

November, 1988

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THE R/C CAR MAGAZINE

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NORRCA
OVAL NATIONALS

KYOSHO'S
OPTIMA MIDS





TWISTER TIMES

FLASH!

'HURRICANE' HITS NATIONALS

Competition Flees in Terror

Lake Whippoorwill, Florida

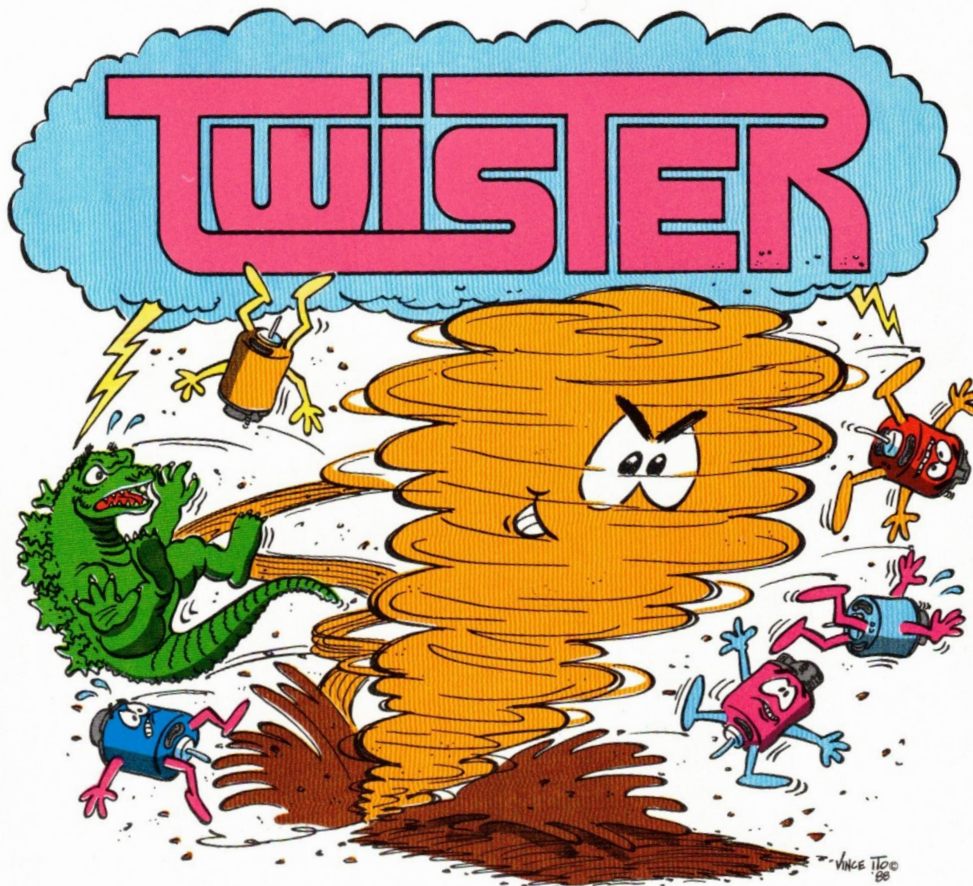
A powerful "Hurricane" hit the first-ever ROAR 1/10 On-Road Oval Nationals at Lake Whippoorwill, Florida. Dennis Vindedahl, using a production Twister #1001 "Hurricane" motor he purchased at the Hobby Emporium in Janesville, Wisconsin, blew past the nation's top drivers at Lake Whippoorwill to become the U.S. National 1/10th Scale Oval Champion. Proof positive that at Twister, we build National Championship horsepower into every motor we make.

Also Destroys Del Mar

That same Twister power ripped the doorhandles off the competition at Del Mar, California, where Eric Soderquist and Eddie Knoles, Jr. not only ran away with the 4WD and 2WD ROAR Oval Series events, but they both completely destroyed the track records along the way. Witnesses maintain that track repairs may take weeks. Egos though, may take a little longer.

Nationwide Havoc

The same powerful Twister touched down in several



Unretouched artist conception of the havoc that was reeked at Lake Whippoorwill.

other places as Knoles, Jr. tore up racetracks everywhere on his way to 2WD 1st Overall in the ROAR Oval Series, 2WD 1st Overall in the NORRCA Oval Series, and 2WD 1st Overall in the NORRCA Off-Road Series.

No End in Sight

Just when all seemed quiet, that same destructive "Hurricane" blew into Quincy, Illinois, as the newest member of the Twister Team, Chris Allec, used his Twister #1001 "Hurricane" motor to flatten the competition at the NORRCA National held at R&R Race-

way. Not only did Allec win the national title in 4WD, but he was also TQ in the 4WS Class using the Twister #802 "Ultra Stock" motor. In his first race as a team member, Chris learned how easy it was to win with TWISTER POWER!

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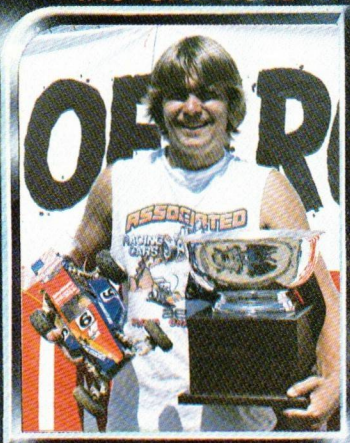


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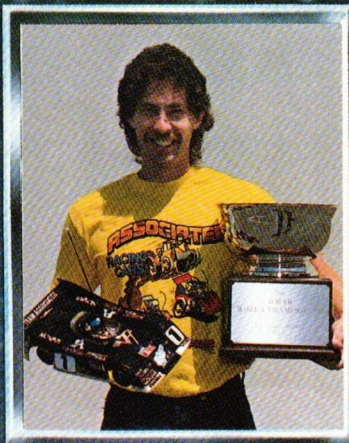
World Champions

TEAM ASSOCIATED

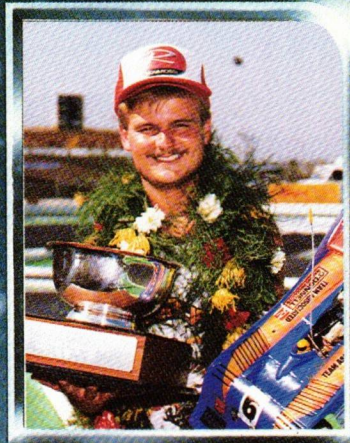
JAY HALSEY
1/10 OFF ROAD



TONY NEISINGER
1/12 ELECTRIC



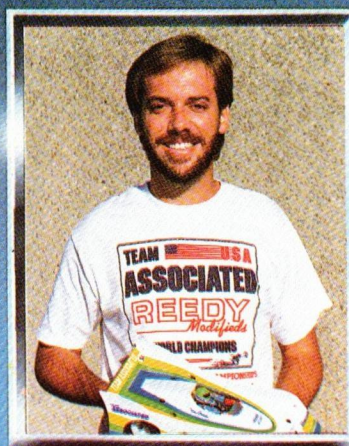
RE-PETE FUSCO
1/8 GAS



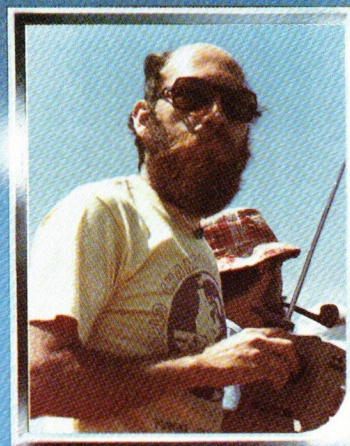
TONY NEISINGER
1/12 ELECTRIC



KENT CLAUSEN
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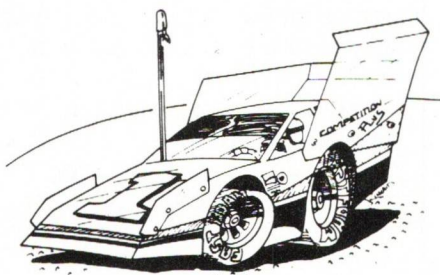
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ABOUT THE COVER

This month's cover features the NORRCA Dirt Oval Nationals. The three cars are the Stock Class Concours winners and belong to (left to right) Shaun Young, first; Pat Griggs, second; and Dave Saylor, third.

MAILBOX

NORRCA

I have been racing for almost five years now and I read your magazine regularly. It seems like all that anyone ever writes to you about is complaints about one organization or another. Well, I would like to say something positive about a national organization that I feel is doing a great job. I joined NORRCA nine months ago and have attended alot of their races and I always have a good time. The races are run on a fairly close schedule so you always know what time things will start and end. The staff is very knowledgeable, helpful and friendly. NORRCA seems to be much more concerned about the racers than any other organization. I have spoken to the president (J.R. Sitman) on a couple of occasions and he has always been available and helpful.

Most recently I attended the SCORE show at the Anaheim Convention Center where the U.S. Championships were held and run by NORRCA. I have attended two previous SCORE races and this was by far was the best run race of all. They had some small problems, but handled them quickly and the race went on smoothly.

One other good item NORRCA is doing is, that all the events they run are well published before and after the race. I ran in the ROAR series last year and I can't remember ever seeing anything published throughout the nine months of the series.

I just wanted to say that I think there is an organization that really is helping to make this sport/hobby grow and I hope they continue to expand throughout the US.

Sincerely,
SCOTT

CONCOURS WINNER

Dear Peter Barana:

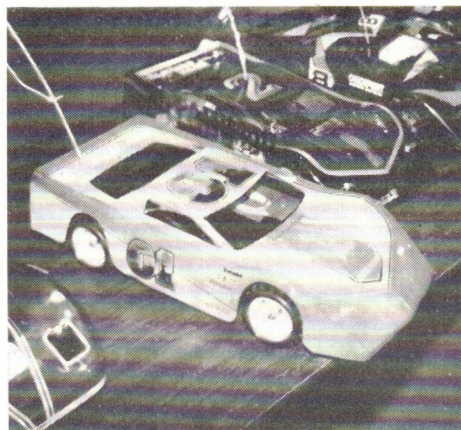
This is a picture of the car (01)

that won first place at the 1988 ROAR Dirt Oval Nationals held in Orlando, Florida. The car belongs to Mike Place of Holiday, Florida and was painted by Dan Toll also of Holiday, Florida. Dan air brushed the mural in the 01 and hand painted all names on side of car: Futaba, Race Prep, Tekin, etc. (There are no decals on this car). The car pictured on page 32 of the July issue of Competition Plus are the second and third place cars.

Thank you for your concern!!
KENNETH CANNIFF

Dear Kenneth:

Thanks for setting the record straight! Note the picture below. Fantastic Job!



MOTOR TIMING

Dear Peter:

As a manufacturer and a racer I am in agreement with a limitation on stock motor timing. Ernie Provetti of Trinity and myself took it upon ourselves several years ago to make our stock motors un-tweakable with the hopes of others doing likewise. Well it didn't happen. More and more motors came out with more advance timing or assembled so as to be tweakable. This in turn

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Region 2 1/10 Scale Off-Road Championships

By Jeff Marsh

Photos by Tom Siler

Some things never change. Or so it seems. When P.D.Q. Hobbies announces an event you better register early and hold your hat cause the red Georgia clay is about to fly. And fly it did!

With 285 entries from Georgia, Florida, Alabama, Tennessee and the Carolinas, this event promised to be a barn burner! And if the weather would only cooperate, who knows what could happen. The weather did cooperate with only a brief five minute shower on Saturday but it was very hot and humid.

Saturday morning started out as a three ring circus with everyone trying to get things organized - but by 9:15 the morning was off to a start with the beginning of what turned out to be over 60 heat races (two qualifying rounds a piece).

Mel Levine announced almost all week-end and did an excellent job. Jack Bailey ran the radio impound area which kept countless interference problems from erupting. Richard Burdett (P.D. Q.) was glued to the timing and scoring computers.

Having attended numerous race events over the past fifteen years (full sized and scale) I can confess to having never seen a more efficient job of timing, scor-



2WD Stock A Main finishers: l. to r. John Walters, Gilbert Comeau, Craig Cain, John Berry, Stephan Miniea, Bill Blakeslee, Kevin Clark.

ing and posting results!

The track was in excellent condition despite the heavy usage during the week by those who came early to get dialed in. P.D.Q. is serious about their off-road racing and the track reflected it all week-end.

Keith Young, Region 2 Race Director had come to race and chipped in on the organization side Saturday and also took his share of the announcing duties. David Blake had tech running

smoothly as did Bill Cunningham on the post-race impound and tech.

Sunday morning saw the last round of qualifying for all classes. As expected, many of the best times were turned in at that time, which caused a real crowd at the results board. Amazing what two rounds of qualifying can do to motivate a "max" effort on the last session!

Now for the racing action . . . 120 racers were battling for the A

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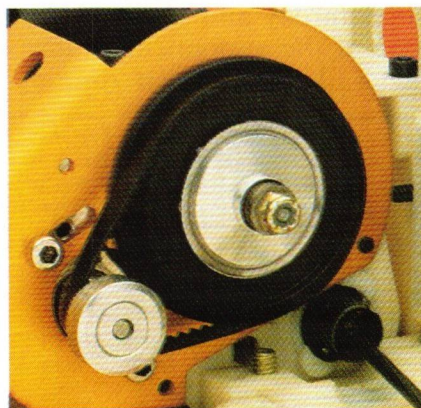
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main in 2WD Modified!

2WD Modified

After three rounds of qualifying Nathan Wincek of Dunedin, Florida walked away with Top Qualifier honors with 13 laps and time of 4:03.8. Nathan was running his Houge Chassis RC-10 with a 15 wind Twister motor, SCR matched batteries and Novak speed controller. The Schumacher block rears and three row front spikes were the obvious order of the day, especially when working with Kyosho Gold shocks/springs all the way around. Nathan is sponsored by Tightwad Hobbies out of Dunedin, Florida.

Qualified tenth in the A main was Bill Jackson of Pensacola, Florida driving his Phoenix powered Houge trailing arm equipped RC-10 with a 4:13.0 and 13 laps.

With Wincek loosing a dog-bone (and the lead) on lap 4 the race became a war between Jackson, Darrin Stump and Mike Burnette in his ARCAR matched battery special fighting all the way to the wire. A last lap tangle between Burnette and Darrin Stump allowed Jackson to sieze the opportunity to sneak though and take the checkered with 13 laps in 4:12.9. This was Bill Jackson's first regional race and he has served notice that he and his Phoenix powered (J.B. Killer matched batteries) RC-10 is fast and cool under pressure.

4WD Modified

"A" Main. You could cut the air with a knife as the 4WD Modified "A" was getting set up on the grid. Everyone stopped what they were doing and got a good vantage point to watch what was about to happen.

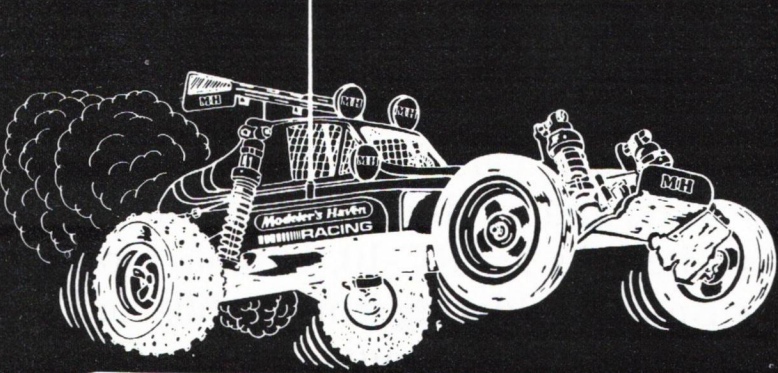
Top Qualifier Tim Raskin was the only driver to turn in 14 laps. Tim came up from Orlando and was totally ready to take on all comers. Mike Burnette of Twister and ARCAR fame was prepared to "defend the local honor" and Brad Reelfs from Mount Juliet,



2WD Modified A Main finishers: l. to r. Nathan Wincek, Bret Reelfs, Mike Bevel, Dave Harrison, Jeff Harris, Darrin Stump, Brad Reelfs, Mike Burnette, Bill Jackson.

Tennessee did not want to be counted out. On the start, Burnette made several absolutely brilliant moves up the hill and into turn one emerging in first place. If there was a trophy for most brilliant start, Burnette's performance would have assured

the award! At the halfway point the race had become Burnette's with Reelfs exiting the turns quicker but Burnette was driving a cleaner line and was faster on the straights. At 2:30 down Reelfs, Narrington and Sova began to reel in Burnette.



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Mike sucked it up to "maximum brain" and put together several perfect laps - opened up a .08 second lead and took the checkered leaving Reelfs, Narlington and Sova engaged in a battle for 2nd, 3rd, and 4th.

Raskin never recovered from the first laps of bumper mania but did an excellent job of working his way back to 7th.

Burnett's Twister powered Kyosho with the ARCAR modified chassis and matched cells was simply too much for the opposition on this day. His Schumacher tires were the order of the day, and others took note as the track continued to dry out.

"B" Main. Ronnie Lucas, ARCAR sponsored, jumped out to an early lead only to get pulled in by Dean Vince. Ronnie lost his rear wing early on and you could tell the difference. Vince drove a good race beating Lucas and Chuck "Darth" Baader who drove to a solid third place.

2WD Stock

"A" Main. The A Main in 2WD



4WD Stock A Main finishers: L. to r. Dave Vince, Michael Cottle, Cheri Gillett, Glenn Richardson, Stephan Miniea, Stewart Levine, Dean Vince, Bill Hock, Gordon Ewins, Scott Page.

Stock was shaping up to be another nuclear battle, with John Walters of Pensacola, Florida TQed with 13 laps at 4:19.2. Walters was the only one in 2WD Stock to turn 13 laps all weekend. John drove a Composite-

Craft chassis with Kyosho Gold shocks/springs, MIP transmission, J.B. Killer matched batteries, Schumacher rear blocks, Dynamite front spikes, Novak 1 X speed controller. This was the obvious hot ticket for qualifying.

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When the flag dropped, a furious race to turn one ensued and John was the first casualty. By the time the pack got through John was out of the race with a broken front end. Mark Novotny showed the pack what experience means and took off with Kevin Clark, Bill Blakeslee and Long Hoang locked into a "junk yard" dog fight. As the final minute arrived Novotny and Clark had developed solid positions and Blakeslee overtook Hoang with some very skillful inside maneuvering and held on to the end.

Novotny made it look too easy, he was never seriously challenged but nonetheless drove a fast and flawless 4 minutes. Certainly the most dominating first place of any of the A Mains.

Mark's Trinity RC-10 was shoed with Schumacher tires (square block) and R & R trailing arms and handled noticeably better than the rest of the field.

"B" Main. Mike Barone qualified first for the B with 12 laps. Chet Ellis had all the "Locals" buzzing with his fifth place qualifying time of 12 laps in 4:15.1 - the highest qualifier from Georgia in 2WD Stock. The race developed between Michael Spehn and Mike Barone with Spehn winning with 12 laps in 4:03.9. Ellis settled for ninth, having served as a bumper for most of the race - so much for the silver-hair crowd.



4WD Modified A Main finishers: l. to r. Dave Harrison, Tim Raskin, Bret Reelfs, Darrin Stump, Steve Narrington, Brad Reelfs, Mike Burnette.

4WD Stock

"A" Main. The last race of the weekend, but oh what a race! To those who watched this race will never leave early in the future for they saw the most spectacular, wheel to wheel racing of the weekend. Glenn Richardson and Cheri Gillett both qualified with 12 laps and 4:03.3 and the track was in excellent shape.

The first lap looked like bumper-pool everyone got into it with Gordon Ewins and Scott Page dueling for first place, followed by Bill Hock and Dean Vince, Cheri Gillett and the rest

of the field. Glenn Richardson really got nailed on lap one and was doing good to be running at all. The race turned into an absolute war between Scott Page chasing Gordon Ewing. The driving was impeccable with Gordon trying to get a few car lengths and Scott hanging less than a car length away - you could have thrown a stray cat over both of 'em.

Scott got a great shot out of turn five and ran right over the top of Gordon on the front straight as they came off the berm on the straight. Gordon fought hard to retake the lead but

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Scott stayed very cool and held the lead on around the last lap to the checker! 24 year old Scott Page had just driven the drive of his year and a half life as an R/C racer and was so excited he jumped off the drivers stand onto the track -a good ten foot fall but he never felt it. Scott's Kyosho Optima Mid with SCR Batteries and Hot Lap Tires had just run a fantastic race of 13 laps in what everyone agreed was the driving performance of the weekend. Write this name down, your going to hear a lot more about Scott Page in the days to come.

"B" Main. This race was dominated by Terry Beadles with Richard Burdett of PDQ in close chase. Beadles kept his cool, avoided potential disaster and pulled off a 2.6 margin victory.

2WD MODIFIED A MAIN

- 1st - Bill Jackson
- 2nd - Mike Burnette
- 3rd - Brad Reelfs
- 4th - Darrin Stump
- 5th - Jeff Harris
- 6th - Dave Harrison
- 7th - Doug Laurent
- 8th - Mike Bevel
- 9th - Bret Reelfs
- 10th - Nathan Wincek

B MAIN

- 1st - Mark Novotny
- 2nd - Tim Raskin
- 3rd - Steve Narrington

C MAIN

- 1st - Joel Watkins
- 2nd - Kevin Clark
- 3rd - David Mottin

D MAIN

- 1st - Chuck Baader
- 2nd - Steve Majors
- 3rd - Craig Cain

E MAIN

- 1st - Kenny Gillett
- 2nd - Carl Zaniboni
- 3rd - Steve Pitts

F MAIN

- 1st - John Walters
- 2nd - Chance Hill
- 3rd - Dennis Rice

G MAIN

- 1st - Randall W. Harden
- 2nd - David Hitt, Jr.
- 3rd - Dennis Pfeiffer

H MAIN

- 1st - J.D. Dossman
- 2nd - Mark Milner
- 3rd - J.D. Dossman

4WD MODIFIED A MAIN

- 1st - Mike Burnette
- 2nd - Brad Reelfs

- 3rd - Steve Narrington
- 4th - Andy Sova
- 5th - Darrin Stump
- 6th - Bret Reelfs
- 7th - Tim Raskin
- 8th - Dave Harrison
- 9th - John Wong
- 10th - Dave Croy

B MAIN

- 1st - Dean Vince
- 2nd - Romie Lucas
- 3rd - Chuck (Darth) Baader

C MAIN

- 1st - Cliff Spangler
- 2nd - Mike Mitchell
- 3rd - Dave Vince, Sr.

D MAIN

- 1st - Sean Farmer
- 2nd - Geoff Kieffer
- 3rd - Glenn Hammond

E MAIN

- 1st - Chris Hanus
- 2nd - Dennis Rice
- 3rd - Gilbert Comeau

F MAIN

- 1st - David Hill
- 2nd - Edward Zaniboni
- 3rd - Michael Rose

4WD STOCK A MAIN

- 1st - Scott Page
- 2nd - Gordon Ewins
- 3rd - Bill Hock
- 4th - Dean Vince
- 5th - Stewart Levine
- 6th - Stephen Miniea
- 7th - Glenn A. Richardson/TQ
- 8th - Cheri Gillett
- 9th - Michael Cottle
- 10th - Dave Vince, Jr.

B MAIN

- 1st - Terry Beadles
- 2nd - Richard Burdett
- 3rd - J.R. Mitch

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- Pulsating LED Charge Indicator

2WD STOCK A MAIN

- 1st - Mark Novotny
- 2nd - Kevin Clark
- 3rd - Bill Blakeslee
- 4th - Long Hoang
- 5th - Edwin McTureous
- 6th - Stephen Miniea
- 7th - Johnny Berry
- 8th - Craig Cain
- 9th - Gilbert Comeau
- 10th - John Walters/TQ

B MAIN

- 1st - Michael Spehn
- 2nd - Mike Barone
- 3rd - Joseph Baker

C MAIN

- 1st - Gary Fulp
- 2nd - Cheri Gillett
- 3rd - Herbie Hussey

D MAIN

- 1st - Steve Majors
- 2nd - Michael Rose
- 3rd - Billy Emenecker

E MAIN

- 1st - Joel Watkins
- 2nd - David Hill
- 3rd - Timmy Chapman

F MAIN

- 1st - J.R. Mitch
- 2nd - Ted Seif
- 3rd - Jay Lollar

G MAIN

- 1st - David Hitt, Jr.
- 2nd - Carl Zaniboni
- 3rd - Heidi Majors

H MAIN

- 1st - Terry Beadles
- 2nd - Neal Munsey
- 3rd - Darren Scholle

I MAIN

- 1st - Larry Townsend
- 2nd - Donnie McCrorie
- 3rd - Werner Frey

J MAIN

- 1st - Bart Daniels
- 2nd - Erich Schmiede
- 3rd - Charles Long

K MAIN

- 1st - Matthew Kohler
- 2nd - Jacob Corley
- 3rd - Jon Harris

A. R. C. C. November Road Racing Events

Host Club: Arizona Radio Controlled Cars

Race Site: SRS Raceway, 1120 N. Hayden Rd., Tempe, Arizona

Rules: ROAR (membership required)



Fourth Annual 1/12th & 1/10th Scale INDIAN SUMMER CAN-AM RACE

Dates: November 19 and 20, 1988

Classes: 1/12th Modified, 1/12th Stock, 1/10th Modified, 1/10th Stock
(1/10th- 6 cells, 4 minute heats)

Entry: \$20.00 per class

1988 ARCC 1/12-1/10 INDIAN SUMMER CAN-AM ENTRY FORM

Driver: _____ Street Address: _____

City: _____ State: _____ Zip: _____ Phone: _____

Class: (circle) 1/12 Modified 1/12 Stock 1/10 Modified 1/10 Stock

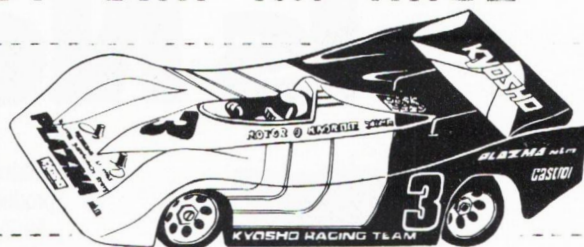
Frequency: 1st _____ 2nd _____ 3rd _____ Car: _____ Motor: _____

Fourth Annual 1/8th Scale TURKEY SHOOT CAN-AM RACE

Dates: November 26 and 27, 1988

Classes: 2 Wheel Drive, 4 Wheel Drive

Entry: \$20.00 per class



1988 ARCC TURKEY SHOOT CAN-AM ENTRY FORM

Driver: _____ Street Address: _____

City: _____ State: _____ Zip: _____ Phone: _____

Class: (circle) 2 Wheel Drive 4 Wheel Drive Car: _____

Motor: _____ Frequency: 1st _____ 2nd _____ 3rd _____



NORRCA 1988 Dirt Oval Nationals

Article and Photos by Rick "The Hammer" Houle

Del Mar, CA - August 31 - September 4 . . . Continuing a very successful first year of operation, NORRCA held their inaugural running of their Oval Nationals event at the seaside track of E & L Racing Center.

The program was jam-packed with awesome activities including a Team Cup Challenge, Trophy Dashes, Concoors judging, giant six-foot sandwich parties and, sun up to sun down racing! The top winners in each class earned bragging rights for National status. This was definitely one of NORRCA'S most ambitious endeavors to date.

The E & L Racing Center is located in the Surf & Turf family recreation area directly opposite the famous Del Mar Race Track.

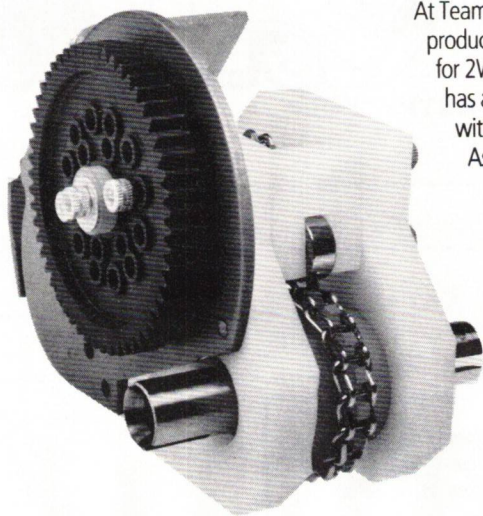
With its palm tree skyline and cool (most of the time) ocean breezes, the E & L facility makes an ideal venue for this event.

An over anxious racer could relax and unwind on the adjacent putting greens and tennis courts, enjoy a great sandwich in the on-sight deli concession, or take a quick jaunt to the beach and catch a few rays.

Open practice began on Tuesday, August 30, and for the next three days racers concentrated on dailing-in their cars, getting checked in, and generally just psyching themselves up for the forthcoming weekend. Friday, Sept. 2, was the big day for the Stock class mains after two grueling days of running a total of six qualifiers!

Concoors enthusiasm was very high at the event as evidenced by the large amount of entries and the superior craftsmanship of the winners. Sean Young with Superior Racing Products took first place in the Stock Class Concoors with an exquisitely detailed SRP-1 prototype. The interior of the car sported a driver that had its helmet visor up, sunglasses on, and a two way radio, as well as a dashboard with full instrumentation and foot pedals. This car was not just another pretty face though, as Sean not only TQed and set the track record with it but also placed third in the 4WS A Main. Pat Griggs of Hot Trick won second place with their new Stripper car covered with a Mustang wedge body. The

Second Place Is No Place.



At Team Pit Stop we are dedicated to providing the R/C race enthusiast with quality products to get to the top. Our latest high performance product is the TPS Transmission for 2WD cars. This transmission accepts 44 to 60 tooth Kimbro and Schumacher spurs, has an eight ball bearing differential and offers four output ratings. This, combined with quality engineering gives it the lowest drive friction of any transmission available. As with all of our products, dependability is unmatched.

If you have your sights set on first place you're ready for the TPS Transmission. Without it you may have to settle for second place. And second place is no place.

TPS Transmission Output Ratios
1.87 to 1 2.14 to 1
2.00 to 1 2.28 to 1

Congratulations to Mike Burnette on his A-Main 2 WD Modified 1st Place finish at the 88 Winter Nationals in Tampa, Florida. Mike got to the top using Team Pit Stop's chain driven TPS Transmission.



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Stripper was designed by the venerable Bill Steele and it also won the Best Engineered award for stock.

Friday's weather was postcard perfect and the occasional sea breezes kept temperatures comfortable and traction on the hard clay track surface was great.

The mains were run in reverse order starting with the slower qualifiers and working up to the A Mains.

There was abundant parking surrounding the track and many racers were able to pit close enough to the track to keep an eye on all the activity. Motorhomes galore were parked in a long row adjacent the track with their air conditioners and power generators churning away all weekend. Other motorhomes were parked in the nearby RV campground.

Many top manufacturers were present and vying for top honors in the chassis and motor wars. Four teams; Team Twister, Team E & L, Team RevTech and, Team



Best Team . . . Team Twister proudly pose with their trophies including the Team Cup.

CRP, competed all weekend for the prestigious Team Cup awarded to the team that racked up the most points in racing.

NBC camera crews were on hand to film the race to be aired the following Sunday night on

Channel 39 after the Raider's Game.

The Stock class mains were run on Friday and the Open class mains were run on Sunday and at the end of both days drivers were treated to trophy

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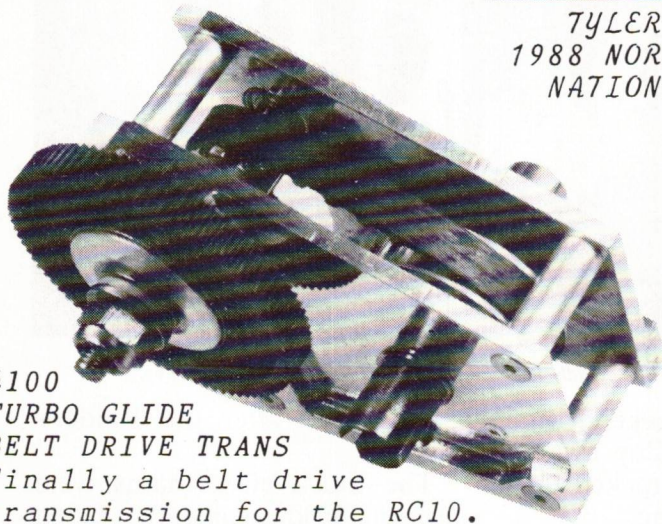
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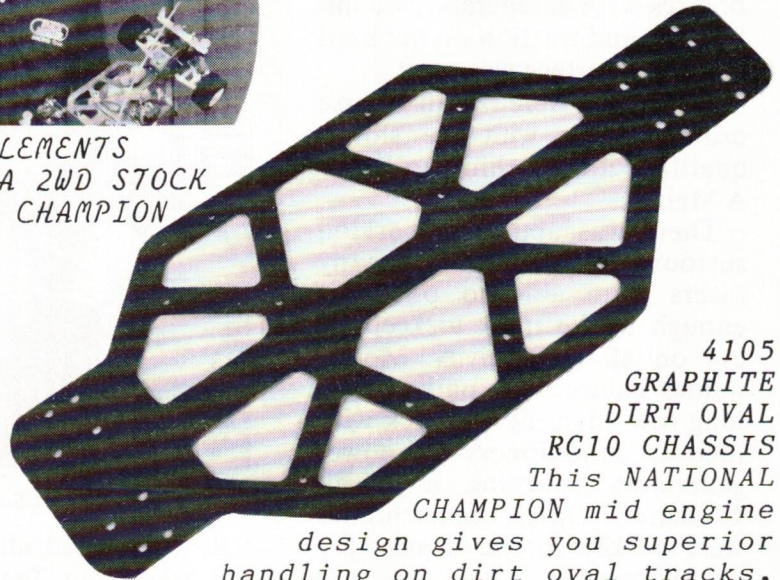


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1988 NORRCA 2WD STOCK
NATIONAL CHAMPION

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helped me become a
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TURBO GLIDE
BELT DRIVE TRANS
Finally a belt drive
transmission for the RC10.
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parts can be used to make a rear
engine or a mid engine transmission.

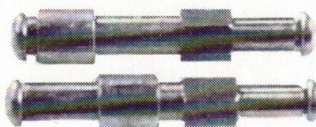


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GRAPHITE
DIRT OVAL
RC10 CHASSIS
This NATIONAL
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design gives you superior
handling on dirt oval tracks.

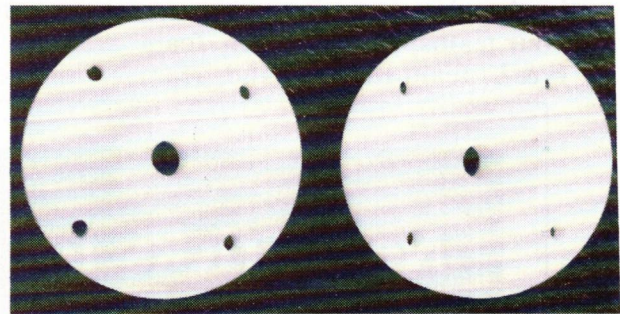
4107 FIBERGLASS DIRT OVAL CHASSIS
Same design, better for beginners.



1010 DOGBONE STRAIGHTENER
Straighten bent dogbone
shafts, ball ends, and
pins.



4110 DUAL WIDTH
FRONT AXLE RC10
Standard width or
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Screw stops axle
loss under loads.



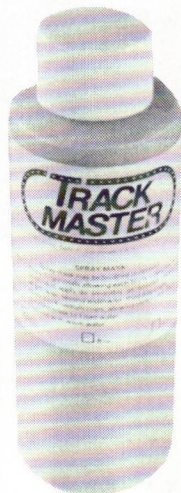
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TRC & BOLINK RIMS These
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tire and stay within the
9 7/8" legal limit.



4115 LONG DIFF SHAFT RC10
This shaft is longer so
the lock nut can work and
stop diff from loosening
under use. The screw lets
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and 1/8" Dremel
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Body paint mask.

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These sets & wrenches won't strip out.
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4130 RC10 RACING DIFF SPRING
4135 RC10 STAINLESS STEEL WING TUBES
4140 RC10 STAINLESS STEEL FRONT TUBES

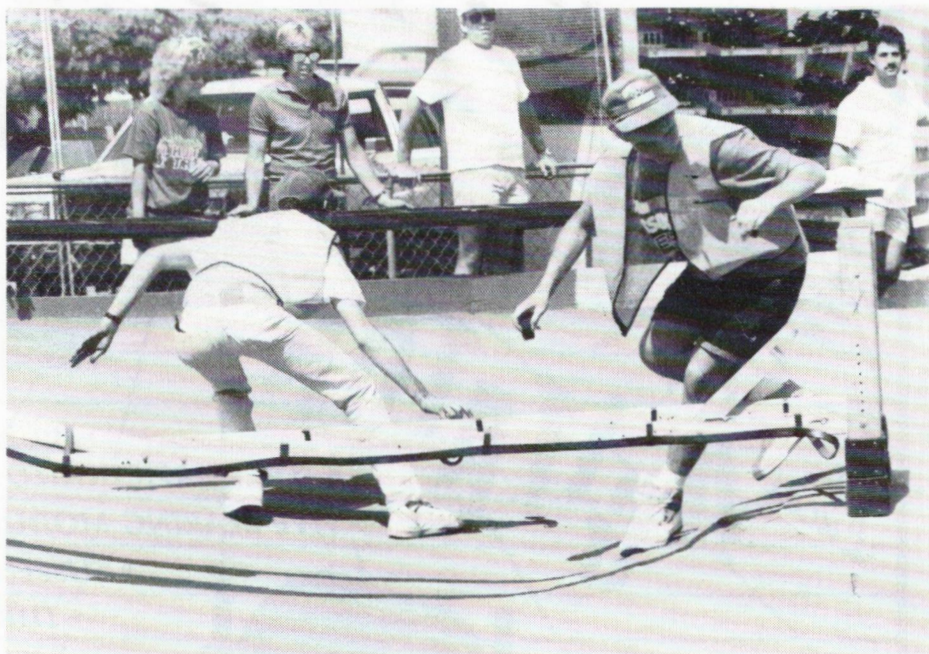
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presentations and giant sandwich parties, compliments of NORRCA and E & L.

Early Sunday morning Concours was held for the Open class cars and once again there was an abundance of extremely sharp looking rigs. Track Master's Bob Currie took a contraversial first place trophy for his immaculate 1/10 scale replica of a NASCAR stock car complete with a hand-made tubular frame chassis, scaled-down four link rear suspension with working third-member, and a plastic V8 engine hiding a Reedy motor. Though it wasn't really a competitive car on the track, the detailing on this model was absolutely breathtaking! Sean Young's SRP-1 won second place and Andy Bartucci's clean Sprint car took third. Best Engineered in Open class went to Jim Benicasa.

For the most part the program ran quite smoothly, at least up until Sunday when hot westerly winds put a crimp on racing activities shortly after noon. The winds had been steadily picking up all morning and by noon the dusty hot gusts were blowing the cars all over the track. The racing had to be called off twice during the last round of qualifying and a decision had to be made on how to proceed with the event. NORRCA's president JR Sitman made the mistake of offering three options to the race to vote on, and mass confusion immediately ensued as all the racers; standing in the center of the track, argued as to which option to choose. Sitman finally called the boisterous group to order and the decision was made to take a break and wait for calmer weather. It's not easy racing in these major events and officiating in them as well, as I'm sure Sitman would agree. The winds eventually calmed down enough to continue the racing; though the hotter conditions compromised the traction according to many racers. At any rate, the rest of the program went on without any further incidents. As



Turn Marshall Ballet... first turn aerobics at the Oval Nats.

with Friday's event, Sunday's activities were capped off with a great party held behind the E & L store and the racers munched on cold cut sandwiches, beans, salad and, punch while rapping about

the weekend's racing action.

After the party, trophies were presented, National champions were crowned, and Team Twister was awarded the Team Cup Trophy.



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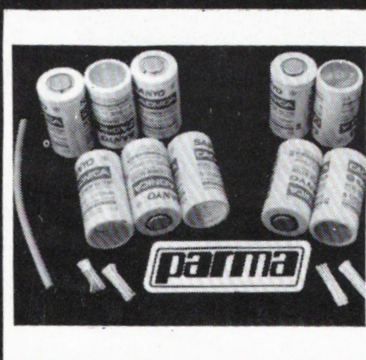
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TWO WHEEL STOCK

In the A Main event, TQ, Charles Reisbol (Team CRP) jumped into the inside groove first with Team E & L's Roy Powell, Rick Hagen (Track Master) and Tyler Clements (Track Master) in tow. Hagen and Clements took each other out as Pat Griggs (Hot Trick) moved into the second slot. Reisbol glitched and allowed Powell to grab the lead with Guy Merrick (Racer's Edge) right behind.

Hagen was in third until a wall knocked him down in position. The action was fast and furious in this heat and without NORRCA's AMB automatic scoring system, it would have been impossible to keep track of the numerous lead changes. Hagen made his way back into the lead with Reisbol chewing on his tailpipe. Reisbol kept diving high, then low, trying in vain to pass Hagen. Suddenly out of nowhere, Clements shot past them both into the lead and



Media Coverage...NBC cameraman (top left) filmed some of the action for channel 39.

immediately began overtaking backmarkers, skillfully passing in the low inside grooves! Clements hung on to the lead to the finish line and became NORRCA's first oval champion

ever to be crowned! Reisbol finished second and Merrick finished third.

There were five mains of 2WS and each one was jam packed with intense racing excitement.

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Full race results are listed at the end of this article.

FOUR WHEEL STOCK

Mike Bodman (Peak Performance) grabbed the holeshot in the A Main and was already coming up on backmarkers before the second lap! Jay Lewis and Keith Miller were hashing it out for the second slot until TQ, Sean Young (Associated) passed them both and began hunting Bodman down. Byron Burns (Twister/Andy's) moved into third and began closing the gap on Young. With about 50 seconds left in the race, Burns got past Young and began reeling in Bodman but there just wasn't enough time and batteries left for Burns to catch him. Bodman won the 4WS National Championship while Burns and Young settled for second and third.

STOCK SPRINT

Run for the first time in any

National event, the sprinters were the most exciting to watch.

Track Master's, Rick Hagen took the holeshot with TQ, Steve Allen (E & L) hooked onto his bumper. A crash in turn two held up Hagen as Allen took the advantage to take over the point position. Hagen went low to pass Allen but they both tangled causing a major pile-up! Hagen emerged from the carnage in the lead with Joe MacGregor (CRP) and John Peterson (with a list of sponsors as long as your arm) all in hot pursuit! Hagen put the pedal to the metal and never looked back all the way to the wire to become the first Stock Sprint National Champion with MacGregor and Peterson finishing second and third.

TROPHY DASH

The no-holds-barred, winner-take-all Trophy Dash, pitted the

top four qualifiers in each main, and yielded some of the most intense competition at the Nats. Strickly for fun and bragging rights, only one winner in each class was awarded. In 2WS Charles Reisbol took top honors. In 4WS it was Danny Marchase and in Stock Sprint it was Rick Hagen.

TWO WHEEL OPEN

There's a windspread belief in what is known as the TQ curse. Simply put, a racer winning the TQ may not place first in the A Main. A quick look at the results will reveal that the "curse" was alive and well at the Oval Nats. Probably no one felt the curse worse than Rich Stratton. However, starting int he pole position in the A Main event, Rich never made it to the second lap when his motor cam loose. Rich gets the "Hammer Headache" award

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Gary Guest won top qualifier 2WD A-Main event winner Modified Class
Andy Arron won top qualifier 2WD A-Main event winner Stock Class
- **1988 SCORE Off Road National Championships**
Andy Arron wins 2WD Stock MONSTER TRUCK Class
- **1988 Norrca Summer Series**
Andy Arron wins MONSTER TRUCK Stock Class
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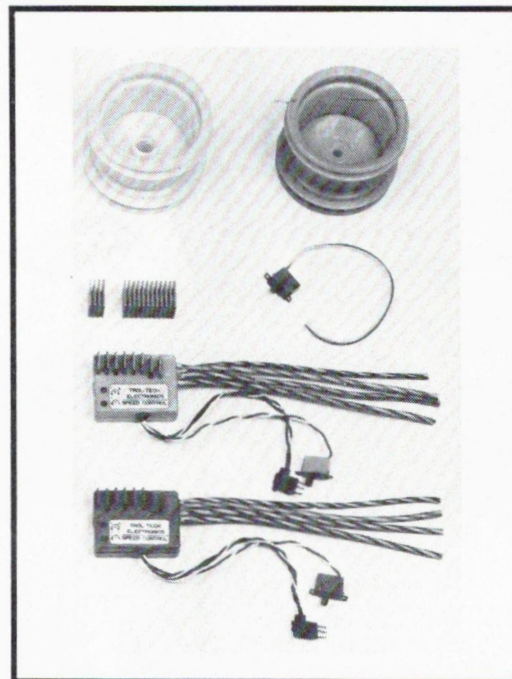
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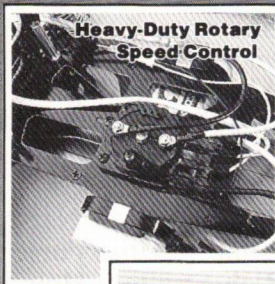
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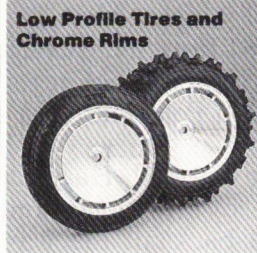
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Platinum Shocks

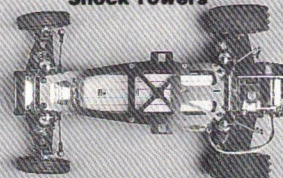


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Ball Differential



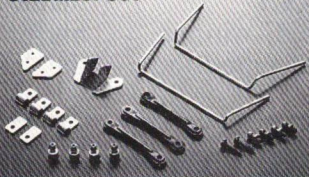
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Kyosho blew them away with the Ultima. Now the new Turbo Ultima puts you even further ahead of the competition. The Turbo Ultima represents the pinnacle in design, engineering, and off-road performance. Kyosho has added an unbelievable list of high performance hop-up accessories (valued at over \$350 retail) as standard equipment. Only the highest-quality race-tested components are used in its clean, effective layout. Its suspension system is made even more resilient with the addition of a special stabilizer set. Instantly adjustable Kyosho Platinum Shocks give you perfect dampening for any track condition. Low profile tires positively grip the track for race-winning traction on the most demanding off-road courses. The rear ball differential unit used by the Kyosho Racing Team and a complete ball bearing set provide you with super-smooth operation and significantly reduce power loss.

What about power? Kyosho has made the ultra-hot LeMans 240ST motor the stock powerplant on the Turbo Ultima, giving you extraordinary RPM and acceleration. All of these high-tech parts are housed in a durable aluminum chassis that not only protects, but allows you to make quick and easy adjustments. Yes, the Turbo Ultima has been souped-up and tweaked to the max for one important reason – to keep you ahead of the competition and keep you in the winner's circle.

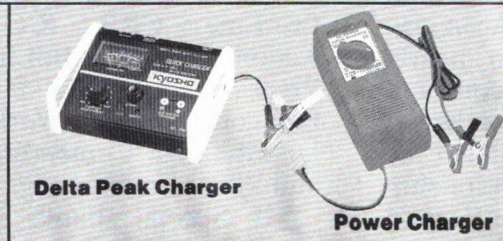
The anticipation is building...

The World Champion Ultima and Kyosho's unmatched winning reputation make the exciting Turbo Ultima R/C's most eagerly awaited buggy at tracks nationwide. If you are constantly tweaking your model, but it still doesn't quite measure up, don't worry. You can move up to the best for a price that won't set you back all racing season. And for 2WD electric off-roading, the Kyosho Turbo Ultima is simply **the best!** Get behind the wheel today and broaden the gap between you and the competition.

Complete your race-winning Turbo Ultima with these high-performance Kyosho accessories:

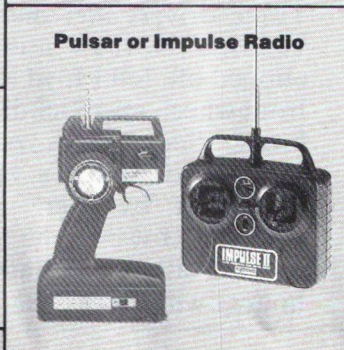


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for his misfortune.

Eddie Knoles (Cox/JG Mfg.); a well known name in off-road circles... took the holeshot in the A Main and never looked back! Martin Buchanan (RevTech), driving a hand built car, kept running Knoles down the entire race but just couldn't get past him. The sole independent driver in this main; Brad Thorn, was out after one lap as well. Allen Furakawa (Peak Performance) was sitting in the third slot until Team Losi's Pete Caudillo (who had worked his way up from the back of the pack), stole past Furakawa about three minutes into the race. Knoles was giving no quarter as he snaked through the traffic, lapping backmarkers left and right! With only a few seconds remaining, Caudillo got past Buchanan into the second spot. Knoles pulled off a brilliant wire-to-wire victory and became NORRCA's first 2WO National champion with Caudillo in second and Buchanan in third! Fifty-six entries filled out the

entire 2WO field culminating in six mains (A-F).

FOUR WHEEL OPEN

Danny Marchase (Reedy) grabbed the holeshot in the A Main with Twister's Erik Soderquist and TQ (and track record, 39/4:02.65) Curtis Strawn of Premier Designs, hot on his heels! Soderquist's horsepower may have been a bit too healthy at the start as the car was getting a little squirrely out of the turns. During one of these squirrely moments, Strawn passed him on the outside into the second slot and took off after Marchase. Soderquist got a handle on his ponies and powered his way past Strawn and Buchanan for the point position! Three drivers met doom in lap 12; Bob Novak's antenna was clipped off, Jeff Floyd lost the left front wheel, and Rick Hagen also broke. Soderquist's run nearly challenged Strawn's record but fell short by mere tenths of seconds! However, he nailed the 4WO National Championship honors with Marchase in second

and Team Twister's Russ Hawkins in third.

A rather impressive field of 52 entries in this class, culminated in six mains A through F!

OUTLAW SPRINT

A whopping 52 sprinters competed in the first ever Outlaw Sprint National event; a true testament to the growing popularity of the Sprint Classes!

If there had been an award given to the driver most sponsored, John Peterson would have won hands down!

Peterson's list included: Twister, Kyosho, JG Mfg., E & L and, even Yum Yum Donuts! With all this support, Peterson jumped out to the early lead with JR Sitman and Steve Allen in tow. Allen hung on to the second slot until he was caught in the back straight pile-up allowing Sitman to claim the second slot. If the loud whooping and hollering by the spectators was any indication, this was obviously a very exciting race to watch. Peterson took the Outlaw Sprint crown as well as set a new track record (34/4:03), beating the previous record by one tenth of a second! An unprecedented six mains were grouped in this class although the F Main wasn't run.

TROPHY DASH

Eddie Knoles was the unbeatable winner in 2WO, Danny Marchase was the 4WO victor and JR Sitman was fastest driver in the Outlaw Sprint.

NORRCA wishes to extend its gratitude to the following sponsors for their generous support in making this grand event possible: Team Hammer, Race Master, Tekin, Race Prep, AYK Racing, RevTech, McAllister Racing, Hot Trick, Bud's Racing Products, Parma, JG Mfg., Checkpoint, Futaba., Twister, Pro-Tech, Andy's, Speed/Sport, Pro-Line, CRP, R/C News, Action Trophy, BoLink, KO Propo, Novak, Big Boy Toys, Paragon, Custom Works, AKS Distributing, Competition Plus and Victor Engineering.

My Special thanks to Vicki

Mahan.

**2WD STOCK
A MAIN**

- 1st - Tyler Clements
- 2nd - Charles Riesbol/TQ
- 3rd - Guy Merrick
- 4th - Rick Hagen
- 5th - Sean O'Campo
- 6th - Roy Powell
- 7th - Joe MacGregor
- 8th - Pat Griggs
- 9th - Daniel Egger
- 10th - Dick Pat

B MAIN

- 1st - Barry Baker
- 2nd - Josh Cole
- 3rd - Jim Gouge

C MAIN

- 1st - David Markert
- 2nd - Randy Matthey
- 3rd - Pat Werkema

D MAIN

- 1st - Steve Messeri
- 2nd - Jim Takamoto
- 3rd - Mark Guerrero

E MAIN

- 1st - John Massengale
- 2nd - Jacob Neider
- 3rd - Jeff Maxwell

**4WD STOCK
A MAIN**

- 1st - Mike Bodman
- 2nd - Bryon Burns
- 3rd - Sean Young/TQ
- 4th - Bob Currie
- 5th - Mark Dunn
- 6th - Paul Pat
- 7th - Keith Miller
- 8th - John Peterson
- 9th - Jay Lewis
- 10th - Danny Marchase

B MAIN

- 1st - Joe Rojas
- 2nd - Don Winans
- 3rd - Ann Murray

**STOCK SPRINT
A MAIN**

- 1st - Rick Hagen
- 2nd - Joe MasGregor
- 3rd - John Peterson
- 4th - Roland Bayly
- 5th - Steve Allen/TQ
- 6th - J. R. Sitman
- 7th - Eddie Mondragon
- 8th - Edwin Barr
- 9th - Barry Baker
- 10th - Bill Steele

B MAIN

- 1st - Steve Perry
- 2nd - Hal Empey
- 3rd - David Wright

**2WD OPEN
A MAIN**

- 1st - Eddie Knoles
- 2nd - Pete Caudillo
- 3rd - Martin Buchanan
- 4th - Allen Furukawa
- 5th - John Peterson
- 6th - Tyler Clements
- 7th - Mark Oldfather
- 8th - Pat Werkema
- 9th - Brad Thorn
- 10th - Rich Stratton/TQ

B MAIN

- 1st - Blasen Blaser
- 2nd - Kevin Hobbs
- 3rd - Pat Griggs

C MAIN

- 1st - David Markert
- 2nd - Phred Gebauer
- 3rd - Josh Cole

D MAIN

- 1st - Dave Saylor
- 2nd - Barry Baker
- 3rd - Wayne Breanlt

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E MAIN

- 1st - John Massengale
- 2nd - Joey Sanchez
- 3rd - Chad Evarts

F MAIN

- 1st - Thomas Thomas
- 2nd - Jeff Floyd
- 3rd - Rick Hagen

**4WD OPEN
A MAIN**

- 1st - Erik Soderquist
- 2nd - Danny Marchase
- 3rd - Russ Hawkins
- 4th - Curtis Strawn/TQ
- 5th - Brian Landgraaf
- 6th - Sean Young
- 7th - Rick Hagen
- 8th - Bob Novak
- 9th - Jeff Floyd
- 10th - Rick Hohwart

B MAIN

- 1st - Paul Pat
- 2nd - Dave May
- 3rd - Greg Banks

C MAIN

- 1st - Chuck Murray
- 2nd - Brad Parrack
- 3rd - Larry Dunn

D MAIN

- 1st - Pat Werkema
- 2nd - Martin Marshall
- 3rd - Jim Greenemeyer

E MAIN

- 1st - Barbara Mondragon
- 2nd - David Miller
- 3rd - David Fields

F MAIN

- 1st - Dave Godfrey
- 2nd - Mickey Johnston

**OUTLAW SPRINT
A MAIN**

- 1st - John Peterson
- 2nd - J. R. Sitman
- 3rd - Steve Allen
- 4th - Roland Bayly
- 5th - Bob Chadeayne
- 6th - Rick Abate
- 7th - Rick Hagen/TQ
- 8th - David Markert
- 9th - Pete Caudillo
- 10th - Martin Buchanan

B MAIN

- 1st - John Smith
- 2nd - Bill Dirr
- 3rd - Allen Ketner

C MAIN

- 1st - Tom Dean
- 2nd - Tom Carter
- 3rd - Jason Takamoto

D MAIN

- 1st - Mark Fox
- 2nd - Edwin Barr
- 3rd - Steve Perry

E MAIN

- 1st - Roger Coldt
- 2nd - Justin Albright
- 3rd - Dan Moyinhan

F MAIN

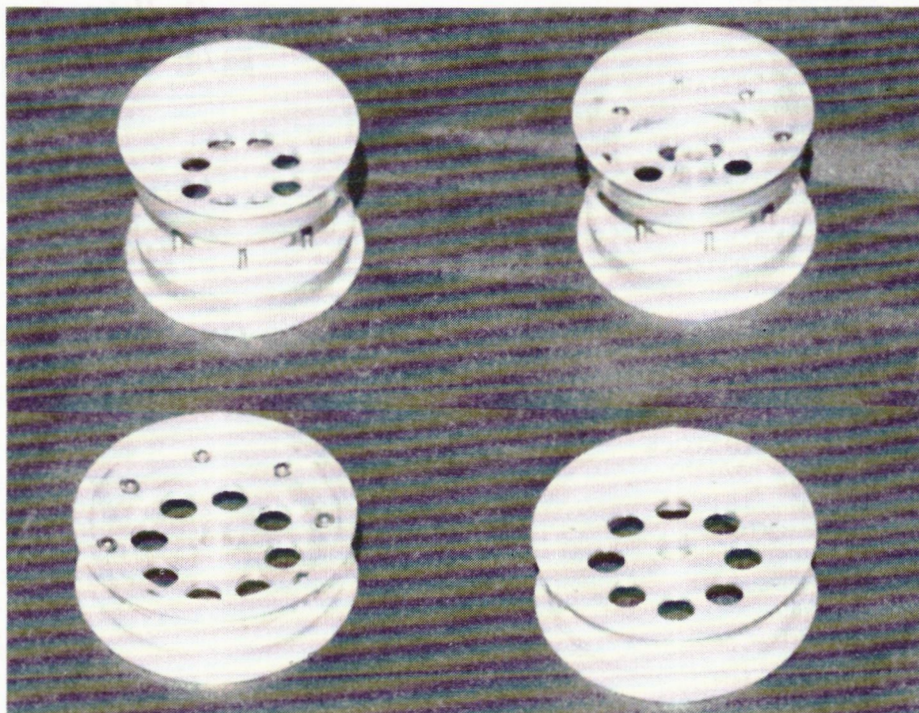
- 1st - Troy Kennedy
- 2nd - Tem Raskins
- 3rd - Randy Woodward

TECNACRAFT Components

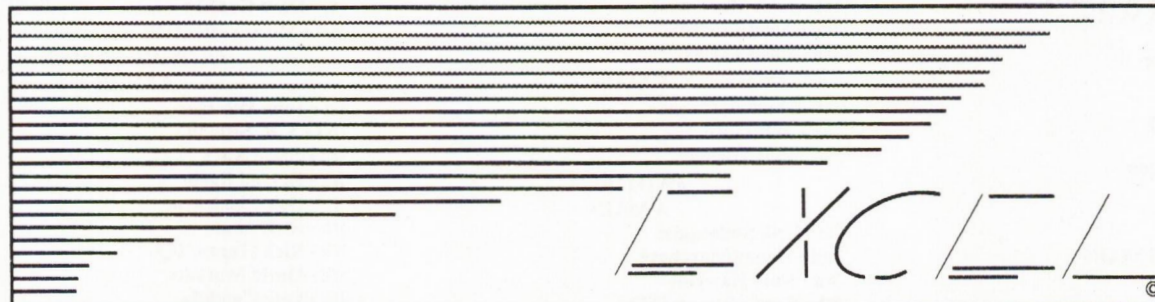
By Bob Crane

Tecnacraft of Salinas, California is manufacturing a superb line of accessories for the RC10, Kyosho Javelin, Optima, Turbo Optima, Ultima and Yokomo. The Tecnacraft three piece modular aluminum racing wheels are precision machined from aerospace alloy aluminum. They are designed to fit the aforementioned cars without adapters or special hubs. They accept stock tires without glue. The quality of the machining is very good. These wheels are the closest thing that I have found to full-scale mag wheels. In addition to the regular wheels you have "super lights." Super lights are designed to meet the needs of the serious competitor, as well as the weight conscious enthusiast.

The super light is a hand picked and inspected standard modular aluminum wheel that



RC10 "Super Lights". The craftsmanship is fantastic!



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undergoes an additional machining operation to remove approximately 25% more material from the wheel. This is accomplished with no sacrifice to the strength or structural integrity of the wheel assembly. Since the design of the entire line of wheels is modular it is possible to change tire size or go from standard to "super light" without replacing the entire wheel. Replacement parts are available from Tecnacraft.

The wheels are held together with allen screws. This enables you to replace parts of the wheel or add a new wheel center called spokes. A selection of wheel centers are available to fit the modular aluminum wheels. Designs in straight and tangential spoke patterns have been added to the Tecnacraft catalog. These wheels are really hot!!!

A new item for Tecnacraft is a 2 inch RC10 wheel. This wheel is designed to fit the low profile 2 inch tire for the RC10. This wheel is also available in super light. To add that finishing touch to your car, go for the real knock-off wheel nuts, that are precision machined from aerospace grade titanium alloy and threaded with a patented, self-locking thread form. Get the strength and durability of steel at half the weight. The Ti-Nuts are functional and come with their own special wrench.

At the request of many serious racers, Tecnacraft is now offering new suspension linkage tie rods. The tie rods are machined from strong, light, aerospace grade titanium alloy. You have the precision and convenience of turn-buckle linkage at half the weight of steel. They come with their

own wrench for adjustments.

Tecnacraft is here to stay. The quality of their products is fantastic. We are using them and are very satisfied. The following are list prices for Tecnacraft products: RC10 "super light" wheels set of four - \$114.90, Titanium knock off style wheel nuts with installation tool - \$26.95, RC10 tie rod set (6) pieces - \$19.95. Tecnacraft, 1335B Dayton Street, Salinas, CA 93901, 408-422-7466.

Till next time . . . tight cornering!!!

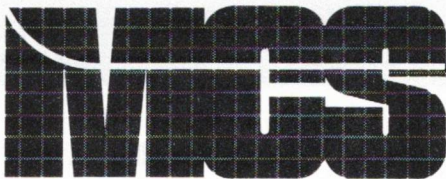
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Keep your car cool on the track with MCS heat sinks. The Motor Cover Heat Sink reduces thermal damage to the armature and brushes and also serves as a cover to seal out dust and dirt. Bond-On and Speed Control Heat Sinks help to eliminate heat build up on your motor and speed control modules for even better performance.

For more information about these great new products, contact your local hobby dealer or send a self addressed 3x5 card to MCS Products, and ask for the MCS Product Catalog.

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- D. Motor Cover Heat Sink
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- E. Bond-On Heat Sink
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#400 C (gold)
#500 B (blk) (vert)
#500 C (gold)
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MRC/Tamiya Launches R/C Off-Road Run For Fun

By Jim McLelland

MRC Tamiya has announced the kick-off of their spectacular R/C off-road \$100,000 Run For Fun Nationals. The first nationwide competition of its kind. Anyone with a MRC Tamiya off-road buggy is eligible, provided it is a stock car, right out of the box and not souped up or modified. The nationals have been designed so that anyone can win even if they've never raced before. It has been created to continue to spread the hobby to new people and keep the emphasis on fun!

The MRC Tamiya Run For Fun Nationals will be featuring prizes on a scale never before offered the R/C car hobbyist. First place finishers will win a full size Pontiac Firebird valued at \$15,000. There will also be \$15,000, \$7,000 and \$3,000 shop-

ping sprees. Here, winners will have 10, 5 and 3 minutes respectively to carry out of a specially stocked hobby shop, all the MRC Tamiya merchandise they can, up to the specified amount and time limits. In addition, MRC will have random drawings for "lucky losers" who will be picked at random to advance to the next level . . . and even go as far as the Nationals. For purposes of logistics, the country has been divided into 7 different regions. There will be local and regional events. Regional winners will advance to the Nationals, which are scheduled for the Summer of 1989.

To assure contestants that these are truly Run For Fun events, some races will be geared to those who have never raced before. For instance, there will be

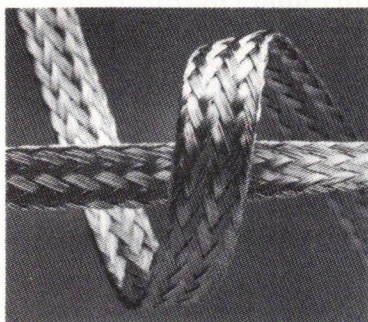
a Monster Truck "carry the egg" race. An egg will be attached to each vehicle. The winner will be the cars that run the fastest without breaking the eggs. There will also be 2WD and 4WD speed competitions. Local events will be run by local hobby dealers. In addition, to make everyone comfortable, there will be an orientation director present who can aid anyone who needs help to get started. Trophies and other prizes will be awarded at every race.

The contest rules are as follows: (1) Racers are responsible for their own transportation, lodging, meals and other incidental costs incurred, if they have to travel to any race including the nationals. (2) This contest is not open to the following people:

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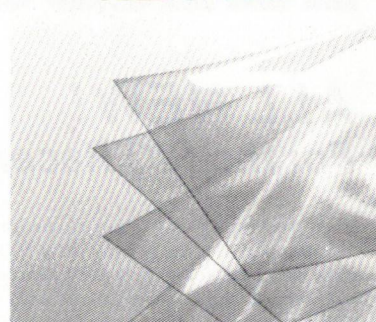
Ultra Braid is now a full 12 gage of fine electronic grade tinned copper braid. Capable of easily handling constant 55+ amp loads, Ultra Braid transfers power between cells with no measurable voltage drop or resistance. Ultra Braid actually has 35% less resistance than 14 gage wire. When nothing but the best will do, connect your cells with **STAGE III's** Ultra braid. Push it to the limits!

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anyone directly or indirectly employed by Model Rectifier Corporation including, but not limited to their advertising agency, lawyers, accountants, manufacturers reps, and/or any immediate family members of same. (3) Odds of winning depend on the number of contest participants. (4) All taxes, motor vehicle registration, licensing fees, and car insurance premiums are the sole responsibility of the winners. (5) In the event that the grand prize winner of the Pontiac Firebird is a minor, his or her parent or legal guardian may accept the prize, or the winner may choose to substitute a \$15,000 hobby shopping spree for the car. (6) Void where restricted or prohibited by law.

The races will be split up into Seven Regional areas. Region I - Maine, Vermont, New Hampshire, Massachusetts, Connecticut,

Rhode Island, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia. Region II - Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, Florida. Region III - Wisconsin, Michigan, Illinois, Indiana, Ohio, Kentucky. Region IV - New Mexico, Oklahoma, Arkansas, Texas, Louisiana. Region V - Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri. Region VI - California, Nevada, Utah, Arizona, Hawaii. Region VII - Alaska, Washington, Oregon, Idaho, Montana.

The race rules are as follows: (1) All racers must sign and adhere to the MRC Tamiya Sportsmanship Code. (2) Racers may only compete in one region for the regional championships. (3) In the preliminaries, 1st, 2nd,

and 3rd place winners of A Mains in each class will automatically move up to the regional championships in the events they won. There will be one additional winner at each preliminary race that will be selected at random to move up to the regionals. (4) In the regionals, 1st, 2nd, 3rd, 4th, and 5th place winners of the A Mains in each class will move up to the national championships race in the events they won. There will be one additional winner at each regional race that will be selected at random to win a prize and move up to the nationals. (5) Racers are encouraged to compete in different classes. Only one Grand Prize will be awarded to each winner of the nationals. (6) Current Tamiya cars and discontinued Tamiya cars are allowed to race. (7) For all classes, racers must use a stan-

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Trinity Shootout Champion
TQ, ROAR 1/10 On-road Champion

TYLER CLEMENTS

NORRCA 2WD Stock Oval National Champion

JAY HALSEY

NORRCA/SCORE 2WD Stock Champion
NORRCA/SCORE Heavy Metal

CHRISTIAN KILL

U.S. Indoor Champion, Cleveland

JIM FULLER

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RESULTS ARE IN!

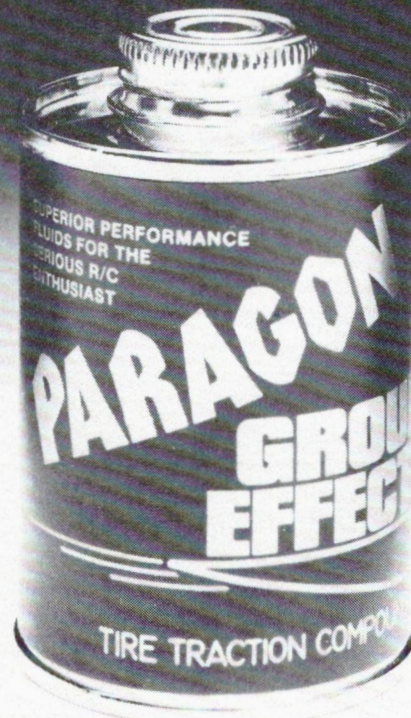
**THE
WINNING
SEASON**

standard MRC Tamiya production car as shipped from the factory. The only after-market parts that may be used are tires and batteries. Batteries must be 7.2V 1200 mAh. No hop-up parts are allowed. Electronic speed controllers are not allowed. (a) In any race, MRC or the appointed race director has the right, without cause, to randomly select any drivers that will be given a MRC supplied stock 540 motor that has to be used instead of the motor that is in the car. (b) MRC or the appointed race director has the right, without cause, to inspect any car before or after any race. This may include completely disassembling the car to ensure that all parts are stock and not modified in any way. Parts may not be trimmed or shaved down. (c) Bodies must be the original Tamiya body that comes with the kit. They must be painted. Modifications such as trimming or cutting are not allowed. (8) Factory team members sponsored by any manufacturer or importer/distributor are not allowed to race in the MRC Tamiya Run For Fun series.

There will be national champion winners in each class/event. Classes are as follows: (1) 2WD Production - Motors must remain stock Tamiya 540 except for the Grasshopper. It can use a standard Tamiya 540 motor instead of the 380 motor that comes with it. All Tamiya 2WD off-road cars are allowed. (2) 4WD Production - Same rules as 2WD Production except that the following cars must change their motors to stock Tamiya 540 motors: 5854 Supershot, 5857 Bigwig, 5859 Porsche 959, 5864 Toyota Celica, and 58072 Avante. The 58072 Avante does not come with a speed controller. It must use a standard Tamiya speed controllers such as part no. SP1054. Electronic speed controllers are not allowed. (3) Monster Production "Carry the Egg" - All Tamiya Monster vehicles can compete. Must use a stock Tamiya 540 motor. Tape a raw egg onto the front bumper and complete race without breaking.

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Putting the eggs in plastic bags will keep the track clean. If the egg breaks, you're disqualified. Obstacles and/or jumps make the race more exciting. If everyone breaks their eggs, the last one to break is the winner. (4) Anyone Can Win - There will be an additional winner chosen by random drawing at the end of each race including the national championship race.

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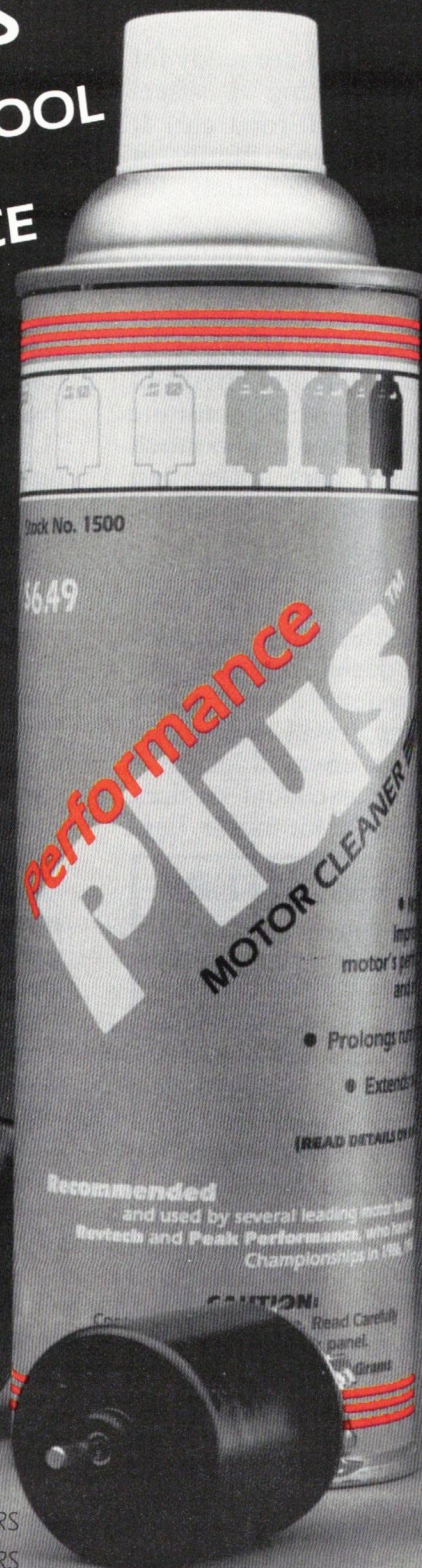
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Kyosho Optima Mids

Article and Photos By Eric S. Gudger

So you think you are ready for a ground wrenching 4 wheel drive 1/10 scale off-road car! If so, one of Kyosho's family of Optima Mids is definitely for you.

Kyosho has made a name for itself by building first rate cars that can be run in kit form or easily and simply changed to meet the varying requirements of the owner. The Mids continue this theme plus give you so much more. These cars offer an excellent value in a 4 wheel drive off-road car.

The state-of-the-art design of the Mids has powered it to many wins around the globe. Included as standard design is a very efficient belt system, a mid motor location, long travel suspension arms using an unequal length A Arm principle, excellent kit tires, an unbelievable kit motor, light

weight one piece rims, ball ends at all steering and upper suspension points, very fine shocks, an excellent pictorial instruction manual, and some excellent adjustment tips.

There is not much more you could ask for, but with our help, guidance, and suggestions, you will find the Optima Mids to be a formidable foe at any event. Featured in this article is "Choosing the Mid" which will help point out the features of each kit and help you make a choice on which car to buy.

"Converting the Mid" will identify the parts necessary to convert the original Optima Mid into a Turbo Optima Mid SE. "Building the Mids" will cover basic construction suggestions to help with the kit versions. "Modifying the Mids" will incorporate changes in the car that will reek havoc on the track. "Igniting the Mids" will further refine the car into an absolute brute. Whatever your choice of car, use our suggestions as a starting point for your setups. Then make only ONE change at a time. Keep good records of how the changes affect the car and the final setup used on the car for that day. Good Luck in your racing. Now for some fun!

Choosing a Mid

Which Mid kit should you start with?? That really is a good question. Should you buy the original Optima Mid or the new high tech Turbo Optima Mid SE? Since both cars use the same basic configurations, the question boils down to which is a better value. In my opinion, the Turbo SE is far superior, kit wise. Its standard list of parts include many that I highly recommend. They include: front and rear ball diffs, heavy duty chassis, a com-

plete set of ball bearings, light weight fiberglass suspension mounts, swing shafts, sway bars front and rear, Platinum shocks, silver metalized wheels, and a heavy duty rotary speed controller. Some of these parts you may not appreciate or use at every race. They are, however, very necessary when completing a full arsenal of products necessary to do battle on varying tracks.

The original Mid Optima is a very versatile kit that in itself offers an excellent value. Besides the excellent suspension set up, this kit comes with the simple to adjust and very consistent gold series of Kyosho shocks. As time and pocketbook permit, the car can be upgraded to the same specs as the SE or it can easily be built beyond those specs. The choice is up to you. Just remember that either kit is excellent.

Building the Mids

Either Mid can be built into a multitude of configurations. In this section, we will work with the kit cars. Since the two Optima Mids represents a different philosophy, only minor but important changes will occur in this section. If you want to convert a Optima Mid to a Turbo SE model, check out the previous section. Plan ahead. Several additional items will have to be purchased before construction is started.

Begin construction by carefully reading and studying the instructions completely. You must be familiar with the necessary steps and procedures before you begin. If you need some extra tools or parts, now is the time to stop and go out and pick them up.

The first thing you want to do is clean and oil the ball bearings.

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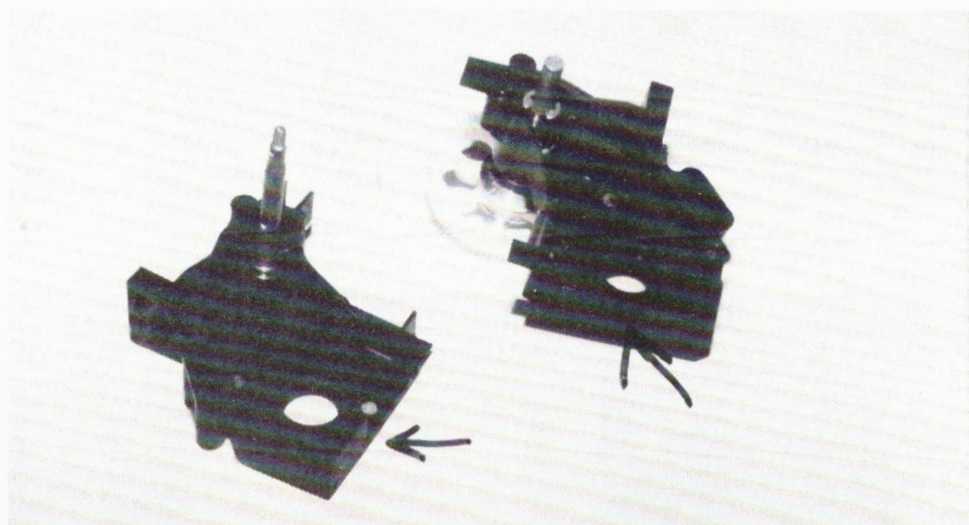
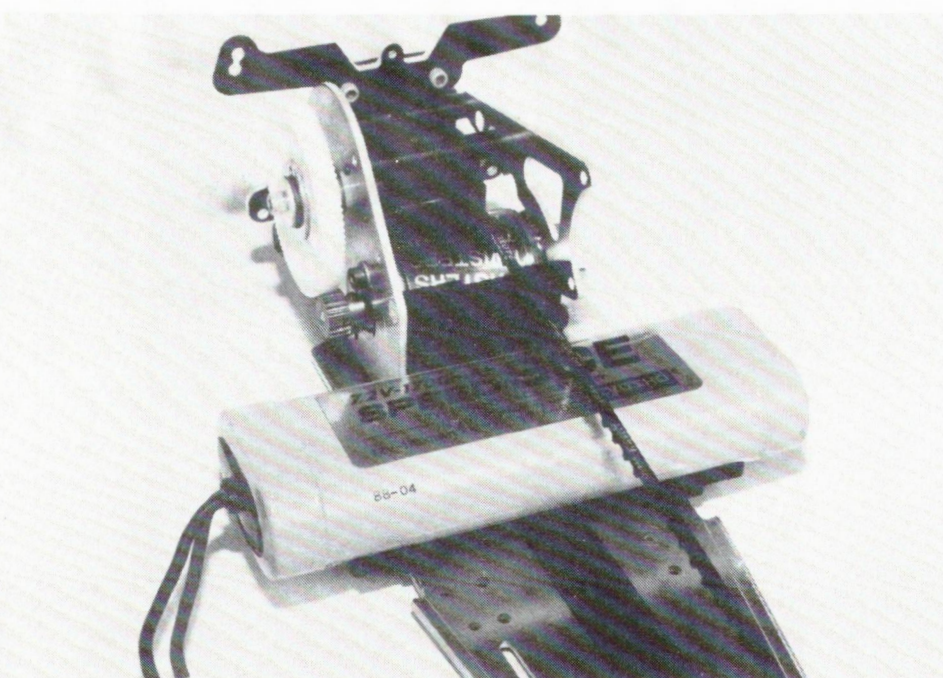
Use the Team Pit Stop #3001 cleaner and #3003 dielectric bearing oil. This oil also works very well when lubricating the bearings or bushings in motors. Apply a little Bud's Racing Products #7460 silicone grease to the face of the bearings. This will help to keep the bearings cleaner. Blue Loctite is always used to seat all metal to metal points.

Starting with the rear transmission, a Robinson Racing #75 aluminum idler gear is slipped into place. Make sure the transmission gears are all centered correctly. Space as required. Assemble the transmission without the belt. Check that everything spins freely. Relieve the necessary areas. Disassemble and slip the belt in place. Do not use any grease on the gears! This can cause belt problems later.

As we move on to the "Installation of the Spur Gear" section of the instructions, a Robinson Racing #070 48 pitch machined 85 tooth spur gear is installed. These gears are the best. Accept no substitute! Be sure to Loctite the gear protector plate "B" to the spur gear shaft. Use a 3mm nyloc nut to correctly tension the spur gear. I prefer a locked gear, but adjust as you require. Notice how round and true the Robinson machined gears are. That is what makes them so good. When adjusting the backlash with these gears, run very little. Fact is, you should not feel any notching motion between the pinion and spur gears.

Assembly is fairly straight forward until you get to the belt covers. At all places where a belt cover is installed, clear silicone sealant is used between the covers and the chassis plates to insure that no dirt gets inside the transmissions. This is very important. You are just asking for major trouble if grit does get into the transmissions.

At the front end, make sure that the A Arms and the steering arms rotate smoothly. Loctite the king pins in place. For a starting



Above: A partially assembled SE with the new Kyosho 1700mah SCE battery pack. Below: The arrows point to a couple of areas to look for contact when assembling the rear transmission.

setup, I prefer not to run front or rear sway bars. However, keep them on hand in case they are needed. If you need to quickly lose bite at either end of the car, just install the appropriate sway bar.

Before assembling the front shock mount, a new upper suspension hole will need to be drilled. 8mm up from position "B" locate and drill a 3/32" hole. Measure carefully. Also, make sure the ball end does not rub the transmission case. Notch as required. This new suspension attachment point will keep the front tires from cambering in too much. It really helps to stabilize

the car in the turns. Use Team Pit Stop #4016 turnbuckles for the upper links. Loctite the aluminum

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Completed Modified Optima Mid (short version).

drive washers to the output shafts.

At the rear, a SRS #07033 three degree fiberglass toe in bracket is used. This increases the toe in and gives the car more rear bite and stability. A five degree bracket, SRS #07035, is available for even more stability and rear bite. Another set of Team Pit Stop #4016 turnbuckles is used for the rear upper suspension arms. These nickel plated units are primo! On the aluminum rear rod plate, use the second inside top row hole as the inner attachment point. On the fiberglass plate, use the first inside top row hole. If you need more high speed rear bite, use the bottom row mounting point.

Moving back to the front, Team Pit Stop #4017 turnbuckles are used to connect the servo saver to the steering arms. Adjust as indicated. Use a little toe out with the car sitting flat. The more toe out in the front, the more ackerman effect takes place.

Assemble the shocks as shown. Use a little Bud's Racing Products silicone grease on the



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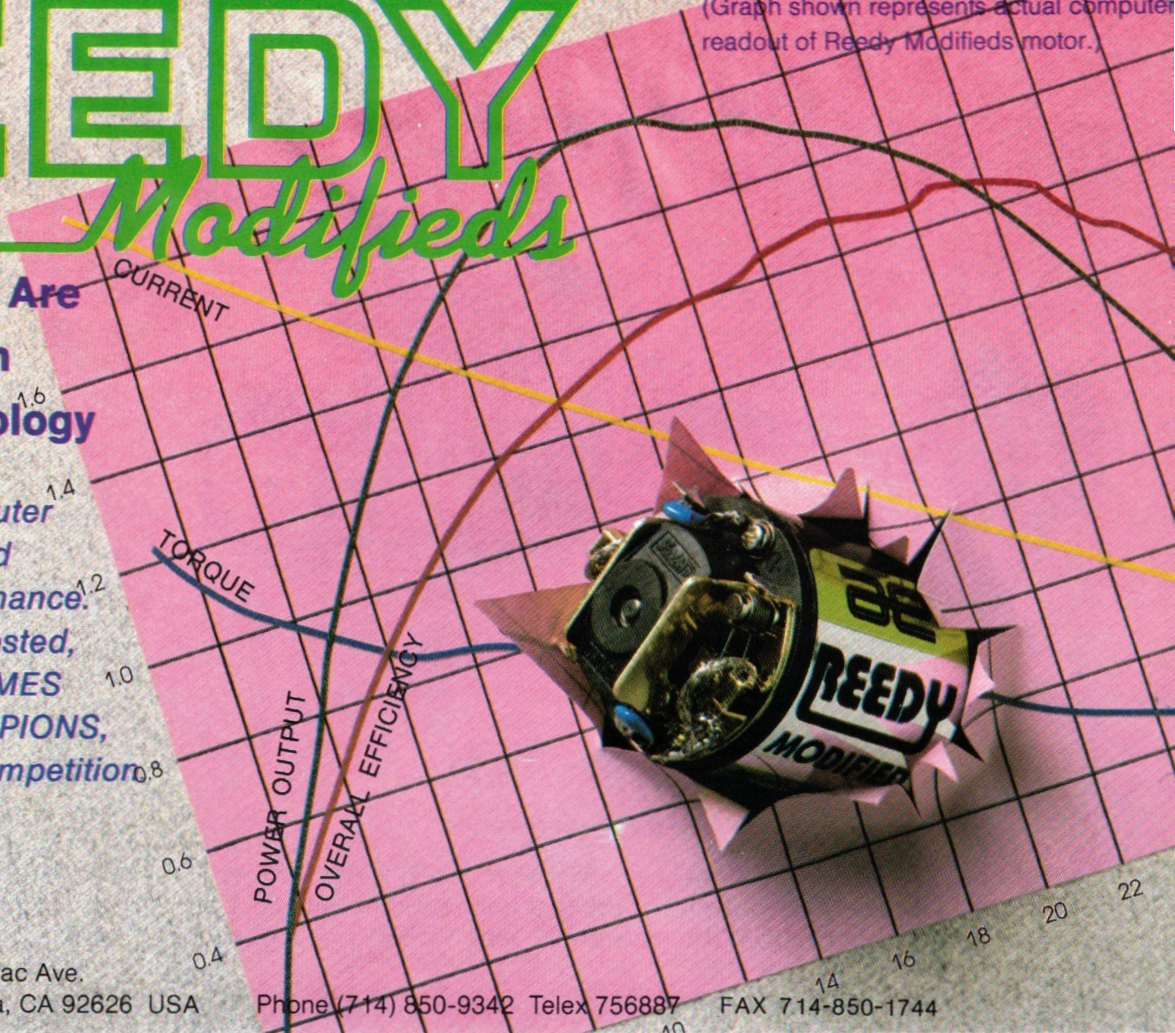
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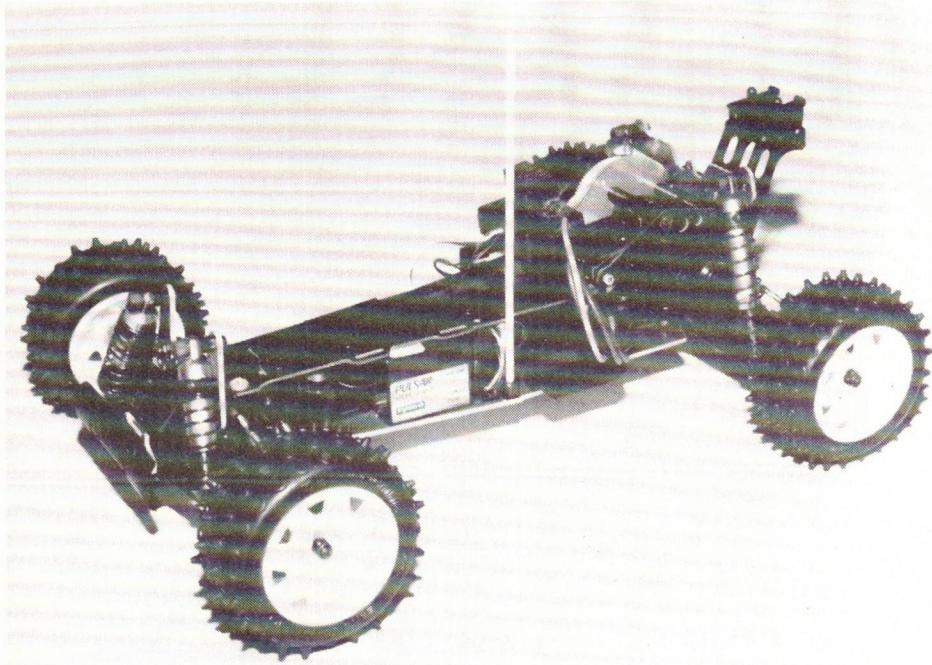
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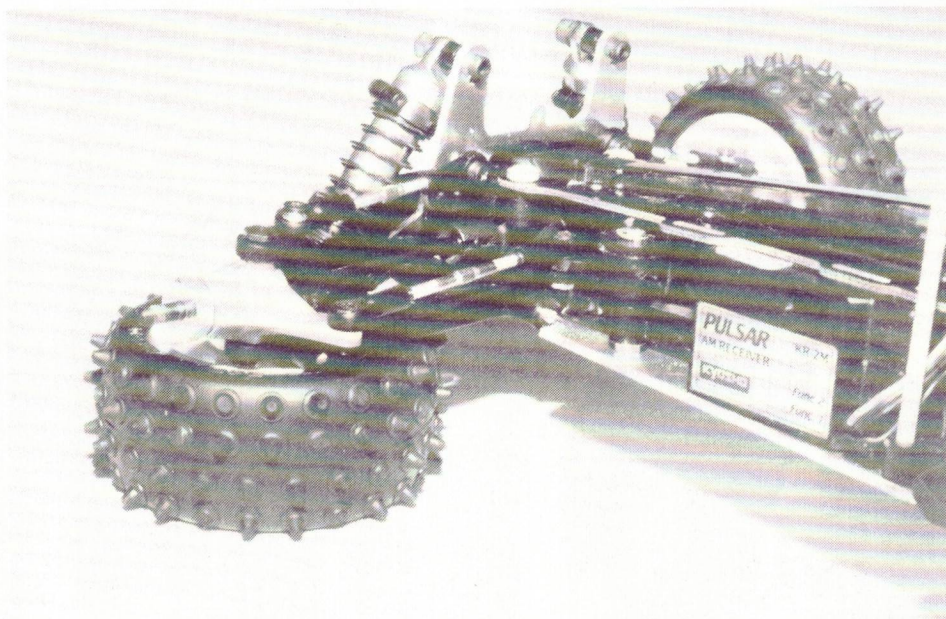
The basic layout of an assembled stock Optima Mid.

o-rings and the shafts. If you have too much friction, polish the shafts with crocus cloth. With the gold shocks, Robinson Racing #160 30 weight shock oil is used front and rear. With the platinum shocks use 20 weight oil. These shocks have more friction and need lighter oil to work properly. Install the shocks using the upper mounting holes. Bud's Racing Products #7551 nylon nuts are used to hold the shocks safely in place. Use the outer mounting point at the lower rear shock A Arm location.

Complete assembly of the car before installation of the radio gear is attempted. Do not forget to silicone seal the belt covers completely. Use a Bud's Racing Products #7115 filter on the motor. Also, put an air release hole in either the rim or the tire.

After the rolling chassis has been assembled, go ahead and install the radio gear. We used the Kyosho #2555 Pulsar EXP-2001 radio gear. It is an excellent choice in radio equipment. It is light weight, has an assortment of adjustments, and is built of excellent quality. To power the kit supplied 240ST motor, we used a new Kyosho #2329 six cell 1700mah battery pack.

We were really surprised with the pep and speed of the car. The motor was VERY responsive



This photo shows the revised steering setup necessary when using the different caster blocks.

while these new Sanyo batteries provided the extra run time required by a six cell 4 wheel drive car. The handling of both cars was very good. The SE would dive in a lot harder due to its stronger chassis and ball diffs. The geared diff Mid preferred to hold the middle of the track. Keep this in mind when selecting a diff. The geared diffs push a lit-

tle more. For ever more push, lock up a geared diff completely.

But overall the cars worked very well on a multitude of different tracks and conditions. Each car worked well where they were expected to. They were fun to drive.

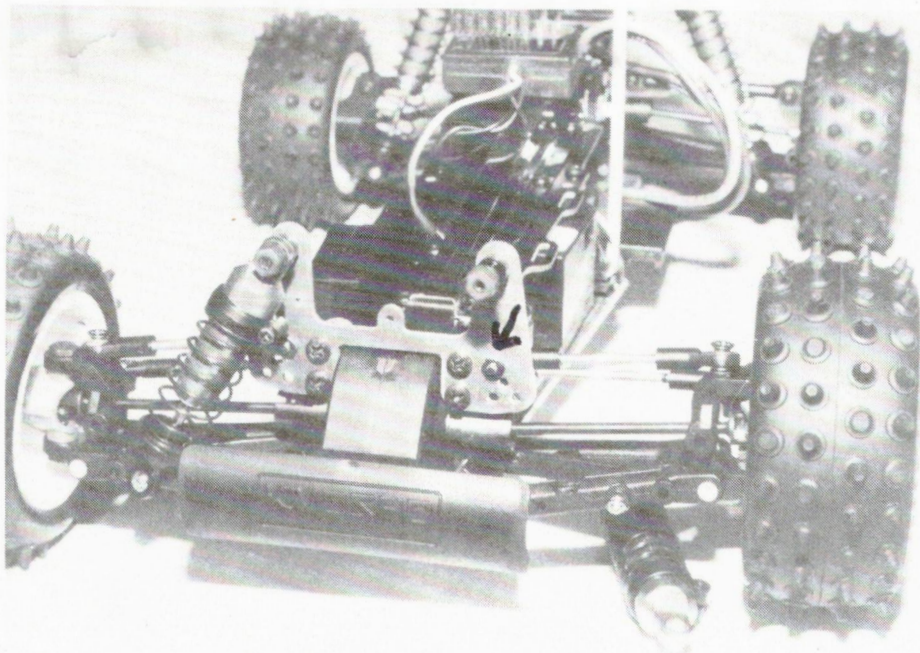
Converting the Mid

To convert your original Optima Mid into a Turbo Optima Mid SE replica will require the following items: ball bearing set, W5003 front platinum shocks, W5004 rear platinum shocks, W5061 swing shafts, W0107 front ball diff, W0108 rear ball diff, OTW01 sway bar kit, OTW02 fiberglass suspension mounts, and OTW03 heavy duty chassis. That is it. Not many parts at all. The nice part about this approach is all the extra items you have to help dial in your car to the track.

Modifying the Mids

Modifying a Mid will take on a different meaning depending on which car you start with. If your kit already has a part we mentioned, continue onto the next item.

To begin with, Team Pit Stop aluminum screws, the #5000 series, are used throughout the



The new upper front suspension mounting hole.

cars. The light weight and strength of these screws has been well proven in battle. I use them regularly. Ball diffs Kyosho W0107 front, and W0108 rear, are put in the appropriate transmission. When replacing the diff balls do not use the hardened high grade balls found on the market today. These can severely damage the diff's face plates.

Bolt the two transmissions to a Composite Craft graphite chassis. This chassis has slots for saddle pack batteries. Its quasi-isotropic layup is light weight, strong, and consistent on the track. Prepare the chassis by filing the edges around the battery slots so that the batteries drop down flush to the bottom of the chassis. Apply red Loctite to the edges to seal the exposed fibers.

Light weight fiberglass suspension mounts are used at both ends of the Mid. Either Option House OTW02 or SRS #07042 units are acceptable. The SRS units are made from a little thicker glass. They weight more but are a little stronger.

At the front end, a Kyosho OT047 less caster front hub set is slipped into place. Right and left steering arms are reversed so that the "R" arm is on the right side

and the "L" arm is on the left side. The steering rods will have to be mounted on top of the servo saver arms. These changes will give the correct amount of bump steer necessary with this length of car. Kyosho W5061 swing shafts are used at both front and rear locations. As before, Loctite the drive washers.

Houge Enterprises #120 aluminum wing mounts are used to hold the wing and the rear shocks in place. This really simplifies the whole wing setup. Trinity #RC6008 wing buttons and 1/16" piano wire are used to hold the wing down correctly.

A seven cell pack is assembled using Sanyo random SCE cells and Bud's Racing Products #6925 braid. Novak running gear is conveniently installed. Using a SRS #02070 aluminum rw,02spacer, a Twister #1001 Hurricane motor is fitted in place through a Robinson Racing #090 21 tooth pinion and the #070 85 tooth spur gear.

Those are the only changes. The car weighed in at a modest 56.4 ounces. Just right for ROAR racing. Not bad considering that not much time or effort was spent trying to lighten the car. The performance results were unbeliev-

able. Now the Mid was predictable and a whole lot more fun to drive. The graphite chassis, the new caster blocks, and the front and rear diffs really let the car charge hard and deep into the turns. The excellent Novak NES1X controlled the power from the Sanyo cells to the rocket Twister motor with ease. This is the first time I have tried these motors. I am extremely pleased with their performance and durability. They worked well with Sanyo SCs and SCRs. Give them a try. You will appreciate them also.

The car worked very well in the tight sections of the track as well as on the sweepers. What a blast to go in so deep into the turns.

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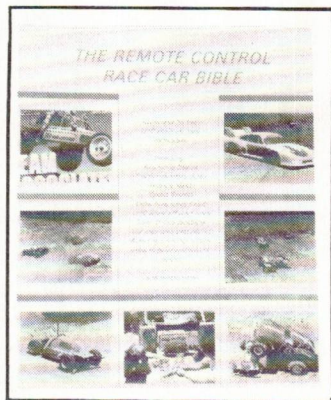
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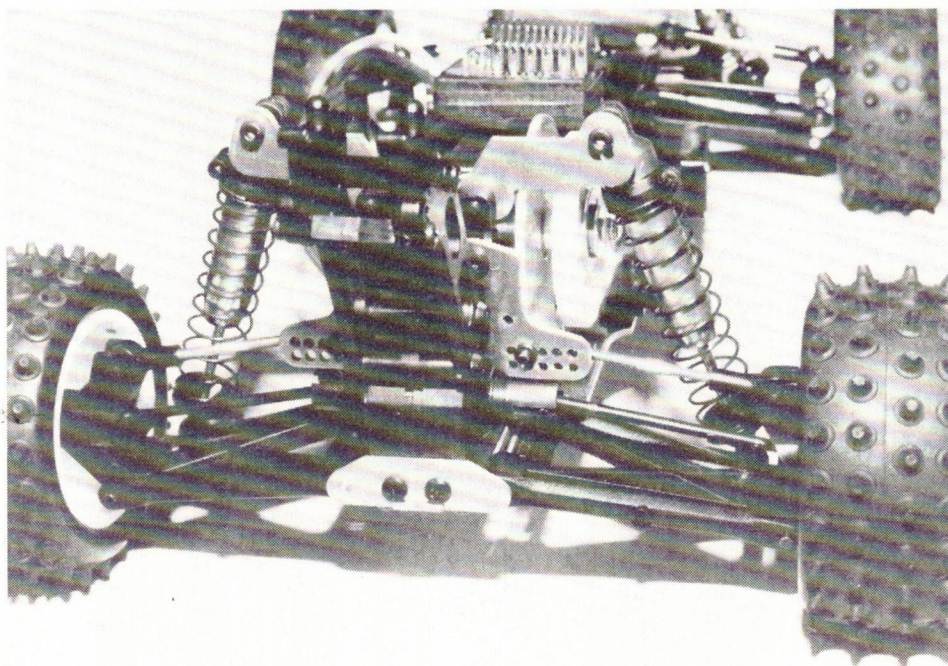
Igniting the Mids

The stock wheelbase Mids were so much fun that I was very reluctant to build a longer car. But the facts were that charging hard off of some steep double jumps and in the deep whoops of a sweeper, the stock length Mid was sometimes a handful. On a tight twisty track the car was awesome. Open the track up and it needed a little more stability.

A call to the fine folks at Scale Racing Sports, aka SRS, put us in touch with their #07015 long/wide graphite conversion kit. Included in the kit are graphite upper and lower trays, upper and lower belt covers, a longer belt, and hardware. The saddle pack design was again the way to go. For those interested in a fiberglass chassis kit, SRS #07014, is available.

Installation was a breeze. A slightly modified Houge #145 steering bell crank kit was slipped in place. You will need to remove some material like the Mid's instructions show for the Mid's stock servo saver. Also remove some material from the bottom of the bell crank so that the M2.6 pivot balls will attach correctly. Use one of the stan-

dard servo spacers on each side to correctly space the unit above the chassis. Two 8/32 x 1" aluminum flat head screws are



This is the location for mounting the inner upper suspension arm.

used to hold the cranks in place. You will need to recountersink the existing holes. Trim the input arm to correctly space the ball nut.

A Delta #11337 mount is cut to length and drilled to be used as a chassis deck post and a servo mount. Use the rear middle hole in the new chassis. An additional

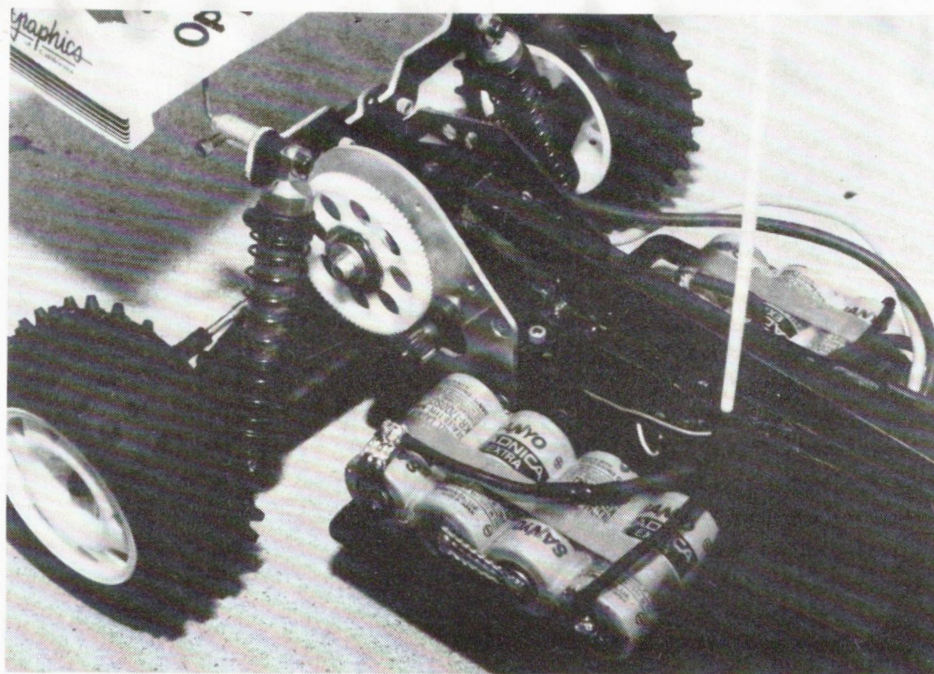
hole is drilled to correctly locate the servo for the stock servo mount. Attach a Kimbrough servo saver to the Novak servo. I slotted the chassis so that strapping tape could be used to hold the batteries in place. The SRS chassis comes with holes for using posts and battery straps. Use whichever method is more convenient.

Up front a Kyosho #W0106 one way diff is installed to give a little more steering going into the turns with the longer car. You may want to try moving the upper arm to the "B" location to give the car a little more steering when the suspension bottoms. Adjust the height of the ball ends on the steering arms to give the car more toe out when the car's suspension settles down.

In the rear, go back to the stock toe in brackets while spacing the front of the rear suspension

mount up approximately 3/32" with three degree spacers and nylon shims. This increased angle to the rear A Arms allows the car to attack the track harder without jumping around. Be sure to file the fiberglass rod plate so that the upper suspension rod clears adequately.

In the rear transmission, the



Layout of the Sanyo SCE batteries using the Composite Craft graphite chassis. There is enough room between the batteries to place the Novak receiver. The Houge mounts are used to locate the upper shock.

output shaft is machined to eliminate the 5mm collar between the outer right bearing and the "B" gear plate. This allows the upper shock mount to be moved in 1/4" and down slightly. The shock should still clear the spur gear. Houge mounts are still used in the upper standard shock mounting holes. The awesome Twister 15 turn motor is installed without a spacer. Rotate the pinion 180 degrees so that the set screw is on the outside. Carefully trim the rear section of the stock body for the new mounting point.

Some of these changes are a little more extensive than others. Altogether they produced only a slightly heavier car at 56.6 ounces. But what a difference the car was on the track! Over jumps and in the fast rough sections the long Mid would just float. What a dream!

With a set of Team Losi Prime Time matched Sanyo SCE batteries, the car really showed its prowess on the track. It was not any faster speed wise, but it ran the full four minutes like a scaled ape with an improved bottom end punch. It never slowed at all! This certainly proved to be a very



Location of the new upper rear shock holes when the output shaft has been modified.

potent combination. These matched batteries made quite a difference in the car's performance.

Final Comments

All in all we were very pleased with the outcome of project Mid. Kyosho offers such a large selection of hop up items that the car was easy to build into a multitude of configurations. The car

can easily improved as the driver does.

One thing you want to do is check out some of Kyosho's excellent line of tires. Both the W5031 and the W5032 proved to be the tire to use on certain tracks. Do not be afraid to cut some of the knobs out of the front tires if the front end comes around too much.

For the short twisty tracks, the standard length Mid is definitely the hot set up. For the faster and rougher tracks the longer car works better. Which one you choose will depend on your driving style and interests.

Special thanks to Mike Dolan, Mike Houge, and Kevin Kelsey for their help with this article.

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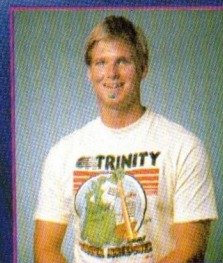


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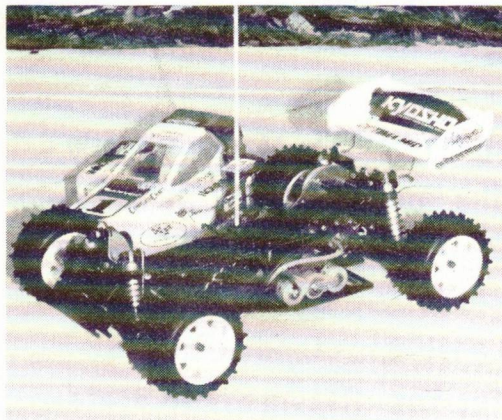
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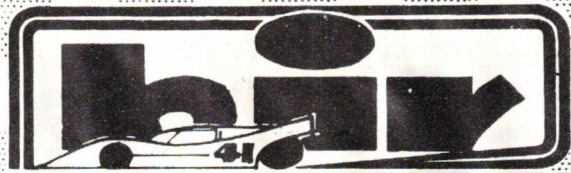
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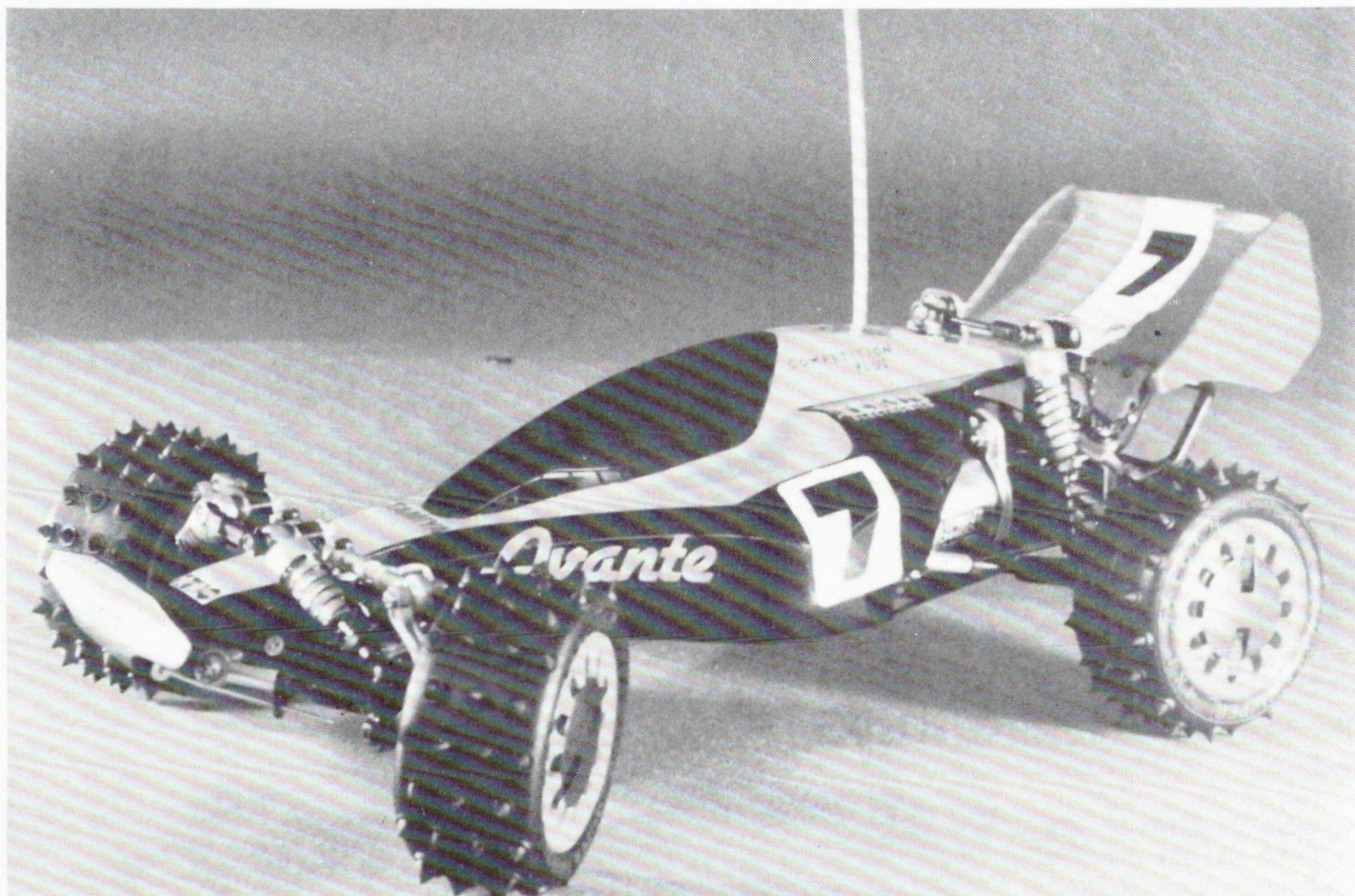
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By F. Dale Cauthen

Photos by Theresa A. Cavanaugh



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Chassis construction is of a composite material. All metal plates are thick aluminum and major suspension rods are steel. Gears are 48 pitch and the kit

contains 22 ball bearings including both the smallest and largest ball bearings I've seen in an R/C car. The driveshaft has been redesigned from previous Tamiya cars and is both simpler in design and stronger than previous units. Shocks are newly

designed, top quality, and partially assembled to save you the complications of inserting the bottom seals and their retainers. Also included are the new sponge inner tire liners that prevent both ballooning at high speeds and bouncing on lan-

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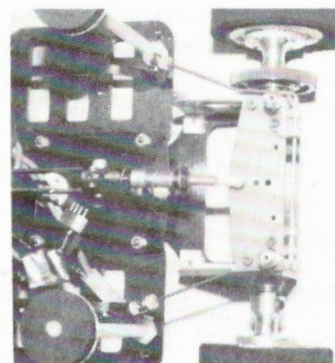
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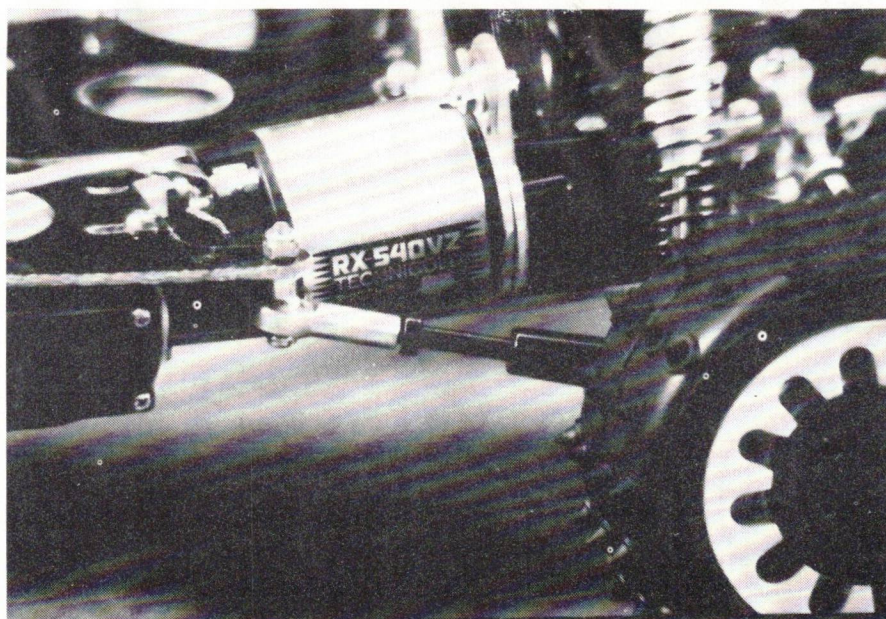
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dings. Wheels are one piece with "knock off" style hubs and mount and dismount easier than any others on the market while being both durable and contributing to the hi-tech appearance of the car. The body assembly includes an undercowl that helps keep dirt out of your car and its mechanical workings.

In short, everything in this kit is what you would want on a car you were designing for yourself and it truly is, as advertised, complete for racing. The car is designed for an electronic speed control, so all you need is a radio receiver, one servo for the steering gear, and the electronic speed control of your choice. I used a Futaba S148 servo for the steering and the superb new Tekin Pro speed control which is extremely small and light with incredible responsiveness, both plugged into Tekin's new unbelievable small micro receiver. With this combination, everything mounted up simply and quickly. This is the first car I've ever built straight out of the kit,



Changing motors is a simple matter of removing servo and suspension arm screws, then two motor bracket screws, exemplary of the ease of maintenance throughout the Avante.

according to the instructions, and taken right out to race, with expectations of winning.

It's difficult to find any nits to pick with this car and I had to look long and hard for anything to pick on. The design is so thorough and so well executed

that there are no faults to be found with the car as a whole or with any of its component parts. Its steering travel is so extreme that the car can practically turn around in its own tracks. The suspension is so strong that I don't expect to have to replace

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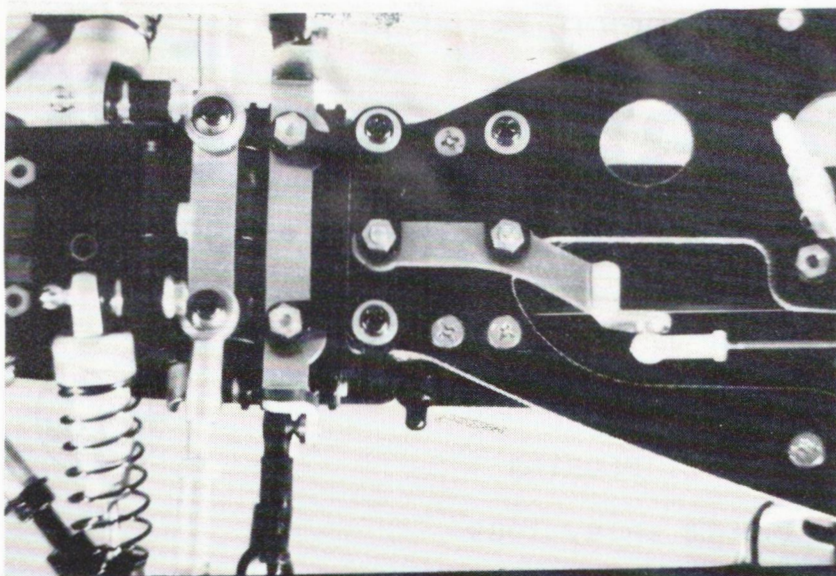
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any parts this season due to breakage. Some people have commented that the car is heavy and it is. But, I for one, will accept a little extra weight for this kind of strength of construction. The car is not cheap. But it is intended to be, and is, a top of the line world class competition machine and the contents of the kit more than justify the price. About the only criticism for the kit is that there is insufficient text in the instructions for so involved an assembly.

Notice that I didn't say the car is complicated, just involved. This is not a kitchen table project, unless you can tie up the kitchen table for two or three days. Assemble took approximately ten hours, plus a couple more hours for body detailing and painting. This is also not a kit to hand to your ten year old. The first car I built was approximately equal in complexity to this one and as I remember it took me over forty hours to assemble that car. So set the estimated assembly time to your own experience level.

If you are looking for a competitive four wheel drive car, you won't find a better one on the market. If you've bought the car and are interested in learning more about the assembly, the following section is my attempt to supplement the instructions

with some needed text and assembly tips.

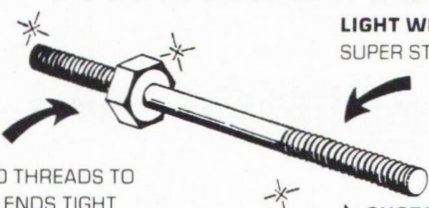
The first six steps of assembly are well illustrated and self explanatory in beginning assembly of the gearboxes. At step seven, the "propellor shaft" must extend completely through the beveled gear and into the pre-

viously inserted inner ball bearing. Check it by trying to wiggle the gear. If it wobbles, the shaft isn't seated. At step nine, look very carefully at the illustration. There are four spider gears in the differential and two axle gears. Two spider gears ride on each axle gear. Insert all four of the spider gears first, two with the gear up, the other two with the gear down. Then the two axle gears slip in. Parma silicone lube will keep these super slippery for a long time to come. Steps ten and eleven complete the very simple assembly of the front and rear differential cases. Now at step twelve comes assembly of the center ball differential. First slide the bearing onto the shaft, next the spacer, then the e-ring goes on. Next, stack on the five cone washers as illustrated. The sixth cone washer in the kit is a spare. Note the lubrication instructions carefully and use the lubricant of your choice. Once the drive gear and bevel gear are

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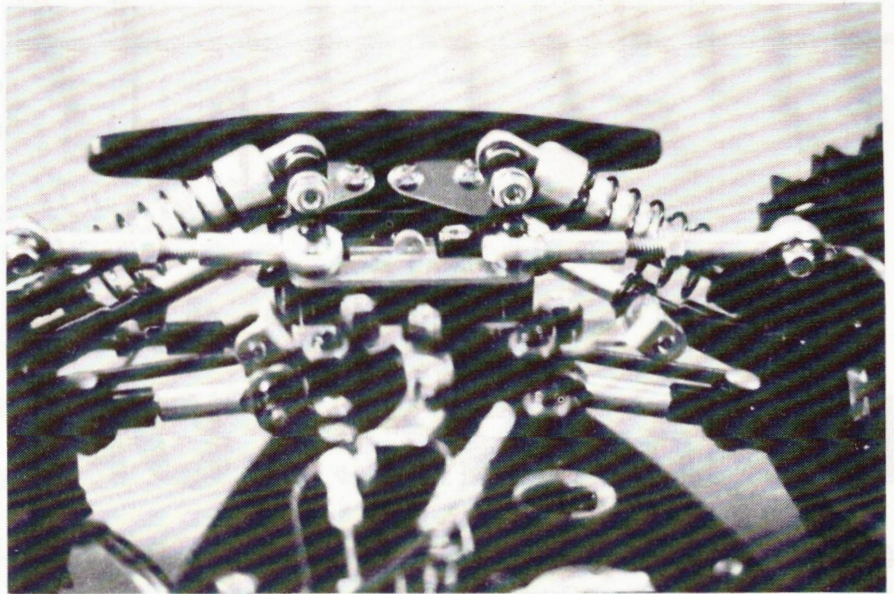
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on the shaft, put on a drive washer, then the thrust bearing, then another drive washer. Part SD5 can't be put on wrong. Just test fit it before inserting the spring washer and cap screw. Don't worry about adjusting the diff until you insert it in the gearbox at step thirteen. If the diff doesn't drop right in, keep tightening. Keep checking to make sure the drive gear will still turn on the shaft to avoid tightening down so hard that the cone washers are crushed. When the diff is sufficiently tightened, it will drop into its mounting position without force. Up to step eighteen, the illustrations are sufficient. At step eighteen, adjustment of the rear arm nut is shown being done with needle nose pliers. Don't do that! If you don't have a wrench this size, at least use an adjustable wrench or smooth jawed vise grip plier or you will scar up the nut and may even ruin it. In step nineteen, pay careful attention to the alignment of



Rear view of the front suspension shows the strength of components that allow the Avante to survive abuse that reduces lesser cars to junk.

the screw holes through the chassis into the tapered bushings on the ends of the rear arm rods to avoid cross threading the screws. These constitute a major structural component of the car and must be assembled correctly to avoid unnecessary strain on

the rear of the chassis. During assembly of the rear halfshafts into the rear suspension, use the indicated lubricant very sparingly to just wet the rubber o-rings. Excess lube will only hold dirt in the joints, accelerating wear.

Steps nineteen and twenty-two

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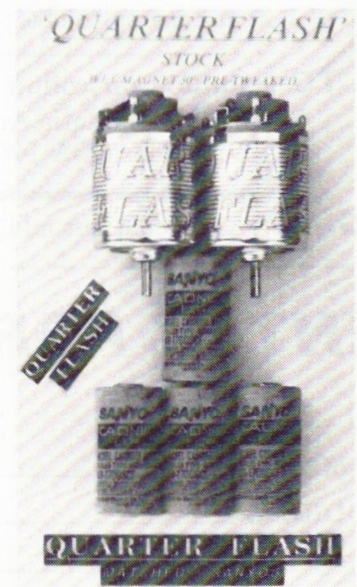
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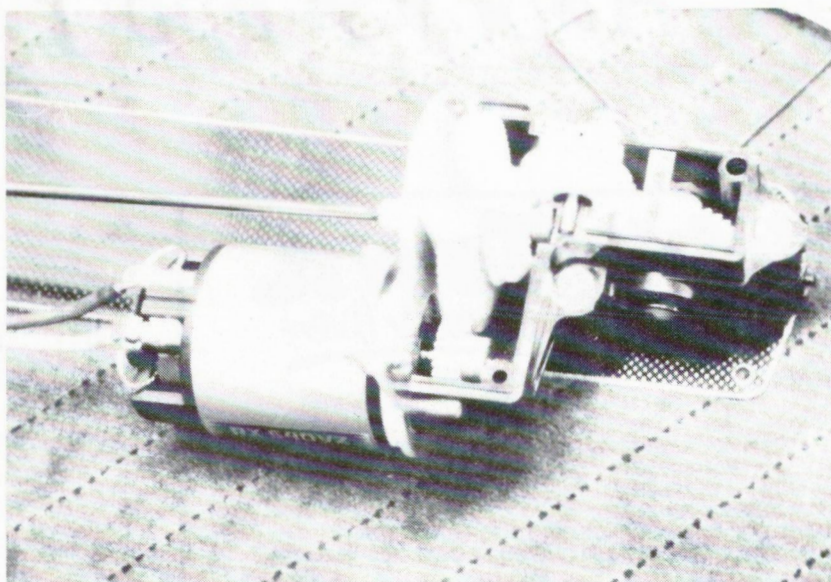
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show link pins being inserted from what will be the bottom side of the car. The apparent intent was to protect the e-rings from contact with the ground that might scrub them off. Flip these over and insert them from the top. True, this does make the likelihood of scrubbing off the e-ring slightly greater. But with the pin inserted from the top, if the e-ring does come off it is much more likely that the pin will stay in place until the end of the run, gravity will be working on your side rather than acting to remove the pin from its mounting hold. While mounting the anti-sway bars in steps twenty-two through twenty-six, keep the stabilizer guides loose on the rods to allow free movement of the stabilizers. Note that rubber o-rings are not used in assembly of the front swingshafts. Attempting to smooth up the action of the shafts by adding o-rings will remove needed clearance between parts and bind up the front suspension.

Nothing out of the way comes up again until assembly of the steering gear in step thirty-one. Before beginning this assembly, compare all the parts to the actual size drawings along the left side of the page. This steering gear is going to be very free when completed if assembled correctly. Some of the hex bushings and bellcrank parts are very similar to other pieces of almost the same size so look over the instructions in steps thirty-one and thirty-two with all the parts laid out on a clean spot on your workbench before beginning to assemble. Leaving out the washers under the steering gear will result in developing bind in the steering very soon. If you've mixed up the hex bushings, the steering won't work freely. At least wait until you've completed test assembly to put any loctite on parts so you can easily disassemble the components for reassembly if the whole thing doesn't move freely when you're through.



RX540VZ mounted to the completed rear gear box.

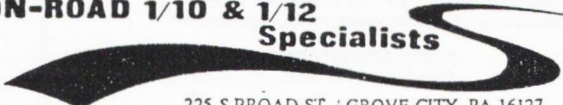
Don't worry if there seems to be some slop in the steering gear when completed. Mine seemed overly loose so I hunted up the most experienced car builder I know for an adjustment consultation. Dr. Bob at Tait's Hobby Shop has been racing R/C cars for over twelve years and I

know that Bob had recently gotten hold of one of the first Avantes to be shipped. We compared cars and both seemed to be the same. His advice was to leave it alone. The theory here is that if the steering is too precise, slight differences in servo alignment will make the steering gear center



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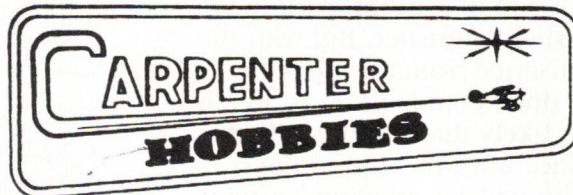
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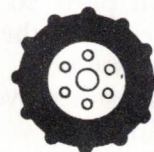


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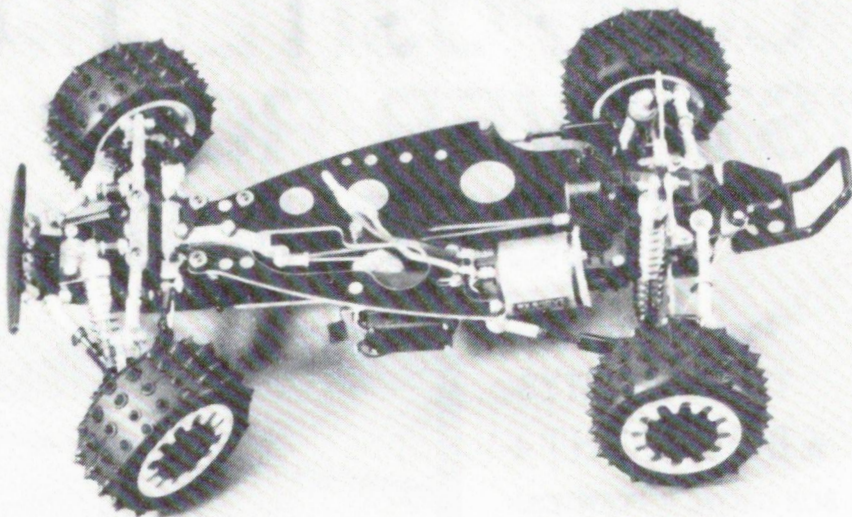
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too positively, causing the need for steering adjustments all the way down a long straightaway. By contrast, a small amount of slack in the steering gear allows the front wheels to center of their accord, even though steering center may be slightly off from servo center. Thanks Bob. The theory has proved itself correct in racing the car.

Step thirty-three completes assembly of the shock absorbers. The damper collar is a white plastic spacer that limits shock travel on the downstroke. Those well known needle nosed pliers are shown again for use in screwing on the bottom mounting rings to the shock shaft. **DO NOT USE BARE NEEDLE NOSED PLIERS ON THIS SHAFT!!** If you should scuff the shaft where it runs through the shock seals, shock oil leakage will become an unpleasant part of your life. The mounting rings screw on quite easily. Should a firmer grip on the shaft be



Completed kit ready for electronics and body.

needed, use the smooth surface of the pliers and pad them with a piece of cloth or paper towel doubled enough times to avoid scratching the rods. In step thirty-six the link pins are shown being inserted from the rear. Just turn them around and insert

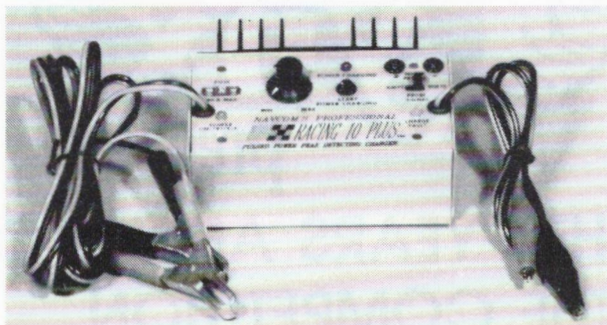
them from the front. Then if an e-ring comes off, maybe you'll notice while inspecting the car between runs instead of having the pin leave the car during the race. Everything else is pretty simple.

Step forty-seven shows you



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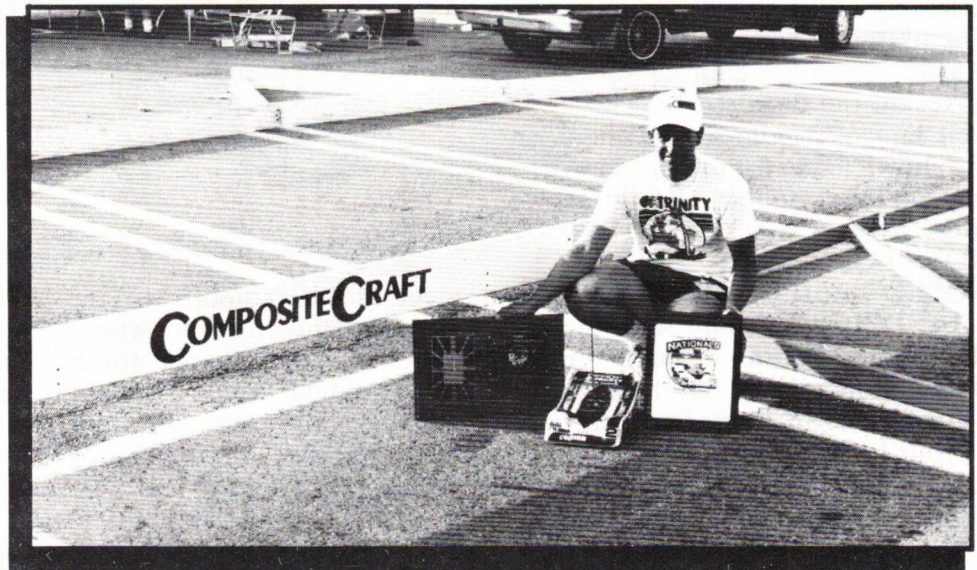
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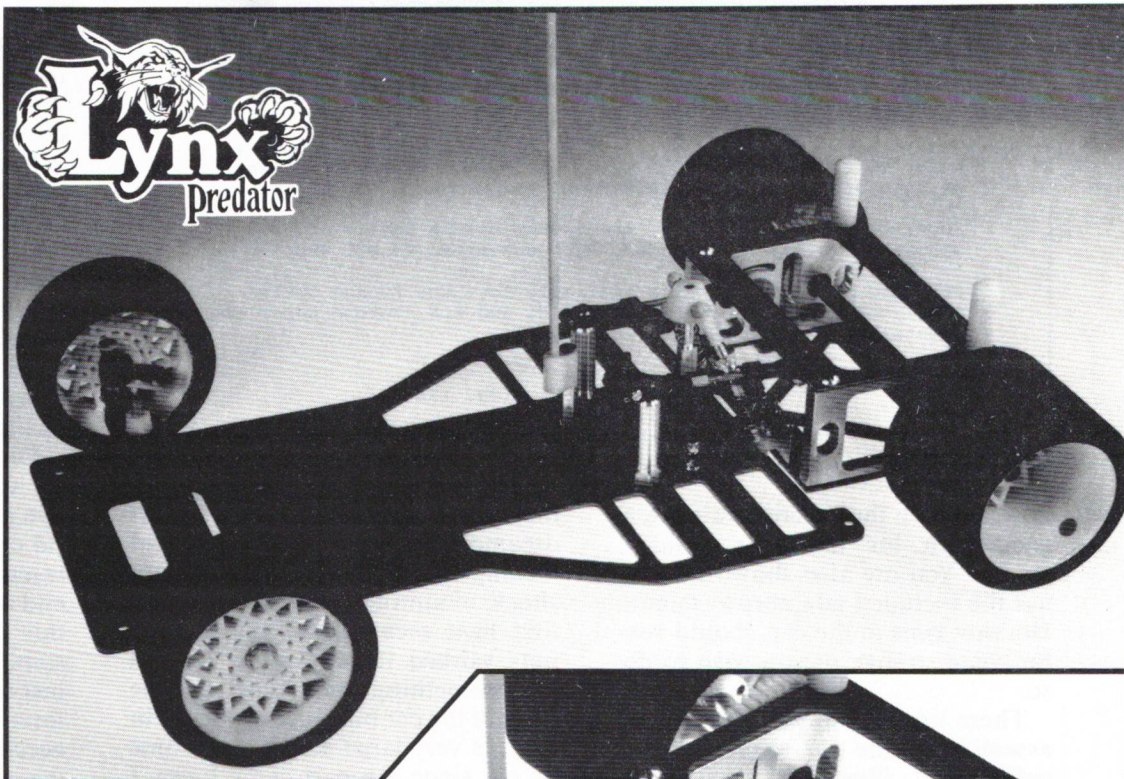
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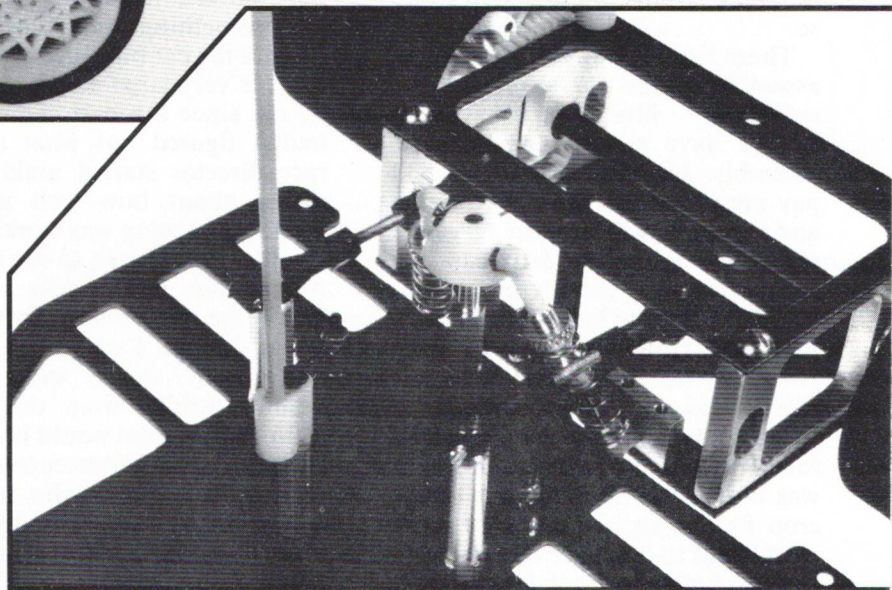
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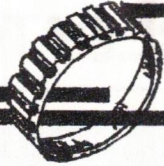
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how to attach the practice bumper, a good idea for the car's maiden voyage. You are also shown how to use the included adaptors to mount HotShot rims to the car, should you for some strange reason wish to do so.

There are fifty-three steps in the assembly of the car and most are sufficiently illustrated that you should have no problems in the assembly. Just take your time and pay attention to what you're doing and the result will be your very own world class four wheel drive car.

The day after completing assembly of the Avante I took it out for its first race. How did I like it? Well, you'll have to drive one to believe it. I've owned and raced several different makes and configurations of four wheel drive cars, each of which was thought to be the cream of the crop for racing, and none of them even begin to compare to this car. It handles better than any four wheeler I've ever driven or raced against. It accelerates like a rocket and the RX540VZ gives it all the top end you will ever need. It takes abuse that would leave other cars out of action for the day and continues to perform as if out for a Sunday drive.

Before completing assembly, I had made some notes on tests to perform to thoroughly check out the Avante's handling and performance unusually adverse conditions. As usual though, racing provides to be the best test of any racing machine and throws in variables

that test the car in ways never dreamed of. I had not used thread locking compound on the front shock mounting screws and in the first heat race one of the locking nuts worked its way off. I noticed that something was loose on the front of the car but since our track in Flint is very large and hadn't come by me since the part came loose, I hadn't figured out what until the race director started making comments about how well my front monoshock setup was working. That sounded like a joke to me since the Avante has two shocks up front. When the car came in front of the driver's stand, I could see that the right front shock was flopping around wildly over the bumps. Think about what would happen if a shock came off your current racing car. On most cars, the front end would simply collapse and your race would be over until repairs were made. The Avante was still handling so well that I had no idea that something so drastic had gone wrong, and to see what would happen, ran the car the remaining two minutes of the race. Hard as it might be to believe, the car kept right on blazing down the straights, zipping around the turns, and taking the jumps like a champ. I usually don't run anti-sway bars but had included them on the Avante since I was building it to test for this article. The only thing that seems to make any sense at all is that the stabilizer was working so well that it kept the car functional

and racing. Give the suspension's design engineer a raise.

There are a lot of really good cars on the market right now. If you have just begun racing, feel privileged to have gotten in at the right time to have access to much better cars than we used to race. The cars are becoming more durable, easier to setup, quicker to repair, faster, better handling and generally much more of a pleasure to race than the cars of past years. Having said that, let me say this. Even in this environment, the Avante sets new standards for R/C cars, four wheel and two wheel drive alike. Rather than coming along to challenge the current crop of four wheel drive racing machines, it presents itself as the new ruler of the class and invites all comers to challenge its superiority.

On the Avante, Tamiya has given us total suspension adjustability. I've always wanted to be able to get rid of the toe-in that most manufacturers insist on putting into the rear end of their cars. Some people claim this rear toe-in provides greater stability coming off turns. To me it just adds drag to the car and wastes force that could better be used for acceleration and speed. Now, with the Avante's adjustable suspension rods, I can set the suspension and wheel alignment up just the way I want it. The only problem you will encounter in dialing this car in is that it works so well any way you set it up that it is difficult to get motivated to make changes. Try it anyway. This is the ideal car for finding out just what each adjustment does to the car's handling. A protractor is handy for measuring camber angles and a couple of good rulers are all that is needed for measuring toe-in and toe-out. Measuring the distance between the fronts of the wheels, then comparing that measurement to the distance between the rear of the tires will allow you to make precise notes for later reference both as to what works under what conditions and for checking the car before a run to verify where everything is set.

While the Avante is not for everyone, if you've built a car or two before and are serious about competing in four wheel drive, it is the car for you.

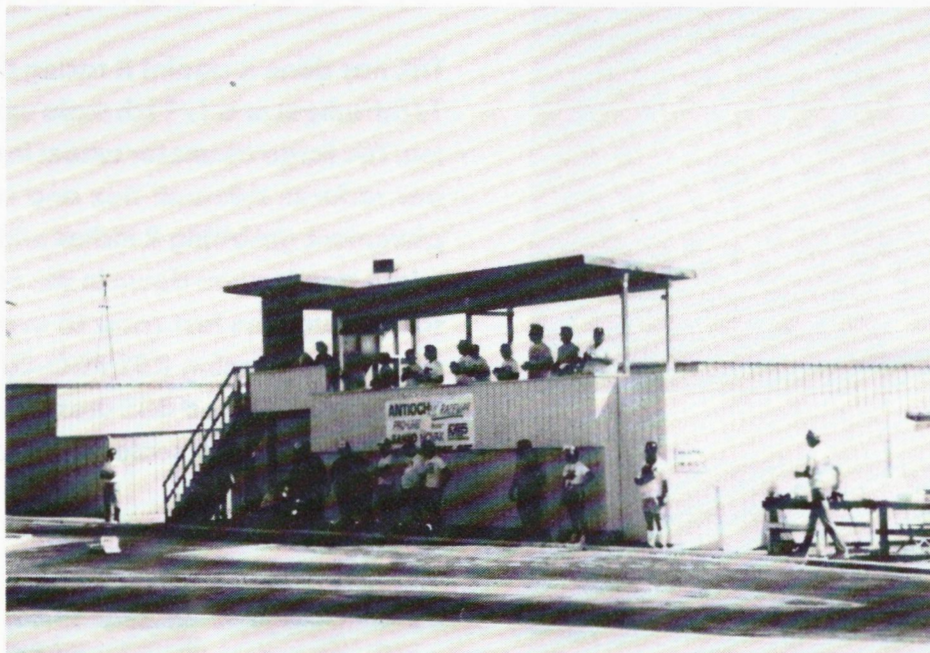
1988 ROAR Region 6

1/8 Gas On-Road Championships

By Ron G.

The 1988 R.O.A.R. Region 6 1/8 Gas On-Road Championships were held at Antioch R/C Raceway, Antioch, California, September 10th and 11th. This was the same site that the 1988 ROAR 1/10 Scale Off-Road Nationals were held in July this year which was the biggest R/C race ever held anywhere. The Region 6 1/8 Gas On-Road Championships could have also broken the record for being the smallest Region 6 1/8 Gas On-Road Championships. Big or small, Antioch Raceway can handle it, and we did just that with 29 of the fastest 1/8 Gas On-Road drivers in Region 6. With the 1/8 Gas Region 6 Championship and world qualifying points at stake the racing was fast and furious. After the fourth qualifying round Saturday of wheel to wheel racing the field was almost set. Sunday we ran the fifth qualifier and the mains were set. Top qualifier in 2WD was Tom Gains, Delta driver and 4WD went to Associated driver Butch Kloeber.

The 4WD A main was a real crowd pleaser from start to finish. Cliff Lett starting in #2 position got the holeshot and was out in front. Butch Kloeber and Mike Swauger were right behind him, on the 17th lap, Mike Swauger flamed out and after a fast restart he was now running in sixth place. Cliff Lett Team Associated driver was still the leader and was getting faster with each lap. Butch Kloeber was still in there right behind him. Danny Stokes was holding down third place. Team Associated driver Mike Swauger who raced for Antioch Raceway for 2½ years and now at the age of 12 is a Team Associated driver, started



Above: Antioch Raceway A Main 4WD. Below: Drivers stand and A Main 4WD start.

to make his move. With 10 minutes to go Butch Kloeber started having car problems and dropped back. Mike Swauger by

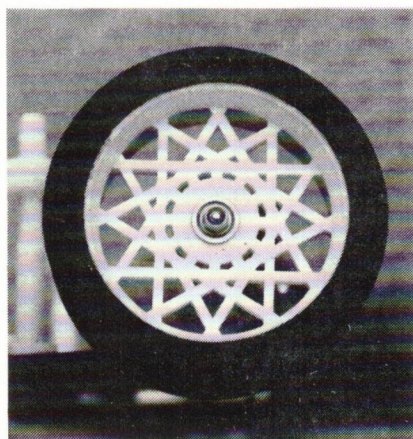
this time was sitting right behind Danny Stokes who was still in third. It took Mike Swauger 8 laps to get around Stokes and

THE BEST JUST GOT BETTER



Pictured from left to right. Tim Morton, President of TRC, Dave Hechler, and Ernie Provetti President of Trinity. The Super Team is here! TRC and Trinity!

Congratulations to Dave Hechler for his super performance at Lake Whippoorwill Speedway. Dave used his Trinity powered Pro-10 to win the Novak 650 Lap Enduro, The Twister Sudden Death Speed Run as well as the Competition Plus Invitational. Mike Giem also drove his Trinity powered Pro-12 to victory in the 1/12th Invitational class. TRC would also like to thank Ernie Provetti of Trinity as well as the whole team for their race winning efforts. Look for more great things from the "Super Team". We are the competition.



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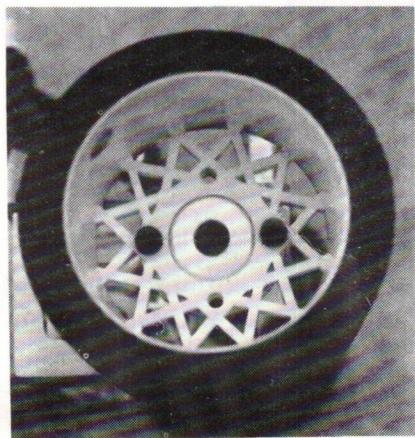
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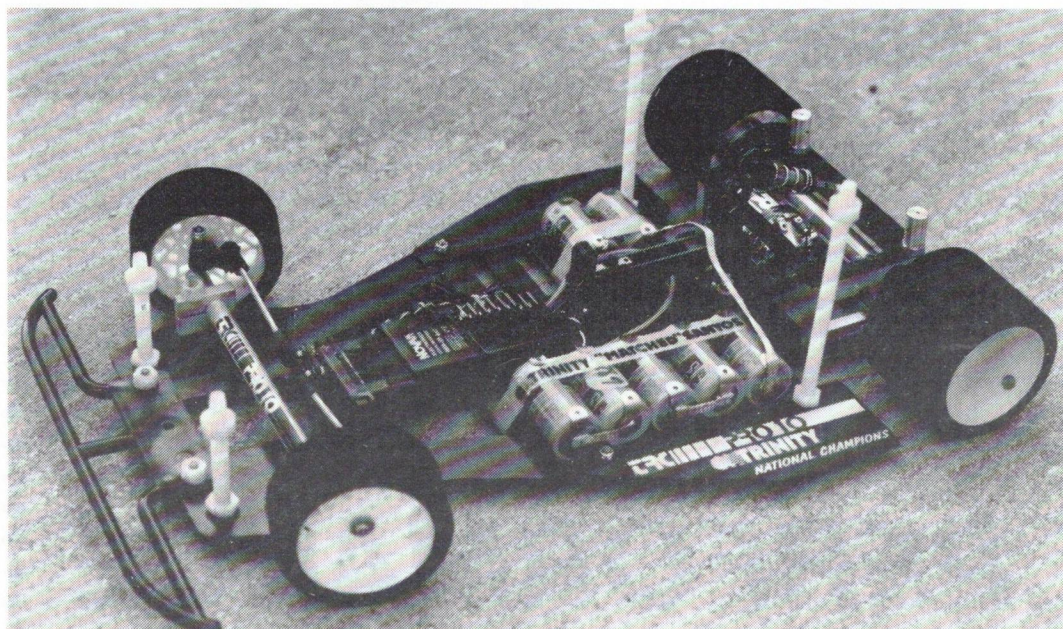
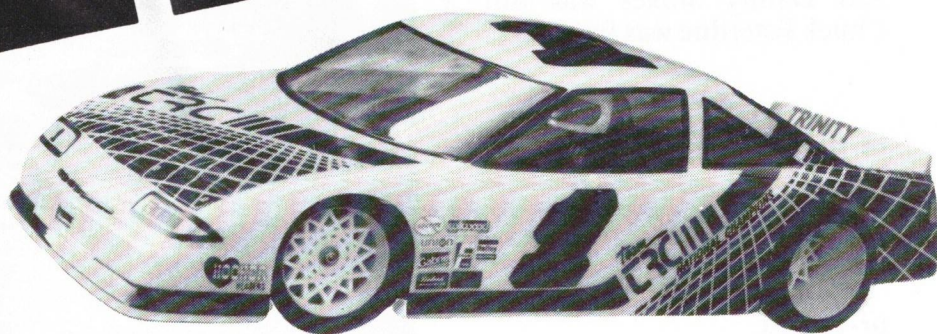
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when he did he started to close the gap on Cliff. When time ran out Cliff Lett took the checkered flag, Mike Swauger was second and Danny Stokes was third. Chuck Esterline was fourth.

2WD A MAIN

- 1st - Tom Gaines/TQ
- 2nd - Kim Reege
- 3rd - Don Cummings
- 4th - Blane Pilato
- 5th - Kim S.

4WD A MAIN

- 1st - Cliff Lett
Associated/Paris
- 2nd - Mike Swauger
Associated/O'Donnel
- 3rd - Danny Stokes
?/Paris
- 4th - Chuck Esterline
?/Paris
- 5th - Butch Kloeber/TQ
Associated/O'Donnel
- 6th - John Hodgson
Associated/OPS
- 7th - Barry Grossenbacker
Associated/Paris
- 8th - Mike Jones
Associated/Paris
- 9th - Ron Stokes



Butch Kloeber was the TQ in the 4WD Class.

- ?/Paris
- 10th - Ron Williams
- ?/Rossi

B MAIN

- 1st - Bill McAllister
- 2nd - Bill "Nitro" Penzini
- 3rd - Mike Schlueter
- 4th - Jeff Atchison

- 5th - Manny Estacio
- 6th - Robert Ladonne, Sr.
- 7th - Lee Clark
- 8th - Stuart Krum

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forced the manufacturers who were trying to keep stock motors in line with the original intent of that class to either follow along with increased timing or make tweakable motors. In this lays the biggest problem. To make it work all the manufacturers have to agree to go along with it. I believe most of the major suppliers are in favor of something such as this, I know I am and so is Trinity and several others. To make this work a means of teching has to be developed that allows a simple means of determining factory set timing. This has to be kept simple enough that the smallest club race can do it, if necessary, without special knowledge or a time consuming process. It is easy to do one thing at a major race with lots of knowledgeable personnel, but for something as important and technical as this it

has to be easy to apply to all levels of racing with a straight forward, simple means of teching. Gary Kyes (ROAR Vice President) has been working on a solution to this matter, trying to develop a simple plastic guide that can determine the factory set timing. If this can be done, then the manufacturers could be required to have their motors assembled in a way as to make them un-tweakable (an easy and inexpensive process).

I am in full support of a timing limitation specification, BUT ONLY if it can be enforced in a fool proof and simple manner. In my opinion the timing should be somewhere in the 10 to 12 degree area, which would allow decent performance while providing a long lasting motor to the racer.

Sincerely,
MIKE REEDY

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Every Saturday from 9:30 a.m. to 4 p.m. Practice: Track open all week. Hal's Hobby Shop, 4886-A Hercules, El Paso, TX 79904, (915) 755-1914.

RIVER CITY R/C OFF-ROAD

Racing is every Saturday, sign-ups 3 p.m., racing starts at 3:30 p.m. (512) 656-5724 evenings.

MASON DIXON R/C CAR CLUB

Every Sunday at 1:00 p.m. Track location at Hagerstown Fairgrounds, Hagerstown, Maryland. Call King's R/C Cars, 219 E. Washington St., Hagerstown, MD 21740, (303) 739-0080.

SNORR

Racing every 1st and 3rd Sundays. P.O. Box 438, East Haven, CT, (203) 469-2594 or (203) 481-5813, Dave Seales.

A R/C RACEWAY & HOBBIES

We are located at the famous Sandhill Ranch in Brentwood, CA. For info call (415) 757-6594, AA R/C Raceway, Sandhill Ranch, Route 2 143 B, Brentwood, CA 94513.

MODEL CAR WORLD & RACEWAY

Indoor Racing - 7041 N. Pecos, Denver, CO 80221, (303) 426-5255. Every Wednesday - 1/12 Carpet Every Friday - Oval 1/10 Dirt Every Saturday - Off-Road 1/10 Dirt. All races start at 7:00 p.m. - Practice all other times.

TEAM RACE R/C CAR CLUB

Fridays: 6:30 p.m. 1/10 scale 505 Spring Ridge, Clinton, MS 39056. Call (601) 924-0722.

ANTIOCH R/C RACEWAY

5631 Lone Tree Way, Antioch, CA

94509. Every Wed. & Fri. 6:30 p.m., Every Sat. & Sun. 10:30 a.m. Call Jack Hanson (415) 754-5700.

F/X CITY RACEWAY

Every Saturday 1 p.m. The Frame Gallery, 13340 F. Franklyn Farm Road, Herndon, VA 22071. For info call Eric Zelman, (703) 471-4499.

RIVER CITY RACEWAY

On Quincy Road, Wichita Falls, Texas. Every 2nd & 4th Sundays at noon. Call (817) 691-1478.

WALT'S HOBBY & CRAFT

4300 West Genesee Street, Syracuse, NY 13219. (315) 468-6544. 1/10 Off-Road racing on unique indoor clay track. Mon. eves (sprints). Racing 7 p.m. - Sat. Afternoons racing at 1 p.m. Computerized scoring. Daily practice.

HITT'S HOBBY AND RACEWAY

Tuesdays: Oval Asa, Full Bodies Thursdays: Off-Road - Stock Saturdays: Off-Road - Novice Sundays: Off-Road - Modified Oval and Off-Road; 853 Wren Rd., Goodlettsville, TN 37072. For info call Ben or Kent (615) 859-3465.

CARCLUB - COCHRANTON AREA

The Carclub races Fridays starting at 6 p.m., Saturdays starting 9 a.m. Sundays starting at noon. Large indoor carpet - dirt outdoor. Call for info Harry Turner, 120 W. Adams St., Cochranton, PA 16314. (814) 425-7788.

QUEEN CITY R/C RACEWAY

1/12, 1/8 and 1/10 scale cars. Every Friday - 7 p.m. - Open Class Every at -2 p.m. Stock & Open. Every Sun. - 2 p.m. Drag Racing 5050 S. Federal Blvd., Englewood, CO 80110, (303) 730-1391.

PDQ RACEWAYS & HOBBIES

1/8, 1/10, 1/12 Scales Call times and details. 429 Bankhead Highway, Mableton, GA 30059, (404) 941-2626.

NEW ENGLAND'S

PINE BANKS R/C RACEWAY

We are located in Melrose, Mass. For info contact: B & B R/C Accessories at (617) 324-4465 or Brian Branon at (617) 322-9554.



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whittier, calif. 90609-6014
Telephone: (213) 947-1206
Fax: (213) 693-2577

NEW PRODUCTS FOR THE KYOSHO OPTIMA MID

TOP PICTURE

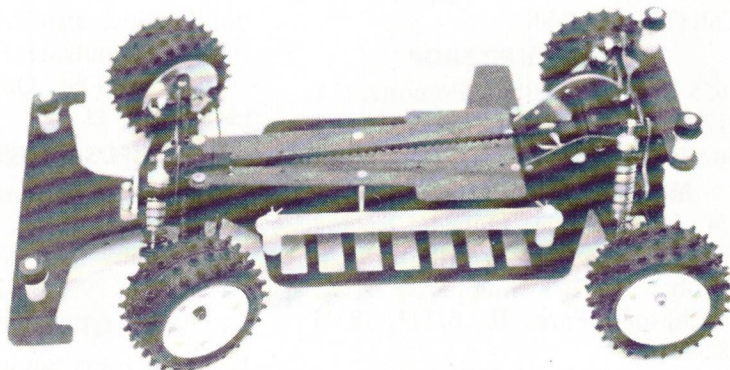
1510 - Oval long W.B. chassis. Radio tray, belt, lexan belt covers, battery hold down kit. G-10 fiberglass. Offset chassis with battery location on inside of chassis for left turn only.

1510G - Same as above except graphite.

1514 - Optima Mid stock length belt.

1515 - Optima Mid long W.B. belt for J.G. L.W.B. chassis.

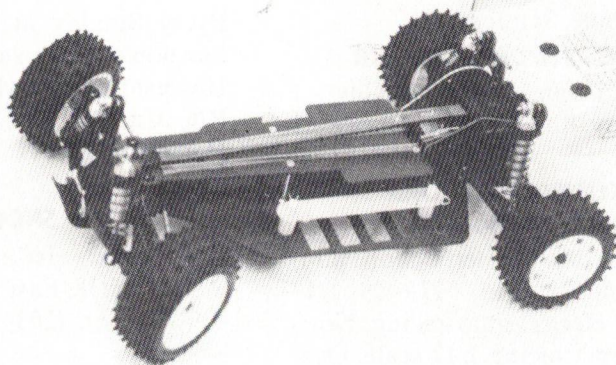
1516 - Optima Mid lexan belt covers top and bottom for stock and L.W.B.



MIDDLE PICTURE

1517 - Optima Mid long W.B. chassis, radio tray, belt, lexan belt covers, battery hold down kit.

1517G - Same as above except graphite

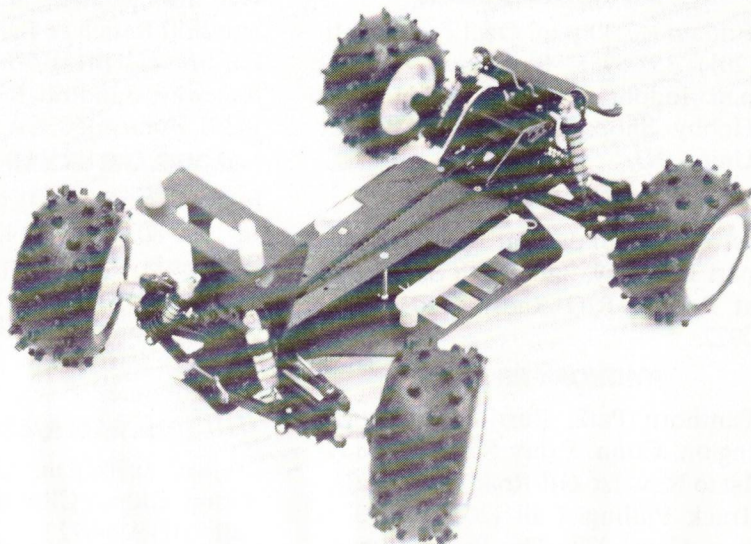


BOTTOM PICTURE

1518 - Optima Mid monster truck conversion kit for Blackfoot rims and tires.

1519 - Optima Mid front monster truck body mount

1520 - Optima Mid and Optima, etc. front and rear rim adapters for Blackfoot or J.G. rims.



SEND \$1.50 CASH OR MONEY ORDER FOR
CATALOGUE

No Personal Checks Please

GROUND ZERO RACEWAY

Sunday: Noon to 6 p.m. 1/10 Off-Road & 1/12 carpet races at 2 p.m. Sign up Noon to 1:30 Tuesday - 1/12 carpet races at 7:30. Friday - 1/10 Dirt Oval races at 7:30. Saturday - Informal Junior Races (16 & under). Speciality clinics. 208th and West Dodge Rd., Omaha NE (402) 289-4184.

SROKA'S INDOOR R/C

Racing every Sunday - Oval racing every 4th Sunday. 5216B Arboga Rd., Marysville, CA 95901. Call Michael or Vickie Sroka (916) 742-6148 or (916) 741-3051.

FLINT R/C CAR CLUB

Flint, MI. Summer: Every other Sun. from May to Sept., Fall & Winter 1/12 4 cell on carpet. For info: Ralph Herndon (313) 658-5390 or Tom Hoos (313) 658-1043.

MILE-HI R/C SPEEDWAYS

Thurs. & Sat. Off-Road, Fri. Carpet, Sunday 2 p.m. 178 S. Kalamath, Denver, CO 80221, (303) 722-6766.

AMERICAN HOBBIES

Thursday Night Oval Racing
Sunday Off-Road & Oval
For info call (201) 446-2010.

C.A.R. CLUB

Racing at Tamarack Raceways. Contact Harry Turner, 120 W. Admans St., Cochran, PA 16314, (814) 524-7788. Racing every Sunday.

ARROW HOBBIES

Wed. Nights - 1/10; Every other Fri. night 1/8 Sprint Cars only; Sat. nights 1/10 dirt oval. 2710 So. 1-35 West, Burleson, TX (817) 295-2821.

BLASTERS OFF-ROAD CLUB

Every Sun. at noon-weather permitting. ROAR. 42 Riel Dr., St. Albert, Alberta, Canada. Call Fred at (403) 457-9333. In winter on carpet.

BUCKLEY SPEEDWAY

37 Douglas Street, Hartford, CT. Every Sunday April 1st to Nov. 31st Black Top Oval. For more information call "Ziggy" or Deb-

bie Kwasnicki (203) 246-4778.

HOBBY HAVEN RACEWAY

1756 First Street, Livermore, CA 94550 AC power, paved parking, computer scoring, trophy races, trophy dashes, gift certificates. Coming soon night racing & oval races. For info (415) 443-5828 M-F 10-6 p.m.

RADIO OPERATED AUTO RACING OF ROCHESTER

110 Anderson Ave., Behind Village Gate (274 N. Goodman St.)

7:00 p.m. - Monday Pro Night

7:00 p.m. - Tuesday Boy Scout Nite

7:00 p.m. - Wednesday Teen Night

7:00 p.m. - Thursday Indoor Clay

7:00 p.m. - Friday Roarr Meetings

7:00 p.m. - Sat. & Sun. Family Days

HOT TRICK RACEWAY

Route 1, Box 390, Wilkesboro, NC 28697. Oval and Off-Road - Indoor dirt track. Friday nites: Oval and Off-road racing beginning at 7 p.m. Sunday Afternoons Oval and Off-Road Racing beginning at 1 p.m. For information call (919) 973-7444 after 4 p.m. weekdays.

HOBBY HUT

2665 Park Marina Dr., Redding, CA 96001, (916) 241-3737. 1/10 Off-Road Racing. Norcal Mini Off-Roaders. Ask for Kevin Paschke.

USA RACEWAYS

6083 Dixie Highway, Bridgeport, Michigan, (517) 777-7USA.

Every Thursday Oval & Off-Road

Every Fri. Indoor Carpet Oval

R.C. BUGGYWORLD & RACEWAY

7511 Hamilton Ave. - RT. 127, MT. Healthy, OH 45231, 522-0809.

Wednesday night off-road and oval on alternating weeks. Also carpet races on Monday nights 40 x 80 banked oval.

OUTLAW MOTOR SPEEDWAY

7920 Webster, Highland, CA Every 2nd Sunday - 1/10 dirt oval. All classes. Call (714) 370-

0607.

LITTLES HOBBIES

Tuesday Nite - 1/12 4 Cell Mod.

Thursday Nite - 1/10 Banked Oval

Friday Nite - 1/10 Oval Stock Car Banked oval carpet surface. 111 Main St., Hebron, CT 06248, (203) 228-4942. Open 7 days.

R/C WORLD & TRACK

New indoor facility for 1/10 off-road and oval dirt racing. Wed. and Fri. - oval. Sat. Daytime and Evening off-road. Practice anytime. Call Glen or Debbie at (303) 789-0838, 2788 S. Federal, Denver, CO 80202.

FAST LANE R/C

On Road Asphalt Track. 21616 Golden Triangle, Saugus, CA. Call (805) 255-2404.

RPM R/C RACEWAY

1112 S. 16th, Elwood, IN 46254. Indoor off-road racing every Sunday at 12:00 noon. For info call (317) 552-7758.

REC. R/C RACEWAY

1/10 scale clay oval track. Racing Sat. - Oval 10-2:30 - Racing at 3:00 p.m. - Sunday - Off-Road 10-2:30 Racing at 3 p.m. Call Erin Clancy (914) 868-7715. Route 82 to Standfordville, NY 12581.

MADISON AREA RADIO CONTROL CAR ASSOCIATION, INC.

Factory Outlet Mall, Madison, Wisconsin. 1/10 and 1/12 scale carpet racing. Practice Sat. Afternoon Racing 6 p.m. Sat. & 7 p.m. Tues. George Jerdee (608) 873-7286.

THE RANCH PIT SHOP

1655 E. Mission Blvd., Pomona, CA 91766 (714) 623-1506. Every Wednesday night at 6 p.m. Alternating Oval and Off-Road.

COMPETITION HOBBY

Off-Road racing indoors on dirt. Every Wednesday night 6:30 - Sunday 12 noon, Juniors (12 and under) & Novice Saturday 12 noon. 8169 S. State St., Midvale, UT 84047, (801) 562-9452.

CONNECTICUT AUTO RACING TEAM

1/10 Off-Road and Sprint Car Oval. 37 Douglas Street, Hartford, CT 06114, Zig (203) 246-

4778.

HOBBYTOWN

1/4 Mile High Banked Indoor Carpet Tracks at two of our stores. The Lincoln track is at our Sutter Place Mall store located at 5221 S. 48th St., Lincoln, NE 68516 (402) 483-7427. The Omaha track is located at Rockbrook Village at 11011 Elm Street, Omaha, NE 68144, (402) 391-5669.
Tues. - 7 p.m. - Lincoln
Wed. - 7 p.m. - Omaha
Sat. - 1 p.m. - Lincoln & Omaha
Sun. - 1 p.m. - Lincoln and Omaha

ROMAC

1/10 and 1/12 on large carpet oval (Northern Lights Mall) N. Syracuse, NY. Thursday evenings and Sunday afternoons. Information call (315) 468-1463 or (315) 468-6544.

COOPER'S RC RACE CENTER

Racing every Sunday 2 p.m.
Open Wed. and Fri. 6 p.m.
Open Sat. & Sun. 12 noon
Oval and Off-Road
Contact Norris, Rt. 4 Box 122B, Chatham, VA 24531, (804) 724-4182.

VICTORIA HOBBY SHOP

Every Saturday - 2 p.m. - Off-Road;
Every Sunday - 2 p.m. - Ovals.
5211 John Stockbauer, Victoria, TX 77904, (512) 575-3270.

M.H.O.A. R/C RACEWAY

155540 E. Batavia Dr., Aurora, CO 80011, (East on 17th Ave. at Chambers Rd.). Indoor 1/10 Off-Road Racing on Wed. & Sat. Practice/Track Time Tues., Thur., Fri., Sun. Complete Hobby Shop, pit area has AC & DC power, a nice clean handicap accessible racing facility. For info call Jess Brockman, (303) 343-0151 after 3 p.m. MST. Closed Monday.

HOBBYTOWN RACEWAY

4915 W. Elm, McHenry, IL 60050, (815) 344-1777.
Hobbytown Raceway, 219 W. Cedar Lake Rd., Round Lake, IL 60073. Indoor - Dirt 80' straightaways, (312) 546-0707. Oval Racing every Friday 7 p.m.; Off-Road Sunday 10 a.m.

BNS COMPETITION HOBBIES

Route 7, Box 380, Anderson, SC 29624, (803) 224-8591, Contact Bob Sanford. Racing and Open Practice Wed. 6:30 p.m., Every Saturday 1:00

p.m. 1/10 Dirt Oval.

DESERT HOBBIES & RACEWAY

Off-Road racing 1st & 3rd Sundays. Sign in 10-11:15 a.m. Every Friday nite 7:30 p.m. 25 minutes from San Bernardino. 17210 Main St., Hesperia, CA 92345, (619) 94858.

TRIT'S HOBBY SHOP

Sat. Off-Road 12 noon, 2WD/4WD Monster Trucks. Sun. Dirt Oval 12 noon 2WD/4WD Any body style. Mon. Indoor Oval Carpet 7 p.m. 1/10 & 1/12. Tues. Truck/Car Pulls 7 p.m.. Wed. Outlaw Dirt Oval 7 p.m. 2WD/4WD Stock cars/2WD Sprints. Friday. Off-Road 7 p.m. 2WD/4WD Off-Road cars. 3270 Bay Rd., Saginaw, MI 48603, (517) 799-3900.

J.G.S.

Wisconsin's finest off-road race track. Perfectly groomed 100 ft. straightaway, computer scoring, drivers stand, starting lights. Racing every other Sunday 1 p.m. Menomonee Falls, WI (414) 255-2040.

TRACKSIDE RACEWAY

Dirt Oval Racing every Thursday night 6 p.m. Fully stocked hobby shop, computer scoring, lights, bleachers, concessions. Menomonee Falls, WI (414) 255-2040.

WAGONHILL HOBBIES

Indoor 1/10 & 1/12 on-road racing every Friday night. Outdoor Off-Road every Saturday Night. 225 S. Board St, Grove City, PA, (412) 458-4711.

HOBBY CENTERS DIRT-DROME

Indoor Dirt Oval: Tues. 2WD Stock/Modified, Sprint Car Bodies Only. 4WD Mod. Oval full bodies 7:30 p.m. Thurs. Open Practice 6-10 p.m. Sat. 6 Big Classes 7:30 p.m. 2WD Stock A, 2WD Stock B; Box Stock Trucks, Modified Trucks, 2WD Modified, 4WD Modified. Sun. Open Practice 1-5 p.m. Call Brent Wilson (502) 683-7611. 715 E. 4th Street, Owensboro, KY 42301.

DIXIE R/C HOBBY SHOP

Every weekend Sat. & Sun. The races will alternate between oval and motocross starting May 14 with oval and May 15 with motocross. Dixie R/C Hobby Shop, P. O. Box 135, Ramseur, NC 27316, after 6 p.m.

(919) 824-2770.

BREMEN RACEWAY

Clay Oval Track 60 x 100 ft. Under roof, lighted Friday nights 7 p.m. May thru Sept. Call for information (219) 546-3807. Bremen Hobbies, 308 N. Bowen, Bremen, IN 46506.

WEST TEXAS R/C RACEWAY

3477 Lee Blvd. - Racing every Sunday. 1/10 scale off-road and oval dirt. Mailing address: 301 Edith Dr., El Paso, TX 79915. For more information call Hector (915) 772-1382.

JIM'S R/C SPECIALTIES

3107 S.W. Van Buren, Topeka, KS 66611 (913) 273-4070. Racing off-road every Sunday 12 noon to 5 p.m. Oval racing every Saturday night 6 p.m.

EAGLE HOBBY CENTER & RACEWAY

Every Saturday night at 7:30 p.m. 1/12 4 cell stock and modified. 1/10 6 cell stock on-road, call for body style. Eagle Hobby Center & Raceway, 3601 Shepherd, Balch Springs, TX 75180, (214) 557-5290.

SUMMIT SPEEDWAY

Summer Schedule: 1/10 Indoor Oval Outdoor Tri-Oval - Fridays 7 p.m.; Tuesdays off-road 6:30 p.m.; Saturday nights and Sundays. Call for more information (219) 489-RACE.

R & A - RC'S

Nov. 6 - Nov. 12 - Nov. 13 - Nov. 20 - Nov. 27 - Dec. 4 - Dec. 11 - Dec. 18. 84 East Main Street, Westminster, Maryland 21157. For more Information contact Donna or Rick at (301) 848-2144. Indoor oval carpet track and Bolink AMB lap counter.

ACTION SPEEDWAY Indian River's Facility

1/10 scale half mile clay oval & off-road. Two story covered drivers' stand, large pit area close to track, ample parking, classes for young and old, beginner's to expert's, and truck pulls. Coming soon - 1/10 scale super speedway and road course, night racing, full electric, and concessions. For further information call Trace or Chip Button (407) 231-9410 or Doug Upton (407) 569-8793.

THE INSIDE TRACK

Every Wednesday - 7 p.m. and Saturday 6 p.m. Classes: 2WD Stock and Modified, 4WD Stock and Modified

and Monster Trucks. For more information call (312) 898-5649. 725 Hill Avenue, Aurora, IL 60505.

ABC R/C

Clay track racing every Saturday 1 p.m. Truck pulls every Tuesday 6:30 p.m. Complete R/C headquarters, 1441B E. Main Street, Waukesha, WI 53186, (414) 542-1245.

TC'S R/C'S

Inside and outside race track and RC shop. 1537 Freeport Road, Natrona Heights, PA 15065, call 226-8802.

BROCKTON INTERNATIONAL SPEEDWAY

Monday night 1/10 & 1/12 oval racing 5:30 to 7:30 Practice. Races start 7:30 p.m. 1217 Main st, Brockton, MA. For more information call Ruben (508) 588-9355.

SONOMA COUNTY RACEWAY

806 Brookwood Avenue, P. O. Box 9565, Santa Rosa, CA 95405 - 1/10 Dirt Oval, 1/10 Off-Road, 1/10 & 1/12 Asphalt. Mark White (707) 571-7565, Schedule info (707) 571-8044, Competition Products (707) 571-8048.

ALL IN 1 RACEWAY

5612 S. 108th St. Hales Corners, WI. 1/10 scale indoor dirt track. High speed semi-oval and true off-road courses. Practice Tues, Thurs., and Fri. 6 - 9 p.m. Racing Wednesday nights at 6 p.m., Sat. & Sun. at 1 p.m. For more information call (414) 425-4060.

— 1/12 Scale — OUTLAW RACING

Every Friday nite Stock only 6:45 p.m. Every 1st Sunday - 1/12 Stock & Modified. 1/10 on-road Stock & Modified, 1/24 Tamtechs. Carl Paul Nadeau, (714) 370-0607

GLASS CITY RADIO CONTROL

Racing 1/10 & 1/12. For more info contact: Clayton White (1/12) (419) 882-2518 or Mike Marshall ((1/10) (313) 241-5321.

S.T.A.R.C.

Every Wed. Night - S.T.A.R.C. Club Series. Rockton, Ontario, Canada. Call Sam Burke (519) 621-5424.

TEAM RACE R/C CAR CLUB

Friday: 6:30 p.m. indoor track, 505 Spring Ridge Rd., Clinton, MS, (601) 924-0722.

*Rebuilds done in 5 - working days guaranteed
or it's FREE!!*

(plus shipping days, 1 & 2 day air return shipping available)

Only \$19.95

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Standard rebuild includes:

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| ✓ Entire motor cleaned and lubricated | ✓ Commutator trued |
| ✓ Bearings cleaned and checked
(new bearings extra, if necessary) | ✓ Springs replaced |
| ✓ Armature re-balancing | ✓ Brushes replaced |
| ✓ Can remagnetized (if necessary) | ✓ Fully broken in |
| ✓ Dyno tuned for maximum performance | ✓ Guides aligned |

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OR

send your motor along with your name, address &
PHONE NO. to:



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*** Specialists in Fine .05 Modified Motors ***

NORTHERN MINI-RACERS

4 Cell indoor regular schedule 1st & 3rd Saturday. located at 1715 S. Broadway, Minot, ND Call Roger Lee, Pres. (701) 838-0654, or 839-5294..

KOUNTRY KLIN HOBBY

1/12 scale small indoor carpet track & hobby store. No regular schedule at this time. Box 247, 324 Railroad Ave., N. Mohall, ND 58761, (701) 756-6307.

USA RACEWAYS

6083 Dixie Highway, Bridgeport, Michigan 48722, (517) 777-7USA
Every Tuesday Nite On-Road
Every Sat. Nite On-Road
Every Other Sat. Eve. Stock On-Road

THE RANCH PIT SHOP

1655 E. Mission Blvd., Pomona, CA 91766, (714) 623-1506. Every 4th Sun. 1/12 & 1/10 On-Road Combined Program.

1988 FLORIDA STATE SERIES

Nov. 12/13 - Sebring, Can-Am or GTP

OMAHA NEBRASKA RADIO

OPERATED AUTO DRIVERS

On-Road 6 cell racing two nights per month. ROAR rules apply. Call (402) 331-3931.

TRACKSIDE RACEWAY

Summer Schedule

Carpet oval racing every Tuesday nite 6 p.m. Computer scoring, fully stock hobby shop, concessions, pit tables. Menomonee Falls, WI (414) 255-2040.

S.O.R.C.A.C.C.

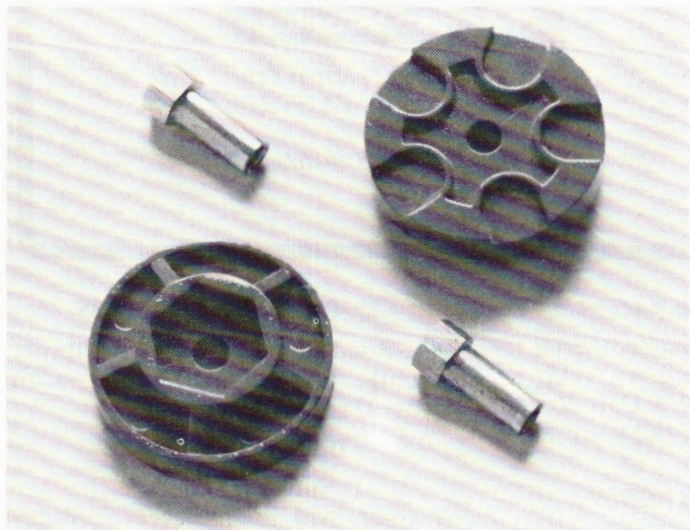
Southern Ontario Radio Control Race Car Club in Toronto, Ontario, Canada. Racing Alternating Sunday evenings from October to April. 6 p.m. to 10 p.m. For more information call Scott Reynolds at 298-4941 or Gary Joi at 421-9061.

CENTRAL MARYLAND ELECTRIC RACING CLUB COMMUNITY R/C SPEEDWAY

Middletown Park, Middletown, Maryland. 100' x 50' dirt oval, 14' wide lanes, 2' banked turns, drivers stand, no electricity available, open to the public. Race Director Mark Coats (301) 694-7420.

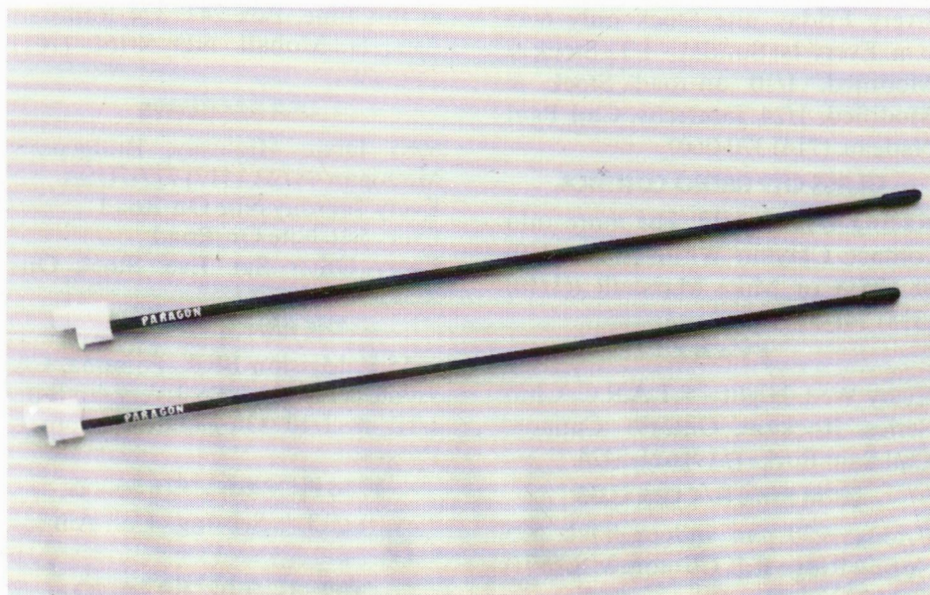
NEW PRODUCTS

Parma's newest accessories for all scales of R/C racing include No. 10408 Universal Wing Mounts. These lightweight aluminum mounts allow for sturdy, convenient wing wire mounting on all types of cars. Pictured at right are new 1/8" motor and axle spacers. These allow for precision spacing of both motor armatures and front wheels. Available in .005 (No. 11051) and .010 (No. 11052) thickness. Look for them at your local Parma dealer. Parma International, Inc., 13927 Progress Parkway, North Royalton, OH 44133.



Part No. 1715 - Rear Wheel Adaptor - Ultima to Monster Truck. Retail Price: \$9.99. Our new wheel adaptors mount CRP No. 4126 wheels with CRP No. 4208/4209 tires, or stock Blackfoot/Monster Beetle tires. Use with CRP No. 1714 axles. Fits Ultima and Turbo Ultima. CRP, 3250 El Camino Real - B-3, Atascadero, CA 93422, (805) 466-6945.

Top: Paragon has developed the ultimate roll-over antenna - The Pro Stick! This new composite antenna has been designed to take the punishment. This antenna is tough and lightweight. It also has the added feature of being hollow so you can run your antenna wire up the center, thereby decreasing drag and reducing the chance of antenna damage. \$9.95. Part No. PS090. Bottom: The new Classic antenna from Paragon not only strength but economy as well. In a crunch you can count on the Classic! \$3.95. Part No. CL090. Paragon Racing Products, 8802 Knollwood Dr., Eden Prairie, MN 55344, (612) 934-1220.



WORLD CHAMPIONS

TEKIN

At TEKIN we lead in technology and performance. As winners in 5 IFMAR World Championships, and 8+ USA National Championships you can depend on TEKIN for reliable products that are engineered for quality, dependability, and service.

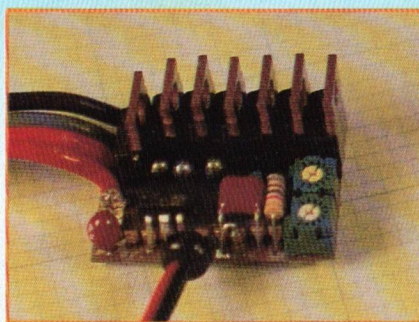
TEKIN PEAK DETECTORS

World's first, most experienced, and most advanced peak detection charger builders.

We have the technology to make your batteries perform. Exclusive variable slope integrated peak detection system gives the most accurate results on a wide variety of battery packs and conditions. Pulsed Mosfet output and trickle insure maximum voltage and capacity from your battery pack.

Available in three versions. Model BC870 is the standard for performance and durability. New BC100 has the highest output of any charger, (9 amps), to extract every last bit of performance from SCR cells.

The Model BC200 has an LCD digital readout of charge capacity, which allows you to estimate how good your cells are, and how long the car will run.



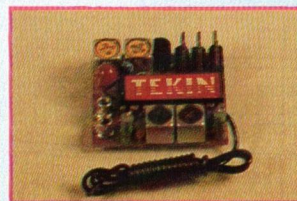
TEKIN SPEED CONTROLS

Replaces the resistor, wiper, servo, diode, switch, and linkage mess. Installs and adjusts easily. Unlike many others, TEKIN ESC's deliver world champion performance, as well as providing the ruggedness and durability to withstand continuous everyday use. Our new generation speed controls are the world's smallest and lightest. Other advanced features include current feedback Mosfet drive modulation which increases drivability, traction, and running time. Specially filtered output allows motor to develop more horsepower and increases life. Double rate braking means quicker stops. Built in L.E.D. brake/throttle indicator allows easy adjustment without a voltmeter, and is much more precise.

TEKIN
ELECTRONICS, INC.

TEKIN ACCESSORIES

Some of the quality accessories with the TEKIN stamp of approval. Stock motor, our own matched Sanyo batteries, replacement wire, heatsinks, switch.



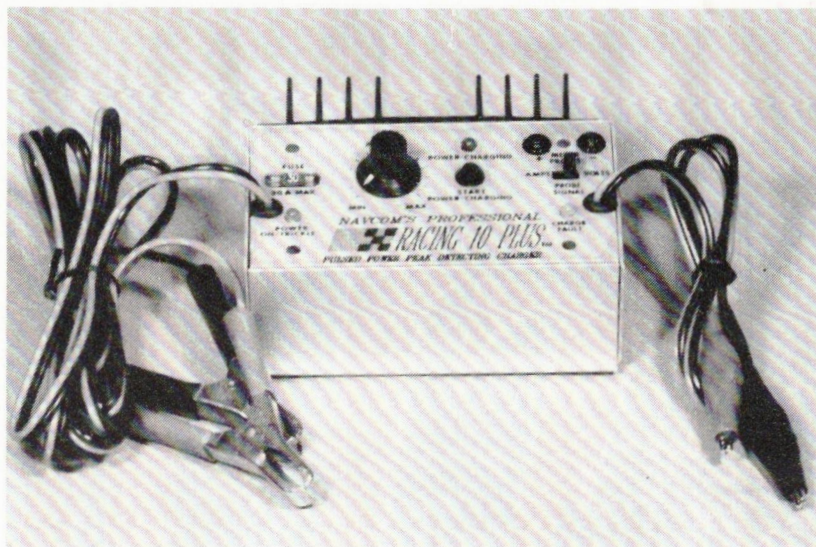
MICRO RECEIVER

World's smallest and lightest 2 channel receiver. Designed specifically for electric model car use. Works great with any transmitter.

PRECISION DIGITAL BATTERY DISCHARGER

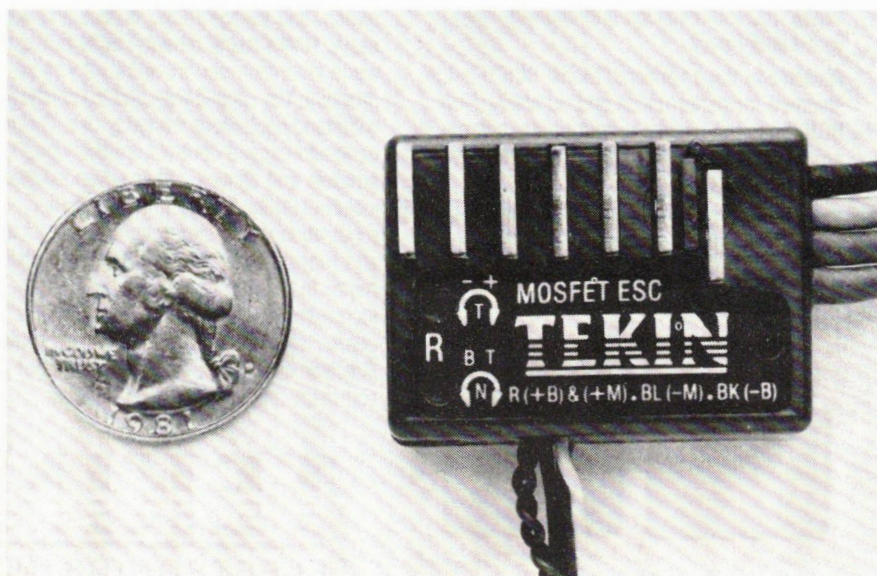
Tests battery capacity the same as factory battery matching equipment. One unit works with 1, 4, 6-7 cells. A world class leader from TEKIN.

Don't be left behind - pack more punch with Navcom's new Racing 10 Plus, pulsed power, peak detecting charger. This high powered version of the Racing 5 Plus delivers up to 12 amps for charging the new 1700 mah and 4000 mah, 4 to 7 cell battery packs. The 10 Plus comes in a gold anodized aluminum case with a black anodized heat sink. This charger, like the 5 Plus, operates off 12vdc (battery only) and has adjustable current from 1.5 to 12 amps. Available now at your dealer, or contact Navcom, Inc., 350 N. Main St., Huron, OH 44839.

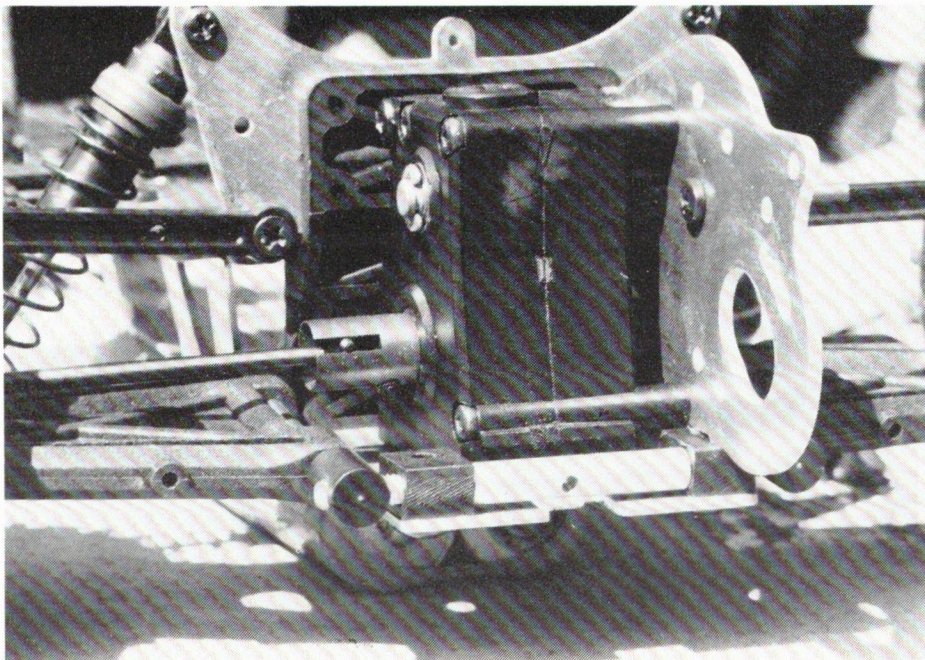
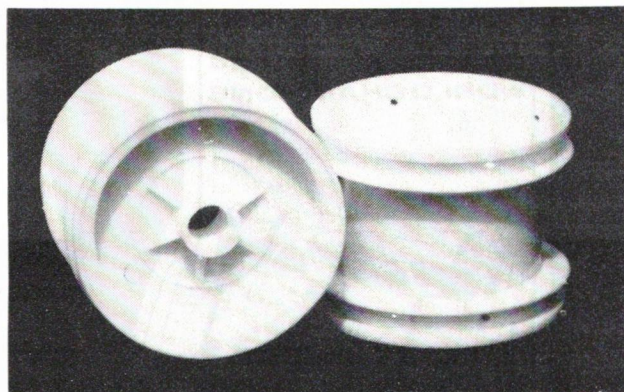


Team Losi wins the ball game hands down with their new diff "Hard Balls". These special 1/8" diff balls are made from ultra high strength space age material that yields a Rockwell hardness of over 75. This is as much as 20% harder than the next best thing. These extremely hard precision ground diff balls fit most 1/12 and 1/10 diffs and allow you to run the diff looser for easier, more effective diff action in the turns. Due to their extreme hardness, they resist the flat spotting and "notchy" feeling associated with even the best of the standard steel type balls. Pick up the Team Losi No. 4015 "Hard Balls" at a performance hobby dealer today. Team Losi, Inc., 1655 E. Mission Blvd., Pomona, CA 91766, (714) 623-1506.

New generation speed controls. These new ECS's represent the first major advance in three years. Component advances have allowed Tekin to put almost twice as many parts in a package 1/4 smaller. The result is such features as an LED lamp to indicate brakes, full speed, and neutral-no voltmeter needed. This makes installation quick, easy and accurate. A very helpful mini-manual is included. Reduced current draw means longer running time, even with the LED on. A special brake circuit allow quicker stops than ever before. This unit is engineered to be able to provide up to a 5+ year service life. Tekin Electronics, 1027 Trepadora, San Clemente, CA 92672.

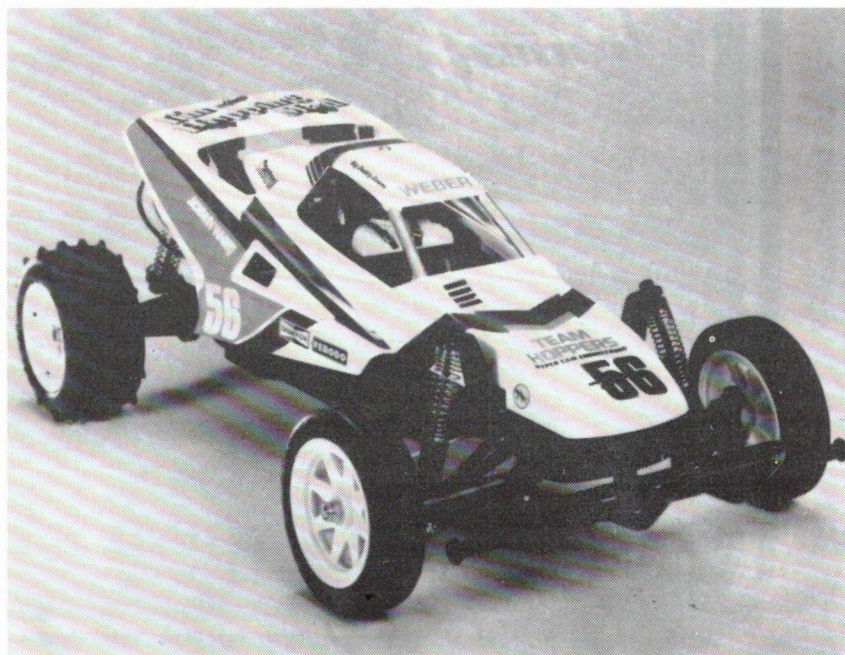


Trol-Tech announces their new Monster Truck Rims. These rims fit right on stock axle and are lighter than the stock ones. Available in White or Flourscent Pink. Part Number TRW1 - Retail price \$6.75. Trol-Tech, 16351 Bolsa Chica, Suite 310, Huntington Beach, CA 92649, (714) 846-6631.

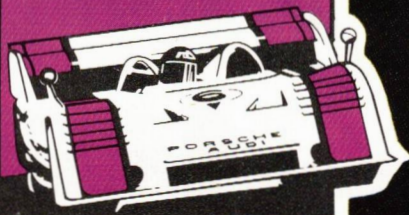


New rear toe in adjustment. This system enables you, with micrometer accuracy, to adjust instantly the degree of toe in on the rear wheels of your R/C car. The ease of changing the rear toe in instantly, even on the starting line, can add to the driver's advantage. As fast as the track conditions change so you can adjust to them. Robinson Racing Products, 165 N. Malena, Orange, CA 92669, (714) 771-4562.

The legend of the Grasshopper has grown to enormous proportions. This beginner level R/C car made by MRC/Tamiya has introduced thousands of people to the fun of off-road running. Now there's a new contender in the ranks of novice-type cars; it's the GRASSHOPPER II. The bathtub frame and chassis is made of engineering plastic for durability. A sealed gearbox houses a differential gear for great cornering control. The speed control is a heavy duty 3 step forward and reverse type. The suspension is made of independent swing axles in the front while the rear is a rolling rigid rear axle with 4 large coil springs on it to absorb shock. The front tires have a straight rib pattern while the rear are spiked for extra traction in the dirt. Don't settle for imitations; accept only the Grasshopper II from MRC/Tamiya, the name for quality and service. MRC, 2500 Woodbridge Ave., Edison, NJ 08817.



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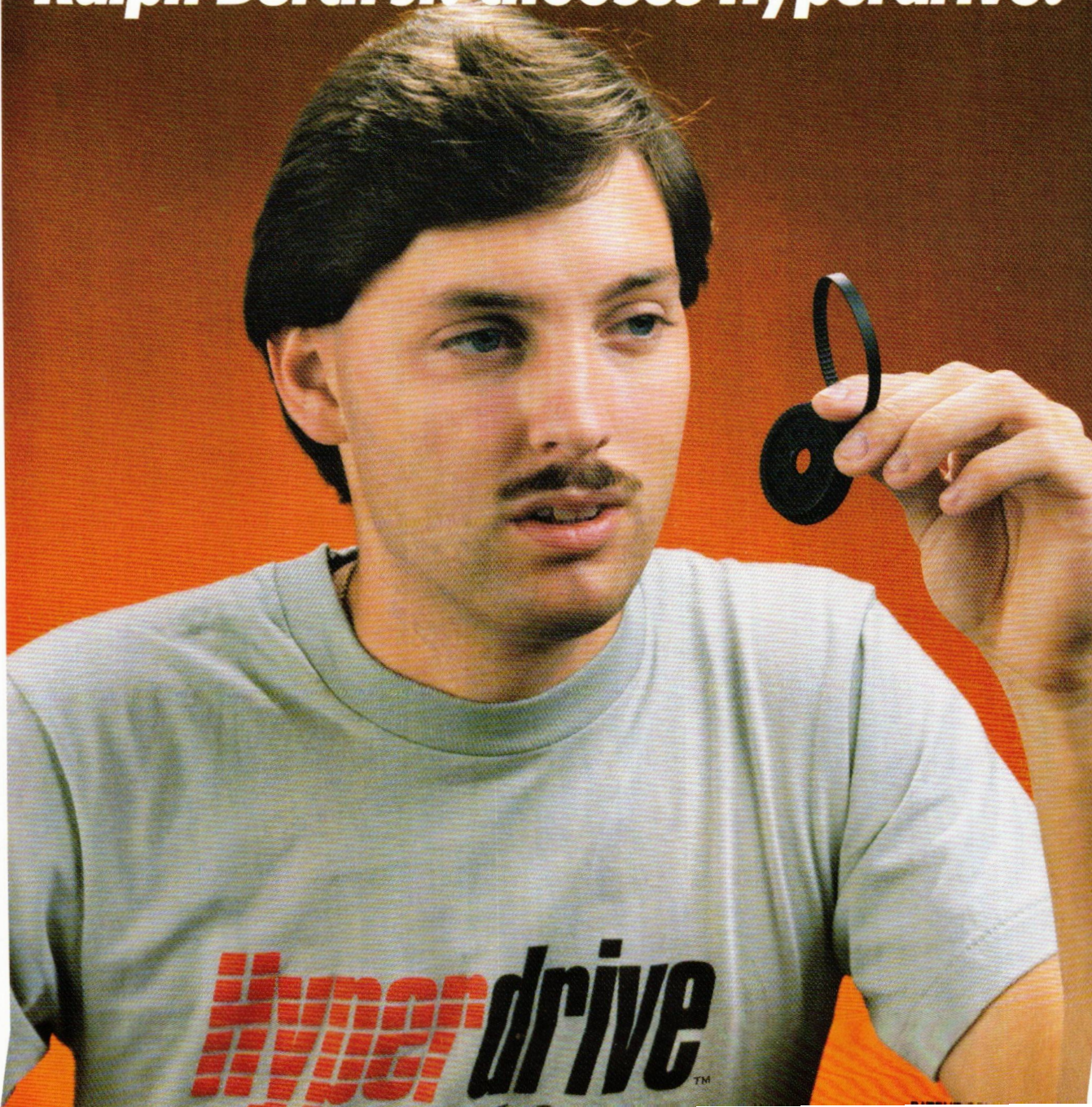
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Ralph Burch Jr. chooses Hyperdrive!



JUNIOR GROWS UP.

The new Magnum 2PBKA Junior has a sleek, functional new silhouette.



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Our Magnum Junior is famous for competition features and performance. The original Junior became our most popular system for RC racing, with tuning features to give you extra control over the fastest cars and boats.

Now there's a brand new Junior, the Magnum 2PBKA, and advanced electronics and ergonomic design make it better than ever.

IMPROVED BALANCE AND HANDLING

Light and well-balanced, the 2PBKA transmitter was ergonomically



Magazine style battery loading concentrates weight in the palm of your hand for better balance. (Batteries not included, NiCd pack optional.)

designed for fatigue-free operation and a solid feel. The stable grip helps provide more positive and precise steering control without adding weight.

You'll feel the difference instantly, and appreciate it even more in longer events.

PRECISION FINE TUNING

For an extra level of fine tuning, the 2PBKA puts the controls you need at

your fingertips. Superfine, ratchetless trims for steering and throttle and throttle ATV let you do precise customizing.

These controls, like the steering rate adjustment wheel, are positioned for rapid, on-track set-up changes. Servo reverse switches, plug-in frequency crystal and an expanded voltmeter are also part of the package.



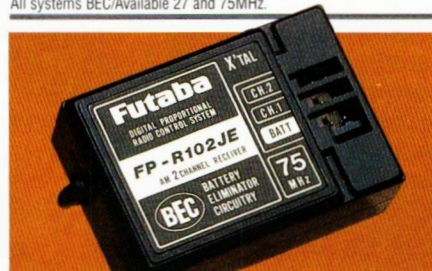
Precise trim and ATV settings are made on the Junior's control panel.

SIX JUNIORS TO CHOOSE FROM

Magnum Junior/2PBKA System Configurations
(All with T2PBKA transmitter)

S148 servos (2)	R102JE receiver	
S132H servos (2)	R102JE receiver	
S9601 servos (2)	R102JE receiver	
S148 servo	R102JE receiver	MC112B speed control
S132H servo	R102JE receiver	MC112B speed control
S9601 servo	R102JE receiver	MC112B speed control

All systems BEC/Available 27 and 75MHz.



R102JE/2 Channel BEC receiver uses the latest SMT construction.

There's a new Magnum Junior system for every type of RC car or boat. With high speed S132H servos it's perfect for 1:12 road racing; with 9601 servos it can handle high powered gas cars and 4WD. And the new R102JE and S148 feature SMT (Surface Mount) for extra reliability in offroad and oval competition.

Get a better grip on your RC car or boat. Move up to the new Magnum Junior.

Futaba

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

Steer clear

The Clod Buster. The monster 4-wheel drive, 4-WHEEL STEERING R/C pickup from MRC-Tamiya.

The first thing that catches your eye are those mammoth tires. Any R/C truck that sits on tires nearly 6½" high will attract your attention.

But the second thing...the most exciting thing to hit R/C yet...is the steering system. Four wheel steering. And only Tamiya has the guts and foresight to bring this technology to you now.

Now, 4 x 4 x 4. 4-wheel drive...and 4-wheel steering

Never before could you get so many advanced features in one package. Like dual motors for turf-tearing power. Motors that can be switched to run in parallel for power climbing...or in a series for endurance driving. These motors are no babies, either. Our 540 type motors alone set records for speed and torque. So imagine harnessing two of these brutes together! Each motor powers a set of wheels shod with huge, crusher tires. So now you can run over even the largest obstacles, or crush

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

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

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

Heavy duty suspension

We've complemented this sophisticated new steering system with a rugged link-style single trailing arm suspension, with rigid

axles both in front and rear. Then we damped it with not four but eight heavy duty coil spring shock units. If you like, upgrade them later to oil-filled units.

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

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



Model Rectifier Corporation
2500 Woodbridge Avenue
Edison, NJ 08817

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

