluid.

The shocks do have a sliding collar to allow more spring tension to be added. A nice touch if driving in rough terrain.

The drivetrain is a full-time four-wheel drive setup. The motor drives a gear that meshes with the front and rear drive system. The front is entirely gear driven. The rear is powered by a driveshaft attached to the rear differential.

The rims are molded plastic and are a deep gold, almost bronze color. I wanted them to shine a little more. I painted the entire wheel silver first, then I masked the outer edge and painted the center a bright gold. This gives the illusion of an aluminum rim and really makes the wheels stand out. The supplied Goodyear Wrangler replicas are nearly perfect copies of the real thing. The tread pattern is identical. Again, the realism of this kit is near perfect.

Tamiya supplies a locking kit for the rear differential for a "posi" rear end. I kept mine stock, but I'll put this in to see how it works later.

PAINTER POINTS

As mentioned above, I wanted to paint the body to look as good as Tamiya's detailing would allow, so I had to paint it in four steps. First I painted the black on to the fender flares, bumper and steps. Then painted the main body minus the top. I had a couple of paint runs, so I had to sand them out and re-coat the body. I painted the top next, then finally, detailed the door handles, vents, marker light so on.

The Jeep was almost entirely painted with an airbrush. The marker light and turn signals were painted with a brush.

The final detail was to apply the decals. They are printed on mylar, so, unlike a smaller static model, do not require water to remove the backing.

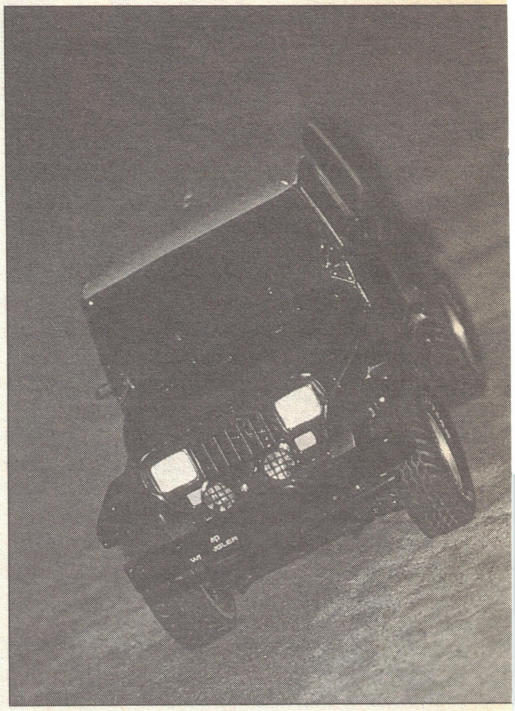
The decals put the finishing touches on. Tamiya supplies decals for different paint schemes.

When I was finished with the paint and decals, I was almost afraid to drive it. It looked great! Nevertheless, my desire to see it go fast prevailed, and off I went in search of some offroad territory to conquer.

DRIVING IMPRESSIONS

I have nearly always replaced a resistor-type speed control with electronic speed controls. they have a more fluid response than a resistor. However, the Futaba radio system did a superb job in proportionally handling the commands from my trigger finger.

As with the real Jeep, the kit has a narrow, short wheelbase and a high center of gravity. To offset this, Tamiya has located the battery pack at the lowest possible point in the kit. This added weight low helps stabilize the vehicle and counteract rollovers. The Jeep will turn on a dime at low speed, and will tackle the most rugged terrain. Its full-time 4WD and oil-



The Wrangler's scale appearance has been enhanced with the use of RAM's light set, powered by a 9-volt battery.

continued on page 59

AND THE WINNER IS...

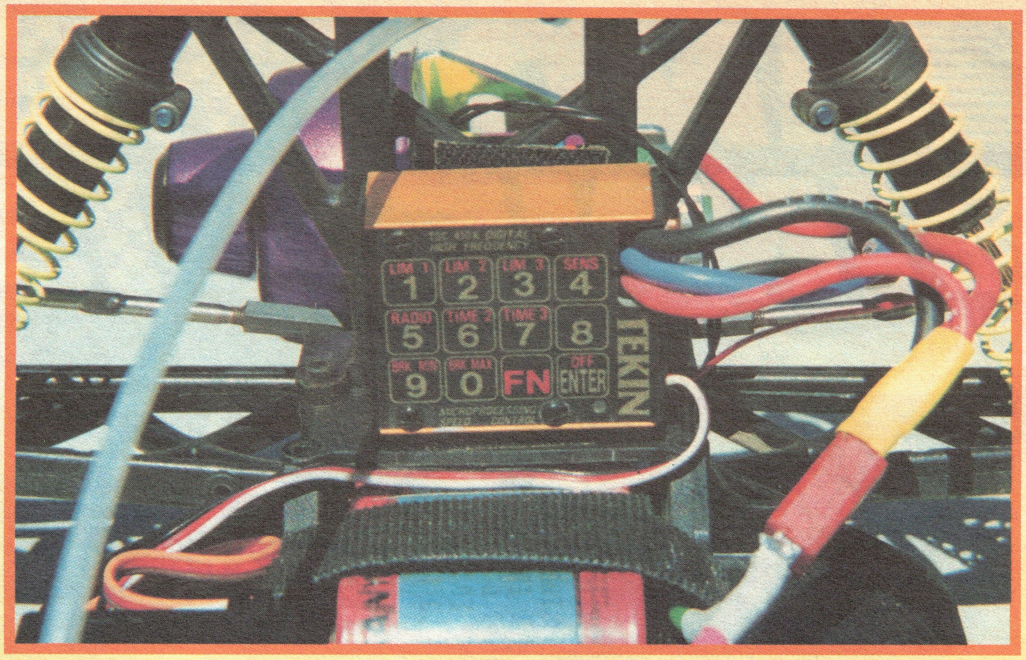


ROAR National Champion Modified Truck ROAR National Champion 2WD Modified N.O.R.R.C.A. National Champion Factory Modified Truck N.O.R.R.C.A. National Champion Factory 2WD Modified N.O.R.R.C.A. National Champion Expert Modified Truck N.O.R.R.C.A. National Champion Expert 2WD Modified ROAR National Champion 2WD Stock N.O.R.R.C.A. National Champion Expert Stock Truck N.O.R.R.C.A. National Champion Expert 2WD Stock REEDY Race of Champions USA First Place Over All British National Champion 2WD Modified German National Champion 2WD Modified REEDY Race of Champions USA First Place 2WD Open REEDY Race of Champions Japan First Place 2WD Invitational REEDY Race of Champions England First Place 2WD Invitational British Grand Prix 2WD Modified 1-3 and T.Q. Norwegian National Champion 2WD Modified Spanish National Championship 2WD Modified T.Q. Swiss National Champion Irish National Champion 2WD Modified Canadian National Champion Modified Truck Canadian National Champion 2WD Modified Canadian National Champion Stock Truck Canadian National Champion 2WD Stock U.K. Truck National Champion REEDY Truck Challenge First Place Modified Truck CACTUS CLASSIC First Place Modified Truck CACTUS CLASSIC First Place 2WD Modified CACTUS CLASSIC First Place Stock Truck MOTOR MAN CLASSIC First Place 2WD Modified Australian Championship Spanish Cup Off-Road Queensland Championship Victorian Championship

EFRA FEMCA NORRCA ROAR

TEAM LOSI Racing

13848 Magnolia Ave. Chino, CA 91710 (909) 465-9400



TEKIN ELECTRONICS 410K-2 ELECTRONIC SPEED CONTROL

Tekin Electronics has re-released their revolutionary keypad speed control, which in its initial form, was met with mixed feelings. The new version doesn't look all that different from the first, save for a set of extra wires connected to an on/off switch. Let's take a closer look to see what's new.

CONSTRUCTION

Unlike most conventional speed controls, The 410K-2 doesn't need an external heatsink. According to Tekin, the aluminum case effectively dissipates the heat. One of the most obvious unconventional looking aspects is the keypad surface. At first glance, it looks intimidating and slightly confusing. However, the instruction manual explains each feature and gives setup tips for each one.

There are three wires emanating from the top right corner that provide connections to the battery pack and motor. These are not user-replaceable, so be careful when cutting them. Snipping them off too short could mean a trip to the factory for wire replacement, which Tekin quotes as $4.00 plus shipping.

Also on the right side is the protection fuse, the radio system connector wires, the FET boost lead and the on/off switch leads. The fuse is easily replaceable. However, like most Tekin speed controls, it can only take a special Tekin fuse.

The unit is compact, especially since there are no heatsinks protruding from it. The unit measures 1.4 x 1.7 x .6 inches and weighs (with wires intact) 1.8 oz.

The usual specifications are exceptional for this speed control: braking is rated at 120 amps and the unit handles from 4 to 10 cells. The torque (current) limiter is adjustable from 10 to 125 amps, plus an override feature that will bypass the limiter and allow the motor the consume as much as it can handle. A great feature for drag racing.

Tekin has also included several other safeguards such as thermal overload protection, reverse voltage protection, and SEC overload protection.

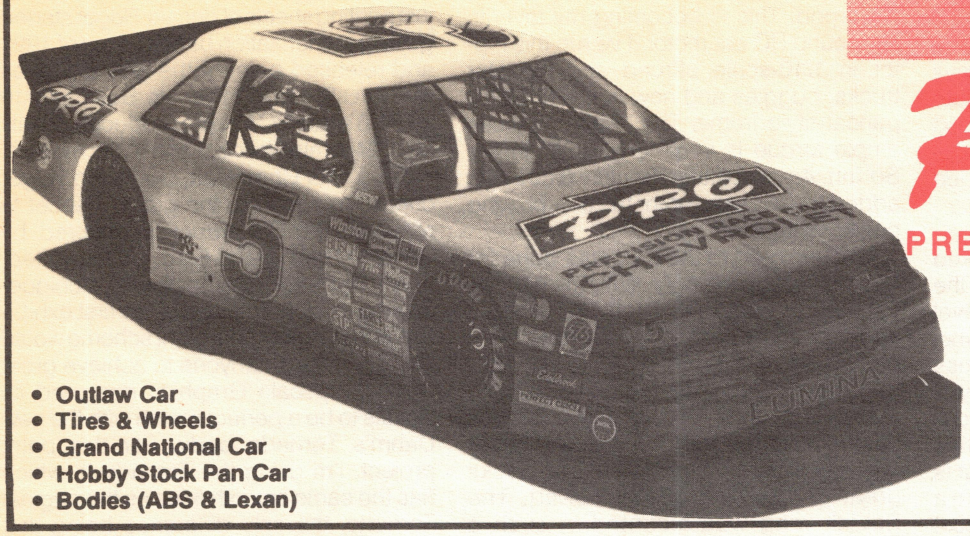
FEATURES

The 410K-2 being the only fully programmable ESC, is loaded with features. We're not talking bells and whistles, we're talking state-of-the-art features such as

continued on page 64

BY ROB TUCK

QUARTER-SCALE CARS • PARTS • ACCESSORIES



Loves PRC
PRECISION RACE CARS

- Outlaw Car
- Tires & Wheels
- Grand National Car
- Hobby Stock Pan Car
- Bodies (ABS & Lexan)

Love's
PRECISION RACE CARS
Box 251
Nuevo, CA 92567
Phone (909) 928-1518
FAX (909) 928-2268

JEEP WRANGLER CONTINUED FROM PAGE 56

filled shocks did a good job at soaking up the bumps and keeping the Jeep stable.

The only problem I encountered was the driveshaft. I'm traditionally a racer, and do not use reversing speed controls. Racing speed controls apply brakes when the trigger is pressed forward. Since I was not used to that response, I instinctively jammed the trigger forward to slow down. This reverses the motor and drivetrain and puts a great strain in the drivetrain. The Jeep actually stood on its nose when I did this. Subsequently, the driveshaft spun out of the Jeep.

I took it back to my toolbox and reinstalled it. It is held in place with set screws. Once I tightened up, put a little Loctite on, and I learned how to drive a car with reverse again, it worked flawlessly.

I originally got into RC cars as a racer. I race offroad stadium trucks. Quite the opposite of how most people get into RC. My Dad, who introduced me to this sport, originally got into it because of the fun and realism of the models available.

I have to say, I was quite impressed with the fun I have with the Jeep. I let my dad drive it (he's in his late 40s) and he wanted to take it home!

FINAL THOUGHTS

I am quite impressed with Tamiya's new Jeep Wrangler. If were any more realistic, I think they'd have to sell it at your local Jeep dealership.

The quality of its construction is superior to most kits in its class. I found that as I was assembling it, I anticipated what It would look like when it was finished. I was not disappointed. It now has a place of honor on my trophy shelf along with my first racing truck.

PRODUCT SOURCES

Tamiya America, 2 Orion, Aliso Viejo, California 92656. (714) 362-2240.

RAM (Radio-Controlled Models, 229 E. Rollins Rd., Round Lake Beach, Illinois 60073. (708) 740-8726. •

RC10ST CONTINUED FROM PAGE 56

to get started in RC. Jason volunteered to build the truck they chose, as his customer was a little young to have much chance of success with a project of this nature. Jason started work on the truck on a Friday night with the understanding that he would work on it Sunday night after he got off work. Well, being the curious dad that I am, by Sunday night the truck was completed (Yup, once started, I just couldn't quit). My major motivation in writing this article is that the RC10ST was so really good that I felt that it would make as interesting article, as it had been an enjoyable project.

ASSEMBLY

I have always been a big fan of Associated's approach to instructions since I first built an RC10, in 1987 as a beginning racer. The instructions are filled with photographs and direct you through the numerous well labeled bags of parts. Assembly is straightforward and any changes that have been made in the production kits are clearly defined in sheets which are included in the parts bag for that particular step. There were a number of these included and they are proof that Team Associated is constantly refining and improving their products. The suspension geometry and all major features are dimensionally the same as the race-winning Team truck even though shock towers are made of fiberglass rather than graphite, and the shocks are not hard Teflon-coated as are those on the Team Truck. Bushings rather than bearings are furnished for all rotating parts to keep the kit cost down.

GETTING IT TOGETHER—QUICKLY

Assembly went quite smoothly and I was careful to try and approach this project as though I was a new racer building my first kit (it took me 24 hours to build my first RC10). Moving at a steady but not frantic pace, build time was about 10 hours including body painting. I do have a tendency to fiddle with fit and trim but these qualities pay dividends in proper suspension operation without any binding and contribute to a better handling finished product.

The mechanical speed control was one area of particular interest to me as I have never worked with the Associated version even though it has been around longer that I have been involved with the sport of radio controlled cars. I found this portion to be as easy to complete as the rest of the kit. I used the Futaba Magnum Sport radio which was purchased as a part of the package. The directions show specific portions for both Futaba and Airtronics radio systems. After proper alignment of the servo horn, the speed control functioned perfectly the first time the truck was powered up. Though not quite as smooth as our new high-frequency speed controls, the Associated mechanical control proved to be every bit as functional as an electronic control. Since this isn't a long-term test (the young fellow was really anxious to get his new truck) I can only surmise from the heavy-duty design of the control that a long life can be expected. Has anyone ever considered this control for a "spec" type of class?

PERFORMANCE TESTING

For our test of this truck, I wanted to run it in an environment similar to what an entry-level hobbyist would expose it to; we selected a vacant lot close to our home. Unfortunately, our weather on the day of the test was about 17 degrees and the wind was blowing straight out of the north at about 15 miles an hour and it was lightly spitting snow. So much for any glamour in testing our RC10ST.

Jason and I were both impressed with the speed of the truck with the supplied stock motor and our six-cell battery pack. The truck responded well to throttle input, and smooth transitions from part to full throttle were possible with the mechanical speed control. Braking was progressive and certainly adequate for the intended use of this truck. Handling was excellent

and the application of the Team Truck geometry is evident through all maneuvers we attempted.

We really gave this one a work out with the natural jumps the lot provided. The forward bias created by the sideways mounting of the battery pack (to facilitate the mechanical speed control) allows good weight distribution and balance. The supplied tires worked well on the ungroomed and natural surface that we tested on.

CONCLUSIONS

As you may have guessed, I *really* liked the RC10ST. It appears to answer the need for a truly inexpensive entry-level truck that is fully functional at minimal expense and upgradable through the use of either Team Associated parts or any of the many after market companies. Probably the greatest single advantage that this vehicle holds for the new hobbyist is that Associated parts are available from a local hobby shop and at reasonable cost should breakage occur.

PRODUCT SOURCES:

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

Futaba Corp., 4 Studebaker, Irvine, California 92718. (714) 455-9888. •

BOKART CONTINUED FROM PAGE 46

and ready to run on a moment's notice.

WHAT WAS CHANGED

As for personal modifications, the usual bits, plus a couple of "fun" additions, were added to the BoKart. First and foremost, a complete set of ball bearings (BoLink part #BI-5451) went on the rear axle pod and the front wheels. This single switch is the only real change the BoKart needs for most RCers to decrease rolling resistance and increase runtime. I used a few drops of Paragon Liquid Bearings on each bearing and axle prior to installation. Suspension mods were limited to the use of a heavier silicone lube on the Kart's front kingpins and rear dampening post. BoLink's "Mega" silicone lube (part #BI-6027B) was lightly coated on each piece and provided the stiffer travel movement I was looking to achieve. A drop of each of the chassis' tubing on the front plate axle was also done to reduce the BoKart's "roll" while doing any high-speed, power-on cornering. The only other chassis/handling change was to attach a different set of rear foam tires. TRC's black dots (pre-mounted and trued) were a direct-fit on the vehicle and gave the type of traction I was after for my local surfaces.

The final two modifications done to the test BoKart were done strictly to increase the vehicle's speed and make it look cool as well.

MORE PUNCH, MORE COMPRESSED AIR

While the ROAR-style stock motor used in the original test gave the Kart plenty of speed and runtime, we RCers are always looking for more. An Oynx Speedworks modified (14-turn double wind) was transplanted into the chassis' aluminum motorpod. This is becoming my favorite all-around RC car motor. I've run this motor in 1/10-scale offroad and monster trucks, buggies and now in the BoLink's pancar-style frame. The Trinity provides ample torque is very "driveable" in the BoKart. An Associated Shottky diode was added to the Oynx motor to keep braking power up to snuff.

The last mod to the Kart was done for cosmetic reasons only. With the higher-velocity powerplant, I felt the chassis needed more rear downforce. So I picked-up a BoLink wing (part #BL-2743) to attach to the Q-scale Kart rear area. This six-inch rib-style BoLink Lexan wing favored by the oval racer set has built-in sidedams and looks great on the rear of the BoKart. The BoLink wing was mounted in such a way as to direct air coming down the top flat surface of the body up, thus giving the Kart more downforce on the rear of the car.

To my mind this update shows just how few modifications are really needed to keep the BoLink BoKart running happily for its RC owners.

More downforce was needed due to the increased speed provided by the modified motor. The wing was attached to the chassis' upper motor pod stay using regular wing mounts. By bending the wing wire 90 degrees, I was able to keep the wing in place even when removing the main body/driver shell. A simple Lexan spoiler attached directly to the body with servo tape or screws might have done the same job, but the wing looked more effective to this writer.

EPILOGUE

To my mind this update shows just how few modifications are really needed to keep the BoLink BoKart running happily for its RC owners. Beyond the ball bearings on the chassis, most of the other changes were purely personal in nature. This would explain why the vehicle is selling so well—BoLink designed the 1/4-scale Kart to be very user-friendly on all counts; its ease of assembly and its driveabilty. And, it's also easily updated with BoLink accessories if needed. So now you have the whole story on BoLink's latest creation; from the first test through this update the BoKart was fun. What more can you ask in a RC car?

PRODUCT SOURCE

BoLink RC Cars, 420 Hosea Rd., Lawrenceville, Georgia 30245. •

GRAPHICS CONTINUED FROM PAGE 48

ness. There is more to a company than just printing sheets of decals. Roger started getting authorization back in June of 1994 and released a set of the (#7) Exide, as well as U.S. Air (#77) decals. Besides 1/10 and 1/8 scale RC he also produces decals for 1/24-scale slot cars and static models.

I'm a BIG Chevy fan, but when Roger offered to send me the graphic sheet to replicate the Supertruck sponsored by Venable Racing and Ford, I was excited, to say the least. Besides being a unique-looking truck (it was one of the first exhibition trucks) the simple paint scheme would be very easy for anyone to achieve great results. Upscale Graphics designed its decals to be a perfect match with the new Dahm's Tornado body. For this paint project, I'm using the Tornado II, which has the same smooth lines as the original Tornado, the only difference being that the truck bed is flat instead of recessed. This design gives more tire clearance in the rear.

GETTING THE BODY MOUNTED

There are several ways to mount Lexan bodies. Because the Dahm's body has pre-formed wheel well openings, it's very easy to do.

First, place the chassis on a flat firm surface. Put the body on the chassis and align the wheels with the pre-formed wheel well openings. Be sure to center the body shell right to left on the chassis as well. Now mark the mounting hole locations with a permanent pen.

At the risk of sounding redundant, the Lexan body shell should be washed before masking. Using warm soapy water (mild liquid dish soap works good) and a paper towel, wash the body inside and out. Dry it thoroughly with a paper towel. I find using a paper towel leaves little or no fuzzy lint behind like cloth towels do. Air drying can leave water spots. Don't worry about scratching the Lexan with the towel—scuffing the inside surface slightly will only help the paint adhere better. Any marks won't be visible from the outside of the body.

Dahm's Pro Mask was used to mask the windows. Pro Mask was also used on the dividing lines between colors. Other, less critical areas can be covered with two-inch masking tape. Each dividing line needs to be as clean as possible. So, using the Pro Mask ensures there will be no bleeding or creeping under the mask. When the inside masking is done, cover the outside of the shell with plastic food wrap. Any areas that the wrap doesn't protect should be covered with masking tape.

A couple of notes before starting: make sure your painting area is well ventilated and always wear a paint mask. It's also a good idea to make the first coat a light mist. This will seal the edges of the mask and prevent the next layers of paint from bleeding under the mask. As per the de-

cal sheet, the paint scheme suggests to paint the truck bed black. If you choose to do so, this color should be applied first. (It is best to paint the darkest colors first.) As my option, and to speed up the paint process, I decided not to use black. The lower half of the body was masked next so that Pactra Blue Streak could be sprayed. Four even coats with a 10- to 15-minute break in between each coat was adequate.

After removing the mask from the lower body panels, I shot three coats of Pactra Racing Red. Now the rest of the mask was removed (except for the windows). The final color was four coats of Sprint White.

As I mentioned earlier, Upscale Graphics provided me with a sheet of their decals. Several interesting things set them apart from other manufacturers. The first is their decal sheet includes everything needed to detail your truck (or car). Vehicle numbers, logos and sponsor clusters. Even hood pins and tire lettering. An excellent job of research and replicating the race vehicles was done by Roger and his staff.

The second item of interest is that with the decal sheet you will also receive a drawing showing the paint scheme and sticker locations. This all makes for a very nice package. To date his offerings include: Kodak #4, DuPont #24 and Quaker State #26. I hope to be getting a first-hand look at these products and when I do you'll get a full report! I'll be taking a closer look at graphics for Sterling Marlin's #4 Kodak car in the very near future. Watch for my next update on Upscale.

PRODUCT SOURCE

Upscale Graphics, 3419 Via Lido, Ste. 385, Newport Beach, California 92663.

Dahm's RC Bodies, Box 360, Cotati, California 94931. •

NORRCA NATS *CONTINUED FROM PAGE55*

pair of rear) for all the four qualifiers and their mains, except that the drivers in the three A-mains would get one more set. Each driver's tires were marked with their entry number and a special mark was also burned into each sidewall to prevent cheating. This all worked quite well, thanks to the increased traction from the track.

Another item that J. R. must be complimented on, is the fact that this was one of the cleanest races that we've seen in a very long time. It was explained to the drivers that penalties would be enforced, and they were, thanks to a NORRCA camcorder man at each end of the drivers' stand to back up any penalty. It all worked out great. In spite of the large 420 entries, J. R. kept the program running on time, through the proficient help of the announcer, Ron Williams and Barry Baker, who helped Ron with the announcing.

FACTORY MODIFIED TRUCK QUALIFYING

Brian Kinwald led the IFMAR-style quali-

DIRECTORY of DRAG RACING CLUBS AND ASSOCIATIONS

ARIZONA
G&S Hobbies
967 Hancock #17
Bullhead City, Arizona 86442
Bob Olsen (602) 758-1100

Hobbytown USA
1915 E. Baseline Rd.,
Gilbert, Arizona
Rob Zoeller (602) 598-5282

CALIFORNIA
Northern California Drag Assn.
Sunnyvale, California
Mitch Williamson (415) 966-1681

Penfield Raceway
Chatsworth, California
Al Herbst (818) 407-0633

COLORADO
Scale Rails
Denver, Colorado
Randy Ray (303) 469-4914

FLORIDA
Drag Racing Club
Ft. Meyers, Florida
Steve Ralston (813) 369-8892

Showtime Dragway
North Miami Beach, Florida
Charles Williams (407) 737-9635
Mike Blair (305) 948-3451

Southwest Florida RC Speedway
1920 Elsa
Naples, Florida 33942
(813) 597-6866

HAWAII
Windward Hobby
Kaneohe, Hawaii
(808) 247-7720

Hawaii Electric Drag Racing Club
Pearl City, Hawaii
Mark Silva (808) 455-4824

ILLINOIS
Windy City Drag Racers
David Goldstein
Lansing, Illinois
(708) 474-8120

LOUISIANA
The Hobby Shop
Sulphur, Louisiana
(318) 583-4082

MARYLAND
Maryland RC Dragway
7901 Poplar Hill Dr.
Clinton, Maryland 20735
(301) 856-8326

MINNESOTA
Northstar RC Dragway and Speed Shop
14056 Junkite St. N.W.
Anoka, Minnesota 55303
(612) 427-0291

NEVADA
Taylor Motor Sports
1027 S. Rainbow #364
Las Vegas, Nevada 89128
Ken Hidgon (702) 258-8513

NEW JERSEY
Kim's RC Pit Stop
357A Union Blvd.
Totowa, NJ 07512
(201) 942-5955

NEW MEXICO
Four Corners RC Drag Racing
Farmington, New Mexico
Bob Clark (505) 310-0473

Hobbytown USA
Famington, New Mexico
(505) 325-5156

NEW YORK
Brooklyn Q-Scale Drag Assn.
Brooklyn, NY
Bob Curto (914) 668-0843

Northside RC Speedway
2550 Two Mile Creek Rd.
Tonawanda, NY 14150
(716) 875-3435

RC Drag Racing Assn.
Monticello, NY
Ronald Hodgson (914) 796-2277

NORTH CAROLINA
Carolina Dragway
907-C Warsaw Rd.
Clinton, NC 28328
(919) 592-9489

Winston RC Drag Assn.
Winston-Salem, North Carolina
(919) 983-9416

PENNSYLVANIA
Pro Challenge Raceways
23 S. Highland Ave.
Lansdowne, Pennsylvania 19050
(215) 622-7651

Tri-State Electric Drag Racing Club
138 So. Springfield Rd.
Clifton Heights, Pennsylvania 19023
(610) 586-4817 (after 5:00 p.m.)

PUERTO RICO
Juncos RC Dragway
Farjado RC
Bayamon RC Speedway
Caguas RC Drags
(Rotating Schedule)
Miguel Valentin
(809) 887-3723

SOUTH CAROLINA
Hobbies and More
1570 S. Main St.
Darlington, South Carolina 29532
(803) 393-0355

Sidewinder's Raceway
North Charleston, South Carolina
Jimmy Closson (803) 863-9032

VIRGINIA
Tempest Productions
Fairfax, Virginia
Rick Blouin (703) 263-9464

CANADA
SOAR
Sudbury Organized Auto Racing
Hanmer, Ontario Canada
(705) 969-5044

Racine Drag Racing
875 55th Ave.
Lachine, Quebec, Canada
H8T 3B5
(514) 631-1360

Note: If you know of a drag club or track that should be listed here, send the information to the Editor at RCMC, Box 2459, Capistrano Beach, California 92624. If you sell drag racing-related parts and equipment, we'd like to hear from you too.

fying in the first round, with a quick 12 laps in 4 minutes and 17.64 seconds, or 12-4.17.64. Mark Pavidis was one second behind with 12-4.18.98, followed by Greg Hodapp with 11-4.00.40, Barry Baker at 11- 4.01.05 and Greg Dennett with 11-4.02.53.

Mark Pavidis improved his time in the second round with a huge five-second jump, with a super quick 12-4.13.96, which held for the Top Qualifier honors. Mark's T2 truck time turned out to be faster than the 2WD T.Q. time, and less than one second off of his own T.Q. time coming up in 4WD. That's of course why more people like trucks—it's easier to go faster with a truck.

Continuing with the truck qualifying, Brian Kinwald took second with a good 12-4.15.48, and Greg Dennett jumped his T2 to third with 12-4.19.41 followed closely by Rick Hohwart with 12-4.19.46 and Greg Hodapp with 12-4.19.52.

FACTORY MODIFIED 2WD QUALIFYING

Brian Kinwald led the qualifying in the first round with a quick 12-4.18.86, followed closely by Mark Pavidis with 12-4.19.34 and Greg Hodapp with 12-4.19.96. Brian lowered his time to a quicker 12-4.15.43 to take the T.Q. spot, with Greg Hodapp also improving to 12-4.18.52, to move into second and Scott Hughes moving Pavidis to fourth with a fast 12-4.19.30. Matt Francis followed in fifth with 12-20.88.

FACTORY MODIFIED 4WD QUALIFYING

There weren't that many 4WD cars, but the racing was exciting. Mark Pavidis took his second Top Qualifier honors turning 12-4.13.22, followed by Matt Ledger with 12-4.16.73, Scott Hughes at 12-4.17.76, Pat Feschtschenko from Germany with 12-4.18.04 and Derek Furutani at 12-4.18.94.

FACTORY TRUCK A-MAIN #1

After Ron Williams gave the driver introductions, the trucks were lined up on the straightaway, the horn sounded and we were underway. Mark Pavidis took off in the lead with Brian Kinwald right on his tail in second.

Jason Ruona moved up into third for a few laps, but Barry Baker was on the move, driving around all the crashes, and took third away from Jason. Meanwhile, for the first two minutes, Brian was trying to find a way to catch and pass Mark. But, Mark was driving perfectly and going too fast, so Brian went into his standard number-two game plan.

He slowed his pace off to about 30 feet behind Mark, knowing Mark would then go into cruise control, which Mark did. Then, just like clockwork, because Mark also knew Brian's standard game plan, Brian, with two laps to go, started driving 110 percent. When Mark saw Brian get within 10 feet, Mark picked up his pace too, keeping Brian at a safe distance behind, with Mark taking the win, just five feet ahead of Brian, and Barry Baker, a ways back in third.

FACTORY TRUCK A-MAIN #2

Mark took the lead again, made it around the pole, but six trucks got caught in a traffic jam trying to get around the pole, with Greg Dennett getting clear first, and going into second, and Brian coming out in third.

How would you like to be in your first race with these world-class drivers, trying to keep your second place position, with Brian Kinwald on your rear bumper? Most normal drivers would stuff it in the wall on the first lap with that much pressure.

But, Dennett didn't crack. He held his own and Brian couldn't catch him. Mark had a pretty good lead now, and must have relaxed a little, because he caught a pipe, rolled over, and gave the lead to Dennett, as Brian also went by into second, with Mark now third.

The positions stayed that way until the three-minute mark, when Brian also caught a pipe, rolled and Mark took over second. So, Greg Dennett went on to a well-deserved win, with Mark second, Brian third, Hodapp fourth and Jason Ruona fifth.

FACTORY TRUCK A-MAIN #3

Mark took off in the lead, with Brian second, Dennett third and Hohwart fourth, just as they qualified. Then, on the second lap, Brian rolled off the jumps to the right of the drivers' stand. Dennett moved into second, with Hohwart third.

Hohwart got hung up on a pipe and Hodapp went into third. A lap later, Dennett got sideways, and Hodapp took over second. But then, Dennett and Hodapp were in a drag race down the straightaway, with Dennett passing Hodapp at the end of the straightaway, to retake second. Mark went on to win by six seconds over Dennett, with Barry Baker now in third, three seconds back.

FACTORY 2WD A-MAIN #1

Brian took the lead, with Greg Hodapp second. Greg was right behind Brian, and then Brian caught a pipe in the infield and rolled over, giving the lead to Greg. I think Greg had Brian spooked, psyched out. Greg's been beating Brian more than Brian's beating Greg, and it looks like it's beginning to rattle Brian.

Greg now had the lead with Scott Hughes second and Mark Pavidis third. On the next lap, Scott collected a pipe and Mark moved up to second, with Scott third and Brian fourth. Greg went on to take the win, with Mark second, and Scott and Matt Francis in a close race for third in a side-by-side finish.

FACTORY 2WD A-MAIN #2

Brian took the lead again, with Hodapp and Scott Hughes close behind. Then Hughes rolled in the whoops section and Mark Pavidis went into third. Greg sat right on Brian's tail for 3-1/2 minutes, then, with just 30 seconds left, Brian's car rolled in the whoops, and Greg got by to take the lead and the win with Brian second and Mark third, Matt Francis fourth and Rick Hohwart fifth.

FACTORY 2WD A-MAIN #3

Hodapp had already won the class, so he didn't have to run. Brian led the whole race, with Scott Hughes second, Rick Hohwart third, Matt Francis fourth and Matt Ledger fifth. The final results revealed that Team Losi also won the Top Team Award, too.

EXPERT 4WD MODIFIED

Mark Pavidis won the first two A-mains, with Derek Furutani taking second in both mains. Scott Hughes won the third A-main.

FACTORY TRUCK A-MAIN #1 RESULTS

1 MARK PAVIDIS
2 BRIAN KINWALD
3 BARRY BAKER
4 GREG HODAPP
5 GREG DENNETT
6 JASON RUONA
7 MARK FRANCIS
8 SCOTT BROWN
9 RICK HOHWART
10 MATT FRANCIS

FACTORY TRUCK A-MAIN #2 RESULTS

1 GREG DENNETT
2 MARK PAVIDIS
3 BRIAN KINWALD
4 GREG HODAPP
5 JASON RUONA
6 MARK FRANCIS
7 SCOTT BROWN
8 RICK HOHWART
9 BARRY BAKER
10 MATT FRANCIS

FACTORY TRUCK A-MAIN #3 RESULTS

1 MARK PAVIDIS
2 GREG DENNETT
3 BARRY BAKER
4 RICK HOHWART
5 SCOTT BROWN
6 MARK FRANCIS
7 JASON RUONA
8 BRIAN KINWALD
9 GREG HODAPP
10 MATT FRANCIS

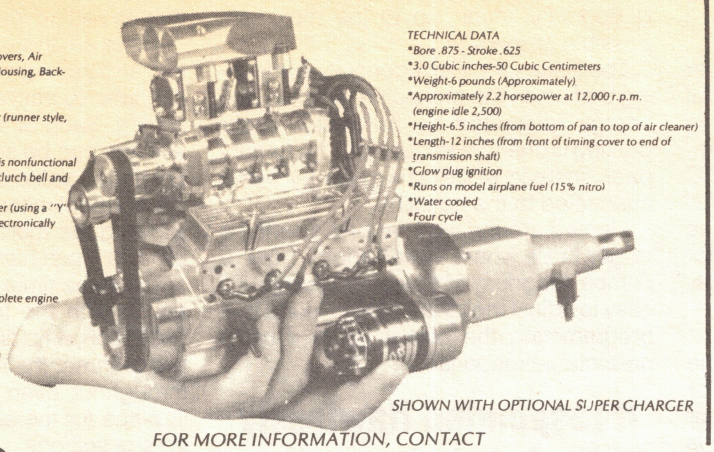
FACTORY TRUCK OVERALL RESULTS

PLACE, DRIVER, TRUCK, MOTOR
1 MARK PAVIDIS, RC10T2, REEDY
2 GREG DENNETT, RC10T2, REEDY
3 BRIAN KINWALD, LOSI XXT, TRINITY
4 BARRY BAKER, LOSI XXT, MAXTEC
5 GREG HODAPP, LOSI XXT, MAXTEC
6 JASON RUONA, RC10T2, REEDY
7 MARK FRANCIS, RC10T2, REEDY
8 SCOTT BROWN, LOSI XXT, TRINITY
9 RICK HOHWART, RC10T2, PEAK

THE ULTIMATE MODEL ENGINE KIT

The Conley-Small Block-V8 Engine
BASE PRICED $2395.00

FEATURES
*All new Die Cast Parts (Pan Heads, Valve Covers, Air Cleaner top and base, Timing Cover, Bell Housing, Backplate, Wing Nuts, Wire Separators)
*All parts fully machined.
*Intake manifold & Walbro Carb/Air Cleaner (runner style, cast and cored)
*Centrifugal clutch
*Replica 4 speed transmission (transmission is nonfunctional but serves as a ball bearing support for the clutch bell and universal joint)
*Custom designed electronic glow plug driver (using a "Y" harness from the receiver the transmitter electronically turns the glow plugs on and off)
*Rubber mounts
*Water pump
*Ball bearings
*All screws, nuts and necessary parts to complete engine
*Instruction manual
*Only hand tools required for assembly
*Crankshaft pre-installed
*Cylinder linders installed and decks ground



TECHNICAL DATA
*Bore .875 - Stroke .625
*3.0 Cubic inches-50 Cubic Centimeters
*Weight-6 pounds (Approximately)
*Approximately 2.2 horsepower at 12,000 r.p.m. (engine idle 2,500)
*Height-6.5 inches (from bottom of pan to top of air cleaner)
*Length-12 inches (from front of timing cover to end of transmission shaft)
*Glow plug ignition
*Runs on model airplane fuel (15% nitro)
*Water cooled
*Four cycle

SHOWN WITH OPTIONAL SUPER CHARGER

FOR MORE INFORMATION, CONTACT

Conley PRECISION ENGINES, INC

825 Duane Street * Glen Ellyn, Ill. 60137 * (708) 858-3190
"World Class Performance - Made in the U.S.A."
Prices subject to change without notice.

KEY CHAINS



$5.00 $6.00 $10.00



If the $2,195.00 is not in your budget at the present time, enjoy the next best thing...a video tape for only $24.95.

Developed by GARY CONLEY (the designer of numerous original model engines, including the Conley 1.20 c.i. double over head camshaft 4 valve model airplane engine and the world famous Conley V-8 engine) this video will take you through various stages of development, from its inception in 1979 to the all new supercharged version. The video is a detailed look at the 32' Ford highboy roadster, 1/4 scale Cobra, Butch Leal's pro stock Pontiac Firebird and the original Pacesetter sprint car. For the avid model engine builder you will see complete step-by-step construction techniques and hints. A must for even the most experienced engine builder.

ONLY ***$24.95 *** VHS Only

10 MATT FRANCIS, RC10T2, REEDY

FACTORY TRUCK B-MAIN RESULTS
1 SCOTT HUGHES
2 STEVE CHAMBERLAIN
3 JIMMY JACOBSON
4 BRIAN DUNBAR
5 RICHARD SAXTON
6 MATT LEDGER
7 DEREK FURUTANI
8 JIM GARD
9 J. D. BECKWITH
10 MIKE WEED

FACTORY 2WD A-MAIN #1 RESULTS
1 GREG HODAPP
2 MARK PAVIDIS
3 SCOTT HUGHES
4 MATT FRANCIS
5 BRIAN KINWALD
6 RICK HOHWART
7 SCOTT BROWN
8 DEAN KARNS
9 MATT LEDGER
10 MARK FRANCIS

FACTORY 2WD A-MAIN #2 RESULTS
1 GREG HODAPP
2 BRIAN KINWALD
3 MARK PAVIDIS
4 MATT FRANCIS
5 RICK HOHWART
6 MARK FRANCIS
7 SCOTT HUGHES
8 DEAN KARNS
9 SCOTT BROWN
10 MATT LEDGER

FACTORY 2WD A-MAIN #2 RESULTS
1 GREG HODAPP
2 BRIAN KINWALD
3 MARK PAVIDIS
4 MATT FRANCIS
5 RICK HOHWART
6 MARK FRANCIS
7 SCOTT HUGHES
8 DEAN KARNS
9 SCOTT BROWN
10 MATT LEDGER

FACTORY 2WD A-MAIN #3 RESULTS
1 BRIAN KINWALD
2 SCOTT HUGHES
3 RICK HOHWART
4 MATT FRANCIS
5 MATT LEDGER
6 SCOTT BROWN
7 DEAN KARNS
8 MARK FRANCIS
9 MARK PAVIDIS
10 GREG HODAPP

FACTORY 2WD OVERALL RESULTS
PLACE, DRIVER, CAR, MOTOR
1 GREG HODAPP, LOSI XX, MAXTEC
2 BRIAN KINWALD, LOSI XX, TRINITY
3 SCOTT HUGHES, RC10, REEDY
4 MARK PAVIDIS, RC10, REEDY
5 MATT FRANCIS, RC10, REEDY
6 RICK HOHWART, RC10, PEAK
7 SCOTT BROWN, LOSI XX, TRINITY
8 MARK FRANCIS, RC10, REEDY
9 MATT LEDGER, RC10, REEDY
10 DEAN KARNS, LOSI XX, SCOOTERS

FACTORY 2WD B-MAIN RESULTS
1 DEREK FURUTANI
2 GREG DENNETT
3 J. D. BECKWITH
4 BARRY BAKER
5 JIMMY JACOBSON
6 JASON RUONA
7 PAT FESCHTSCHENKO
8 SCOTT ROBERTS
9 STEVE CHAMBERLAIN
10 JIM GARD

EXPERT 4WD MODIFIED OVERALL RESULTS
PLACE, DRIVER, CAR, MOTOR
1 MARK PAVIDIS, YOKOMO, REEDY
2 D.FURUTANI, YOKOMO, EXTREME
3 SCOTT HUGHES YOKOMO REEDY
4 P.FESCHTSCHENKO, YOKOMO, LRP-X
5 MATT LEDGER, YOKOMO, REEDY
6 MATT LEE, YOKOMO, MAXTEC
7 J.ASHTON, YOKOMO, RACE PREP
8 J.WALENTIA, YOKOMO, TRINITY
9 JEFF WITTMAN, YOKOMO
10 BRYCE BEAVER, YOKOMO, REEDY

EXPERT 2WD MODIFIED OVERALL RESULTS
1 SOHRAB TAVAKOLI
2 BILLY EASTON
3 ALEX MAZURKEWYCZ
4 COLIN MACRAE
5 JIMMY BABCOCK
6 CURTIS SCHLAHT
7 MATT LEE
8 BRENT THIELKE
9 SCOTT BURNS
10 JEFF LEWIS

EXPERT MODIFIED TRUCK OVERALL RESULTS
1 SOHRAB TAVAKOLI
2 CURTIS SCHLAHT
3 BILLY EASTON
4 JOHN WALENTIA
5 MATT LEE
6 JIMMY BABCOCK
7 JASON SCHWEITZER
9 RYAN MURRAY
10 COLIN MACRAE

EXPERT 2WD STOCK
1 MATT LEE (TQ)
2 JIMMY BABCOCK
3 JADE KURTCHI
4 KAREEM EL-SHEREF
5 SOHRAB TAVAKOLI
6 BRIAN HEIGES
7 ALEX MAZURKEWYCZ
8 PATRICK MCCARSON
9 ALEX GUERRERO
10 CARY BENNETT

EXPERT STOCK TRUCK
1 SOHRAB TAVAKOLI
2 JIMMY BABCOCK
3 ALEX MAZURKEWYCZ
4 KURT BUSCH
5 STEVE BUTTS
6 SHAWN DASSONVILLE
7 CHUCK ERICKSON
8 CARY BENNETT
9 JUSTIN MORRISON
10 TRAVIS LAWRENCE •

torque limiting, braking amp adjustment, three timers to set different torque limiting and a host of others. Let's take a look at a few.

The 410K-2 is what one would consider a quick set up for your transmitter. All that has to be done is find your transmitter in the listing in the manual, make the appropriate nominal settings, turn on the ESC and transmitter, press the "FN" then "5" key, pull full throttle, then push the brakes and release. The speed control will automatically sense the optimum settings. That's it!

SENSITIVITY

I found the sensitivity feature to be the most useful. Its purpose is to quicken or delay the throttle response relative to your trigger finger. Normally, the sensitivity is set to 5. Setting it to a higher number will cause the 410K-2 to react faster to a throttle input, a setting lower than 5 will have the opposite effect.

I found this to be useful on slippery tracks. I installed the 410K-2 in my Losi LXT for testing purposes, and headed to the track. I found that by adjusting the sensitivity, it could, to some degree, compensate for the low bite surface. The throttle was less reactive, thereby being more forgiving to my nervous stabs at the throttle.

BRAKE ADJUSTMENT

Like the sensitivity, I found the brake programming to be an extremely useful feature. The 410K-2 allows the user to adjust how much current will be sent to stop the motor at the trigger's lowest and highest point. By setting a minimum value for the brakes, the ESC will respond by sending the amount dictated to the motor the moment the brakes are applied. Setting the maximum amount tells the ESC the maximum amount of brakes to send regardless of how the throttle ATV is set.

The manual explains this best: "The amount of amperage developed by the motor is constantly monitored for the most precise control. To program the brakes...enter how many amps of braking you'd like as soon as brakes are applied. The factory setting is one amp. If you desire stronger initial braking, a higher value can be programmed. With the default factory settings, the brake response is perfectly linear, up to the maximum possible amperage."

The brakes are also regenerating, meaning that when the brakes are applied, the energy generated by the motor under braking is channeled back into the battery pack, instead of being wasted by being channeled to the heatsink.

I fooled around with the brake settings to get them where I liked them. I use a Futaba Magnum FM radio, although it's easy to adjust the throttle ATV, I found that programming the brakes gave a more predictable response.

It responded flawlessly to the inputs I gave it no matter how frequent. Its construction is solid both inside and out, and, it proved to be reliable under all of the conditions I exposed it to.

One thing I would suggest to anyone who purchases this is to write the settings down in a little notebook and keep it with you. That way it can save you a lot of trial and error in the future. Be sure to write down the track conditions, tires, etc. It all helps when it comes down to it. I'll give a sample form in a future article for offroaders.

TORQUE (CURRENT) LIMITER

The torque limiter is unique to the 410K-2 in that it can be varied throughout the race. A timer is associated with the limiting circuit allowing the user to input three separate torque settings that will be activated at different times as set by the user.

The timer begins the first time the full throttle is used. For some of you that means you'll have to refrain from "gunning" the trigger before a race begins. You can move your car or truck to the line without activating the timer by using any throttle setting lower than full.

There are three settings for torque control, and three programmable settings for the timer to activate each torque control setting. Each of the three torque control settings can be set from 10 to 125 amps. Entering a value of 999 amps will bypass the current limiter as I described before, allowing the motor to draw as much energy as it can handle.

The three timer settings directly correspond with the torque limiter, with one exception, if no time is entered for limiter two or three, the first limiter will be active throughout, even though a value may be in place for the second and third torque control settings.

Basically it works like this, if the first limiter is set to 85 and "TIME 2" is set for 30 seconds, the ESC will respond by supplying 85 amps from the moment full throttle is first applied for 30 seconds. After that the second torque limiter setting takes over, then, if programmed, the third.

It's actually very simple, and very useful. I set mine up to deliver a little more punch off the line at a high bite track. So I would set mine as follows:

LIM 1 90 (amps)
TIME 2 15 (seconds)
LIM 2 75 (amps)
TIME 3 210 (seconds)
LIM 3 80 (amps)

With these settings I would get a 90-amp punch off the line, then conserve my battery pack until the last 30 seconds of the race. If I needed it I'd have a little more punch if I was geared right and had batteries that would last.

CONCLUSIONS

As I put this controller to the test, I found that it responded flawlessly to the inputs I gave it no matter how frequent. Its construction is solid both inside and out, and, it proved to be reliable under all of the conditions I exposed it to.

I paired the ESC up with several different radio systems, and if the instruction manual was followed, it had no problems adapting to its new host.

This speed control is not for the beginner. It takes some understanding of what a speed control does to fully appreciate the features it has. For oval racing, this ESC is an almost-must have addition to any mid- to pro-level driver's arsenal. For offroad, this would adapt perfectly for modified car or truck, though I believe a car would benefit more. The programmable limiters work very well if the operator has a good idea of his/her driving style and the car's needs during the race.

In short, the 410K-2 is nothing less than an onboard computer assisting you with your racing efforts. Imagine what the future holds!

PRODUCT SOURCE

Tekin Electronics, 940 Calle Negocio Suite 140, San Clemente, California 92673. (714) 498-9518. ●



The YANKEES Are COMING!
The YANKEES Are COMING!

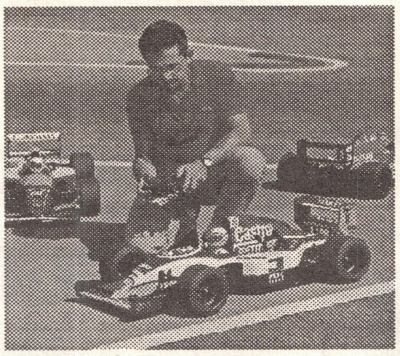
37 MODELS!

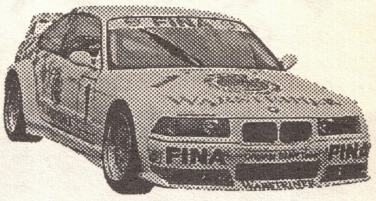
The most USER-FRIENDLY gas 1/4 Scales in the World!!
All Yankees feature composite injection molded parts, making them most definitely, virtually INDESTRUCTABLE!

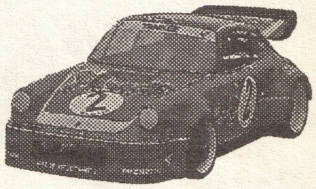
Guaranteed Parts Availability, and Pro-Excessories. *"All Parts Sold Seperately"*

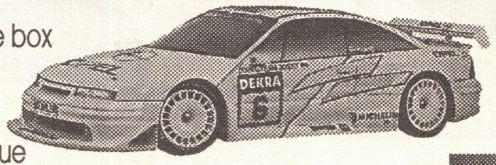
"All Yankees Feature:"

- Highly detailed Lexan Bodies
- Pure rubber racing tires - one piece *(13 different styles)*
- Steel Heavy duty gears in Drive Train
- Heavy Duty 10mm dogbones
- Over 85% Factory assembled, ready to race
- Full ball bearings
- Oil-filled aluminum high-volume shocks
- Fully race-ready planetary (steel) differential*
- Fully tunable suspension, 95% race ready out of the box
- 30 minute run time on 8 cents worth of gas
- Dependable, easy pull start Zenoah 22cc engine
- Racing carbuerator with high and lower needle value
- Optional detailed driver's suits, helmets, mirrors, steering wheels, wings and drivers, carb's, teflon clutches, tuned pipes...And More!













CEC

CALL (914) 342-8697 TODAY!

2 North St. Middletown, NY 10940 FAX: 914-344-5266

— Imported by CEC —

**20 page color book - detailed pictures Only $5.95*

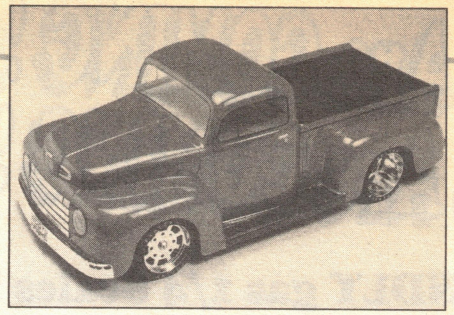
GAS

Grand National	$1395
Porsche 930 Turbo	1395
BMW-M3	1395
Super Porsche	1695
ALFA Romeo 155	1395
BMW-M 3-DTM	1395
Mercedes 190	1495
Opel Calibra	1395
Bentton F-1	1695
F-1	1595
Jaguar XJR-12	1595
Peugeot 905 Spider	$1495
Ferrari 330-P4	1595
Ford Mustang GT	1495
Super Truck	1395
Renault Twingo	1295
Mini Cooper	1295
Off Road Bugster	1295
Off Road Preditor	1200
Off Road VW	1295
63 Corvette	1495
Pro-Stock Drag	1595

ELECTRIC

Grand National	$425
Super Truck	425
Porsche 930	525
BMW-M3	525
Indy	425
Viper Coupe	595
Mustang GT	595
East Coast Mod.	425
Pro-Stock Drag	695
Pro-Mod.-Drag	795
T/F Rail Drag	895
Volkswagon	425

AWESOME '95 WHAT'S NEW PRODUCTS

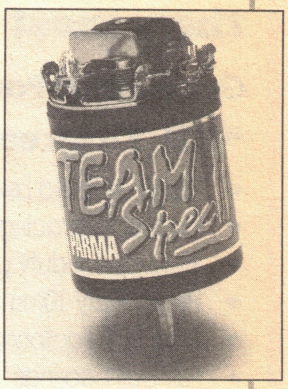


BOLINK'S '49 FORD CUSTOM PICKUP BODY

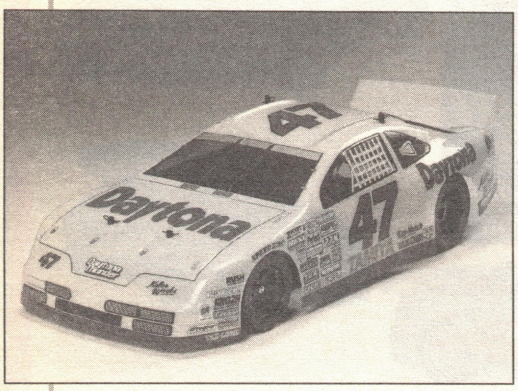
Joining BoLink's classic pickup line of bodies in 1/10 scale is the '49 Ford Custom offers detail that results in a great-looking RC vehicle when painted and detailed. Along with the '40 Ford and '53 Chevy, the '49 Ford pickup is a worthy choice for modeling. For a catalog, send $3.00 to BoLink RC Cars, 420 Hosea Rd., Lawrenceville, Georgia 30245. (404) 963-0252.

by restricting the incoming airflow they could increase the motor's power band, and fuel economy, without jeopardizing the motor's low and top-end speeds. The Carb Caps are for use with the O.S., Thunder Tiger and Dynamite .12-size engines. Each kit contains two different size bores. For further information, contact Moore's Ideal Products, 746 E. Edna Pl., Covina, California 91723. (818) 339-9007.

TEAM SPEC MOTORS

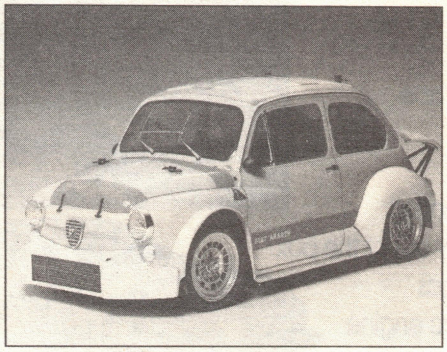


The World Class Team Spec hand-wound modified motors now includes 12-turn double, 13-turn single, 13-turn double, 13-turn triple and a 15-turn triple.



TAMIYA'S STOCK CAR KIT

This 1/10-scale NASCAR kit is based upon the vehicle sponsored by the Japanese car magazine *Daytona*. The detailed body is manufactured by Parma in the U.S. and comes with rear spoiler. The chassis is Tamiya's rear-wheel drive Group C chassis, strengthened by the addition of two space frames which are fitted to the front and rear for more rigidity. The Daytona Thunder is powered by Tamiya's top quality Dyna Tech 01R motor, and comes with a three-step speed control. The limited edition kit is available from Tamiya dealers now.

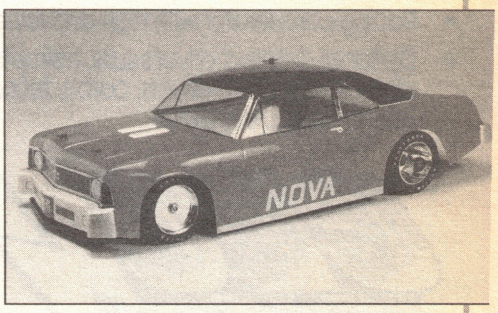


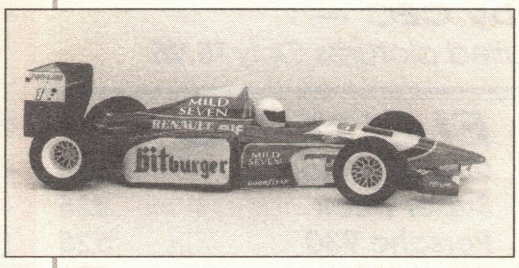
TAMIYA'S FIAT ABARTH 1000

Leave it to Tamiya to create the unusual, and to make it interesting. Their new 1/10-scale Fiat Abarth 1000 TCR Berlina is based on the M-chassis series and is powered by rear-wheel drive. The kit comes with Super Slick tires in the rear and normal slick tires up front. A Lexan body is molded with a wealth of detail, down to the open rear engine hood that shows off their reproduction of a 982cc engine. All major components of the eight-piece engine assembly are molded in, including manifold, cylinder head and carburetor. a 540-type motor and three-step mechanical speed control is included in the tape. Adding to the detail is the original ribbed-dish Abarth wheel design. A complete sticker set that includes silver-color coated headlights and a Fiat emblem. The kit is available now at your Tamiya dealer. Tamiya America, 2 Orion, Aliso Viejo, California 92656. (714) 362-2250.

BOLINK'S 1970 NOVA SS

The latest 1/10 body from BoLink is the 1970 Nova SS, a narrow-width with lots of detail. It can be painted to resemble a custom street machine, drag racer, sportsman oval racer or any other type of model you wish to create. For a catalog of available BoLink models and accessories, send $3.00 to BoLink RC Cars, 420 Hosea, Lawrenceville, Georgia 30245. (404) 933-0252.



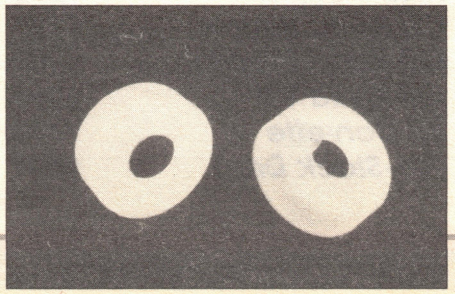


PROTOFORM F1 BODY

Protoform has just released its new F1 body, a rendition of this year's winning Benetton, made to fit the Tamiya F103 chassis (the body shown here is mounted on the 103 chassis). The Benetton body comes with separate molded air deflectors, just as seen on the full-size racers. The Benetton body looks the most realistic when combined with Tamiya's Ferrari 412T front wing. The new Benetton 1/10-scale body retails for only $24.95. Protoform, 201 W. Lincoln St., Banning, California 92223.

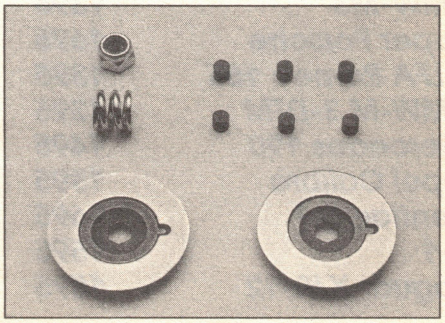
MIP CARB CAP

This is a simple, inexpensive way to tune your gas engine and increase its fuel economy. The Carb Cap from MIP is a plastic restrictor that pushes over the top of the carburetor between the air filter. MIP's design team has found that



TRAXXAS SLIPPER CLUTCH SET

Made for the Traxxas Rustler and Stampede, the slipper clutch set from Traxxas controls traction problems when modified motors are used on slippery tracks. A slipper clutch also reduces the shock on the gears and other driveline components. The slipper installs easily in minutes and is fully adjustable. It's from Traxxas, 12150 Shiloh Rd., Dallas, Texas 75228. (214) 613-3300.

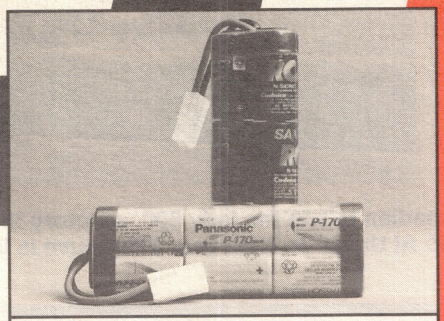


TEAM DURATRAX®

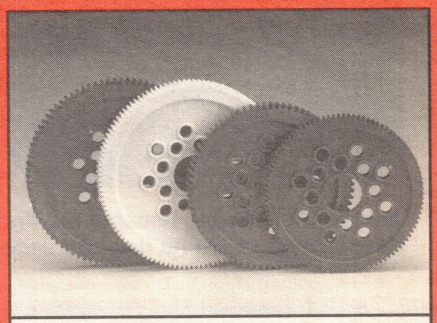
High-Performance Products for Electric Racers



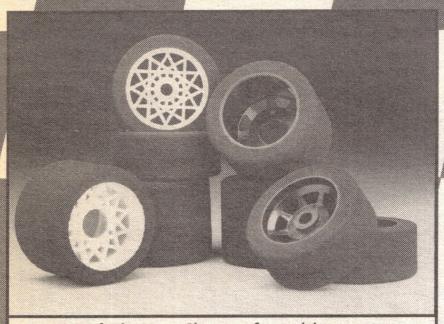
Spike™ and M5™ MEGAFET ESCs — Spike makes thermal protection and ESC set-up ease affordable for 5-7 cell sport use. **M5 MEGAFET** gives 4-10 cell racers the "punch" that only high-frequency ESCs can deliver.



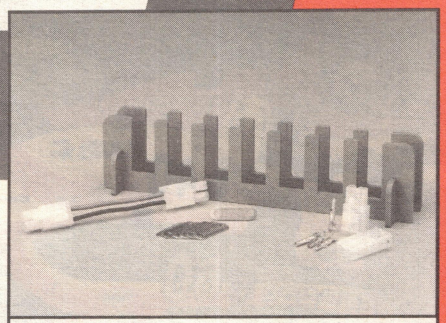
1700 mAh Power Packs — More power fast, more run time when you need to last. These assembled packs deliver both, plus the "run and recharge" toughness that only SCR cells offer. Assembled, with Tamiya connector.



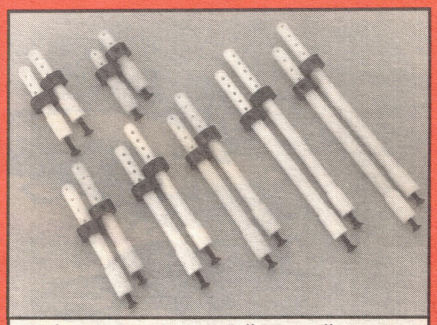
48- and 64-Pitch Spur Gears — Dial in a proper gear ratio for less. DuraTrax's gears are precision-molded for optimum mesh, and made from durable black composite nylon for maximum strength. Direct replacements for all 1/12 and 1/10 scale cars.



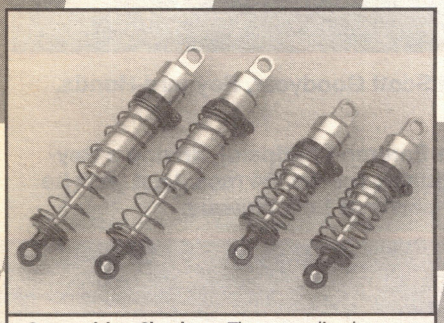
On-Road Tires — Choose from blue, green or yellow foam-rubber compounds. Available mounted and trued on BBS-style rims, or NASCAR-style Pro Series composite rims. Direct replacements for all 1/10 on-road cars.



Pack Builder's Supplies — Make it fast, make it last with lightweight, low-resistance **Pre-tinned Battery Bars, Battery Jig** and a wide choice of connectors and adapters.



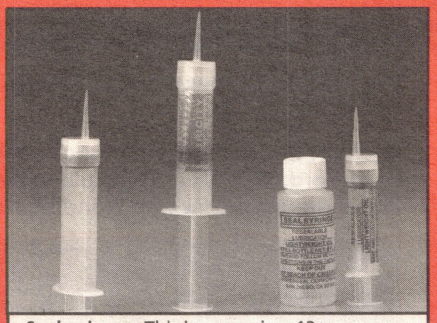
Body Post Bonanza — Collars on all seven sizes (1.5-4.5") adjust for picture-perfect body height. Made of flexible, impact-resistant nylon and dyeable for color matching. All hardware included.



Competition Shocks — These anodized aluminum oil-filled shocks drop the price of quality suspension dampening when you buy 'em, and when you rebuild 'em. O-Ring-sealed and sold in 3" and 4" pairs. Includes springs, ball ends and adjustable spring collars.



Pit Box Necessities — Use flexible, fuelproof, **Shoe Goo** to fix Lexan® bodies, assemble cells or mount electronics. Ozone-safe **Power Shot** removes dirt & grime more easily – and more affordably – than ever!



Sealsyringe—This inexpensive, 12cc applicator makes it easy to apply shock oils, bearing oils, diff grease and other lubricants. A rotating O-ring valve prevents leaks. It's also available with 1/4 fl. oz. of **Silicone Diff Grease** or 1 oz. of **Motor Oil**.

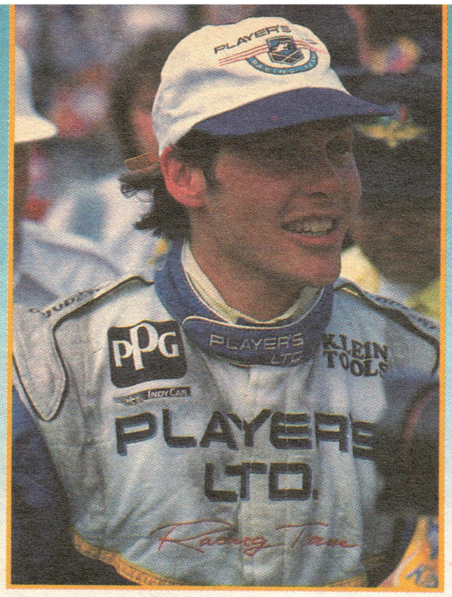
Available at fine hobby retailers everywhere!

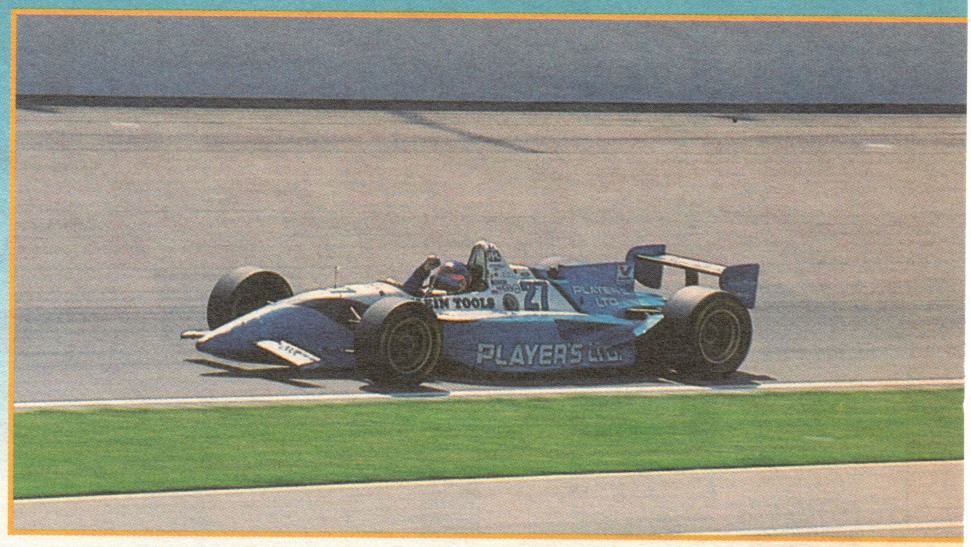
©Copyright 1995—3075072

Distributed Exclusively Through

GREAT PLANES®

GREAT PLANES MODEL DISTRIBUTORS COMPANY
P.O. BOX 9021, CHAMPAIGN, IL 61826-9021



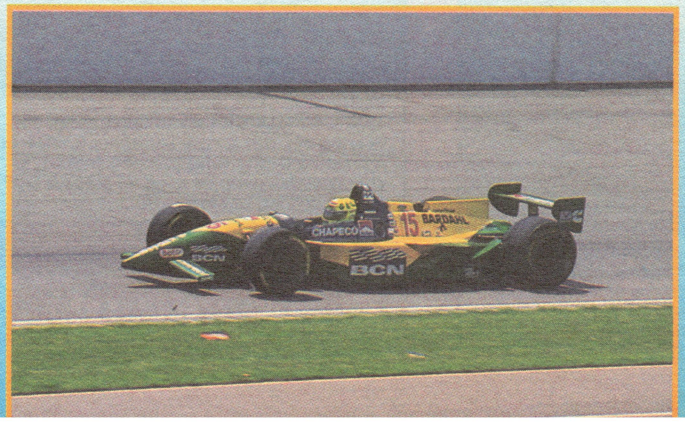


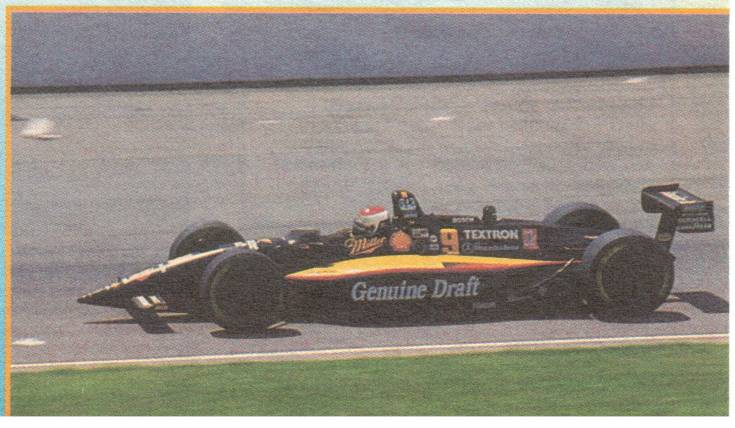
Jacques Villeneuve became the first Canadian to win the Indy 500, a victory that came in only his second race at the Speedway. In 1994 he finished second to Al Unser Jr. Next year Villeneuve is likely to jump to Formula One competition.

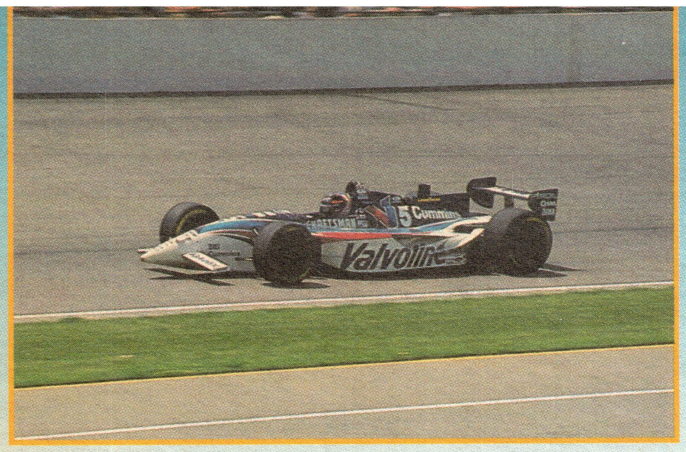


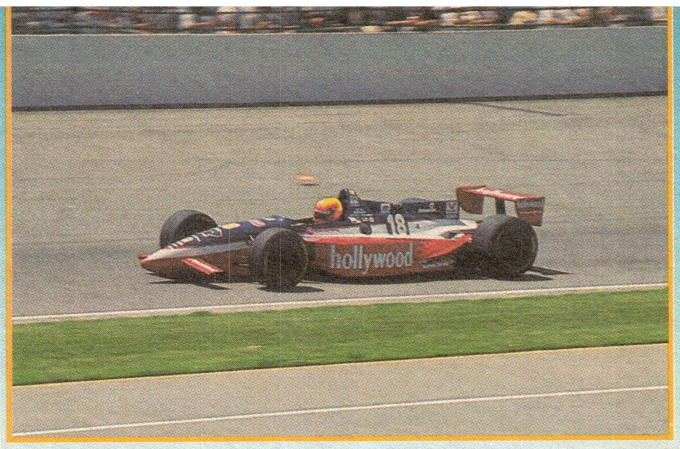
The 1995 front row: Scott Brayton, Lola-Menard; Arie Luyendyk, Lola-Menard; and Scott Goodyear, Reynard-Honda.

■ LEFT: Second-place finisher Christian Fittipaldi, nephew of two-time 500 winner Emerson Fittipaldi, driving a Reynard-Ford. ■ RIGHT: Third place went to a persistent Bobby Rahal, who failed to qualify for the '94 race. Last year he drove an underpowered Honda-Lola; this year he found success with a Mercedes-powered Lola chassis.









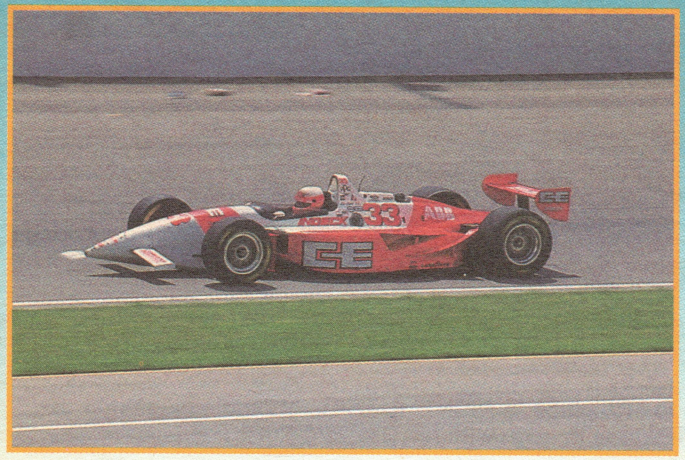
■ LEFT: Californian Robby Gordon drove this Reynard-Ford to fifth place. ■ RIGHT: Brazilian Mauricio Gugelmin, an ex-Formula One driver, led the most laps of anyone at Indy, finishing in sixth with his Reynard-Ford.

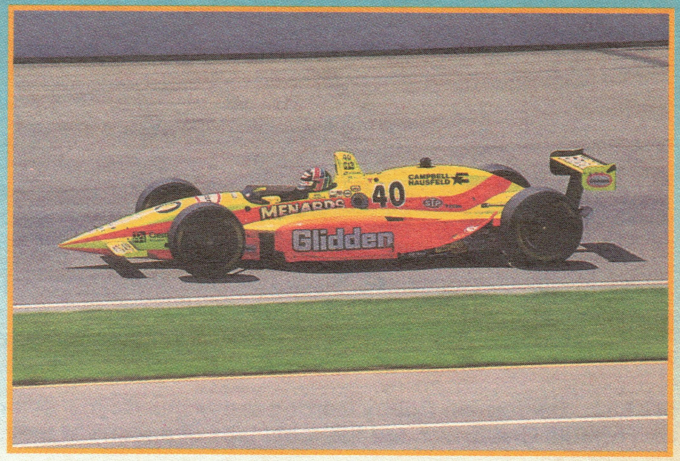
The Wild, the Crazy & the Last-Lap Hustle



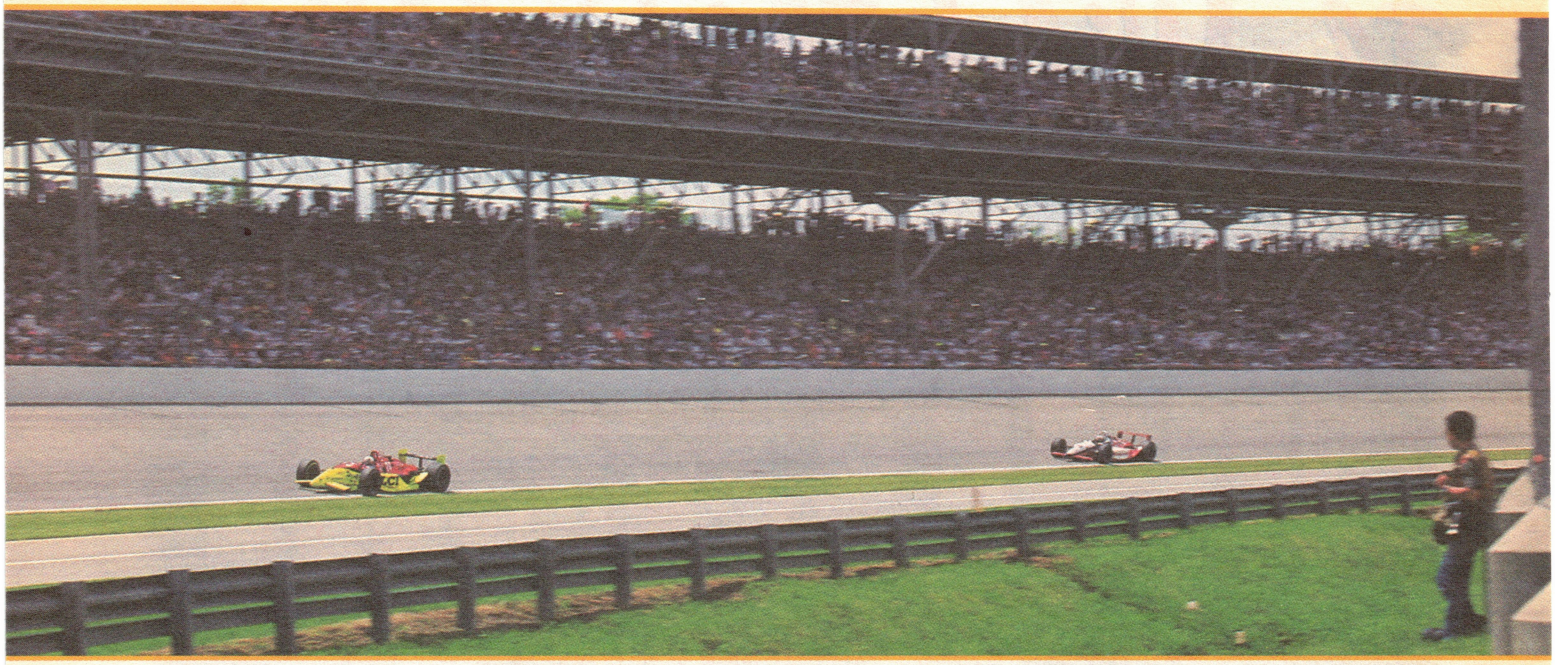
The intense drama that is the Indianapolis 500 began weeks before the green flag fell, back in early May when the hot Menard cars (with much-modified, former Buick engines) set the pace, led by former winner Arie Luyendyk who posted a phenomenal speed of nearly 235 mph in practice. That mark set the standard for the other teams to shoot for. None came close, as alternating days of wet weather and heat held down the anticipated record-setting speeds. First-day qualifying found Menard's Scott Brayton driving his car for all it was worth to take the pole by posting a speed of 231.604 mph, lower than record-holder Roberto Guerrero's 232 mph in '92.

BY RICHARD DOWDY

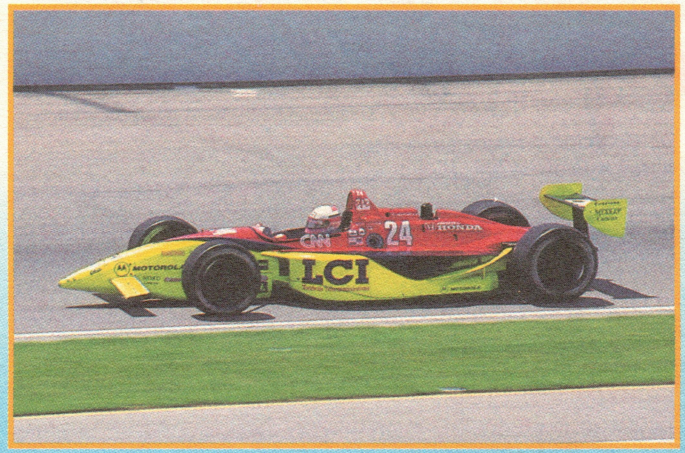


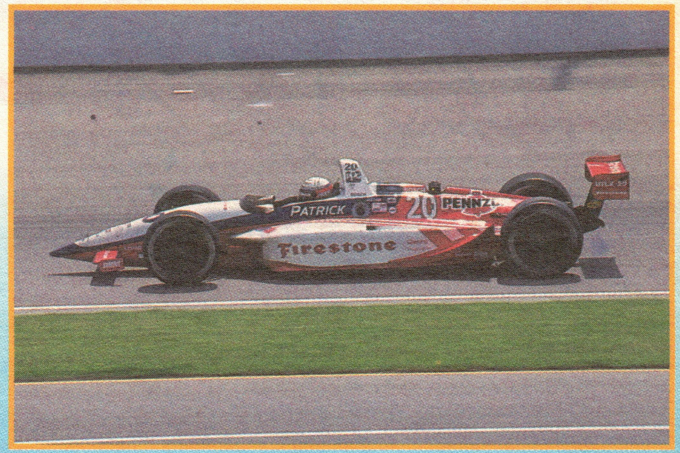


■ LEFT: A rejuvenated Teo Fabi brought his Reynard-Ford home in eighth; seven of the top 10 finishers drove Reynard-Ford cars. ■ RIGHT: Arie Luyendyk's Menard suffered from low turbo boost and couid only muster a seventh-place finish. The 500 was only his second race this year.



Goodyear (left) being pursued by Scott Pruett's Lola-Ford. Coming out of turn two, Pruett hit the outside wall, and veered into the infield fence, ripping his car apart. He was unhurt.





■ LEFT: Scott Goodyear looked to be a certain winner with his strong Reynard-Honda, but the front-row qualifier ran afoul of the rules. With only five laps to go, Goodyear passed the pace car during the yellow flag and was penalized for his error with a heart-breaking 14th-place finish. ■ RIGHT: Scott Pruett put on a brilliant show, and nearly caught Scott Goodyear for the lead, but instead crashed on the 184th lap after hitting a patch of oil.

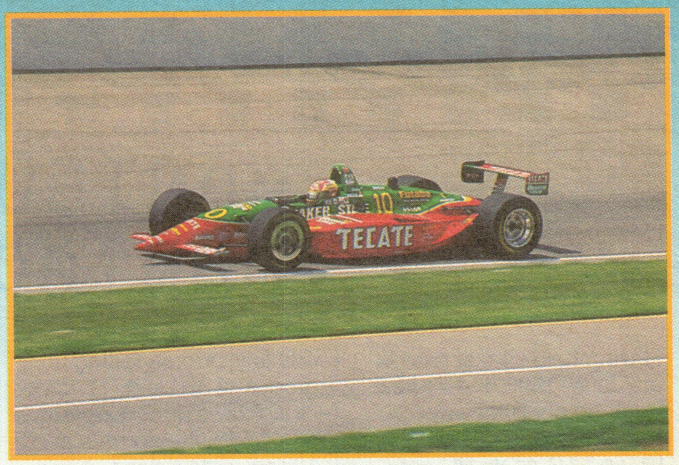
Next to Brayton was teammate Luyendyk with a speed of 231.031, and sitting outside on the front row was Scott Goodyear's Honda-powered Reynard with a speed of 230.759.

The real shock of Indy qualifications was the absence of the always-dominant Penske team. Not only didn't drivers Al Unser Jr. and Emerson Fittipaldi (who between them had won the previous three 500s) fail to get their Penske/Mercedes cars up to speed, their desperate, last-minute attempts to qualify one of Bobby Rahal's backup Lola cars, a borrowed Reynard and even last year's chassis, dusted off and brought out from the Penske museum, failed. Both drivers fell far short of the minimum to hang onto a spot in the 33-car field, a genuine disappointment for both Penske drivers. For owner Roger Penske, who had fielded a car in each 500 since 1969, the turn of events was especially painful. It was also the first time a defending champion (Unser) had failed to come back and qualify for the 500 the following year.

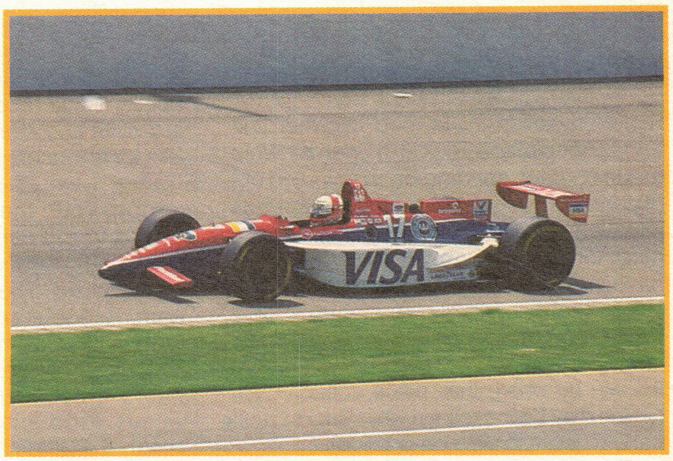
On raceday all the statistics were put out of mind as the pace laps began. Though there was no shortage of predictions on who might be the eventual winner, wise people who know how unpredictable the Speedway can be, were not quick to pick a winner.

The first lap showed how scary the start at Indy can be, as Stan Fox lost control of his racer and veered across the track, collecting a hapless Eddie Cheever in the process. The violent crash into the wall sent Fox's Reynard splintering into a cloud of carbon fiber, the nose cone breaking free and exposing his legs as he sat helplessly strapped into the cockpit as it spun through the air. Miraculously, Fox's legs and feet were uninjured, though he suffered a severe head injury from the shock of hitting the concrete wall. Besides Cheever, the crash took out Gil de Ferran, Carlos Guerrero and Lyn St. James.

continued on page 72



Adrian Fernandez' Lola-Mercedes sports Futaba RC Systems' sponsorship; in reality it's Futaba's industrial LED division that provided the money. The only logo the Galles team had was the Futaba RC version, which showed up well on TV. Fernandez finished 21st.



Danny Sullivan, back in an Indycar after a year's layoff, finished in ninth place with this Reynard-Ford Pac West car.



The first-lap crash triggered by Stan Fox eliminated five cars from the field, including Eddie Cheever, Gil de Ferran, Lyn St. James and Carlos Guerrero. Only Fox was injured.

Track of the Month

MONTGOMERY RACEWAY, MONTGOMERY, ALABAMA

Having held its first race in late June, 1995, the all-new Montgomery Raceway opened its doors to both 1/10- and 1/4-scale RC car oval competion. Built in only 4-1/2 weeks, the asphalt oval track is situated in Montgomery's Lagoon Park, a complete sports park complex. The track measurements include a racing groove of 320 feet, 77-foot straightaways, 50 degrees of banking in the corners and a 12-foot wide pitlane. A low-sand content asphalt was laid counter-clockwise on the track to decrease potential tire wear. Each wall is made from the same plastic used on full-sized racecar bumpers and airdams and there's also a five-foot sodded outside runoff zone and infield. Trackside amenities include computer scoring, separate double ramp drivers' and scoring stands, restrooms, concessions and ample tree-lined areas for parking and pits. The Montgomery track also has many major restuarant and motel chains near its location at the intersections of U.S. 185 and 65. For more information on the track and upcoming 1/10- and 1/4-scale race dates, contact either Bob Claussen at (334) 262-1126, or Jerry Evans at (205) 491-7846. *—R. Eyrich* •

NATS-EYE VIEW CONTINUED FROM PAGE 55

Rick Hohwart, being lapped, between first and second place. Rick and Brian Kinwald made contact, sending Brian spinning out of contention. I don't think the contact was intentional, however, the leaders were lapping Hohwart, and in my opinion, he should have yielded to let the leaders dice it out.

In spite of that, Team Losi ended up winning the Factory Class Trophy. This is achieved by factory drivers accumulating points towards the win by where they place in each main (which may be the reason why Rick Hohwart had no desire to yield his position).

There were some interesting stirrings in the Team Associated pits this year. I noticed that several Team Associated drivers, including their ace, Mark Pavidis, were using LRP Speed controls. LRP comes here from Europe, and it seems they are here to make their presence felt. Traditionally, Associated has been a staunch supporter of the fine Novak Electronics speed controls.

NORRCA's new tire rule was in effect this year, and the new system seemed to work fine. Basically NORRCA's desire is to cut the cost of racing by allowing only a limited set of tires to be used during any major event. The intent is that non-sponsored drivers won't have as great an out-of-pocket expense trying to keep up with sponsored racers using new tires in every qualifier and main. So far it has worked out pretty well.

RC Model Cars gave out many copies of the magazine to the racers on hand. I spoke to one mom who brought her son to the track. She told me that he was into riding dirt bikes, but recently got into racing RC cars. She and her son collected up a few copies of the magazine and announced they were selling the dirt bike in favor of RC racing.

We would like to take this opportunity to congratulate Team Losi on capturing the 1995 NORRCA Factory Cup. I would especially like to recognize Jack Johnson's hard work and ever-vigilant presence.

As for sponsors, well here they are. As a racer, I would like to remind you to support your local hobby shop/race track, and the companies that take the time to support you such as the ones listed below. They include: primarily, Team Associated and Team Novak; along with Dahm's Bodies, Pro-Line, RPM, Reedy, Matrix, Kimbrough, Maxtec Motors, Peak Performance, Robinson Racing Products, Tekin Electronics, Stealth Batteries, Double Strike Batteries and Tecnacraft products.

Congratulations to all of the sponsors of the 1995 NORRCA Nationals for participating in a such a successful event, and thank you from the racers for your participation.*—Rob Tuck* •

INDY 500 CONTINUED FROM PAGE 71

Once things were cleaned up and the track went green again, Scott Goodyear relinquished the lead to Arie Luyendyk, who led for a brief time until pitting, allowing Michael Andretti a chance to lead for a brief time. A few more lead changes between Goodyear and Andretti finally ended when Mauricio Gugelmin took over and held the lead for more laps than any other driver.

Toward the end of the 200-lap race, things began to really heat up as the lead changed in concert with a host of pit stops. Between laps 160 and 200, six different drivers were out in front. As things began winding down, it looked as though Canadian Scott Goodyear's Honda-powered car with Firestone tires would be the victor. His only competition came from Scott Pruett, also racing on Firestone tires, a brilliant comeback for the tire company that had been away from Indycar racing for 21 years. With the laps ticking away, both cars were lapping at speeds 10 mph faster than the rest of the field—and pulling away.

But all was not over: coming out of turn two while chasing down Goodyear, Pruett's car got loose from oil on the track and slapped the outside wall. For a moment it looked as though he would save it; then it fishtailed out of control across the track and backed into the infield catch fence as it went airborne, ripping the engine and transmission from the chassis. Pruett climbed out unhurt.

Back up front, Goodyear led the pack through the turns behind the pace car as the track was cleaned up. As they came through the short chute between turns three and four, Goodyear accelerated in anticipation of a green flag, and in doing so, rocketed past the pokey Corvette pace car and committed a serious violation of the rules: you never, never pass the pace car under yellow unless waved by. Second-place driver Jacques Villeneuve knew this lesson well; he had been penalized *two* laps for a similar violation and battled for 300 miles to get back on the lead lap. When he saw Goodyear fly by the pace car, Villeneuve hit the brakes to avoid doing the same thing, and thereby sealed his fate. Goodyear was black-flagged, but ignored the signal and continued to race out in front. On lap 195, scorers stopped counting his laps and the last five circuits were recorded with Villeneuve as leader. Last year's 500 Rookie of the Year, runner-up and the second-youngest driver to ever win the 500 came across the finish line as the first Canadian to ever win the race. Second place went to rookie (and Emerson Fittipaldi's nephew) Christian Fittipaldi, with Bobby Rahal in third. Goodyear finished 14th, emotionally shattered by the turn of events. When someone said, "It isn't over till it's over," they must have been thinking of the Indy 500.•

TEAM ASSOCIATED

STILL

THE TOP NAME IN 1/10 OFF ROAD RACING

and 1/10 on road . . . and 1/12 on road . . . and 1/10 gas



R/C CAR ACTION TRUCK OF THE YEAR!

RC10T

A technological breakthrough! This truck's design is similar to the RC10, which has made it the dominat electric truck since its release. Winners race RC10T's.



R/C CAR ACTION CAR OF THE YEAR!

RC10

The RC10 has won 4 IFMAR World Championships, and was voted as Car of the Year by the readers of *RC Car Action Magazine.*

IFMAR WORLD CHAMPIONSHIPS
TWELVE

RC10L

On road racers have made our National Champion RC10L car the most popular on road car, and our RC10LSS has revolutionized high banked oval racing, shattering the speed record with an *85 mph run!*



R/C CAR ACTION CAR OF THE YEAR!



R/C CAR ACTION CAR OF THE YEAR!

RC12LW

Our family of RC12 cars have won 6 IFMAR World Championships. They're tough to beat!



RC10GT

The most advanced 1/10 gas truck available anywhere, setting new track records everywhere.

TEAM ASSOCIATED
3585 Cadillac Ave. Costa Mesa, CA 92626
714-850-9342 fax 714-850-1744

Arrow Hobbies

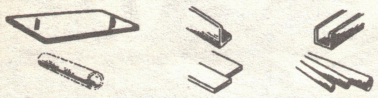
YOUR R/C DRAG RACING STORE

FINE DESIGN + CORDITE MOTORS
LIGHTZ PRODUCTS + TRINITY/WEBB
LOCKMANN PRECISION + TWISTER
NIFTECH + DRAGWORKS + ARROW S/W
NEW PRODUCTS, DRAG DYNAMICS
RACEAMERICA + QUARTERMASTER MOTORS

CONGRATULATIONS TO HARRY GAUNCH FOR BREAKING THE T/AD MPH RECORD WITH A 68.87 MPH AND KEN DAILEY ON WINNING PRO TRUCK AT THE 1995 IEDA SOUTHERN NATIONALS IN CLINTON, NC

25% OFF ALL 1/10 SCALE DRAG PARTS
CALL FOR FREE CATALOG
(610)461-1481 - FAX (610)586-3455

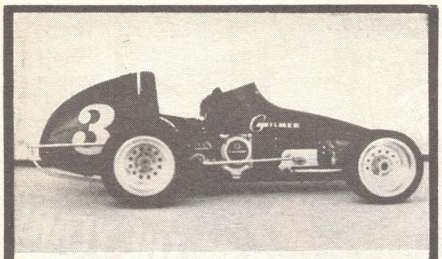
METALS FOR THE RC MODELER



COLD ROLLED STEEL • STAINLESS STEEL • THREADED ROD • ALUMINUM • SHEET METAL • BRASS, BRONZE & COPPER TUBE • DRILL ROD • TUBING • SHAPES • WIRE • WIRE BENDERS • COIL WINDERS • TUBING CUTTERS • BENDER KITS • MUSIC WIRE
HEXAGON • SQUARE • ROUND • RECTANGLE
FREE CATALOG • (304) 562-3538
ALSO..LATHES, MILLING MACHINES, SUPPLIES, TOOLS, ACCESSORIES, BOOKS, MUCH MORE!!!



Your Complete Machine Shop Supplier!
PO BOX 536-MC • HURRICANE, WV 25526



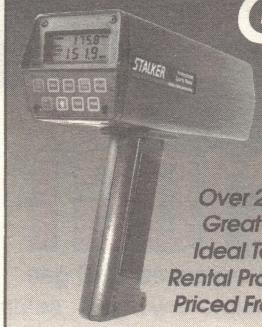
MANUFACTURER OF 1/4 SCALE RADIO CONTROLLED MIDGETS.
SEND $3.00 FOR INFORMATION.
GILMER HOBBY
P.O. BOX 400
HOWARD LAKE, MN 55349
612-543-2395

AD INDEX

Aero-Car Technology 50
Arrow Hobbies 74
Associated Electrics 38, 39, 41,73
BRP 17
Blue Ridge Machinery 74
Boca Bearing 43
Bolink RC Cars 56
Custom Electric Cars 65
Conley Engines, Inc. 63
Dahm's Racing Bodies 35
Duratrax 67
Gilmer Hobby 74
Hitec/RCD 19
JPK 33
Kimbrough Products 45
Kyosho 7, 26
Lightz Products 27
Litespeed 6
Lockmann Precision 49
Love's Precision Racecars 59
NORRCA Road Course Nationals 15
Novak Electronics ..... Cover 2
Parma International 40, 47
Quarter Flash 6
PTI ..... Cover 4
RCHTA Hobby Show 53
RPM 11
RaceAmerica 12
Radar Sales 74
Schumacher 5
Shop Task 74
TD Enerprises 74
TM RC Racing 43
Team Losi 57
Thorp Racing 13
Traxxas ..... Cover 3
Venom Racing 33
WCM 27

Note: The Ad Index is published as a service to our readers and is revised as late as possible to include ad changes. Gallant Publications is not responsible for errors or emissions.

New and Refurbished RADAR GUNS



Call for Our FREE Catalog

Over 20 Different Guns
Great for Lots of Sports
Ideal Tool for the Racer
Rental Program Available
Priced From $395 - $2000

RADAR SALES - 5485 Pineview Ln. - Plymouth - MN - 55442
Phone (612) 557-6654 - Fax (612) 550-0454

SHOP - TASK
MILL · LATHE · DRILL
The Original Home Machine Shop Designed in USA by Shoptask

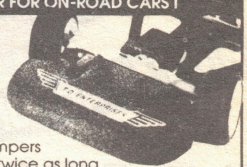


3 Models to Choose
Best quality, best price
3 Axis Power Feed Available
12 Month Warranty
100% Parts Supply
All Tooling Available
17" Swing
11 x 18 Mill Table

1-800-343-5775 FREE CATALOGUE
DEMAND THE BEST
SHOPTASK P.O. BOX 186, ABERDEEN, WA 98520
SINCE 1981

THE T.D. PROTECTOR™
THE BEST BUMPER FOR ON-ROAD CARS !

"GET THE T.D. PROTECTOR AND KISS GOODBYE THE BROKEN PARTS AND CRACKED BODIES OF YESTERYEAR"
Leo Hill / R/C Model Car



- Lighter and stronger than conventional bumpers
- Bodies last more than twice as long
- Raises the durability of on-road cars to a new level
- Over-sized for trimming to fit any on-road car

1:12 - $5.95 1:10 or 1:10ss - $6.95 1:8 - $7.95

...ALSO AVAILABLE THE PROTECTOR/PT™
Pre-Trimmed to fit any 1:10 NASCAR body.
Trim only the rear of the bumper to fit any chassis.
1:10 or 1:10ss - $6.95

DEALER /DISTRIBUTOR INQUIRIES INVITED! Free shpng. contntl. USA, no C.O.D.'s
TO ORDER CALL: 800-253-7229
VISA/ MSTRCRD ONLY
Or send chk or MO to:
TD Enterprises, Box 3301
Lexington, OH 44904
FREE SHIPPING! For info call : 419-884-2004

JUST DRIVE IT!

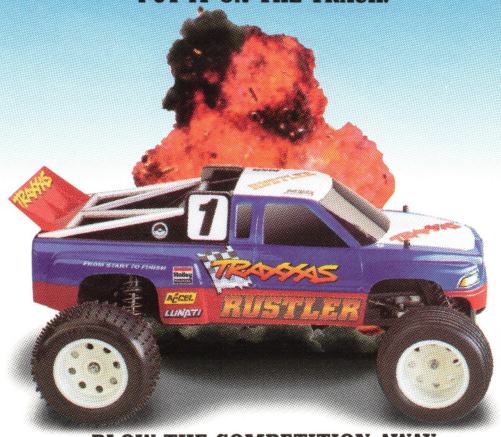


RUSTLER

This is it...the one you have been waiting for. The one with superior performance. The highest quality. The lowest price of any 1:10 scale truck kit in its class. There are loads of hop-up parts, a fully-assembled version that's ready-to-go right out of the box, and the Traxxas Test Drive™ program so you can drive it before you buy it. That's genuine value. That's Rustler!

PUT IT ON THE TRACK.





BLOW THE COMPETITION AWAY.

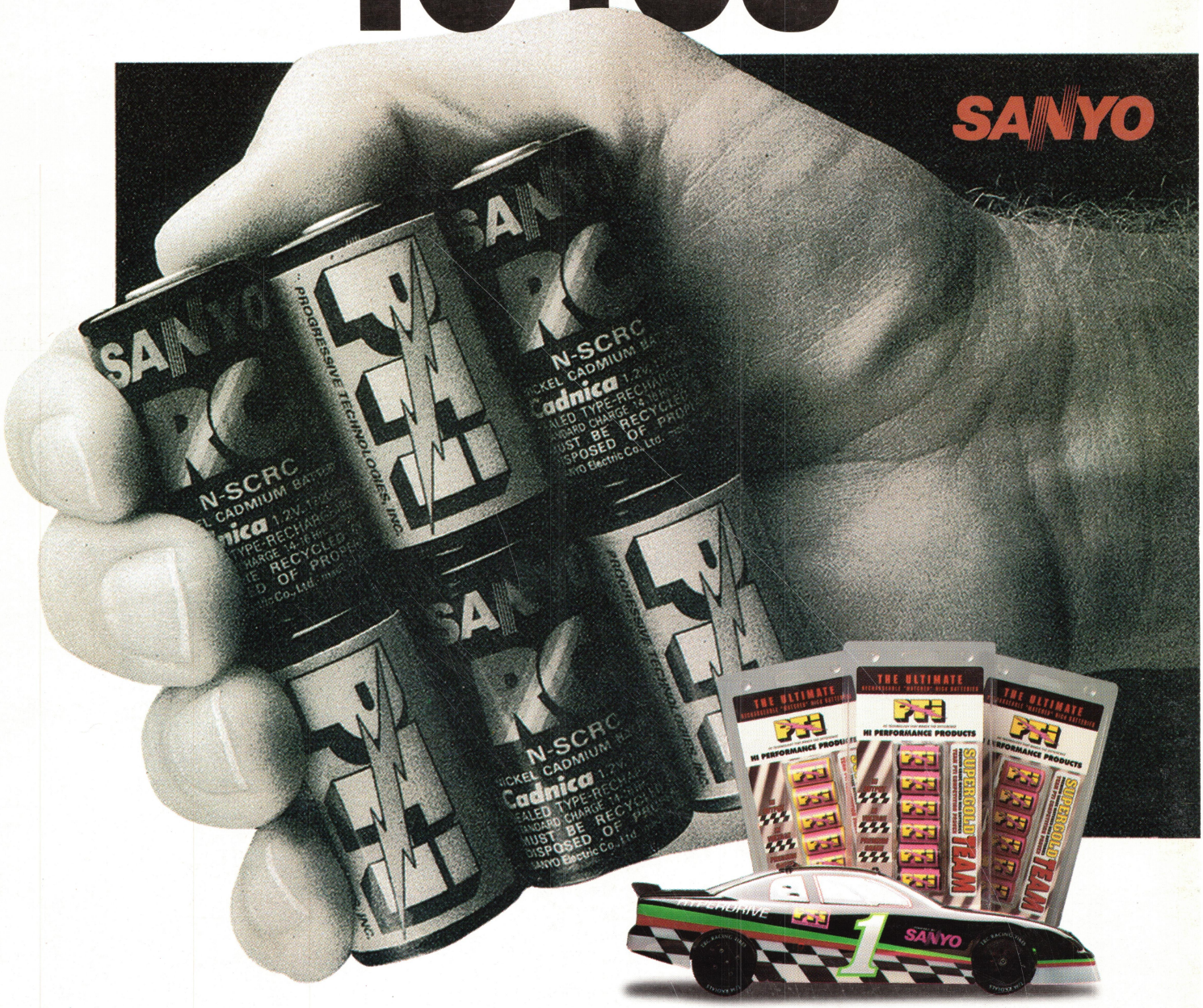


READY-TO-RUN WITH RADIO SYSTEM. NO ASSEMBLY!

TRAXXAS
FROM START TO FINISH

Traxxas Corp. 12150 Shiloh Rd., Dallas, TX 75228 Ph. (214) 613-3300 Fax (214) 613-3599. Traxxas U.K., P.O. Box 1128, Winterbourne, Bristol, BS17-2SH, England. 441-454-250441
Copyright Traxxas Corp. 1995. Write for a complete catalog.

MORE POWER TO YOU



With PTI Power Pack batteries the power is in your hands. Whether you're racing flat out or just flat out having fun, you have the power to cut the juice loose right in the palm of your hand. PTI's batteries are cycled until they are stabilized before being precisely matched into packs. So crank it up with the PTI power pack, and turn up the juice.

FOLLOW THE LEADER PTI

Progressive Technologies, Inc., PO Box 950, Pilot Mountain, NC 27041-0950, Phone (910) 368-1375, Fax (910) 368-1380