



MRC'S THUNDER KING

TAMIYA R/C CHAMPIONSHIP SERIES

Race your way to fame in Tamiya's new 1:10 scale on-road R/C Championship Series. **Race #2 will be hosted by Sheldon's Hobby Shop, 2135 Old Oakland Road, San Jose, CA 95131—(408) 943-0220—May 22, 1994—Race will be held at "The Rams RC Club Track" in Fremont.**

No Entry Fee! Entries are limited to 48 racers per class and all racers must pre-register by mail or fax. Reserve your place now for this free event.

The Championship Series continues monthly at

different locations across the country. Come join the fun as you compete for trophies, national press coverage, even celebrity status. You can race—modified or stock—in Tamiya's Formula One, Four Wheel Drives, Front Wheel Drives and Group C cars. All scale replicas of some of the racing world's greatest legends.

To get in on the action, see your R/C retailer for times, dates, locations, race rules and Official Entry Forms or phone 1-800-TAMIYA-A. Then show up and show-off at the Tamiya R/C Championship Series races nearest you.



Representing competitors from the three categories in Tamiya's 1994 R/C Championship Series—Formula One, 4WD/FWD and 2WD Group C racers. From the left: Lotus 107B, Alfa Romeo 155 V6 TI, Castrol Civic and the Nissan R91CP.



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Spring 1994

WORLD CLASS RACERS ON WORLD SCALE'S SPEED.

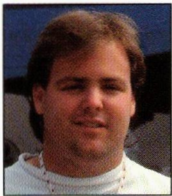
We invited some of the country's best racers to compete in the first annual World Scale event, The MRC-Trinity Dash-For-Cash. Everyone had heard about how big and rugged World Scale was... smashing into a brick wall 200 consecutive times; king of the hill in backyard bashing; smokin' through tall grass and taking major inclines with ease.

But how good was their speed, handling and race performance? We decided to find out. The track was the Ranch Pit Shop in Pomona, California. On the line were thousands of dollars in prize money. And the adrenalin was pumping.

There were both buggy and truck events. In the unlimited truck event everyone used World Scale's Baja King, which out of the box is complete with 15 ball bearings, adjustable ball diff, two motor transmission with adjustable slipper clutch, 4 oil filled aluminum shocks with coil over springs, adjustable turnbuckles and much more.

We spoke to some of the drivers who participated in the race... none work for MRC, nor did they get paid to give us their gut reactions.

Rick Hohwart



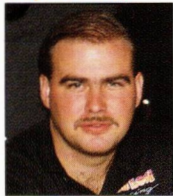
“Lap times were as fast as 1/10, I was surprised. They were super easy to handle. For instance, hit the brakes in a turn then kick the tail out and you don't have to worry about them spinning out, you're still in control cause they really hold the road. Great handling. I think they're a lot of fun and would recommend them to any 1/10 drivers for speed and handling.”

Six Times ROAR National Champion

Past Winner Reedy Race of Champions

Three Times World Finalist

Jay Halsey



“The trickiest thing is the realistic handling. It's like a Mickey Thompson truck race. When a 1/10th gets into a corner, it's quick and turns like it's on rails. These World Scale trucks are not only realistic looking, but handle realistically too. When they come out of a turn you can see the delay as they shift weight from one side to the other, like a real truck would. One more thing impressed me, nothing broke. Not just on my truck but on anyone's. They're rugged.”

Past World Champion

Five Times National Champion (Combination of ORRCA and NORRCA)

Past Winner Reedy Race of Champions

Jim Halsey

“I was shocked that they were as fast as they were. Their handling and speed was excellent.”

Race Director and former race driver of full size off-roads

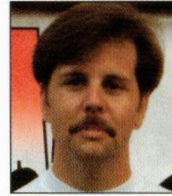
Tony Neisinger



“I think everyone would enjoy the larger size of these World Scale trucks. They seemed to me to be running lap times as fast as 1/10th. And with their dual motors they still ran very cool.”

Three Times IFMAR World Champion

Jack Johnson

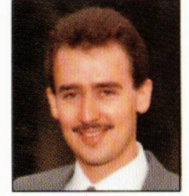


“Because of their size and weight I never expected them to be as fast as they were. And not only were they bigger and heavier but they were easier to drive, they stayed on their wheels a lot easier than some of the smaller scales.”

Nine Times National Champion (Combination of ORRCA and ROAR)

Two Times World Finalist

Chris Allec



“They're bigger and so they look more to scale, yet they had the same lap times as 1/10th. And excellent handling. They're more fun than I've had in a long time on the track. I'd recommend them to 1/10 drivers for their speed, handling and realism.”

Past World Finalist

Past ORRCA National Champion

Past ROAR National Champion

Past Winner Reedy Race of Champions

Past NORRCA National Champion



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OFF-ROAD Scale™



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COMPETITION



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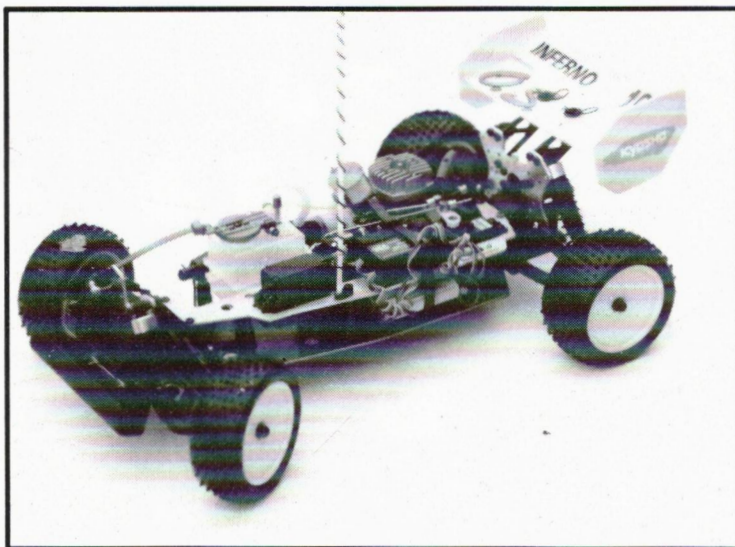
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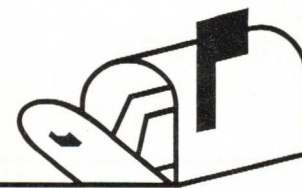
**THIS MONTH
IN RACING**

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A LOOK AT HLR



CP's Mailbox



Competition Plus is a magazine dedicated to racing and racers. From time to time, you may need an open forum to express your ideas or thoughts on racing or a racing subject. This section is for you the racers! Write to: Mailbox, Competition Plus, 23182 Alcalde, Suite K, Laguna Hills, CA 92653 or Fax (714) 830-5108. We'll be waiting for your opinions!

A NEW SCALE: 1/18 SCALE RACING

Dear Competition Plus:

Bud Bartos from B.R.P. tells me you are going to do an article on 1/18 scale R/C racing.

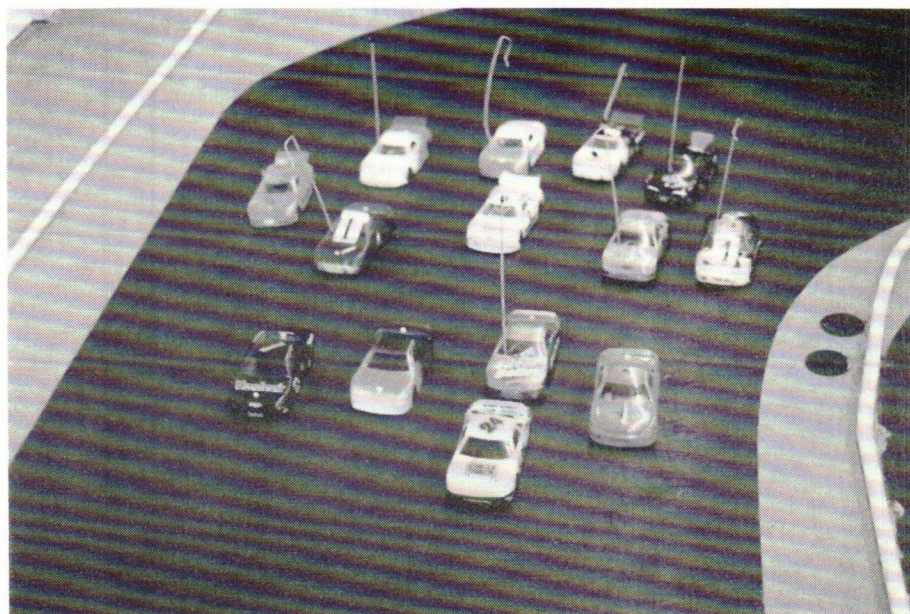
Enclosed are photos of our 1/18 scale racing facility in Bullhead City, AZ.

After first getting in and trying a few of the oval outlaw cars - we decided to open a track just for these cars. The track is made from 3/4" P.V.C. pipe and was painted on the concrete floor - total cost about \$60.00.

By most standards it would be considered a small track (60' x 30') but these are small cars and they turn 6 second laps which makes for quick, exciting racing.

The cars run 12 to 15 minutes, so we hold 8 minute heats and mains. They run on 4 AA's and re-charge in 8 to 10 minutes at 3 amps. We do not allow any modifications to the cars, they run box stock.

Having sold 30 cars in the first 30 days, we are more than pleased



with the durability and quality of the cars and hope more hobby shops will jump in and start racing this class of car.

Notice everyone in the pictures are smiling and having fun. Please notice we even have several ladies racing. Let's have fun! That's what our sport is all about.

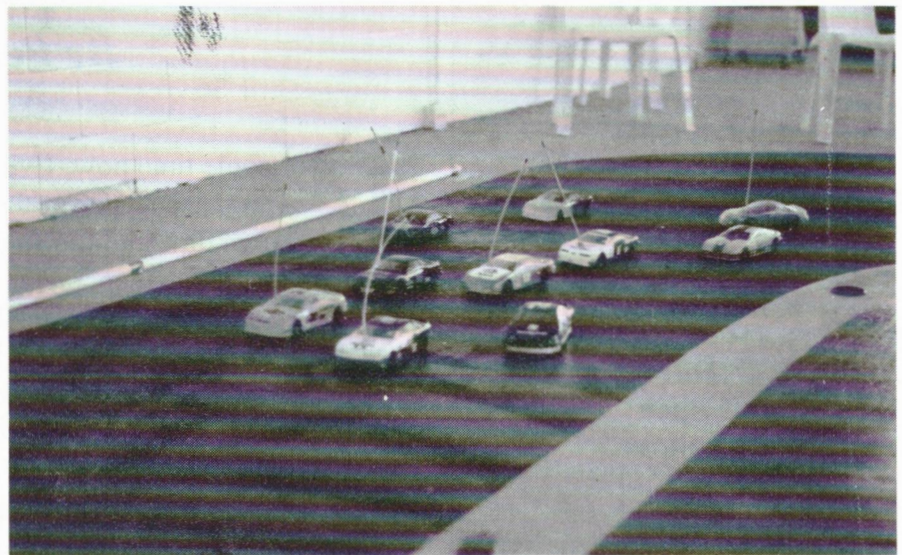
Sincerely,
BOB OLSEN
G & S Hobbies
967 Hancock
Bullhead City, AZ 86442



Editor's Note:

Sounds like a great facility! Hopefully we can get more tracks interested in racing 1/18 scale. This is a great scale for beginners that want to get into R/C racing without the high expense to start. I believe that the scale will get new people into the sport and they will then branch out into our larger, more competitive scales.

Any tracks around the country wanting to get into the scale and need advice on putting a track together, contact: Bud Bartos at B.R.P. (216) 284-0270, Fax (216) 284-0271.



DRAG COVERAGE

Dear Peter:

The story in your January issue on Chuck Etchells written by Matt Wojkowiak was terrific. We really appreciate any exposure we get, especially a feature story like that. Matt has been a friend of Kendall Products for some time and does an excellent job of covering professional drag racing for your publi-

cation.

If we can assist you in any future endeavors, please don't hesitate to call.

Best Regards,
BILL GRIFFITH
President
Motorsports Marketing, Inc

NEWCOMER REVISTED

Last month we received a letter from Jack Monaco asking about

any national organizations supplying rules and regulations for R/C car racing, we apologize that we refrained from mentioning NORRCA as one of the sanctioning bodies for R/C car racing.

We wish at this time to state that NORRCA has been operating for quite a few years and is a great organization to join. The NORRCA President, J.R. Sitman, can be contacted at (909) 944-5381

CP.

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PUBLISHER
Cory Barana

EDITOR
Peter Barana

ADVERTISING
Samantha Ryan
Monica Cole

CONTRIBUTING EDITORS

Bob Crane
Kent Heiden
Rick "The Hammer" Houle
Bill McCall
Jeff Pack
Jeff Palmer
Erik Soderquist
Jack Wright

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Finish The Lap You're On!

By Peter Barana

For some time now, I've been calling for some type of reform in racing, especially in the Stock and Novice classes. It has been shown time and time again, that tomorrow's world champ is out there somewhere racing in the Stock class today. In order to keep them racing, we've got to put forth both a competitive and affordable class. Spec racing, a class of racing that is common place in just about every other form of racing, is long overdue in our sport. ROAR, moving in the right direction, is going a step closer to the formation of a spec class with the 1995 Stock Nationals.

As you know, hand-out motors have been a standard for some time now when it comes to National level races across the country. ROAR will go one step further in putting forth an approved tire list for the 1995 Off-Road Nationals. In short, ROAR would state before the event that only certain tires will be allowed for that race. This will cut way back on the expense of having to bring a barrel full of brands and patterns to find out what's going to work the best.

A second, and potentially more important benefit is that the tires on this list will be available over the counter at your local retailer. No more "prototype" or "one-of-a-kind" tires being run by a sponsored ringer in the Stock class. One of the things that has always troubled me about our sport is the "secret" or "special" stuff available to a select few. If you feel you're not competitive going into a race because you can't purchase the "good stuff", you're not likely to continue with the sport.

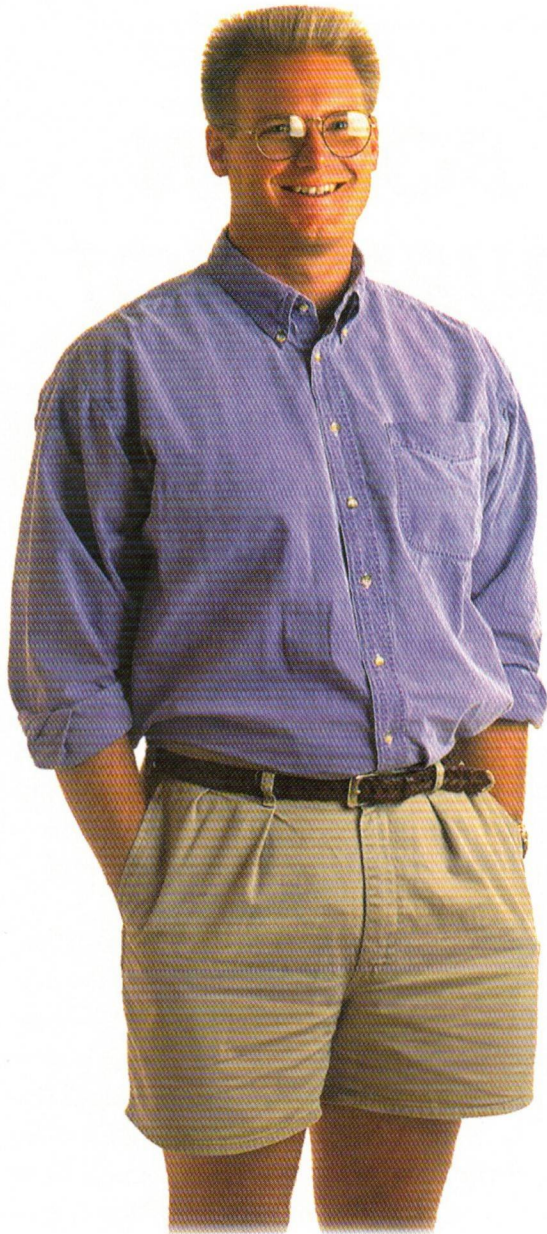
There will always be a need for manufacturers to field test new products before they release them to the public. However, they should do this in the modified classes. I feel this new regulation in ROAR is a step in the right direction!

R/C

The Fastest Man in the World.

Joel "Magic" Johnson® Won the 1:10 On-Road and T.Q.'d the Off-Road IFMAR World Championships, making him the "Fastest Man In The World." How did he do it?

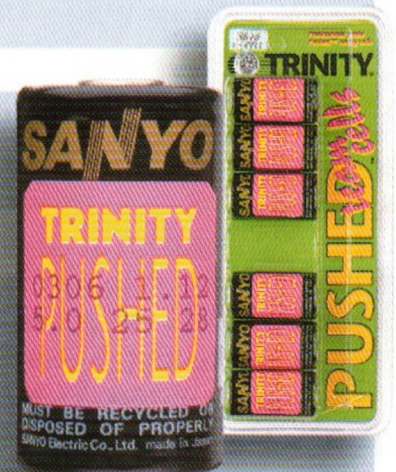
Trinity motor and battery technologies delivered the horsepower for these World Class performances. Joel counts on Trinity for world-beating power, you should too!



EX-Tech. From the engineering department at Trinity came this totally new design. Initially developed as an experimental modified Team Trinity racing motor, the EX-Tech is here, now for any driver who demands the ultimate in performance. The Trinity design staff started from scratch. From the Armature Balance Concentrator™ to the capacitor installation eyelets, everything represents the state-of-the-art in motor design and technology. The EX-Tech is available in 11 different winds (7 to 17 turns), to fit any car on any track.

Pushed™ Team Cells. If there was a better battery anywhere, Joel would have to use it in order to be "The Fastest Man in the World".

As Sanyo's Number One hobby customer, we test thousands and thousands of cells to the highest standards in the industry to insure you and Joel the absolute best matched packs in the world!



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PIT BOARD

MIP Takes The 1994 Florida Winter Championships

The 1994 Florida Winter Championships has come and gone with great success for the MIP Team members. Congratulations to Team Associated's Mark Pavidis for placing First in the Modified Truck Class. Mark used MIP CVD-10T's, and our New Golden Shock shafts (Titanium Nitride coated shock shafts due out in mid-March) on his A Main winning RC10T. Six out of ten drivers in the Truck A Main had MIP products on their trucks. Seven out of ten drivers in the 2WD A Main had MIP products on their cars. Using MIP products puts you in the A Main.

MIP has long been a supporter of the 4WD class, with its 4WD conversion kits. Starting in 1994 MIP factory drivers Eustace Moore and B.J. Christensen will be seen running the Yokomo YZ-10. MIP will be testing and developing products for the 4WD in hopes that this once very popular class will be revived in the USA. Eustace and B.J. started off with both of them placing in the A Main at the Winter Championships. Congratulations guys!

BOYLAN BURNS HOT LANTA

Mike Boylan on one of his weekly excursions through the south, stopped recently at Silver Wings Super Speedway in Atlanta, Georgia. Like Sherman 130 years before him, Mike rolled through Atlanta crushing the competition, and leaving 2 new track records for them to remember him by.

Mike broke the stock track record for 4 minutes with a 42 lap run in 4:04.6, one lap faster than the old record. Mike also took a new single lap record with a 2 tenths faster 5.5 second pass.

For weapons, Mike used an Evolution 10ss, powered by a Pointblank P301 "24 degree ROAR Legal" stock motor. Mike used Trinity RC4460 "Silver Sportsman Brushes" which he fully broke in so they wrapped around the comm as much as possible with RC 4469 "Motor Break In Drops." Before each heat Mike put several drops of RC 4040 "Revtech/Trinity Comm Drops" on the commutator for that extra speed.

For batteries Mike used Trinity RC 5616 Team Pushed Sanyo 1700 SCRC cells. Mike was also using TRC radials.

PIT BOARD

YUASA BATTERIES DOMINATE AT RONDY

Drivers running Far North /Yuasa 1800's dominated the largest annual RC event in Alaska. The Anchorage Fur Rondzvous Mini Gran Prix saw John Helton TQ and win both stock and modified truck classes with his Yuasa powered Schumacher Storm. Second in Stock was Ken Forrest, also with Yuasa power. In the on-road classes, Tom Tomazevic TQ'd and won both the 1/12 and 1/10 with Ken Forrest taking third in 1/12 and Carl Blocker second in 1/10, all with Yuasa 1800 power. During the last round of 1/12 qualifying, the computer was incorrectly programmed and the race was restarted after one minute of running and without any delay, run another eight minutes. The only cars to finish the now nine minute heat were Yuasa powered.

C.O.R.C. SPRING FLING '94 Set For April

The best oval racers in California will be at Victory Speedway in the San Fernando Valley for the third annual Competition Oval Racing Club (CORC) Spring Fling '94.

They will be racing 1/10 scale electric or gas powered NASCAR bodied autos on the 385 foot oval parking lot course. These land missiles will be traveling at scale speeds of over 500 mph (50 mph actual)! There will be a 200 lap Super Speedway race which will have pit stops. The competition will be fierce and if you crash you don't get hurt. These high-tech cars will be competing in a grueling 2 day event for trophies and prizes for the various classes.

Designed to let the whole family race and play together, we do not accept sponsorship from alcohol or tobacco companies, and actively promote a drug free life style through "RC Racing is a Habit We Can Live With". We invite everyone to come and witness the excitement.

Victory Speedway
22960 Victory Blvd.
Woodland Hills, CA 91367
Time: 10:30 a.m. - 5:00 p.m.
Dates: April 23-24, 1994

PIT BOARD

BADD BOYZ CLASSIC HAS 312 ENTRIES

The Badd Boyz Classic Off Road Xtravaganza was successfully completed on the weekend of February 5th and 6th. A total of 99 heats of qualifying were completed in 12 hours thanks to the very organized staff of RCRC of Oklahoma City. Congratulations to all of the trophy winners.

GET A GRIP.

Gettin' sideways is cool if you're running dirt oval, but if you're racing on carpet or asphalt, it doesn't cut it!

To improve foam tire performance on hard surface tracks, the race team worked with the chemical engineers at Trinity to develop Zip Grip™, a custom, hand blended R/C foam tire traction compound.

Using Zip Grip provides the most precise and repeatable tire performance on carpet or asphalt R/C racing tracks, of any formula available today. And, the new style applicator keeps the Zip Grip on your tires and off your hands.

So if you've been getting entirely to familiar with the turn marshals, it's time to "get a grip" with Zip Grip!

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PROCAR SERIES QUALIFYING

In 1993 PROCAR introduced a format of racing designed to accommodate the large number of racers wishing to attend major events. While this may not be a problem in today's economic climate, PROCAR is committed to maintaining a system that rewards drivers based on their efforts and participation. By the same token . . . we don't want to see anyone left out. Last year I felt it was important that PROCAR demonstrates a firm position on rules and the way they are applied throughout the series. While I realize that position left some people unable to participate in the World Championships, I felt a long term responsibility to those that had raced according to the outlined requirements.

To help and encourage more people to participate this year, I am slightly modifying the qualifying structure. First, PROCAR has added two "Regional Level 2 Championship" events to the series. These events are geographically located in a fashion to help those that had trouble traveling to last year's Nationals. These two events will offer Worlds qualifying status. Second, those who have qualified for the Worlds through the outlined method will have first right of refusal to entry, based on their Level 2 qualifying position. Other PROCAR members will now have access to the event as an alternate. I feel both of these adjust-

ments will help maintain the quality of racing that racers have come to expect at a PROCAR event while giving everyone an equal and fair opportunity to compete.

The two Regional Championship events are indoor oval and are being held the weekend of April 24, 1994. The East Coast Regional Championships is at Winners Circle Raceway in Richmond, Virginia (804-355-7076). The Midwest Regional Championships will be sponsored by Trinity and held at Autograph Raceworld in Pendelton, Indiana (317-778-3386).

The Northern Nationals will be held the weekend of May 15 at K/N Speedway in Connecticut (203-684-9896). The Southern Nationals will be at Lake Whippoorwill Speedway in Florida, (407-277-9586) July 1,2,3. AmeriTrac in Mattoon, Illinois (217-234-8707) will host the Northern Nationals on September 2,3,4. The World's will return to PC Hobbies/King Superspeedway in King, North Carolina, October 7,8,9.

I am still scheduling much of the Off Road Series. However, Nationals are slated for PC Hobbies/Baja King, July 29, 30, 31 and AmeriTrac, September 16,17,18.

Tracks interested in sanctioning and scheduling Off Road or Oval series races should call (810) 549-4346.

2

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PIT BOARD

1994 Florida Winter Champs The Team's Dream Race!

Tampa, FL - The 1994 Florida Winter Champs is one of the premier Off-Road events of the year. The event was sponsored by Team Losi. 430 entries from all around the United States, as well as Japan, Germany, Sweden and South America were competing, showing the importance of this race.

In our wildest dreams, we never could have dreamed of the final overall results. Working together as a Team and sharing each other's car set-ups, helping each other with everything, the drivers accomplished their unbelievable dreams.

We know we have the car to beat, with our RC10. Our four off-road world championships prove that. But, we're also aware that there is some talented competition racing against us. This is what made the race so special for us. While we know we have the best car, and great drivers, the results prove our point.

First, Mark Pavidis took Top Qualifier honors in the Truck Class, and then we qualified nine drivers

into the A Main. They then went out and finished first through ninth in the A Main!! We've never been able to do that before. All nine RC10T Team Trucks used Reedy's New Sonic motors, Reedy's Sanyo SCRC batteries, Proline tires and Novak ECS's.

Then in the 2WD Modified Class, Masami Hiro-saka was Top Qualifier, and eight of our Team qualified into the A Main. And, in another dream finish, they took the first eight places!!! All of the eight RC10 Team cars also used Reedy's new Sonic motors, Reedy's Sanyo SCRC batteries, Proline tires and Novak ECS's.

One dream finish would have been fantastic, the team had two dream races!!

MODIFIED TRUCK

- 1st - Mark Pavidis/RC10T/Reedy
- 2nd - Jason Ruona/RC10T/Reedy
- 3rd - Carlos Gonzales/RC10T/Reedy
- 4th - Derek Furutani/RC10T/Reedy
- 5th - Paul Wynn/RC10T/Reedy
- 6th - Bret Reelfs/RC10T/Reedy
- 7th - Scott Hughes/RC10T/Reedy
- 8th - Greg Hodapp/RC10T/Reedy
- 9th - Ruffy Rios/RC10T/Reedy
- 10th - Mike Weed/Losi/Peak

2WD MODIFIED

- 1st - Masami Hiro-saka/RC10/Reedy
- 2nd - Mark Pavidis/RC10/Reedy
- 3rd - Matt Ledger/RC10/Reedy
- 4th - Carlos Gonzales/RC10/Reedy
- 5th - Scott Hughes/RC10/Reedy
- 6th - Cliff Lett/RC10/Reedy
- 7th - Greg Hodapp/RC10/Reedy
- 8th - Jason Ruona/RC10/Reedy
- 9th - Scott Roberts/Losi/Peak
- 10th - Rick Hohwart/Losi/Peak

Stock Motors: General Care And Performance Hints

By Erik Soderquist

The stock class in all scales of racing has become an increasingly competitive class. Only a few years ago the stock class winner was recognized simply as the best driver. Through the evolution of the sport, the stock class has taken on the appearance of the modified class. In other words, the equipment factors vary heavily in the outcome of the race. The racers that seem to have the winning edge in stock simply have the knowledge needed to optimize the motors that they have to work with.

In learning how to best deal with a stock motor, it is useful to look at it from a "handout" motor race situation. In this situation, the motors are given out as they come from the original manufacturer in Japan.

The first major horsepower gain to be made involves a brush change. The brushes that come with most all of the stock motors are the original brushes that come in them from Japan. These brushes are quite inad-

equated for racing purposes. They do not provide much horsepower and are very abusive on the commutator. Fortunately, a few American companies have done their homework and have made available soft durable brushes designed for use in stock motors. A brush containing silver is most often used in this application because of its low resistance. It should be noted that a brush with too much silver is quite damaging to the commutator and should be avoided. Two to six percent is usually more than adequate.

Because the stock motors do not draw a tremendous amount of amperage under load compared to modifieds, you can cut approximately a third to one-half off of the top in order to reduce friction. Another popular brush modification is cutting the trailing edge of the brush. This is commonly referred to as a timed brush. What this does is advances the timing of the motor by a few degrees. The result is a bit more

horsepower. This is generally most useful for ROAR legal 24 degree motors. One trick for the "laydown" style of stock motors is cutting both the leading and trailing edges a bit. This helps return some torque to the motor without sacrificing much if any RPM.

Other ideas included the ever famous "hole in the brush" and "saraded" surface. Both of these concepts have proven to have their uses in certain situations. If you are unsure, or are just learning how to deal with a stock motor, it is advisable to keep things simple until a general understanding of stock motors is achieved.

Breaking-in of the brushes involves a couple of different methods. The safest by far is to just let the motor run on a low voltage power supply for five to ten minutes. Keep an eye on the motor so it does not get too hot. Another method uses "motor comm drops" to help speed the process up. In this

method, take one of the industries commutator drops (Extreme Motorsports, Can-Non, Cam, Trinity, etc.) and place a few drops behind a brush and position it so that the fluid will flow onto the comm... put the motor on the same break in power source and let it rip!! The comm drops will greatly decrease the amount of time it will take to fully break-in the brushes. Be careful not to use too much of the fluid as it can also damage the commutator if not used correctly.

Brush springs control a great deal of the motors performance. Because the commutator of the stock motors are not very round, there is a very big problem of having the brushes "float" at high RPM. The cure for this is to simply increase the spring tension. On most motors increasing the stock spring tension

ten to twenty degrees will do the trick. Though this may decrease the free running RPM's, and increase the AMP draw, the brush will be held to the commutator. The end result is greater horsepower under load. In many cases, by just increasing the spring tension the motor can be geared up a tooth or two more without any problem. What must be remembered is that in the stock class, there is generally not a problem with run time. With this in mind the general goal is to provide more horsepower even at the expense of a bit more AMP draw. Keep in mind that there is certainly a point where too much spring tension will begin to give diminishing return. The only way to truly see this is on a dyno. Without the advantage of a dyno, small incremental adjustments are the best way to approach

the situation.

Another speed mod that the pros use is to advance the timing using a little bit of force. Many of the motors available today have quite a bit of clearance on either side of the tabs that secure the can to the endbell. The first step is to grab the endbell (being careful not to squeeze the bushing) around the bushing with a large pair of pliers. Next grab the can with your other hand. Hold the can tight and rotate the endbell in a counterclockwise motion (looking at the endbell). If the endbell moves at all it will only be a small amount. Though it is small, it is just that much more power that you will have. Be careful! If the endbell does not move with a reasonable amount of force, do not force it. Some motors will cooperate and some won't.



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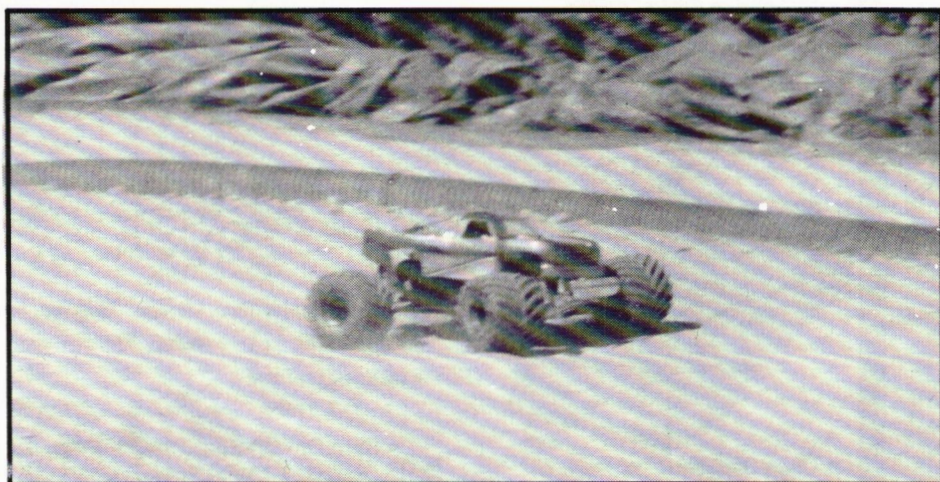
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AWESOME KING!

MRC's Latest Entry Into Their World Scale Class Is The New Awesome King. This Evil Twin Brother Of The Thunder King Will Certainly Turn More Than Its Fair Share Of Heads!

You have already met our friend Thunder King, now meet his evil twin "Awesome King." Just when you thought you have seen everything, some nut (namely me) finds some twisted way to take MRC's Thunder King to new heights. Since the Thunder King was intended as a Monster Truck, I thought it deserved the full treatment. Starting with the truck's look, I couldn't see much more than maybe a new body. But then I remembered Chrome Tech U.S.A., that's it! I'll chrome all of the plastic parts that



will really set this king apart from the crowd, so with a quick call to Robert at Chrome Tech U.S.A. I was set. Robert can chrome most anything made of plastic or nylon, even if the parts have already been installed, that's no problem for Chrome Tech, although the parts will turn out better if they're new and left on the part trees. In my case, I had

Surprisingly enough the King handles quite well even with the big balloon monster tires. Needless to say roll-overs are a thing of the past.

Story & Photos By Jack Wright

NOVAK
ELECTRONICS, INC. *RACING TEAM*

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and
TEAM LOSI

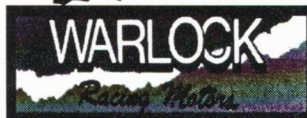
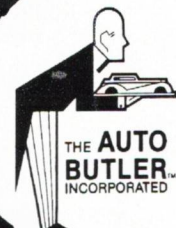
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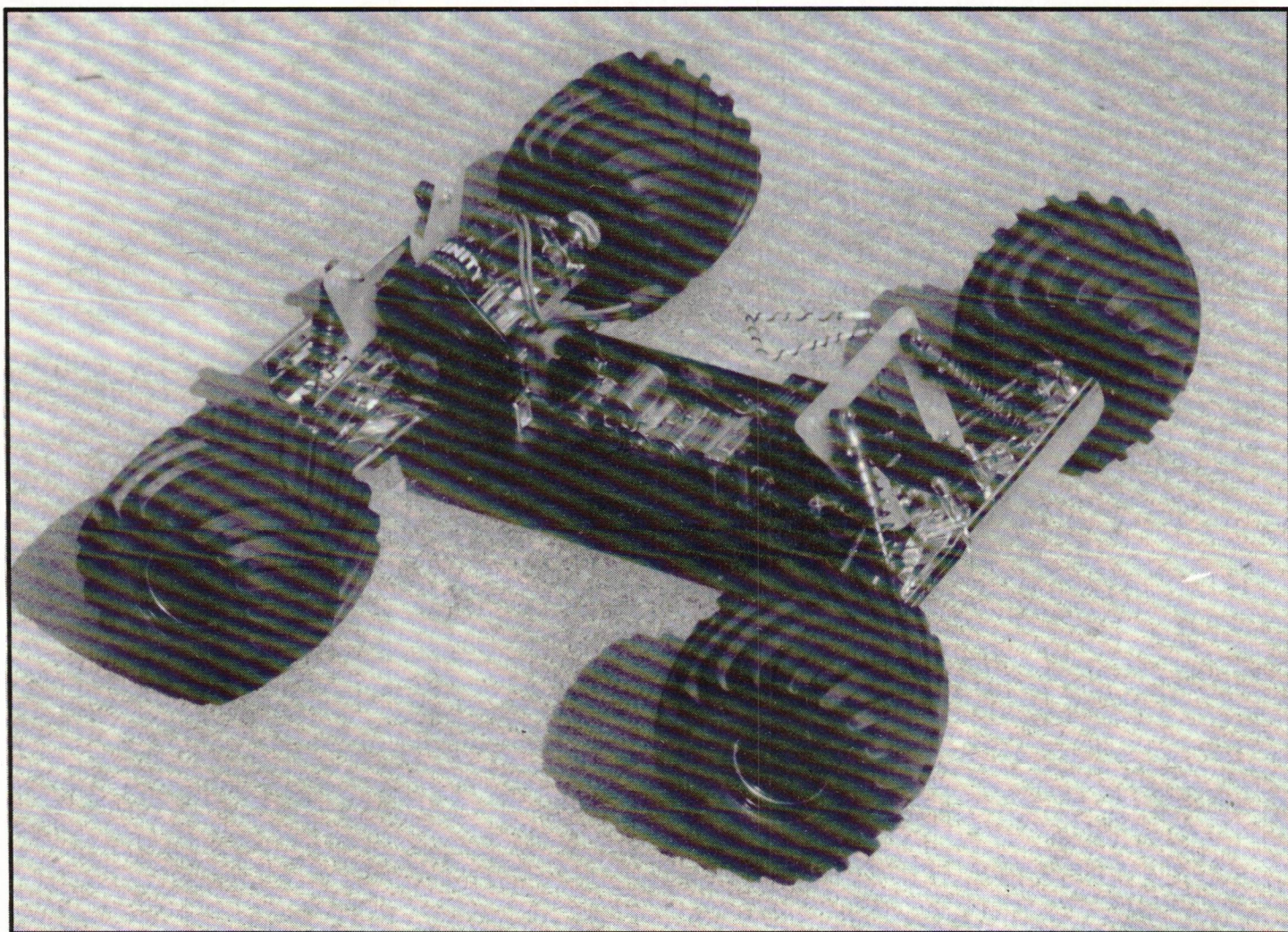
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"First of all, I replaced all the stock plastic bushings with ball bearings I had left over from a Trinity bearing kit. The King uses the same 6 X 12 MM bearings found in the Clodbuster, of course MRC offers a ball bearing upgrade . . ."



already built my Thunder King, and, even with the few scratches that were on the parts the chrome still gave them a class look. Chrome Tech does offer pre-chromed parts for the Clod Buster and other popu-

lar kits, so if you need chrome, give Robert a call.

**Tread Softly,
Carry Big Tires!**

At first I thought there wasn't much I could do about the tires and

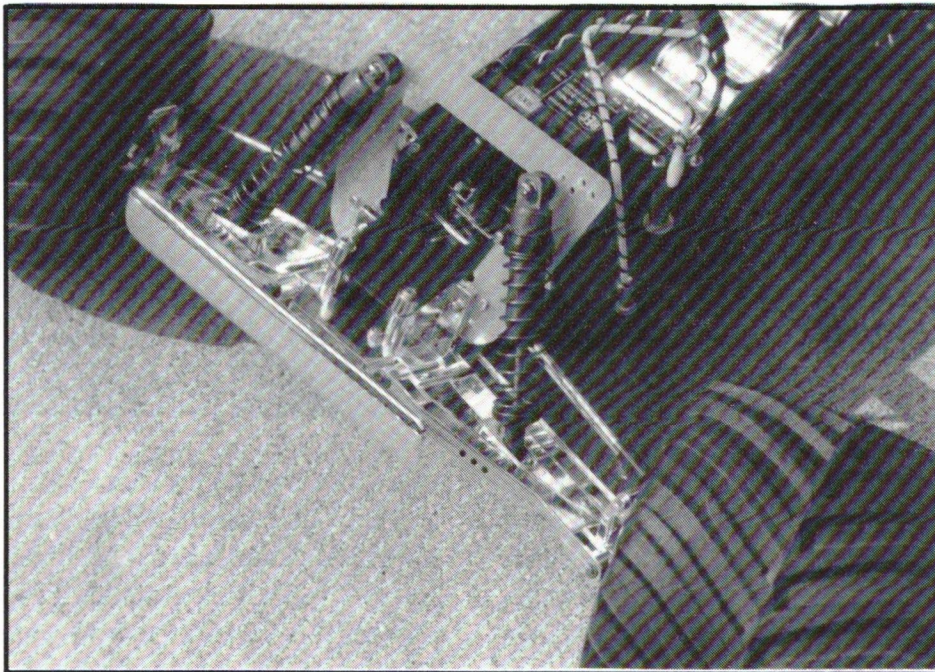
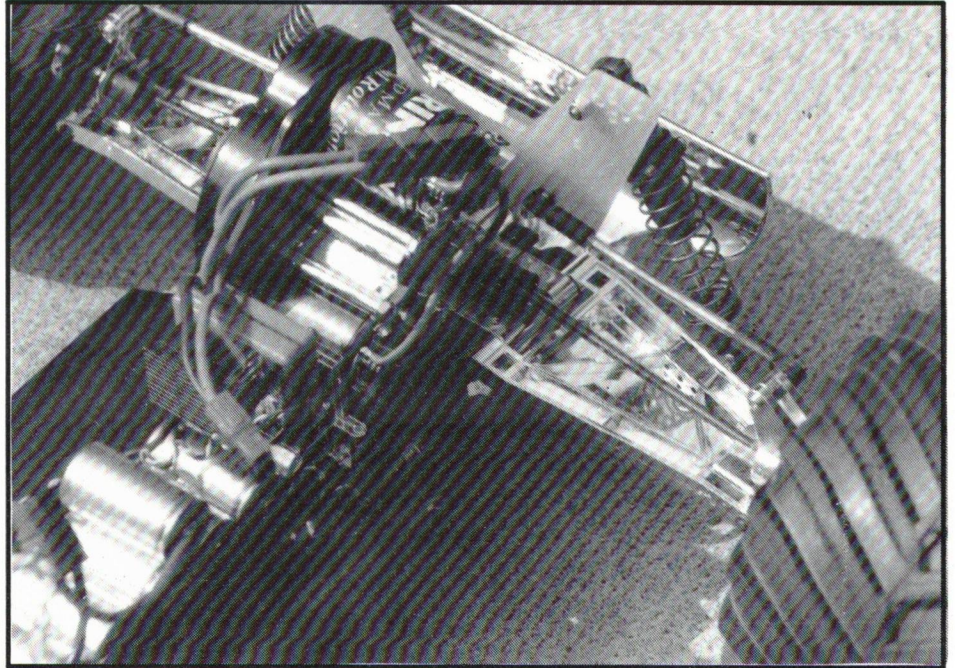
The finished chassis; mounting the big tires on the King looks weird at first, but, once you see it with the body on all that changes.

wheels on the King, besides chroming the wheels there wasn't much else, but, then again maybe I could! After taking a close look at the rear hubs on the Thunder King, I discovered that the CRP Ultima conversion hubs that allows Blackfoot wheels to be mounted to the Kyosho Ultima, will also work on the Thunder King. Of course, why in the devil would I want to put the smaller Blackfoot wheels and tires on the King? Well I don't! Instead, I would put a set of Imex's Jumbo Dawg's Tires and wheels on my Thunder King. For those of you not familiar with these tires, they are roughly larger than those found on the Tamiya Clodbuster, so needless to say these are some big tires.

To mount the Imex Wheels and tires you will need to make a few modifications, mounting the rear wheels is much easier than you

think, but, the fronts are quite a bit more work. First as I mentioned before, you will need a CRP or JG Mfg. Kyosho to Tamiya adapter kit for the rear wheels. Although the

adapters do require a slight modification to fit properly, I had to open up the center of the nylon hub adapter with a 23/64ths drill bit so the stock brass hex would fit in the

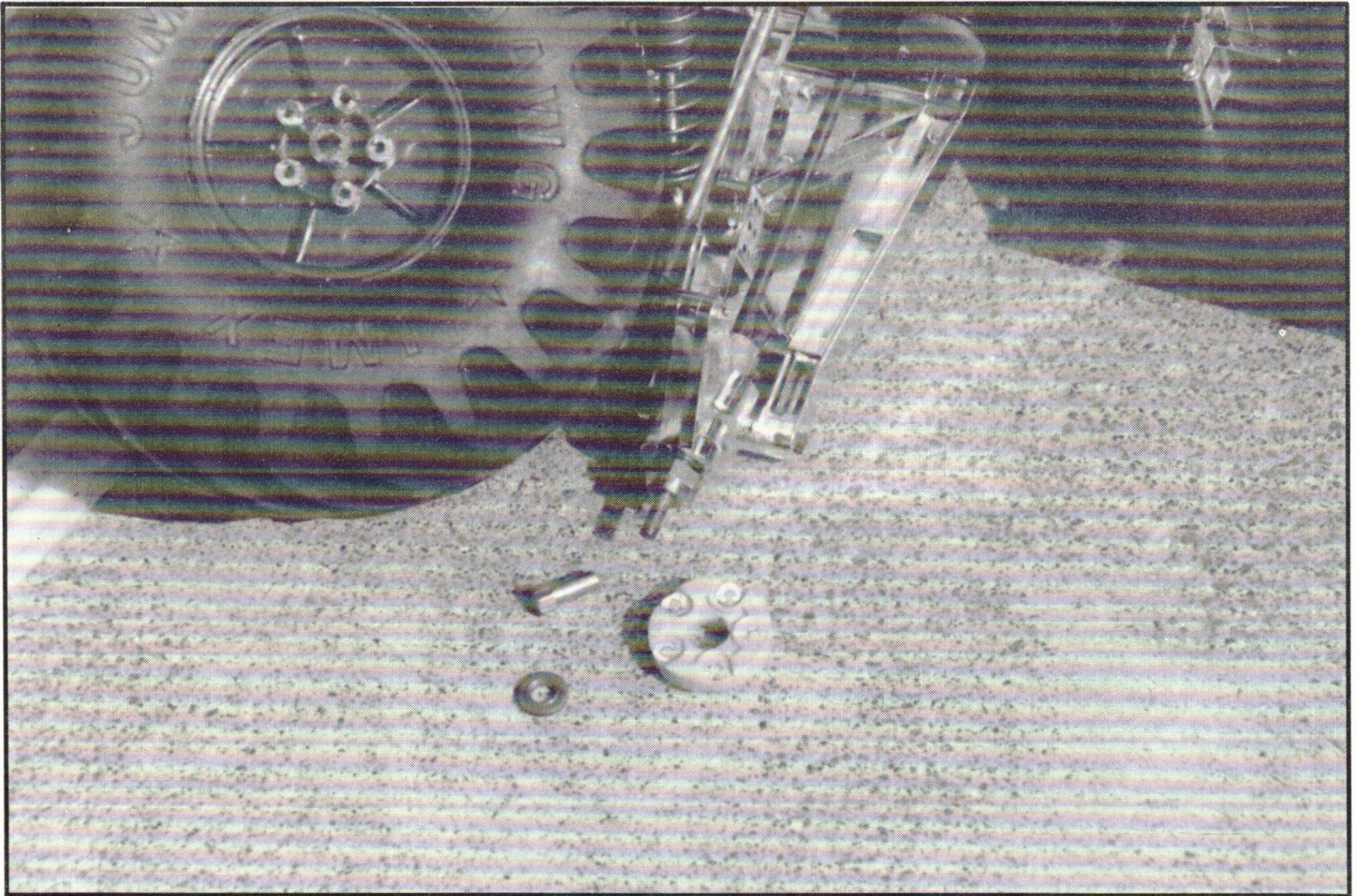


I moved the upper mounting positions of the front and rear shocks to the inner most holes on the tower for better stability with the Imex tires. The Trinity motors made this truck one of the biggest of the movers and shakers.

nylon hub (as shown in the photo). With this adapter, you have no problem mounting the Imex wheels to the rear of your Thunder King, as for the front wheels, mounting them is a bit more tricky.

First of all, I replaced all the stock plastic bushings with ball bearings I had left over from a Trinity Clodbuster ball bearing kit. The King uses the same 6 X 12 MM bearings found in the Clodbuster, of course MRC offers a ball bearing upgrade kit for the Thunder King. Save the plastic bushings from the front wheels, we'll need them to space and support the ball bearings in the Imex wheels. Now things become interesting, the bearing supports in the Imex wheels is 11 MM in diameter, in order for the new ball bearings to fit I used a 1/2 inch

"On this truck I did replace the stock pinions with two 16 tooth pinions for just a bit more top end speed. Of course, with our twin Trinity modifieds on board, a tough electronic speed control was in order."



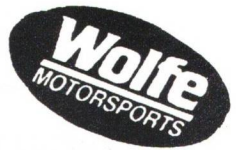
drill bit and enlarged the supports in the wheel to fit the bearings. In doing so the center divider that keeps the bearing centered was removed, that's where the old bushings come in to play. Put one bearing in the front side of the wheel, now turn over the wheel and install two plastic bushings then the other ball bearing, this will help to center the spacers and the bearings

properly in the wheels. Now remove the bearings and put a bead of thin super glue around the bushings on both sides. Note: before using the glue, be sure the bushings are centered and, test fit the wheel to the trucks spindle to see if the wheel will spin with very little wobble. After the glue has dried, drill out the center of the bushings with a 1/4 inch drill bit so the bear-

ings alone ride on the axle.

There, that wasn't so bad . . . and now sit back and take a look, tricky isn't it? A Hurricane couldn't flip this truck over with its wild wide stance, and heaven forbid some

This photo gives you an up close look at how the rear adapters are used to mount the giant Imex tires and wheels.



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- 5/27: DRIVER'S MEETING 9AM/TWO ROUNDS QUALIFICATION
- 5/28: DRIVER'S MEETING 9AM/FINAL TWO ROUNDS OF QUALIFICATION
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Manufacturers mentioned in this article:

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CRP
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Atascadero, CA 93422

JG Mfg.
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Kyosho/Great Planes
P.O. Box 4021,
Champaign, IL 61820

Trinity
1901 Linden Avenue #8,
Linden, NJ 07036

Associated Electrics
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Imex Model
663 Townline Road,
Hauppauge, NY 11788

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Madison, WI 53711

JR Radio/Horizon Hobby
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Champaign, IL 61821

Litespeed Racing,
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Spokane, WA 99202

crazy 1/10 scaler to get in the way... Crunch! With the chrome and the giant Imex tires on board it was time to install the ponies, that's right more motor and a better speed control.

More Power!!!

The stock 540 motors and mechanical speed control are okay but I wanted more thunder in my Thunder King. So out with the stock stuff and in with a pair of Trinity's Matched Madness (part #2030) Modified Motors, these motors were intended for trucks like the USA 1 and Clodbuster. So I figured they would be just the ticket for the King, since these motors were set up for the Clod one of the motors is reverse rotation so I had to change the running direction so it would

match the other motor. To do this carefully loosen the endbell screws and turn the endbell 180 degrees, this will change the motor direction. Now it helps to have a motor dyno or find someone who has a dyno, the reason for the dyno is to re-match the motors so they have roughly the same rpm output. First dyno the normal rotation motor and find both rpm level load and no load, then put in the other motor and adjust the endbell timing to equal the readings of the first motor.

When you install the motors there is no need to change the gear ratio, as the Imex tires are the same diameter as the stock Thunder King tires. On this truck I did replace the stock pinions with two 16 tooth pinions for just a bit more top end

speed. Of course with our twin hot Trinity modifieds on board, a tough electronic speed control was in order. Enter Novak's 828 HV Hi Frequency ESC, this ESC is a Monster Trucker's dream come true. The 828 is capable of running twin modifieds and up to 28 cells! I've used the 828 in everything, 14 cell hydro boats to Open II pulling trucks without as much as a whimper, so I knew this was the controller for my King. The only down side is the 828 has no reverse but then again as big as this truck is there's no need to back up just drive over it! But if you find you prefer reverse, Novak does offer the 610 RV, and I have found this controller to work well with the Trinity twins in my Clod and still keep its cool.

To provide the juice to power the King I added an 8 cell 1400 mah SCR battery pack to the mix, I strongly recommend using quality connectors for the motor and battery like Litespeed's Super Cons. Super Cons have the lowest resistance of just about any connector on the market and they're worth it. To handle the steering duties, I stuck with an Airtronics 94152 servo that was in the truck when I first built it along with the JR Beat 2 radio system. Now we're to the last step in the Thunder King's transformation the bod!

In Search Of

The Ford body that comes with the kit is hot! I wish MRC offered this body in 1/10th scale but for this project I wanted something different, after spending hours looking in catalogs and driving my local hobby shop crazy I found what I was looking for. Team Associated offers a

1988 Ford F-250 Stadium racer body (part #6169) that is true to scale, when put on a 1/10 scale truck it covers everything including the tires and suspension but on the Thunder King it fits like a true Monster Truck. I wanted the body to sit lower on the truck than the stock body did, so I removed the stock body mounts and made my own from scratch. After all this work trying to find the perfect bod for my King, you would think I already have a paint scheme in mind, well . . . just think again! Now that I have completely bored you with my paint job plight, let's mount the bod, charge the batteries, and do some damage!

Reach Out And Crush Someone!

I guess trying to determine how a Monster Truck performs is not as simple as a high performance off-roader, so I figure monster jumps, car crushing, speed and how much damage could be inflicted would just have to do! With all that in mind, the newly built off-road track at King R/C in King, N.C. was just the ticket, besides the off-road track, King is working on a large dirt oval track. And, due to the work there's lots of treacherous three and four high mounds of dirt to jump over, plus plenty of unsuspecting 1/10 scalers to run over on the off-road track.

With a snap of the trigger the King rumbled to life, needless to say horsepower was never in question. The slipper allowed me to power around the track with ease and jumps were no contest. Although with the larger tires turning was a bit hampered but will easily out handle big trucks like the Clodbuster and USA 1. Driving the King was a blast! Not once did the truck try to roll over, even over the steep mounds of dirt the King was just that . . . KING! Of course, this truck won't win the A-Main at the local off-road race track. It sure will, however, be the center of attention anywhere it decides to land!

CP

Team Class Does it Again!!!

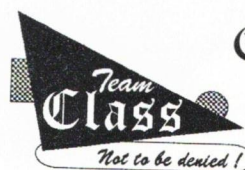
Class' Three New Chargers

Class' variable output A/C #188 charger has always been one of our favorites. Class is retiring the #188 and releasing three newly-updated chargers with high-tech features. First to be released, is the #190. This D/C only charger features an L.C.D. volt/amp meter, variable output up to 5 amps, 4-8 cell capability, digital peak detection, auto trickle and more. See photo.

Scheduled for a later release is model #189 which is an AC/DC version that will handle 1-12 cells with a variable output up to 6 amps. An inexpensive DC only charger, model #191 will be released in the spring and features a fixed 3 amp charge rate, 4-7 cell capability, an L.E.D. readout and digital peak detection.



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Kyosho's Inferno 10

By Jack Wright

Big Buck Bang On A Firecracker Budget!

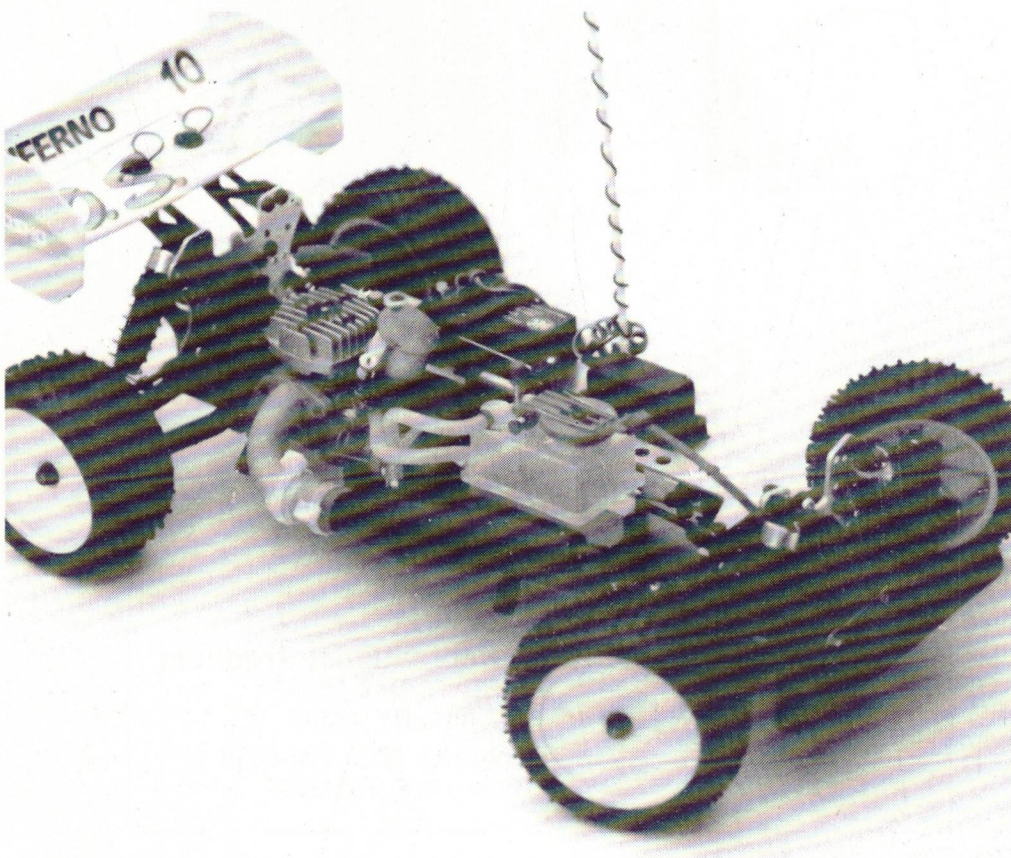
Opposite: The engine on this kit is an O.S. .12 CZR. The installation of this part of the car scares many electric car fans, but it is really quite simple and the instructions provided are excellent.

Below: The Inferno 10 is actually a scaled down version of the popular and competitive Inferno DX 1/8 racer.

Seeing 1/8th scale nitro burners blazing around the track can definitely motivate anyone to the local hobby shop but many find the price of gas powered four wheel drive to be a bit costly. Now Kyosho has realized not everyone has the bucks nor space to race 1/8th scale, so Kyosho has sized down the Inferno to attract new racers to the fun and excitement of gas racing. Kyosho has introduced the Inferno 10, a 1/10 scale nitro powered four wheel brother to the Inferno.

Now the Inferno 10 is not just a modified version of one of Kyosho's old four wheel drive kits, it's actually a scaled-down version (in size only) of the ever popular Inferno DX 1/8 scale racer. Besides the obvious four wheel drive and the ever popular O.S. .12 power plant, the Inferno 10 also features four wheel independent suspension supported by four Kelron bodied oil filled shocks, a set of mini pin spike tires on 2.2 one piece wheels, a molded nylon wing, and a three differential drive system for equal power distribution.

The Inferno 10 also features a removable radio tray like that found on the full size Inferno. The removable tray makes cleaning the 10 a snap. The same can be said about the three diffs, they're just as simple to remove as the radio tray is. The center diff allows for fore and aft transfer of power to achieve equal power distribution between the front and rear of the car, as the front and rear diffs help to improve cornering by adjusting power between the tires. Other standout features are the heavy duty blue anodized chassis,





and the competition legal 75cc fuel cell with flip top lid for fast fuel stops. Of course, Kyosho designed the Inferno 10 for the first time gas racer, so the use of Kelron shock bodies and bushings in some of the drive train helps to keep the Inferno 10's price within reach of the average hobbyist.

Open Say's Me . . .

The Inferno 10 came wrapped in the usual colorful box with all of its parts neatly packaged and numbered for easy assembly. Now Kyosho offers the 10 with or without the O.S. .12 engine. For the kits that do not include a motor, you have the option of using either an O.S. .12, O.S. .10 or an Enya motor. As far as I can tell by the manual,

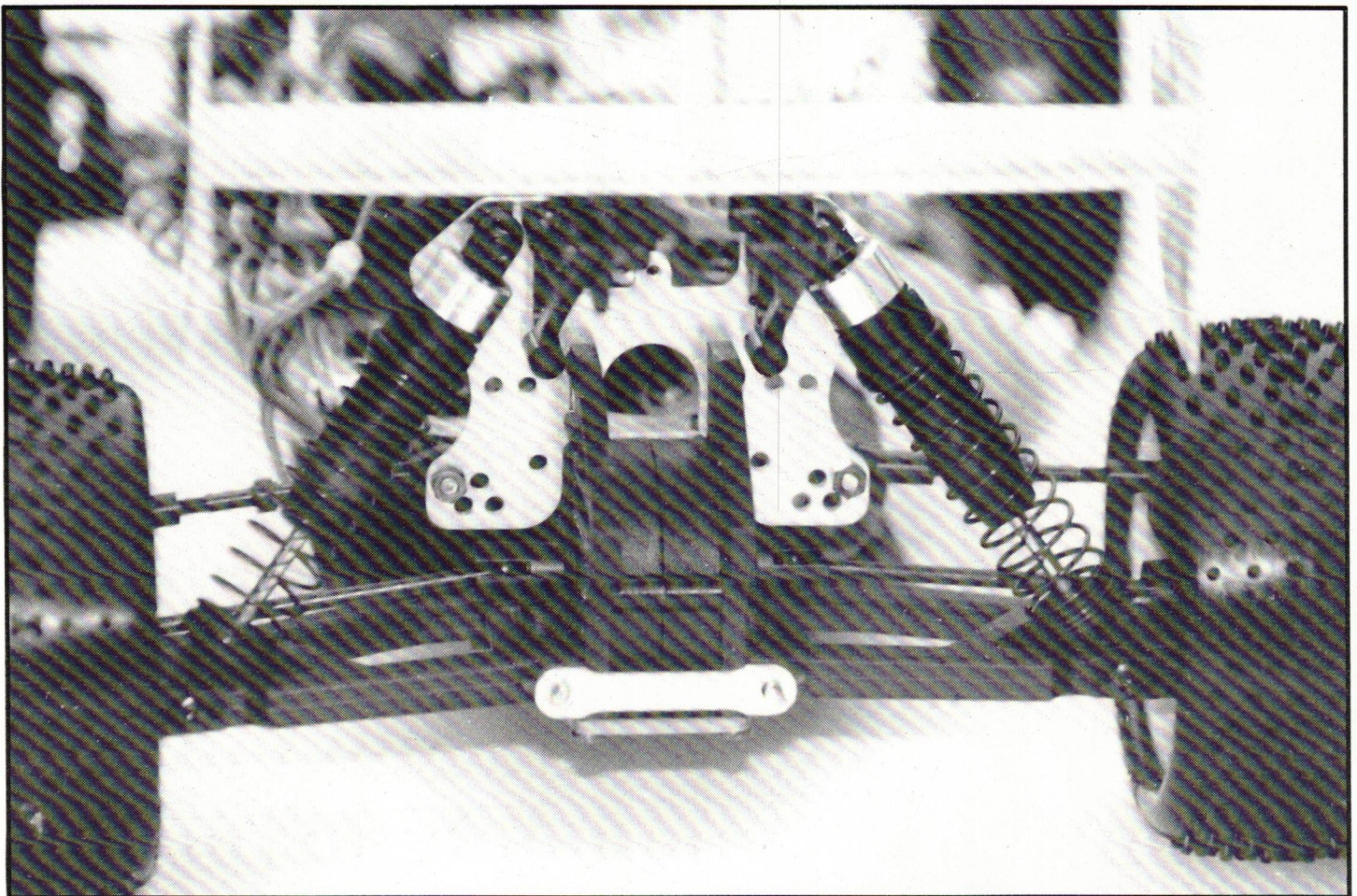
these are the only recommended motors that can be installed in the Inferno 10. Building the 10 appears to be rather simple, thanks to the well-thought-out manual. To complete the Inferno 10 you will need a 2CH radio system, 12 AA batteries, a glow starter, and R/C car racing fuel with a nitro rating between 10 and 20 percent. It's best to use car fuel only, as airplane fuel does not meet the demands of glow powered cars.

As I picked thru the parts, I came upon the O.S. .12 engine, I noticed this was not a stripped down version of the .12 as it came with the very popular 2BK carburetor. Also included in the kit are many of the allen wrenches needed to build the 10 along with grease and

threadlocker for all of the metal to metal assemblies.

Building The Perfect Beast . . .

The first step in building the Inferno 10 is assembling the front and rear differentials. The gear diffs are made up of metal bevel gears with a nylon reinforced plastic case. The important step with the diffs is to lube the gears and not to overtighten the four small self-tapping screws that hold the diff together. Once you have assembled the diffs, we'll start on the front gearbox bulkhead. Even though the 10 uses bushings on most of the drive train, the diffs are supported by two very large 8mm X 14mm ball bearings. Once the bearings have been installed on to the diffs, you will need to put one of



the 8x12 shims on one side of the diff to help remove the slight amount of play the diff has in the gearbox (kits may vary so you have to add more than one shim).

With the diff in the gearbox halves, go ahead and install each of the 5X10 bushings into the gearbox cover, then add the final pinion and mount the whole assembly to the gearbox. From here just add the dogbone joints (be sure to use threadlock on the set screws) and the pivot balls to the gearbox for the upper suspension rods. The next step deals with assembling the front and rear suspension rods and steering linkage. Here Kyosho uses very beefy turnbuckles with large plastic ball ends. And to make the job easier, there are full size diagrams

of how long each of the rods need to be.

To finish up the front gearbox, we'll assemble the front steering knuckles, upper suspension rods, short dogbones, and A-arms. (Note: For smoother suspension movement, trim off any of the excess flashing on the arms and gearbox.) With the front gearbox completed, install the gearbox along with the front bumper to the blue anodized chassis.

Steering In The Right Direction . . .

The Inferno 10 features a dual bell crank steering system supported by four oilite bushings. The system can be upgraded with ball bearings for even better steering performance. Besides the bell cranks,

Kyosho also supplies the 10 with a large universal servo saver to take the stress off the steering servo. Once you have the bell cranks installed, it's time to move on to assembling the rear gearbox.

Building the rear gearbox is nearly identical to the front, the only difference is in the rear gearbox instead of using the two 5X10 bushings on the final pinion they're replaced with ball bearings. Another difference is that you also need to remove some of the material from the gearbox housing (as shown in step 9), by removing the plastic from the housing you improve the car's suspension travel. As in the front gearbox, we'll now add the A-arms, outrives, dogbones, and shock tower. Now mount the rear

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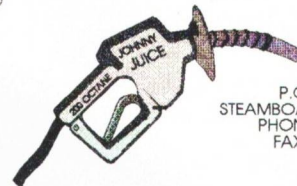


HC-80

Erik has done it again!!! This new brush is designed to produce absolute maximum horsepower without sacrificing comm. life!! It runs like the highest silver brushes, but without the damage or other side effects. This one is certainly looking at!!!

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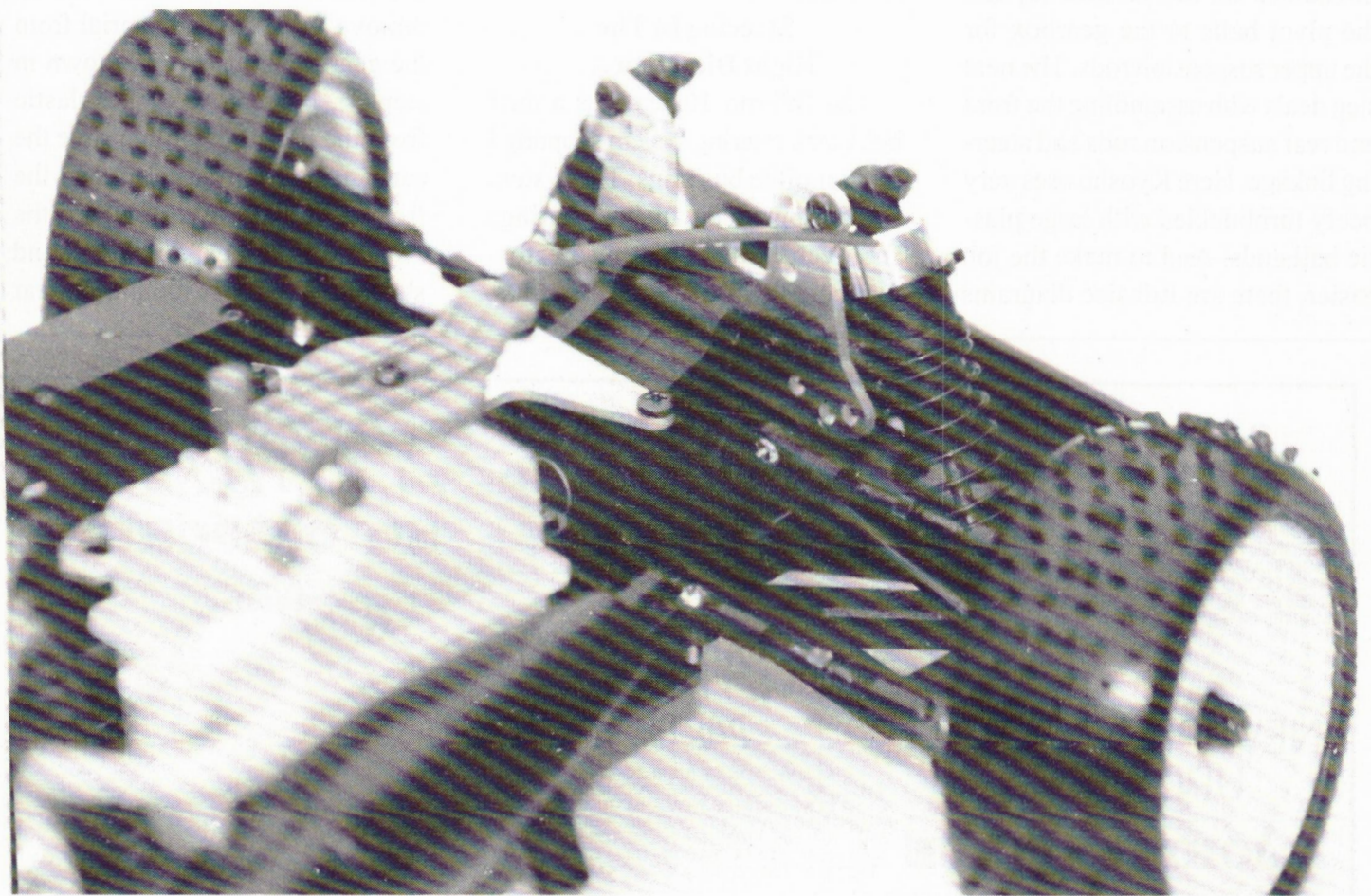
gearbox to the chassis along with the thin steel chassis cover.

The Braking Difference . . .

Moving right along it's time to install the center diff assembly as well as the 10's braking system. As in the other diffs the center diff helps to distribute power between the front and rear diffs, in the manual they suggest you use the same lube in the center diff as in the other two.

front to compensate. This power is wasted on tire spin and slow corner speed is the result, now replace the diff lube with a thicker silicone lube, and, you would see the same power transfer but with more even results. Now the car would still have the corner speed, but at the same time the front tires would help to pull the car through the corner. So with that in mind, I replaced the stock lube with BoLink's silicone

diff aside for now as we'll concentrate on the braking system for the 10. The Inferno 10 uses a cam operated brake for braking, simply put a cam shaft pushes out a small plastic cam mounted in the diff mount that depresses a thin metal pad against the brake disk enabling the car to stop. The instructions cover building the system very well and you shouldn't have any trouble building it. Now mount the center



Well, I found this allows too much power to be transferred to the set of tires with the least amount of traction and this is very counter productive. For example, let's say in the corners the rear tires get a better bite than the fronts, with a thin gear lube power will be sent up

Super Lube.

Next install the ball bearings on to the center diff along with both of the dogbone joints. On one of the part trees you will find the brake disk, carefully trim away any flashing and install it to the diff housing (as shown in step 15). Now set the

The Inferno 10 features a dual bell crank steering system supported by four oilite bushings. The steering system can be easily upgraded to a ball bearing system for improved steering performance.

diff assembly to the chassis, along with both of the swing shafts that run to each of the gearboxes.

Quit Fueling Around . . .

Installing the fuel tank and lines is up next, you may want to take a phillips head screwdriver and flair the ends on the inlet and outlet of the fuel tank so the lines will have a tighter fit. Once the fuel tank is on board the next step is to install the engine, as I had mentioned before this kit included an O.S. .12 CZR engine. If you choose to build a kit without an engine,

Kyosho supplies instructions for using either an O.S. or Enya engine (to use the Enya engine you will need to use the optional pilot shaft from Kyosho). Assembling the clutch and pilot shaft to the engine is just as simple as it would be for installing a pinion gear and electric motor with Kyosho's clear instructions you just cannot go wrong. Another step to engine preparation is to remove the carburetor, turn the carb around 180 degrees and reinstall it so the throttle will be facing the left side of the car.

With the engine assembled and the car turned around, it is time to

install the engine to the chassis. Step 18 covers mounting of the engine very clearly but take your time to see that the gear mesh is just right. You will notice that in the manual there is no mention of the tuned pipe and how to install it. In the kit there is a small supplement sheet that explains how to mount the tuned pipe to the chassis. In the event you have lost this slip of paper, just use the photos on the box to mount the pipe to the engine, as for the music wire mount for the front of the pipe just bend the wire so you can attach it to the hole in the chassis in front of the fuel tank. At this point, set aside your chassis and start on the Kelron bodied shocks that come with the 10.

Traveling . . .

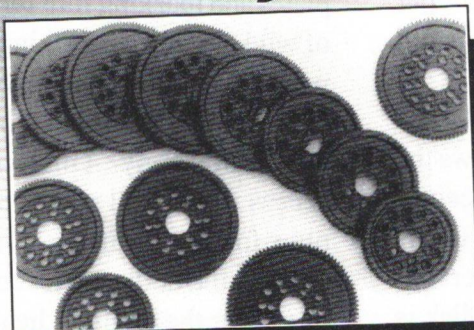
Besides their lightweight, Kyosho's Kelron shocks also feature pre-installed o-ring seals, no clips or c-rings to fight with here. As in many areas of this kit, the shocks are easy to assemble so I'll only pass on the set up I chose to use in my shocks. As for pistons, I went with the single hole shock pistons that are recommended in the manual. As for shock oil, I skipped

over the oil included in the kit and opted for some of Trinity's Pro Racer 30 weight Silicone shock oil. Once the shocks were assembled, it was time to mount the shocks to the chassis, at first I followed the manual but I wasn't very happy with the car's ride height. The front seemed to sit too low so I reset the shocks lower mounting point to the most inner hole in the a-arms. I noticed what looked to be a set of add-on mounts to allow for longer shocks but saw nothing about them in the manual. I figure I'll save these and maybe try to put them to use in another article I'm working on.

Please Put Your Trays In An Upright Position . . .

Well it's the home stretch, time to assemble the radio tray and install the radio gear. This is probably the most outstanding feature on the Inferno 10. The radio tray, as I mentioned before, allows you to remove the radio gear from the car easily to make cleaning a snap. Besides this, the tray also acts as an upper chassis stiffener and prevents chassis flex. Once again, this step is a no brainer just follow the diagrams and you will have this baby

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Manufacturers & Parts Mentioned In This Article:

Inferno 10 - \$499.95 JR Propo Beat 2 Radio - \$109.99

Kyosho/Great Planes
P.O. Box 4021
Champaign, IL 61820

BoLink R/C Cars
420 Hosea Road
Lawrenceville, GA 30245

Trinity
1901 Linden Avenue #8
Linden, NJ 07036

O.S./Great Planes
P.O. Box 4021
Champaign, IL 61820

JR Propo/Horizon
P.O. Box 6029
Champaign, IL 61820

Associated Electrics
3585 Cadillac Avenue
Costa Mesa, CA 92626

Dahm's Racing Bodies
P.O. Box 360
Cotati, CA 94931

Dynamite/Horizon
P.O. Box 6029
Champaign, IL 61820

together in no time. Kyosho supplies you with a universal servo saver that fits most popular servos, For this article I used JR Propo's Beat 2 radio system along with JR's NES-507 servos. In a gas car it is a good idea to use servos with a least 40 oz. of torque for proper operation.

There's one modification I made to the radio tray, I left off the inside support brace so I could fit my five cell receiver pack on the tray. The reason I use five cells instead of the normal four cells, is five gives the car better servo response. Now install the short rod with the z-bend on to the servo saver and mount the radio tray to the chassis as shown in step 25. Once you have the rod and tray in place, turn on the radio system and adjust the car's steering, you can adjust the rod that attaches to the bell crank via the hole in the

bottom of the chassis.

With the tray on board it's time to move on to installing the throttle and brake linkage. In steps 26 and 27 the diagrams are a bit confusing but if you look into the upper right hand corner of step 27 you will see a small diagram of how the throttle rod should bend when using the O.S. .12 engine. The design of the linkage system is rather strange but if installed properly it works fine, using the diagrams at the bottom of step 27 will show you the proper amount of throttle opening for full throttle, idle, and braking.

Them's The Brakes . . .

As for braking, step 27 shows the brake arm to be sitting dead center with the brakes applied, and this is how they must be to work. Personally, I feel the plastic brake disk is a waste, I know it was used to help

keep the cost of the kit down. But in any car whether for real or R/C should have good braking, Kyosho does not offer a Fiberglas brake disk for the 10 as of this printing.

To check your braking, take the car and roll it by hand across the floor with the throttle wide open, then do the same but with just half throttle then full brakes. If there is no binding under throttle yet you have strong braking with the brakes on you're on the money.

On The Home Stretch . . .

At last now we're down to mounting the wing mount, tires, and painting and mounting the body. Kyosho uses a very sturdy wing and adjustable wing mount for the 10, the wing is molded of the same strong nylon as the bright neon yellow 2.2 in rims are made of. Speaking of the wheels, Kyosho shods the 10 with an H blocked mini pin tire all the way around in a medium rubber compound that's ideal for most racing surfaces. For better traction and less side wall flex, I added a set of Associated's foam tire inserts to the insides of the Kyosho tires.

Painting the body is no real trick and I'm no master paint man but a set of flames can be made easy using one of Dahm's racing's masking trim kits, the kit includes templates and masking film for all kinds of wild graphics. One thing you will want to keep in mind is to remove both the front and rear window areas in the body. This will allow access to the pull starter and glow plug for easy starting without removing the body and let cooling air pass over the engine's head to help keep it cool.

"It is highly recommended to run the motor with a rich fuel mixture (three turns out on the high speed needle) for the first few tank fulls of fuel, this will help break in the motor."

moving the body, and let cooling air pass over the engine's head to help keep it cool.

Let'er Rip . . .

Now for the moment we all have been waiting for, let's take this baby out and see what she can do! It is highly recommended to run the motor with a rich fuel mixture (three turns out on the high speed needle) for the first few tank fulls of fuel, this will help to break-in the motor. During the break-in, never run the car at full throttle or run it with the wheels off the ground, as this is a sure fire way to kill an engine. As for fuel, I used Dynamite's Blue Thunder 20 percent nitro racing fuel. As I mentioned before never use model airplane fuel as it does not have the proper lubrication properties that is needed for car motors.

Since it's the dead of winter here in North Carolina, I had to take the Inferno 10 indoors to my local favorite off-road track, Big Kids Little Toys, in Greensboro, N.C. The track at Kids is one of the largest indoor facilities in the south, it's just right for electrics, but a little small for gas-powered machines. So with the motor broken in and the car's

trims set, just a tug on the pull starter, the O.S. engine came to life. After a little warm up the 10 hit the track, for the first few laps I sort of took it easy to get the feel of the 10. Once I felt comfortable with the car's power I turned her loose, look out! This thing is fast, the only bad thing about racing gas cars indoors is once you get in the trigger it's time to put on the brakes. The four wheel drive made this car take corners at much faster speeds than my 10T. As for the moguls and table tops, the 10 lacked the suspension travel to negotiate the rough stuff as well as I liked it to.

Of course, longer shocks would

help tremendously. After a few tanks had gone by, the car became easier to drive, as I found a better line around the track (reads: I got braver).

On a track this tight an electric has the edge, except in this case the 10 held up to the best of the electrics. The only injury the 10 suffered, was when one of the bell cranks broke during an encounter with the wall. These things happen, but the kit would be better served with nylon cranks instead of plastic.

Overview . . .

Over all, the Inferno 10 is a winner, as for its suspension a little work here wouldn't hurt. Same goes for the brakes, after only just a few runs, the disc already had deep grooves in it. But we must remember this is an entry level kit so some things must be sacrificed to keep the price within reach to all. Of course, Kyosho already offers many performance parts for the 10, like engine heat sinks, universal swing shafts, ball diffs, and much more. So if the nitro bug has bit you and you want four wheel drive at two wheel drive prices, this is the machine for you!

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Back To Basics, Again . . .

By Jeff Pack

First off, allow me to apologize for my long absence...it's been quite hectic around here. For those wondering what happened or where I've been, let's try a multiple choice guess.

- a) I died
- b) I was bought by Trinity
- c) Shut down by the EPA
- d) Arrested for growing drugs.

Actually, I'm now a research facility, doing advanced battery research for a large battery manufacturer. The demands this places upon my time has been 100 percent more than I'd anticipated and has been the real reason why I've been so noticeably absent in these pages. For a quick but funny story, actually item <d> above is sort of correct. Because of the high amount of power my lab facilities consume, I recently had a visit by our local sheriff's narcotics unit who was alerted by the power company for large power usage! It was rather

amusing though.

Anyway, during my absence, I've continued to answer racers' battery questions and decided it was time to collect and answer the most common questions, as it seems there is a new crop of readers who haven't followed previous articles.

Most asked question:

"What's the best charger?"

The answer is rather lengthy, but to keep it as short as possible, my answer is the old Tekin BC-100S chargers with SCE (soft pulse) and SCR modes. These were the predecessors of the current BC-100L series chargers. 1400SCR's and 1700SCR's really love this type of charging. This charging method gives you the most power, with the least internal resistance. Next favorite after the 100S is the 100L because you still have the SCR mode it's just not a soft pulsed charge, so you only use SCR mode for repeaks. Avoid fancy chargers with

fancy names for charging, as they offer little and even sometimes less performance than a standard charger.

"What is the best way to discharge a battery pack?"

If you've read my previous article on NPM (Nicaid Performance Memory), then my answer will be the same. For those who haven't read that article, I'll quickly elaborate on NPM. NPM is a cell's ability to remember not only where it was discharged to, but "how" it was discharged. That being discharged hard or discharged lightly. This impacts a cell's ability to deliver power. With that in mind, the most popular method for discharging is still the old light bulb rack. This method has two real problems. Problem one is NPM, you are discharging at a diminishing current load. With a full-charged pack (for example a 7.2V 6 cell battery pack), you will pull approximately 20 amps. By the time you reach .9V per cell (what matchers use for a shutoff for cell matching), you are only pulling about 15 amps. This is diminishing current and is not even close to how you are running the pack. What basically happens is, let's assume you typically run a pack down to point "x", but there is still runtime left in the pack. You now use your lightbulbs to discharge the rest of the pack. You do this often enough, and you develop NPM. What happens, is anytime you run the pack past point "x" you'll notice a very sharp drop in power, that is NPM kicking in. Another problem with using lightbulbs is you have no shutoff protection against cell reversal. How many times have you clipped on your lightbulbs, turned around to watch a race, only

to come back and find the lightbulbs totally out? Every time you do this, you are creating permanent damage to the cells by reversing them under load. The "best" way to discharge a pack is by running it out. Simple rule of thumb is "always discharge at greater than or equal to race conditions". This way the pack is discharged exactly how it's used. Given that we can't always do this, the next best way is via some sort of constant current discharger. There are many good ones, from manufacturers like Competition Electronics, Pegasus Electronics, Cobra, and others. You've probably noticed I've left out the resistor bank, single cell dischargers. That is because these units neither adequately discharge nor equalize a cell. They are marginally better than lightbulbs, in that they don't reverse a cell, but they suffer the same problem as a lightbulb, in creating NPM.

How do I store my batteries?"

I'm amazed that some major companies are STILL telling people to put 30 ohm resistors on battery packs! Apparently the concept of cell reversal still hasn't sunk in yet. Never-Never-Never, I don't care who tells you, put any kind of equalization/long term discharge device across the entire pack. Nobody matches cells to zero volts! The best way to store a pack, is by placing a 5 ohm resistor across each cell for about 8-12 hours. Remove the resistor, and you are set until your next race day. Refer to my previous article on "Deep Cycling" for a more in-depth write-up on the above procedure. It's critical that you note the 5 ohm resistors, as there

are other products which claim to equalize by using .1 ohm resistors. These work a pack too hard for long term storage, and don't remove enough energy at a rate that adequately allows the cell to cool, and the gases to re-combine. They are really dischargers, and you must separate discharging from cell equalization/deep-cycling processes.

Since the new 1700SCRC cells have higher numbers, they are better than 1400SCR's, right?"

As Wayne and Garth would say . . . NOT! There are three numbers we should refer to, and actually should be using four. We have the capacity number, measured in seconds, at a given discharge rate. We have an average voltage, which gives us a rough idea of the voltage curve (notice I didn't say power!), and a relative internal resistance number, which is an indicator of the internal resistance curve of the cell. The fourth number, and what we really care about, is power which is calculated by taking the voltage (squared) and dividing it by the relative internal resistance number. This gives you a relative power

reading. In comparing the new 1700SCRC's to the older 1400SCR's you'll notice that the discharge seconds are higher for the 1700's but power ratings are lower. That is because the 1400's have a higher power delivery curve, but for less time. So it basically comes down to usage and time constraints. If you aren't runtime critical, like for Stock off-road racing, 1400's are the best. For short dirt ovals and high bank ovals with tight corners, 1400's are best. For places where you are runtime critical, like high bank ovals or big dirt ovals, 1700's are best.

As usual, you can contact me at "The Pack Shoppe" 206-838-7293, but I do have to ask that you remember that this number is support for users of the Pack Shoppe products. In the past, I've returned long distance calls, answering questions on others' products, but with many-many phone calls to Japan and Germany now, I can't return long distance phone calls, because my phone bills are becoming horrendous! So if I'm not there, try again later...

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THIS MONTH IN RACING

Lake Whippoorwill International Speedway Mid-Winter Warm-Up For The 1994 U.S. Oval Masters

What the Daytona 500 is to NASCAR racing, the U.S. Oval Masters is to R/C paved oval enthusiasts. It's the first big race of the season.

During the long cold winter the paved tracks north of Florida are generally closed, and the drivers are relegated to the indoor carpet to satisfy their racing obsession. The staff and management of LWIS sponsored the Mid-Winter Warm Up races on January 29-30th to give oval racers from around the country an opportunity to escape the cold and converge on The Whip to get their cars and super speedway pit crews "dialed-in" in prepara-



*You dream about that perfect race.
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THIS MONTH IN RACING

tion for the Oval Masters and the '94 Season.

Drivers and teams from Florida, Georgia, Texas, Michigan and North Carolina began arriving on Wednesday and they enjoyed ideal weather for practice. At the start of qualifying on Saturday, the temperature was 80 degrees.

The Qualifiers

Due to a forecast of rain on Sunday, the decision was made to run all three qualifying heats on Saturday. The first round of qualifying in the Stock Division was a slam-bang affair as drivers who hadn't raced outdoors since the Fall tried to find the fast way around the big tri-oval.

Records Fall

By the time the third round of qualifying was set up, the sun came out and the track temperature was up to a toasty 84 degrees. Conditions were perfect for a record run.

In the final qualifier in Stock, Billy Bruce (a local favorite) drove his Associated 10 LSS to victory, capturing the TQ and setting a new track record of 42 laps in 4:02.49!

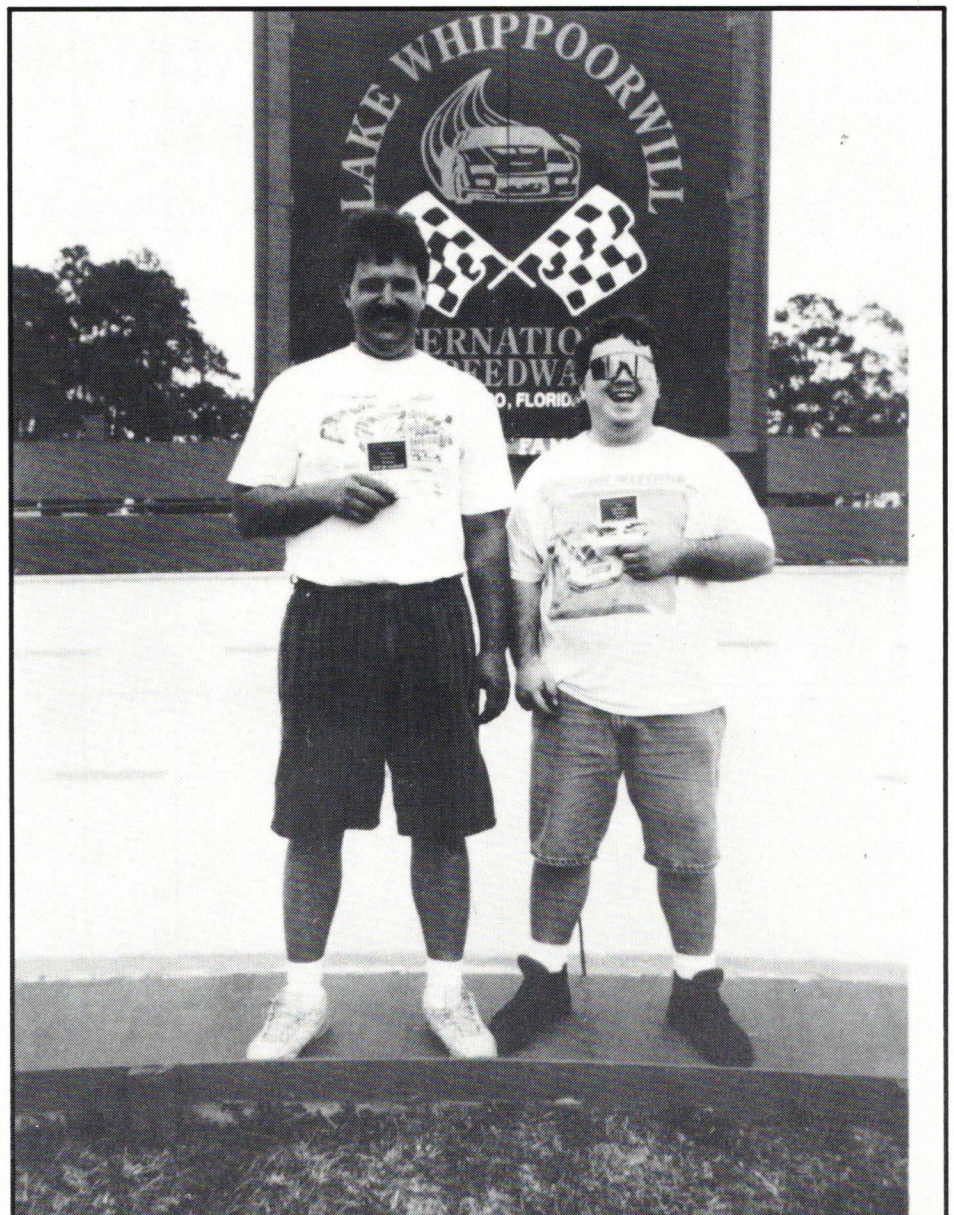
The final qualifier in Modified produced another astounding performance. This time it was Paul Schaub who piloted a Trinity EV10SS to a track record of 44 laps in 4:04.70!

Following these record breaking performances, everyone was ex-

pecting to see the first 47 lap run in the Pro-Modified Division. The track was lined with spectators in anticipation of a record run. Starting from the back row, track record holder Mike Boylan (driving for Trinity) patiently picked his way through some very fast traffic and took over the lead at the three

minute mark. He held onto the lead and captured the TQ position with a 46 lap 4:04.57 run. This was just two seconds off the record pace.

Seven teams were competing in the Enduro competition. The man to beat this weekend was David Davis, the winner of the 1993 Oval Masters. Thanks to flawless driv-



The new track record breakers at the Whipp. Paul Schaub set the mark in Modified and Billy Bruce did it in Stock.

THIS MONTH IN RACING

ing and super-human efforts by his pit crew, David was able to dominate the field and set the TQ at 127 laps in 12:02.52.

The Main Events

By Sunday morning it was raining everywhere in the Southeastern U.S. Everywhere except Lake Whippoorwill Speedway, where it was dry and 78 degrees. The mains were set up and started right on time at 10 A.M.

The biggest shock of the weekend came in the Stock A Main when Billy Bruce's record setting car failed to start on the line due to a broken motor wire. This opened the door for two Florida racers, Larry Burkett and Paul Schaub to battle it out for the lead. Paul lead the way for the entire race until he ran into traffic in turn four on the last lap. Larry streaked past the wreck and on to victory in his Associated 10LSS.

Following the Stock A Main, Paul Schaub went back to the pits and proceeded to reconfigure his EV10 for the Modified contest. Paul started from the pole position and held onto the lead from the start, winning the A Main with a 43 lap effort.

A full field of Pro-Modifieds were on the line for the A Main event and the track temperature was up to 80 degrees. The Pro-Mod contest was evenly split between the Associated and Trinity chassis. Mike Boylan (driving for Trinity) started from the pole and after four minutes of accident-free high speed

oval action, he had won it with a 46 lap run. It was a close race with the top five cars jockeying for position and finishing within three seconds of each other. The spectators loved it.

The main event in the Enduro Division was a 200 lap shoot-out, with David Davis jumping out to the early lead. There was a lot of action in the first 30 seconds of the race. Three cars suffered broken axles and major damage due to a multi-car pile up coming out of turn three. Frantic action by the pit crews eventually got all three cars back in the race, but David Davis had successfully avoided the carnage and was 30 laps ahead of second place Troy Meredith from Georgia at the half-way mark. It looked as though Troy might have a chance at catching David when with only five

laps to go, David's motor began to overheat and slow dramatically. However, David's luck held and he coasted across the finish line to victory.

Immediately following the trophy presentation, the sky opened up and it rained throughout the rest of Super Bowl Sunday.

Play It Again

The concept of the Mid-Winter Warm Up Race was so well received by the racers, that by popular demand we have scheduled a sequel. Mid-Winter Warm Up #2 will be held at The Whip on March 5th and 6th. Don't miss this one!

Final Results Of Mains:

Stock Class - 1/10 Scale:

A Main

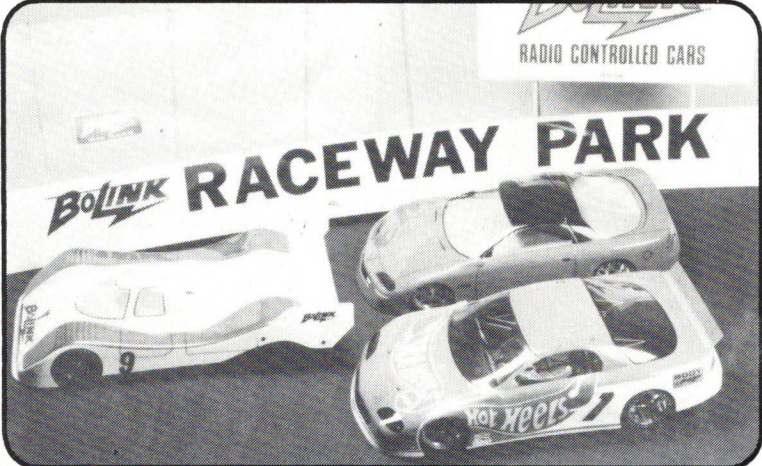
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2nd - Paul Schaub

3rd - Greg Bush

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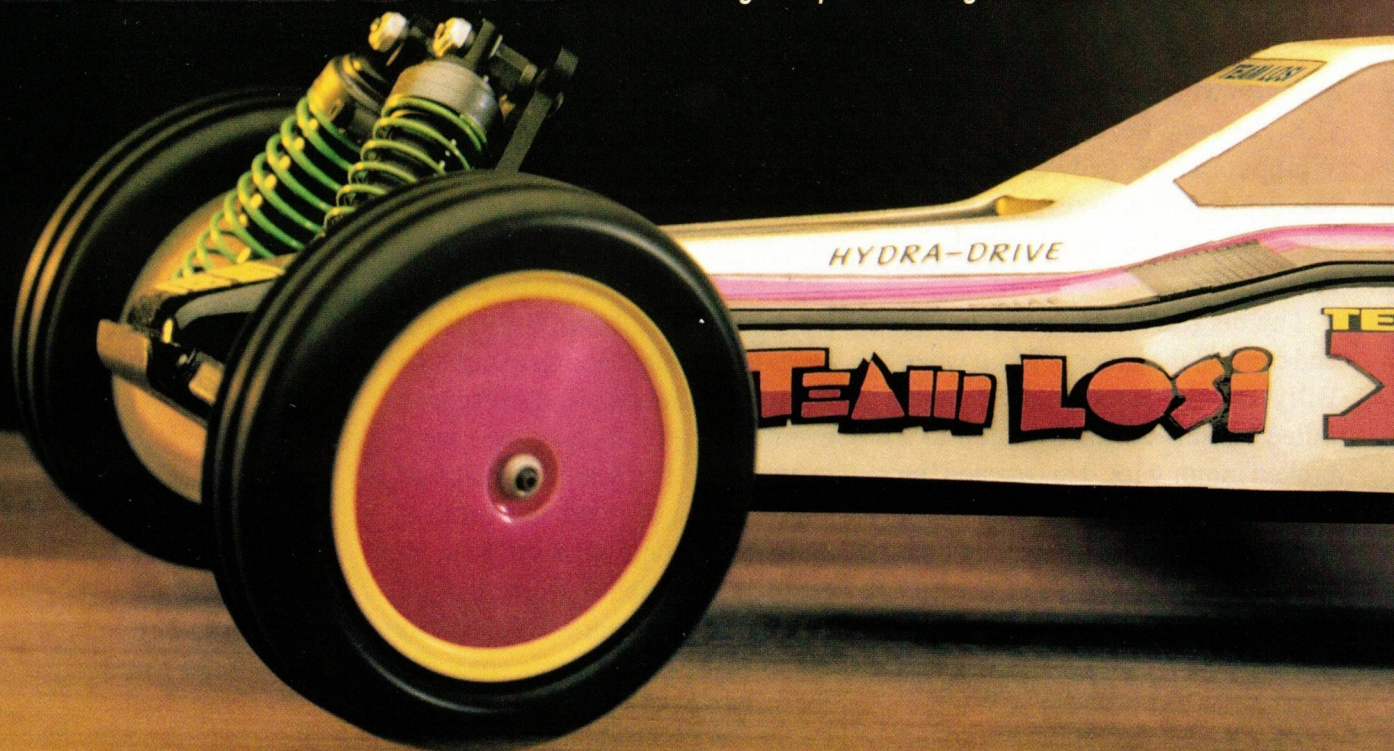
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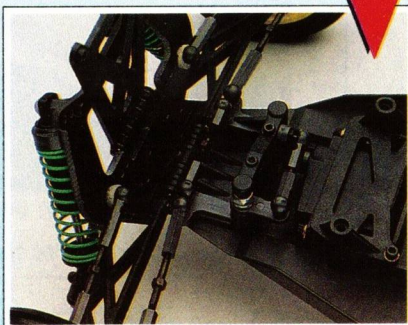


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Racing

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THIS MONTH IN RACING

4th - Mike Dispenza
 5th - Glenn Kaeser
 6th - Howard Baird
 7th - Roy Bohnsack
 8th - Mike Martin
 9th - Michael Bruce
 10th - Billy Bruce
B Main
 1st - Greg Vick
 2nd - Charles Creamer
 3rd - Kevin Mandeville
 4th - Gary Larrick
 5th - Ed Smith
 6th - Bryan Pundt
 7th - Dom Mauro
 8th - Delbert Hill

9th - Chuck Rencurrel
 10th - Steve Armstrong
C Main
 1st - Mike Armstrong
 2nd - Chris Lawson
 3rd - Mark Abbott
 4th - Bob Astarita
 5th - Clay Smith
 6th - Kevin Zahnen
 7th - Sonny Smith
 8th - Steve Shultz
 9th - Ray Lambert
 10th - Harold Briley
Modified Class - 1/10 Scale:
A Main
 1st - Paul Schaub

2nd - Larry Flowe
 3rd - Mike Lavine
 4th - Justin Meridith
 5th - Larry Small
 6th - Armon Beckom
 7th - David Jones
 8th - Rock Massey
 9th - Scott Gardner
 10th - Bob Fairbrother
B Main
 1st - Vince Bellino
 2nd - Ron Hagan
 3rd - Mark Shirey
 4th - Chris Brimmer
 5th - Barry Blackwell
 6th - Ernie Smith
 7th - Bob Astarita
 8th - Cliff Garra
 9th - Josh Larrick
Pro-Mod Class - 1/10 Scale:
A Main
 1st - Mike Boylan
 2nd - David Davis
 3rd - Jeff Irish
 4th - Jim Fuller
 5th - Bobby Horan
 6th - Troy Meridith
 7th - Bill Evans
 8th - Paul Davis
 9th - Jason Alderman
Novak - 1/10 Scale:
A Main
 1st - David Davis
 2nd - Troy Meridith
 3rd - Gary Coker
 4th - Steve Shultz
 5th - Chris Brimmer
 6th - Danny Shaw
 7th - Chuck Massey



THIS MONTH IN RACING

*R/C WORLD OF
INDIANA PRESENTS*
**THE 5th ANNUAL
OFF-ROAD
INDIANA STATE CHAMPS**

By Eric Passmore

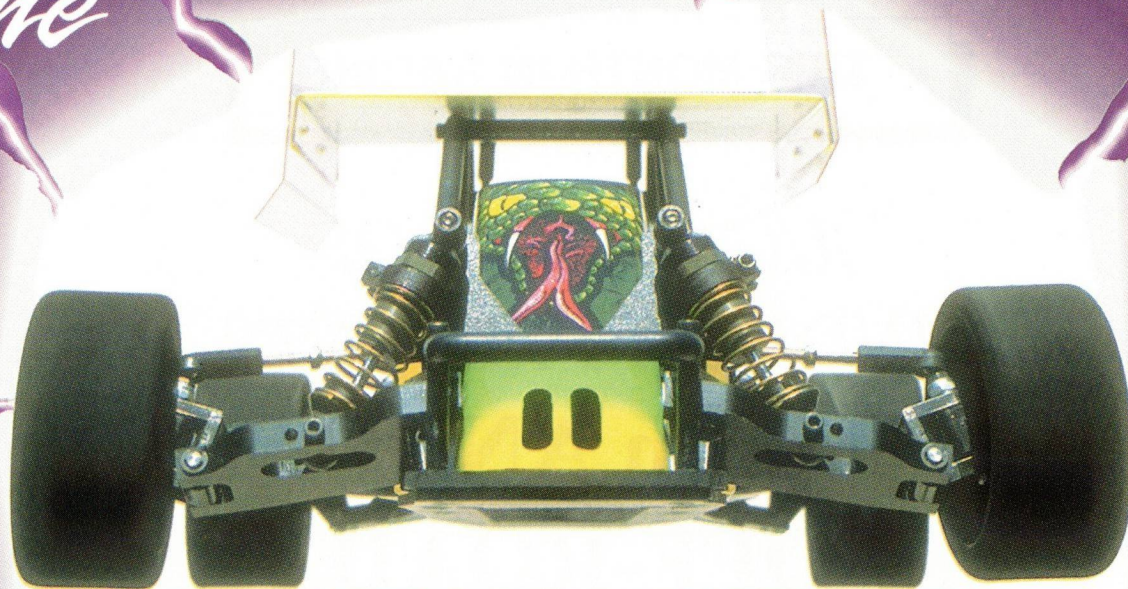
Ninety-six racers converged on one of the best off-road facilities in the midwest for the 5th Annual Indiana State Off-Road Championships. There were one hundred twenty-eight cars and trucks entered in five classes, the largest class being stock truck with fifty entries. Two rounds of qualifying were held on Saturday and the final two rounds of qualifying and mains were held on Sunday.

The track configuration was one of the most difficult layouts to be used. It made for some very exciting racing through all the heats and mains. As a small twist, the track crew made some small changes to

*The drivers for the A-Main
final get ready.*



The

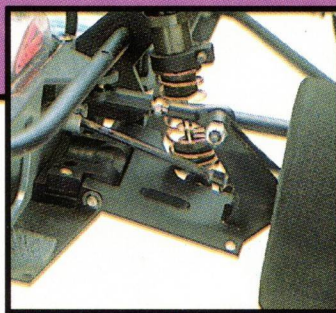


NEMESIS

Cobra 1:10 Scale Dirt Oval Chassis



Kits do not include wheels or electrics.
Wedge Kit does not include body.

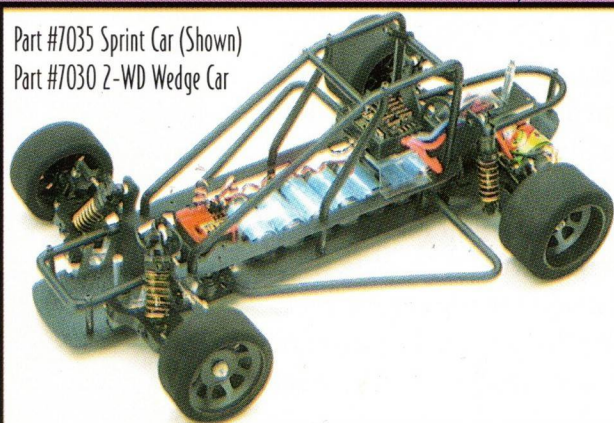


Features Include:

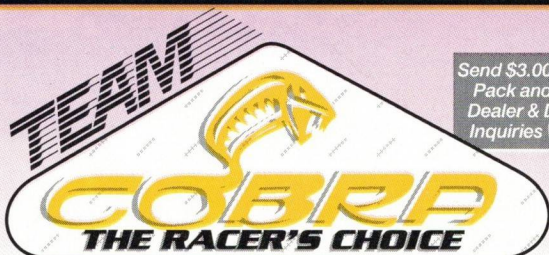
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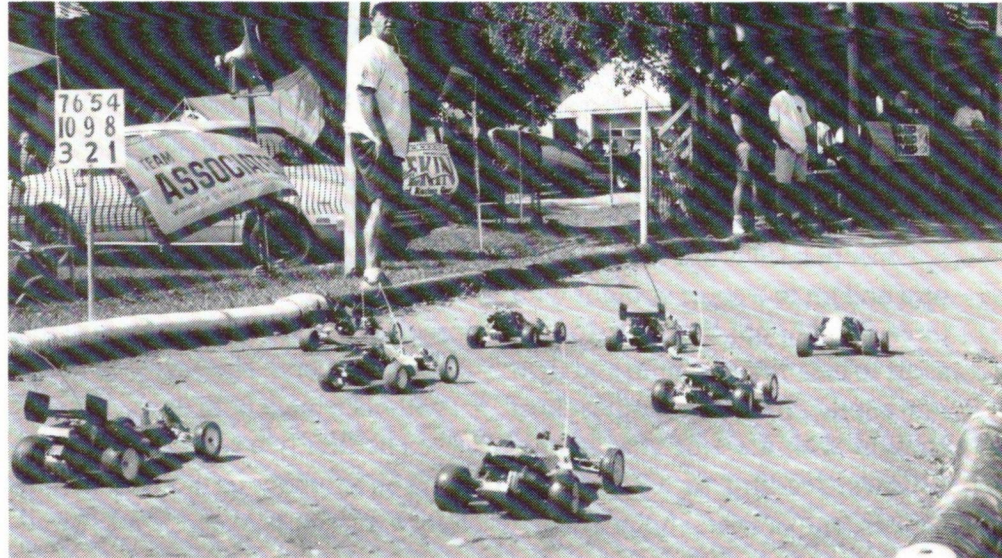
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THIS MONTH IN RACING

the track after the practice sessions, prior to the first heats. This made it just a little more fair for all the racers. The cars were gridded at the start of a very long front straight with the start/finish line coming at the midpoint of this straight in front of the drivers' stand. At the end of the straight was a right hand sweeper leading to a pair of right and left hairpins. There was a small hill at the entrance of the second hairpin, making it even more chal-

Tim Caldwell doing a good job turn marshalling.



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THIS MONTH IN RACING

lenging. After rounding the hairpin, there was a small jump and a hard left hand turn and then on to a short straight with a series of small hills staggered down it to disturb the line. There was another right hand sweeper that leads to a flat left hand turn and on to a short straight with three small jumps that were too far apart to clear in one jump and then into another hairpin. Another short straight with a set of washboards follows, leading to a sharp left hander, onto a short stretch, over a

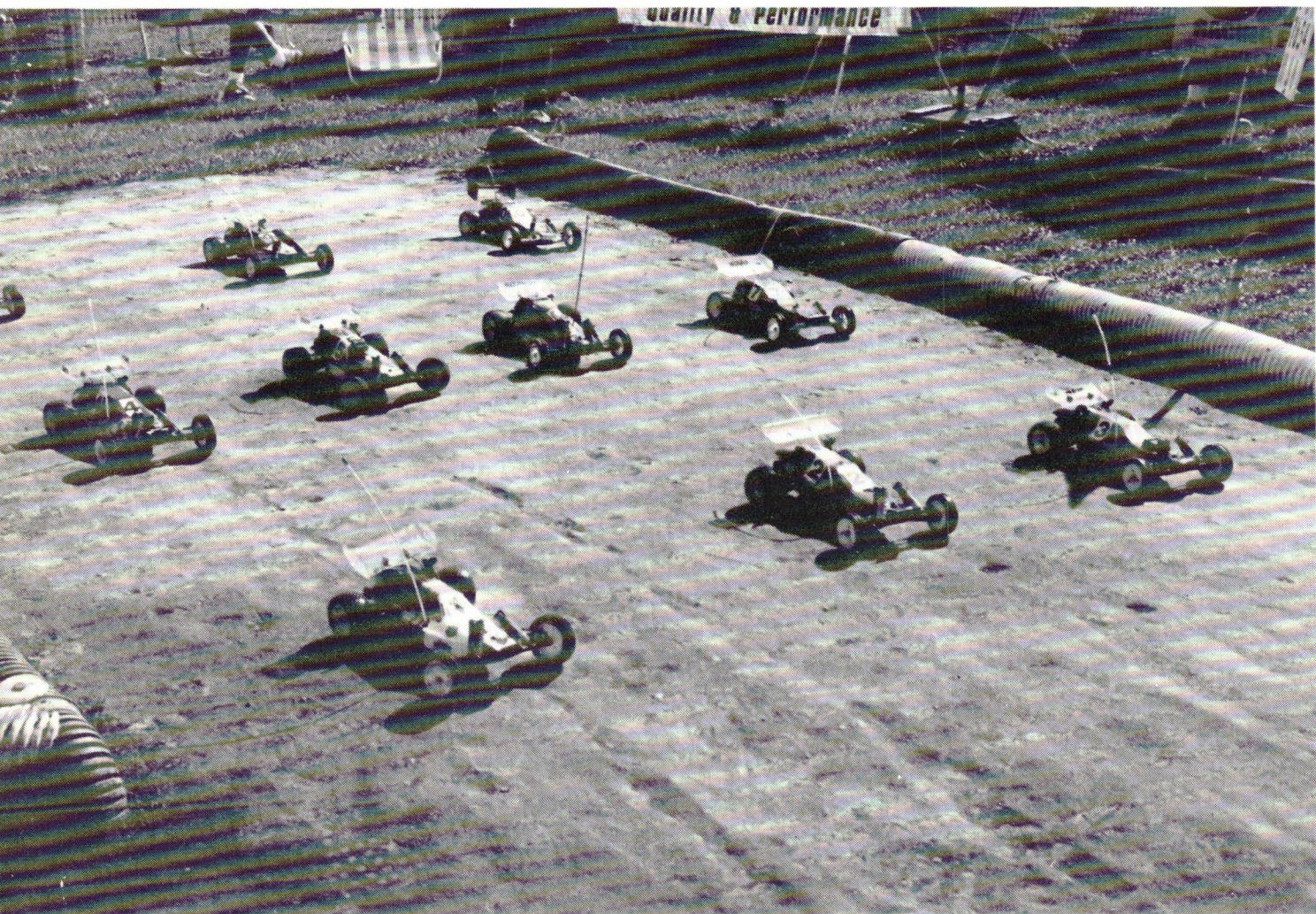
larger jump and around a right hand sweeper. It was through a small right/left switchback, around another right hand turn and back onto the start/finish straight.

The track crew did an excellent job of track maintenance throughout the entire weekend making the racing surface as fair as possible for all racers. The races came off without a hitch both days.

The first two rounds of qualifying on Saturday set the TQ positions for every class except 2WD Modi-

fied. TQ in 2WD Stock was set by Gary Studt in the second round with a run of nine laps in 4:16.710. TQ in Stock Truck was set in the first round by Doug Jones with a run of nine laps in 4:17/870. TQ in Modified Truck was also set in the first round by Gary Studt with a nine lap run in 4:05.870. TQ in Gas Truck was set by Dan Stifford in the first round with a twelve lap run in 6:17.750. TQ in 2WD Modified

Grid starts certainly make the first turn a bit easier.



THIS MONTH IN RACING



While many find the racing exciting, others watch it casually preferring to simply gaze at the event while holding up the driver's stand.

way. I think that the racing is the second reason that so many people attend this annual event. I think the food is first!

Sunday morning brought two more rounds of qualifying in preparation for the mains. All of the previous days' TQ times held up through the last two rounds except for 2WD Modified which was reset by Pat McCreery with a nine lap run in 4:07.160 in the third round.

After the fourth round of qualifying, the board was reset. Door prizes were awarded to the racers. These were donated by the many generous companies in our sport. It is by their generosity that makes this race even more special. To make it even better, R/C World donated prizes to insure that every racer in attendance received a prize. Many thanks go out to the companies who donated prizes for this race: Futaba,

was held by Pat McCreery with a nine lap run in 4:14.390 through the first two rounds.

After the second round of qualifying, there was the annual hog roast for all the racers and guests. The food was great as usual. A fabulous job was done by Shirley Kolp with help from many of the racers' wives and mothers. It was a much welcomed meal after a long day of racing. Hats off to everyone who cooked, served or helped in any

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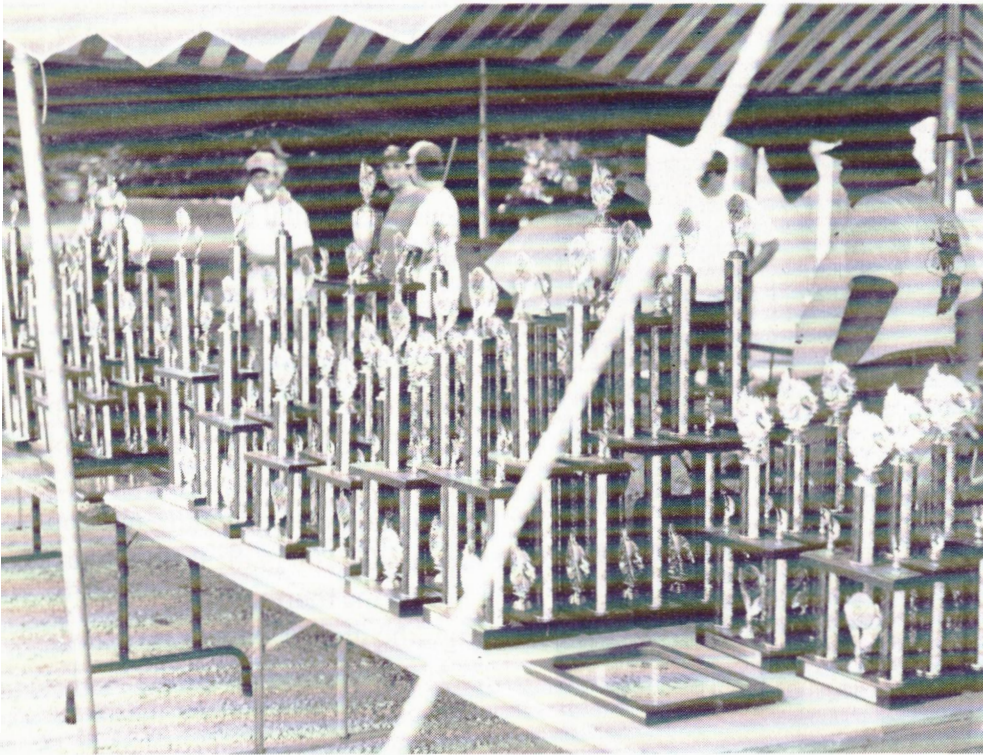


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THIS MONTH IN RACING



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The mains were now set and began with 2WD Stock and progressed on from there. As is the case with most big events, the best racing of the weekend came in the mains. It would be much too lengthy to describe the action in the mains. Suffice it to say that the racing was

close as well as exciting from the lowest main through the A Mains in each class. This is a tribute to all the great competitors in our sport. Great job to all.

After all the mains were run, trophies and TQ awards were given to all the winners. First through third in all mains received trophies and all places in each A main got a trophy as well. The trophies were quite large and made many people very proud to take one home.

This race was a memorable event for all racers. Each received a T-Shirt and a small plaque from this event. It was another added bonus for an already good weekend.

Make plans to attend the 6th Annual Indiana State Off-Road Championships on Labor Day. We have a great weekend of fun, racing and food waiting for you, with the accent on fun! Thanks to Joe and Shirley Kolp and the rest of the R/C World staff for a great time. Thanks to all who helped and kept things running smooth. Hope to see you next year.

2WD Stock

A Main

- 1st - Gary Studt/TQ
- 2nd - Pat McCreery
- 3rd - Scott Burns
- 4th - Justin Cox
- 5th - Ron Byrd

One of the trademarks of this event is the nice trophies that are always given out.

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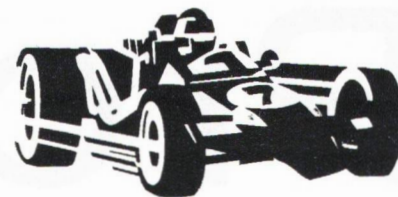
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THIS MONTH IN RACING

6th - David Smith
 7th - Dustin Craig
 8th - Dan Stifford
 9th - Peter Toft
 10th - Amy Edwards
 B Main
 1st - Bret Sinclair
 2nd - Otto Allmendinger
 3rd - Jason Cox
 C Main
 1st - Brent Sheppard
 2nd - Derrick Reed
 3rd - Brian Bauer
 D Main
 1st - Larry Kirby
 2nd - Larry Fanning
 3rd - Corey Passmore
 Stock Truck
 A Main
 1st - Doug Jones/TQ
 2nd - Chad Buffalo
 3rd - Toney Crowell
 4th - Larry Wilson
 5th - Bobby Mote
 6th - Rob Cox
 7th - Mike Kendrick
 8th - Ron Walls
 9th - Rob Schaffer
 10th - Michael Hampton
 B Main
 1st - David Riley
 2nd - Terry Bryant
 3rd - Rick Jeffers
 C Main
 1st - Mike Palmer
 2nd - Jeff Palmer
 3rd - Danny Jones
 D Main
 1st - Ben Priest
 2nd - Gary Scott
 3rd - Amy Edwards
 E Main

1st - Bob Sandlin
 2nd - Rick Reed
 3rd - Richard Sester
 2WD Modified
 A Main
 1st - Pat McCreery/TQ
 2nd - Gary Studt
 3rd - Scott Burns
 4th - Peter Toft
 5th - Ron Byrd
 6th - Don McMillan
 7th - Dustin Craig
 8th - Rich Burton
 9th - Jason Ladow
 10th - Gary Fanning
 B Main
 1st - Jane McMillan
 2nd - Carl Magnuson
 3rd - Ed Lyon
 Modified Truck
 A Main
 1st - Gary Studt/TQ
 2nd - Pat McCreery
 3rd - Larry Wilson
 4th - Doug Jones
 5th - Wendell Light
 6th - Robert Bauer
 7th - David Riley
 8th - Rob Schaffer
 9th - Jeff Crowell
 10th - Rob Cox
 B Main
 1st - Mike Kendrick
 2nd - Jason Ladow
 3rd - Jane McMillan
 Gas Truck
 A Main
 1st - Richard Love
 2nd - Ray Williams
 3rd - Mike Christian
 4th - Dan Stifford/TQ



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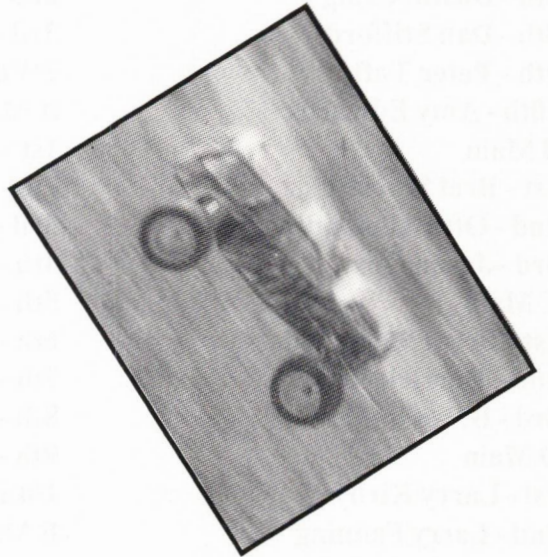


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CP

Project: Nitro Hawk



Top: The Nitro hawk can sure fly! Whether it's for the track or just the backyard, this Traxxas machine will certainly please. Bottom: Even standing still the Nitro Hawk looks fast.



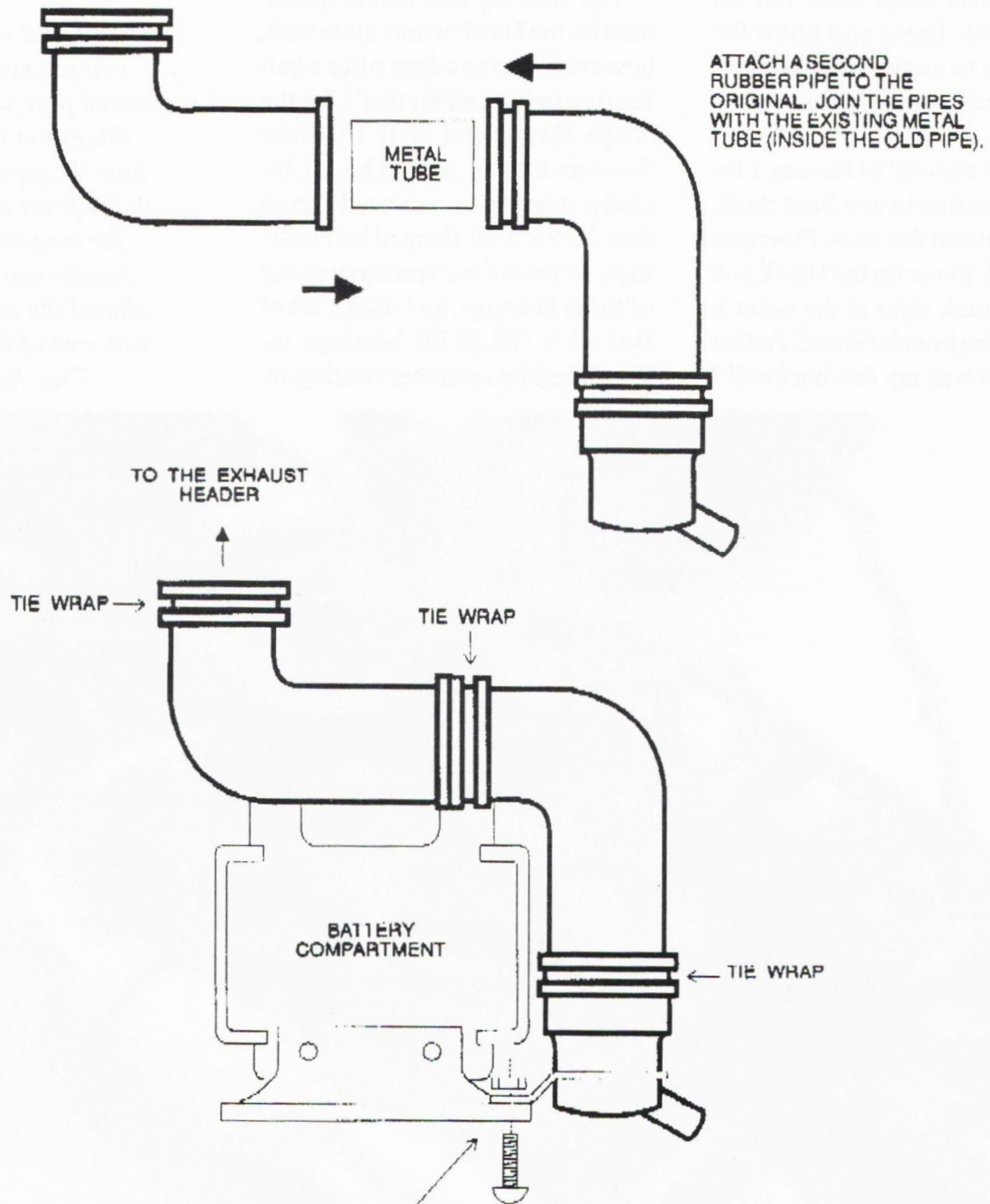
When I first saw the Traxxas Nitro Hawk I was truly impressed, I had previously owned other gas racers but none of them stood out like the Nitro Hawk. What impressed me most about the Nitro Hawk was its owner's manual and the use of race winning suspension components from the Blue Eagle LS. Traxxas' intent was to create an affordable and yet fun to run gas truck for the beginner and that they did very well, but at the same time Traxxas made the perfect foundation for a full blown racing machine. Of course, like most of us with racing in our blood, we all could see potential in the Hawk for flat out racing. And those thoughts are what brought me to this point, let's take the mild mannered Hawk and turn it in to a Screaming Eagle.

BY JACK WRIGHT

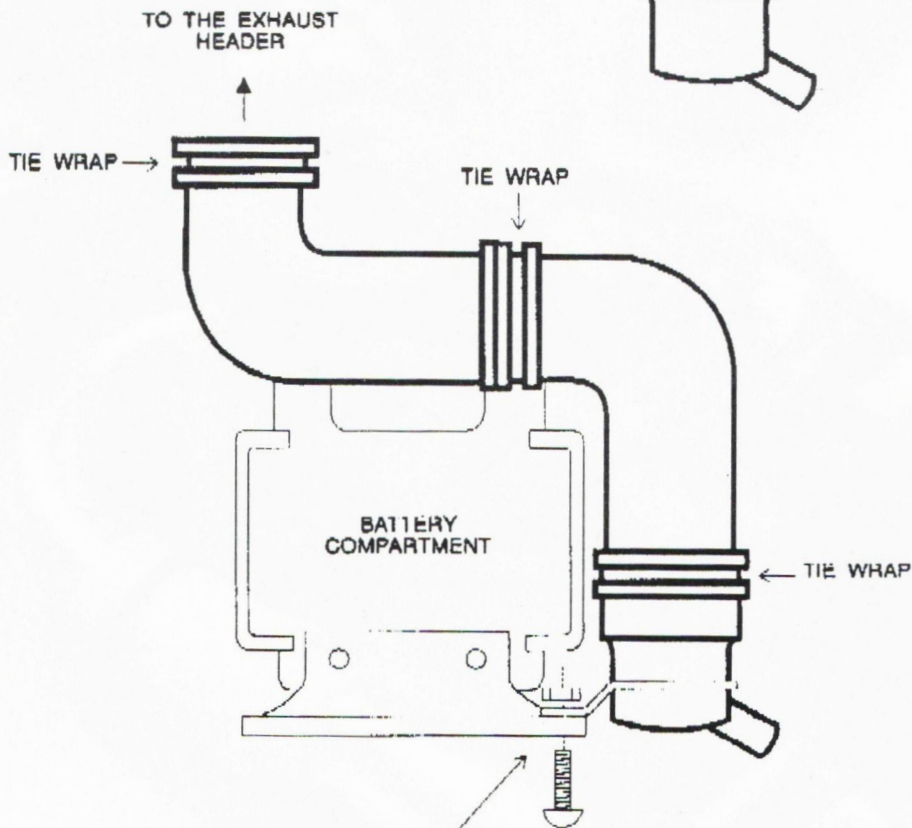
TRAXXAS

RACER'S TIP

ADD A SECOND RUBBER EXHAUST PIPE TO YOUR NI1HO HAWK. THIS WILL INCREASE POWER, IMPROVE THE SOUND, AND DIRECT DIRTY EXHAUST AWAY FROM THE TRUCK. ADDITIONAL PARTS REQUIRED ARE THE RUBBER PIPE (PART #3152), NEW TIE WRAPS (PART #3155), PIANO WIRE OR COAT-HANGER WIRE, AND A SMALL MACHINE SCREW AND NUT.



ATTACH A SECOND RUBBER PIPE TO THE ORIGINAL. JOIN THE PIPES WITH THE EXISTING METAL TUBE (INSIDE THE OLD PIPE).



DRILL A HOLE IN THE BUMPER. BEND A WIRE LOOP TO SUPPORT THE EXHAUST PIPE AND FASTEN IT TO THE REAR BUMPER WITH A MACHINE SCREW AND NUT.

ON PINS AND SPINDLES

The first course of action was to free up the suspension and reduce bumpsteer. I found that the threaded suspension pins that are used throughout the Hawk suspension fit very tightly, causing the suspension to bind up and work slowly over the rough stuff. To remedy this I replaced the stock pins with a Traxxas stainless steel suspension pin set (part #2739). These pins allow the suspension to move freely without binding and improving suspension response.

With the pins out of the way I focused on the shocks and front shock tower, I noticed the stock Fiberglass front shock tower on the Hawk had begun to crack right at the point it mounts to the front bulkhead. At first I thought it was my driving (well I

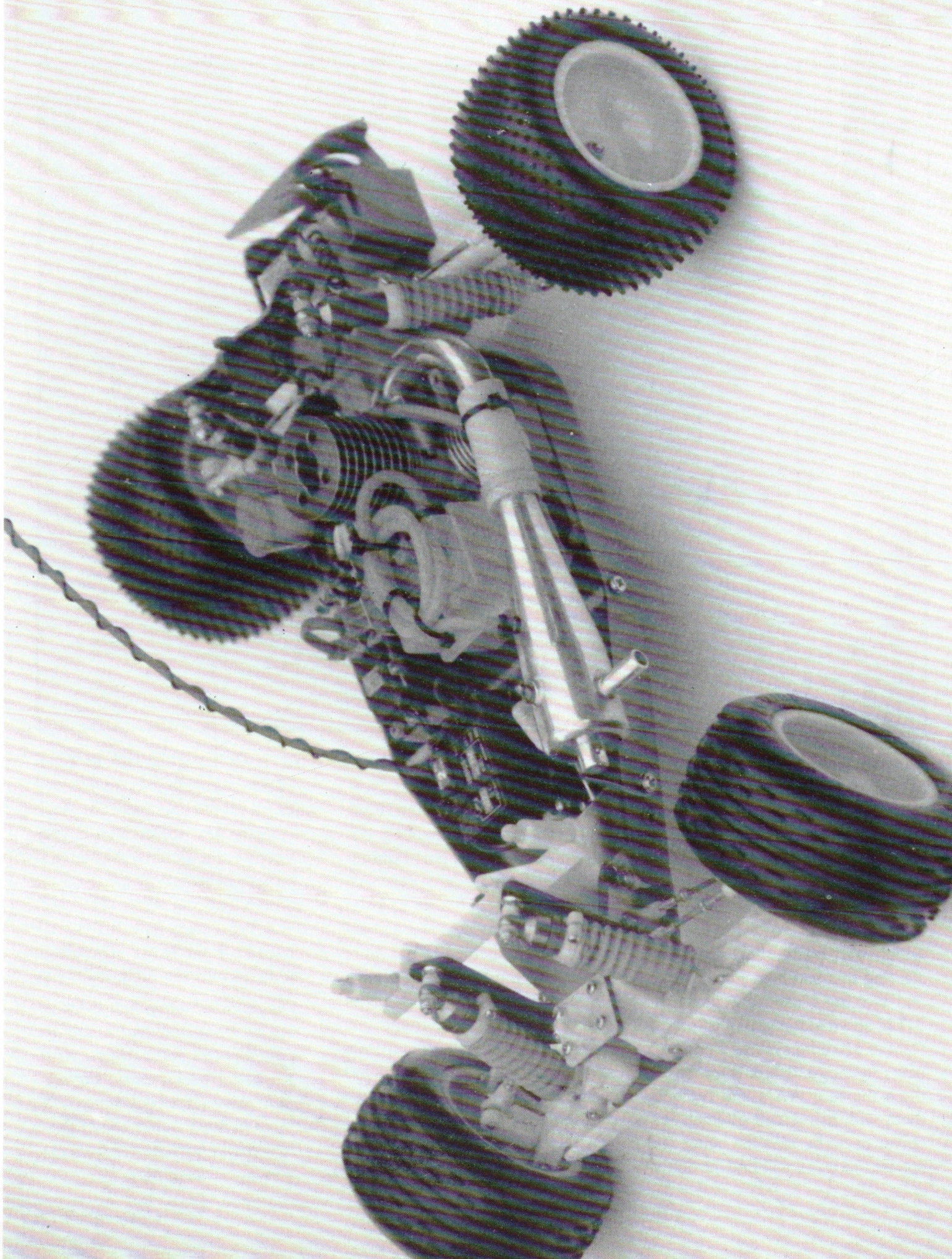
might be half right), but after letting someone else take my truck for a lap around the track, I noticed the tower would flex during cornering and coming off the jumps. Right off I realized the Graphite shock tower of a TRX-1 (part #4708) would fit the Hawk thus solving the flexing problem I was having with the stock tower.

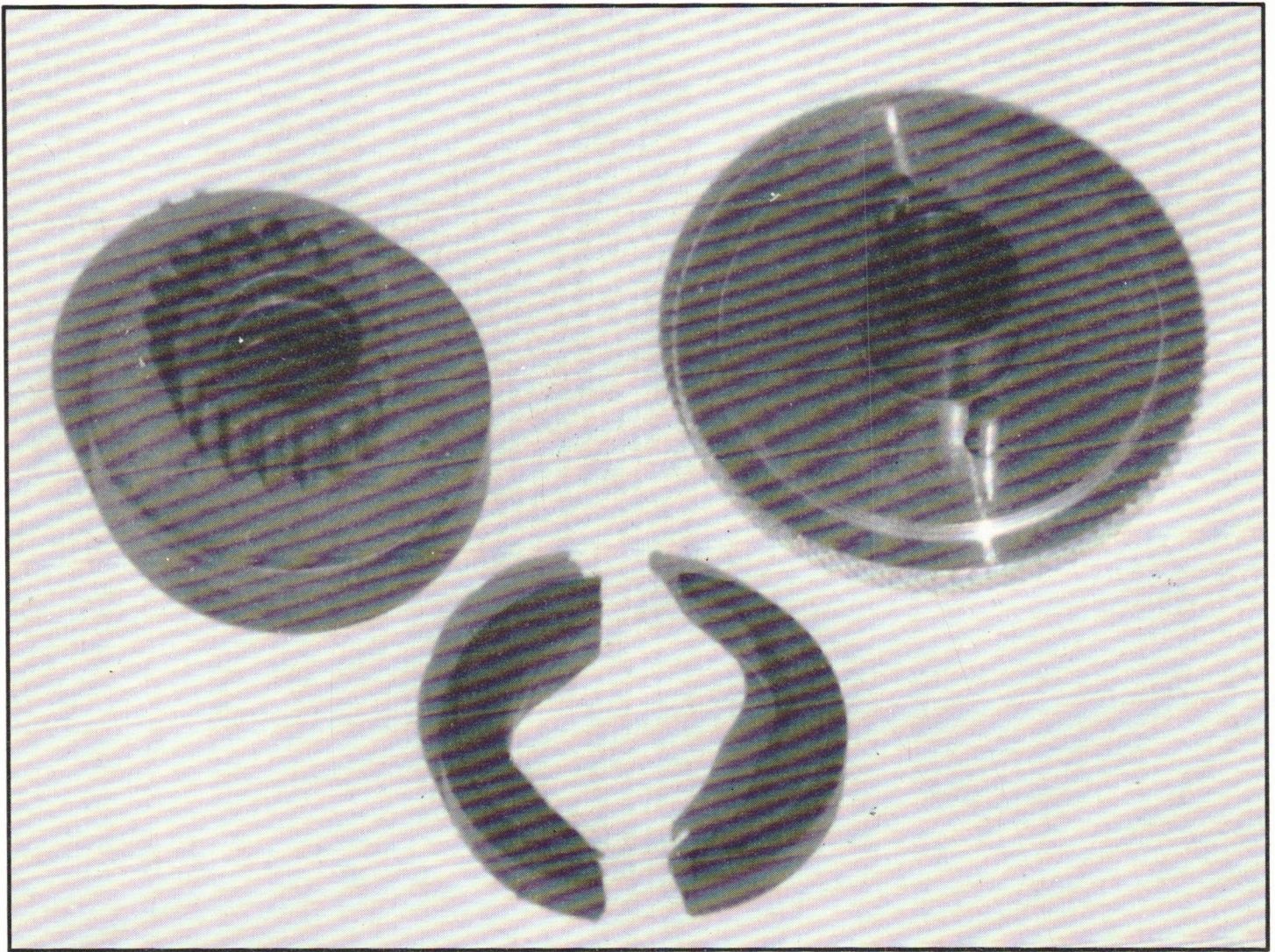
The steering bell crank system used on the Hawk works quite well, however, Traxxas does offer a ball bearing bell crank kit that's for the Nitro Hawk and will fit other Traxxas kits as well. The kit includes everything you need except four 3/16 x 5/16 flanged ball bearings. At press time Traxxas was out of these bearings, so I used a set of BoLink's (BL5455) bearings instead. Besides smoother steering ac-

tion the bell crank kit also removes much of the slop that was in the stock cranks. Another area of concern with the steering is bumpsteer. The Hawk can drastically change its toe in as the suspension is compressed. To counter this I put an 1/8th inch spacer between the tie rod and steering block, the spacer has reduced the amount of bumpsteer.

Below and right: As you can see mounting the tuned pipe won't disrupt things too much. Note how the pipe is attached to the front chassis brace for support. And, for longer run times I replaced the stock fuel cell with one of Kyosho's new 75cc fuel cells.







This along with the new bell cranks have greatly improved the Hawk's steering response. To handle the steering duties I called upon my ever trusty Airtronics 94152 Hi-Torque ball bearing brass gear servo with its 105 in/oz. of torque and a transit time of 0.12 seconds which will make short work of steering this bad boy. For throttle and braking I used a Airtronics 94102 servo along with Airtronics Caliber 3P radio system. For even better steering and throttle response, ditch the four AA's and replace them with a five cell 600mah receiver pack, besides the better response times you will find the 600's

have a slightly longer run time than standard NiCad AA's.

Moving to the rear of the Hawk didn't require many changes. Besides the suspension pins I did replace the stock 3 degree rear suspension blocks with a set of 1 degree blocks. By reducing the amount of rear toe in, helped to put more steering in the truck, and almost eliminated the truck's tendency to push in the turns. I've found that most of the Hawks suffer from a severe push, and so far this trick has worked very well on my Blue Eagle and should do the same here.

GEAR BOX BLUES

One of the short comings the Ni-

tro Hawk has is the lack of a ball diff but then again Traxxas intended this kit for the beginner. The stock planetary gear differential is very effective and durable. Although if you want better handling through the corners Traxxas does offer their TRX Pro Series ball diff (Part # 4620) to fit the Hawk. There's no modifications required, it fits like

The optional aluminum flywheel and 17 tooth steel clutch bell are a welcome go fast addition. Also, for better acceleration slightly lightening the clutch shoes will help to make better use of this new found horsepower from the tuned pipe.

a glove and can be fully adjusted while inside the gearbox. I almost forgot to mention since we're making all of these improvements, it would be wise to replace all of the stock bronze bushings with a set of Traxxas 5 x 11 ball bearings (part #4710) to keep things running smoother than before. Besides the diff I also installed a Thorp Manufacturing anodized idler gear as well as their steel u-joints, I figure with all of this truck's soon to be found horsepower I'd better reinforce the gearbox.

SHOCK ATTACK

The stock aluminum shock bodies do their job just fine and don't need to be replaced for the Hawk to perform well, however, I feel for just a few dollars more the hard

anodized Teflon coated shock bodies (part #'s 4762 front and 4763 rears) are well worth having. For one thing they reduce friction in the shock for a smoother dampening. To make the change from the stock shock bodies to the Teflon bodies is simple, you only need to replace the old units with the new ones, as the shock shafts and seals will fit the Teflon bodies.

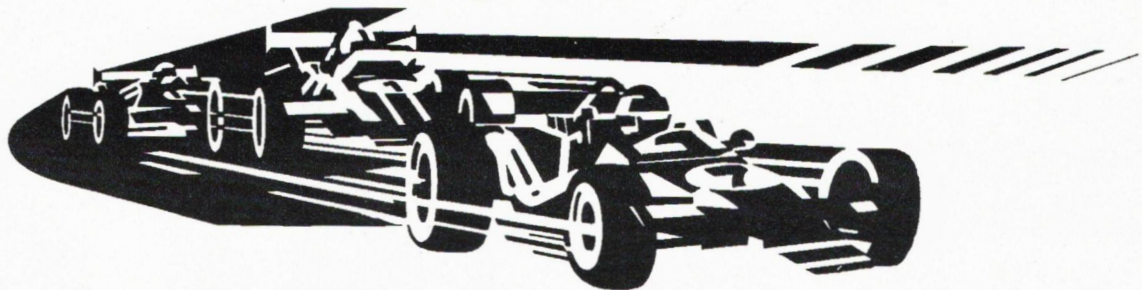
I used three hole pistons in the fronts and two hole pistons in the rears, I ditched the supplied shock oil in favor of Team Losi's 30wt. synthetic oil all the way around. I swapped the stock shock springs with Traxxas TRX Pro Series progressive springs, blacks up front and blues on the rear shocks. For keeping the shocks and springs clean

and operating at their best I installed a set of S & K's Shock Boot's (part #SKG4). Shock Booty's cover the spring to seal out dirt and debris and this will give you constant dampening as dirt won't collect in the shock springs reducing the shock's performance. As well as less wear and tear on the shock shafts and seals, this could save you a few bucks.

I installed the rear shocks with upper mount in the center hole lower in the shock tower and the lower mount in the next to last hole in the A-arm. As for the front shocks, I mounted the upper mount in the center hole of the front tower and the lower was mounted intermost hole of the front A-arm. I've found this set up works very well over mo-

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guls and small table tops as well as the matterhorn size jumps.

TRACTION

The stock tires that come with the Hawk are fine for running around the yard, since I was planning to race this truck I would replace the stock tires with a set of Pro-Line's XTR tires. Of course, every track is different, around here most tracks are packed clay, so I used Pro-Line 65 XTR tires up front and a set of Pro-Line 90 XTR fuzzies on the rear. The new XTR tires are made of a softer compound of rubber that has unbeatable traction but in most cases you will need to run foam inserts as these tires tend to have more side wall roll in the corners than the standard Pro-Line tires. Also spraying the tires with CRC's silicone spray will help to keep dirt

from collecting on the tire and reducing traction. You can find CRC silicone spray in most hardware stores under part # 03030.

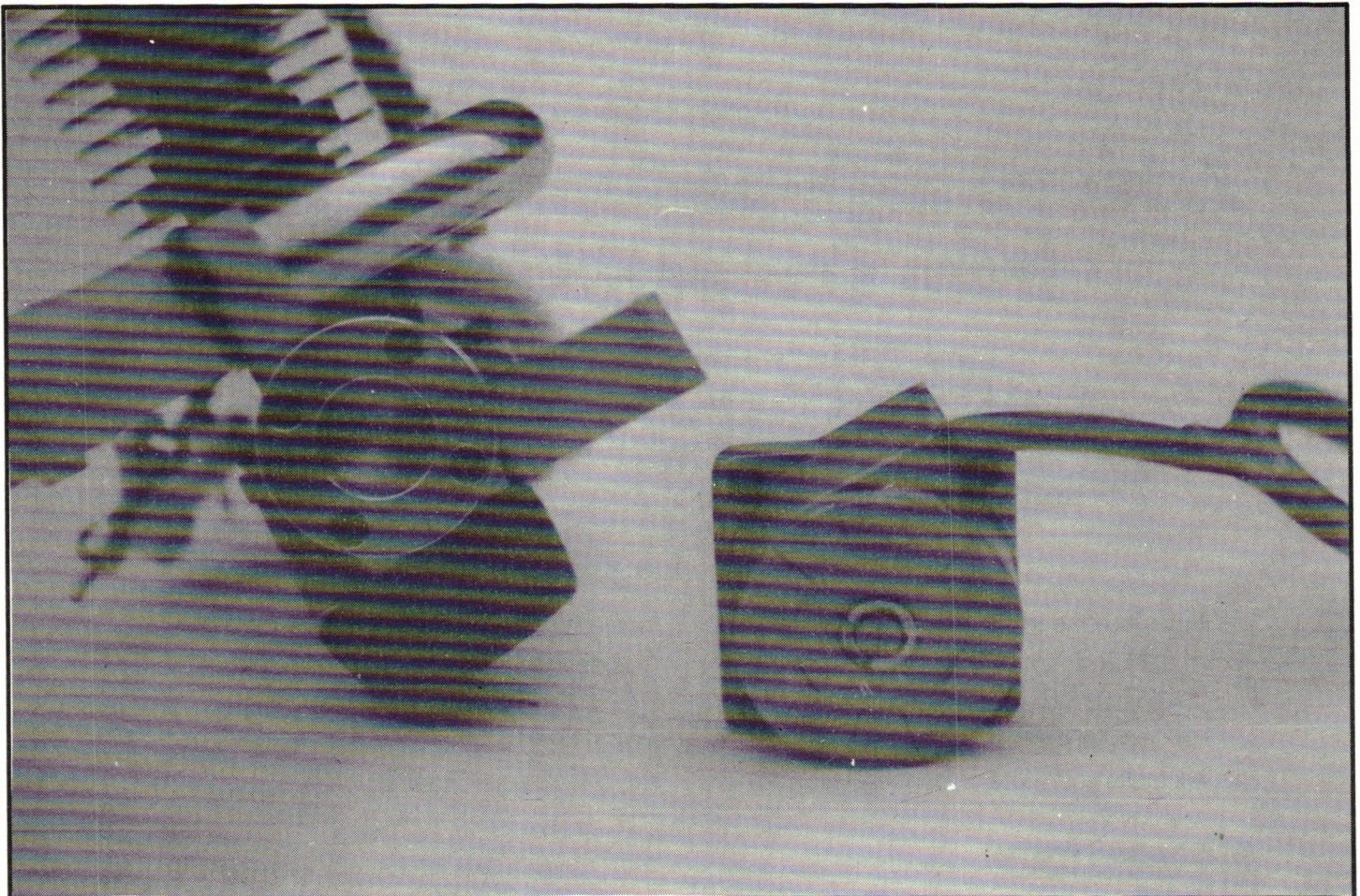
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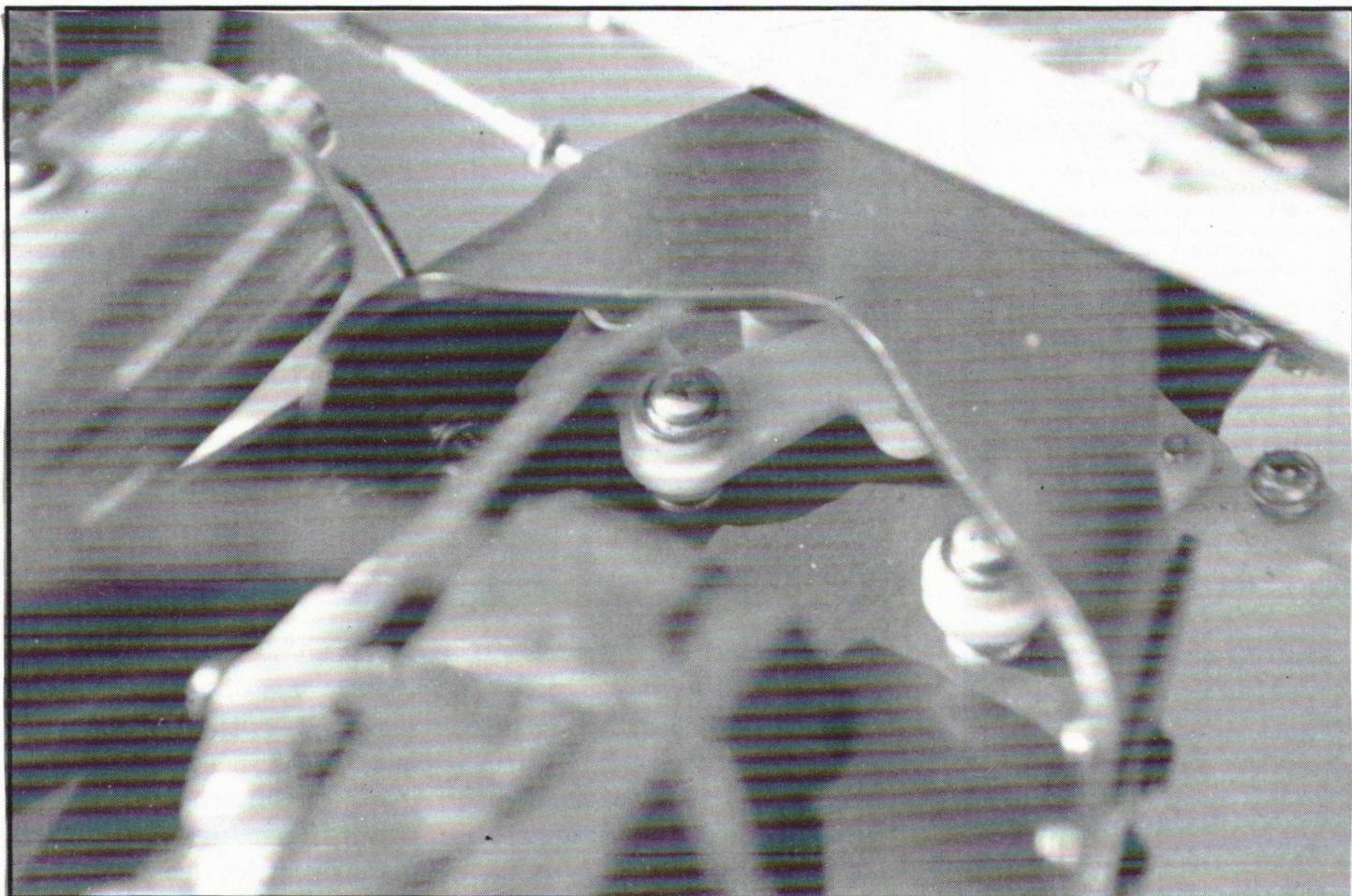
Since I first received my Nitro Hawk, Traxxas has made many updates to the Nitro Hawk's powerplant, the Image .12, for starters. Traxxas redesigned the pull starter for easier starts and better durability. Besides the new pull starter, Traxxas also added an improved finned head for better heat dissipation. And to ensure a stronger engine the new Image .12 also features an improved connecting rod with bronze bushings in both ends to reduce the amount of wear on the connecting rod. Don't fear if you already own a Nitro Hawk with the older style Image .12 engine,

these latest improvements can be added to your engine. Although to use the new pull starter you will have to replace the stock chassis with Traxxas' new chassis for the Hawk. Even if you plan to drop the starter in favor of using an electric starter, the new chassis is outfitted with a chassis brace that prevents the chassis from tweaking under severe load.

Besides the factory add-ons I decided to see how much more power could I extract from the Im-

I've found for all out racing it's wise to replace the stock pull starter with a finned backplate and use an electric starter. Of course, if you prefer to keep the pull start Traxxas offers an aluminum starter case to replace the stock nylon case.





age .12. Starting with Traxxas, I found they offered an aluminum fly-wheel that would save 3/4 of an ounce in rotating mass allowing the motor to come up to speed much quicker. Then I picked up a Traxxas steel 17 tooth clutch bell. I found over just a few short runs the stock

aluminum bell would begin to show signs of wear, besides the stock gearing was much more suited to dirt oval instead of off-road. Note: you will need to elongate the motor mount holes in the chassis in order to get the proper gear mesh between the clutch bell and spur gear. To in-

To eliminate bump steer, as well as steering slop, I added an 1/8 inch spacer between the tie rod and steering block along with replacing the stock bell cranks with Traxxas ball bearing supported bell cranks.

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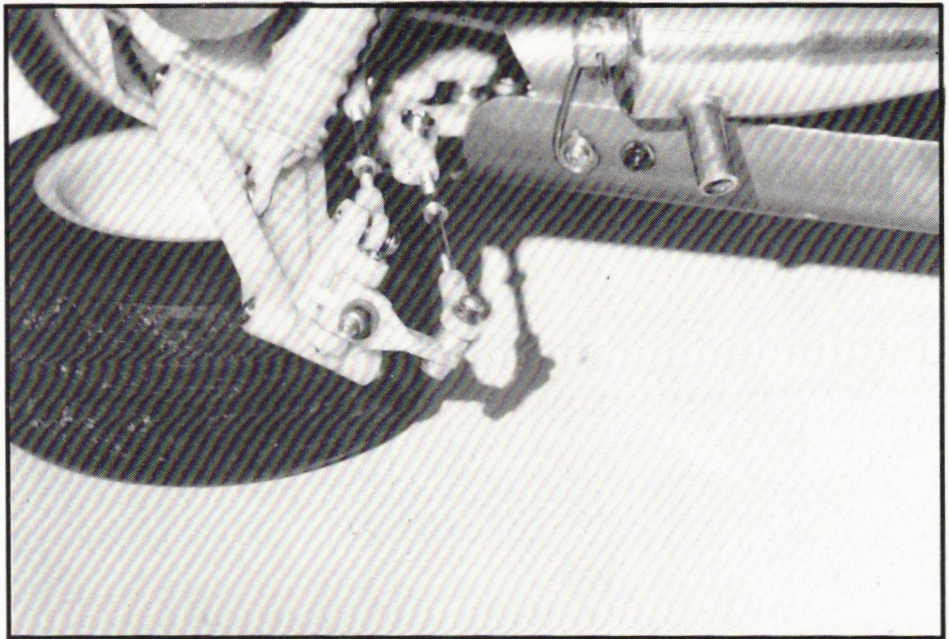
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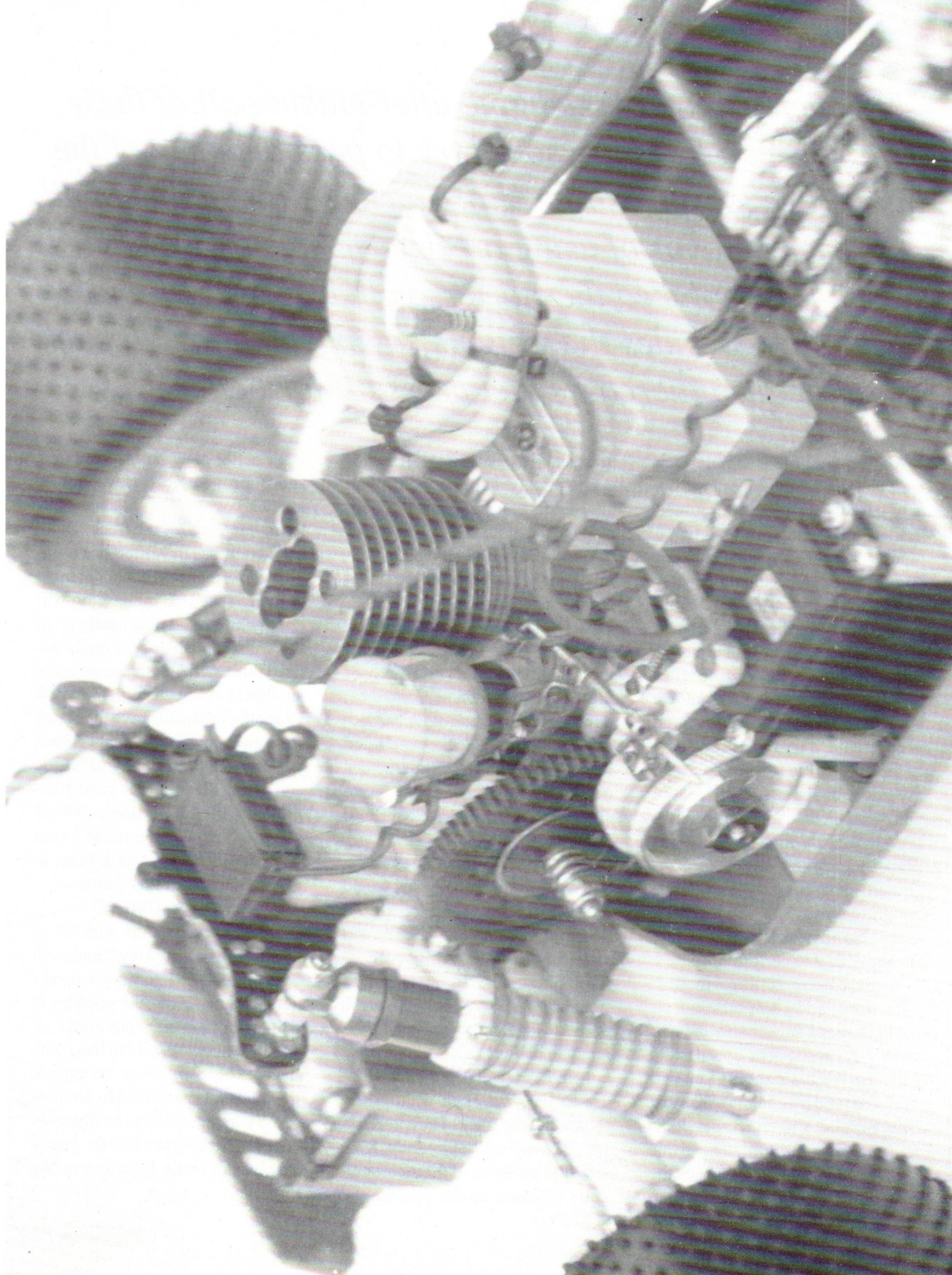


Another view of the new steering system I installed in the Nitro Hawk to reduce the incidence of bump steer.

stall the 17 tooth clutch bell you will need to replace the stock 5 x 11mm bearings with 5 x 8mm and don't forget the black metal spacer that fits between the bearings in the clutch bell, or the bell will not spin freely on the engine crank shaft. For improved exhaust performance add another section of the stock rubber exhaust pipe to the exhaust (as

shown in fig. 1), this will greatly improve the sound as well as the truck's performance. Now if the power bug really has you in its grasp, like it does me, you can add Mac's Products new tuned pipe. Mac's tuned pipe for the Image .12 is available from Horizon Hobby and can be found in most local hobby shops.

"So with the transmitter in hand we hit the track. Right off, I could see the difference in engine performance. Talk about mind blowing speed! The handling too was greatly improved with nearly all of the truck's push gone. I really noticed this when I would come up on another Hawk in the turns."



"Properly tuning the engine after making all of these changes can be tricky so I'll try to pass on some of the things I've learned so far. For starters I ditched the pull starter in favor of using an electric starter. To save weight I replaced the starters with a Traxxas finned back plate. Besides the weights savings, the finned back plate also increases fuel pressure for better . . ."

Adding the pipe is simple, just remove the existing pipe, install a new gasket and mount the tuned header, connecting tube and tuned pipe. To secure the pipe make a mount out of some small diameter music wire and attach it to the mounting screws that hold the chassis brace (as shown in the photo). Properly tuning the engine after making all of these changes can be a bit tricky, and since every engine is different I'll try to pass on some of the things I've learned so far on my ride. For starters, I ditched the pull starter in favor of using an electric starter. To save weight I replaced the starters with a Traxxas finned back plate. Besides the weight savings, the finned back plate also increases fuel pressure for better engine performance.

Basic engine settings to start with, is two and a half turns out on the high speed adjustment and two turns out on the low speed side. Now this is a basic setting you will need time and practice until it's just right for you. But remember don't let the motor run too lean as this will spell certain disaster, check the motor temperature by putting a drop

of water on the heat sink, if it sizzles away quickly stop the motor, you have it too lean and could possibly damage the motor. Also I've found the stock Enya 5 glo plug supplied in the kit is too cold for the tuned pipe set-up, so I switched to an O.S. 8 plug and it's been smooth running since. As time passes you learn more about the motor and many of the tricks to better performance, don't be afraid to ask other gas racers about set up. Heck, even I had lots of help from more experienced gas racers to get my Hawk up to speed (thanks Jack, Chris and Jamie for the help).

Once I had the motor up to speed, it was time to find a body that would really make my Hawk stand out from the crowd. The choice was simple, Dahm's Racing's new Ford Explorer Stadium Body, I had Dan from Izzy Racing apply his air brush talents to the Dahm's body and I was ready to hit the track.

LET'S GLOW RACING!

The day I've been waiting for, time to hit the track! Here in King, NC, a great local hobby shop, King R/C, has built one of the nicest outdoor off-road tracks around and

what better place to take my new and improved Nitro Hawk for its maiden voyage. So with transmitter in hand we hit the track. Right off, I could see the difference in engine performance. Talk about mind blowing speed! Handling too was greatly improved with nearly all of this truck's push gone. I really noticed this when I would come up on another Hawk in the turns. The new 17 tooth clutch bell gave the Hawk plenty of punch out of tight corners, yet didn't take away any of the top end speed. Steering was greatly improved with the Airtronics 94152 servo and my Caliber never let me down. The Hawk was a blast to drive and race for that matter.

CONCLUSION

I was very pleased with all of the changes on my Hawk and even with all of the performance parts I added to the Hawk, the price tag is still lower than any conversion kit out there now. And, it can hang with the best of them! Even the gang at the track was surprised to see how much performance can be squeezed out of this truck. Not bad for a truck that wasn't really built as a racing machine!

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By Bob Crane
Photo By John Meola

The 21st century in lubricants and cleaners are here! Bel-Ray, who started in full size racing has brought their expertise to radio control. Bel-Ray's products are formulated with pure synthetic materials and all formulas are patented. A special note about the Bel-Ray products is that they are all environmentally safe. Let's take a quick look at their product line.

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The Bel-Ray "Motor Bath" comes in a large can in which your entire motor will fit. To give your motor a bath, hook up your 4 cell motor maintenance pack, submerge the motor in the Bel-Ray motor bath, turn on your motor for 4 to 5 seconds and presto, a clean motor in-

side and out. You will be amazed at the amount of junk that was in your motor.

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in your standard small plastic container that fits easily into your pit box.

The entire line of Bel-Ray products has been used by all of my racing buddies, including the rug rats and they all give them a "two thumbs up". When you're going for the "Winner's Circle" Bel-Ray will help to take you there. Order directly from Bel-Ray or your local hobby shop. And don't forget, Howard is looking for "Team Drivers".

Till next time...Tight Cornering!

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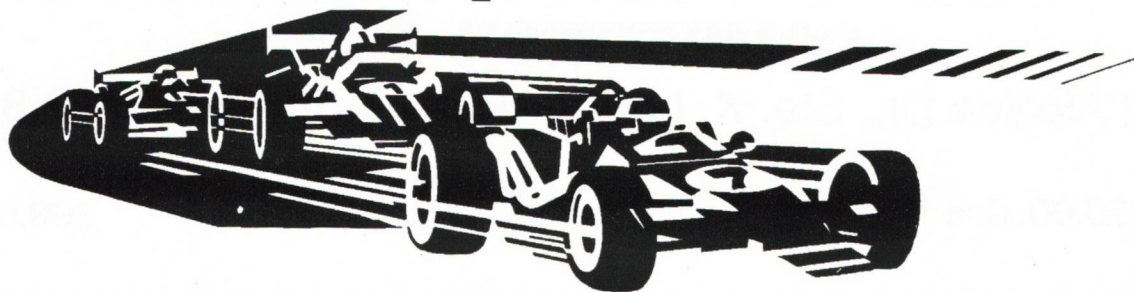
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Racing for 1/10th and 1/12th cars. Indoor carpet and oval course. Racing every Saturday night at 6:00 p.m. (also off-road - call). 1/10th scale off-road racing every Sunday at 2:00 p.m. (call for oval races). Track is at 2600 Beltline Rd. Decatur, AL. (205) 353-3399

ARIZONA

HOBBYTOWN U.S.A., PHOENIX

Racing for 1/10 scale asphalt oval every Sunday at 1:00 p.m. at "Bell Canyon" Pavillions. Located at 2814 W. Bell Rd. Phoenix, AZ 85023. Phone (602) 993-0122.

HOBBYTOWN U.S.A., GILBERT

1/10th and 1/12th electric outdoor asphalt 100 ft. oval. Racing held twice a week, 12 months a year. Drag racing held on the 1st and 3rd Tues. of every month. Fully stocked hobbyshop, classes for all cars, and computer scoring make for a great racing experience. For race times and more information contact HobbyTown; Gilbert & Baseline Rd., Gilbert, (602) 892-0405.

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1/10th and 1/12th electric outdoor asphalt oval. Year 'round racing twice a week in the warm Arizona sun. Fully stocked hobby shop and nearby restaurant/hotel accommodations make this a perfect R/C getaway. For race times and information contact Hobbytown; Indian Bend and Pima, Scottsdale, AZ (602) 948-3946.

CALIFORNIA

R/C OFF-ROAD RACEWAY

1/10 indoor off-road racing. Call for racing schedule and date information. Jeff Paul at (714) 965-9615. Track is located at 10810 Talbert Ave, Fountain Valley, CA 92708.

OUTLAW MOTOR SPEEDWAY

1/4 Scale Dirt Oval every first and third Saturday. 1/10 scale: Tues. Tamiya Off-Road, Thur. Off-Road & Dirt Oval, Fri. 1/10 and 1/12 on-road, first Sunday Dirt Oval, second Sunday 1/10 & 1/12 On-Road, 3rd and 4th Sun. off-road. 7920 Webster, Highland, CA, (714) 864-1770.

THE RANCH PIT SHOP

1/10 Scale: Every Wednesday night at 6 p.m. Alternating Oval and Off-Road. Every fourth Sunday 1/12 & 1/10 on-road combined program. 1655 E. Mission Blvd., Pomona 91766, (714) 623-1506.

SMR/CRC

1/8 Scale & 1/10 On-Road: First Sunday of each month at G.I.A., 1660 Stewart Street, Santa Monica, CA. Sign-up 8:30 a.m. For more info call Glenn Williams (213) 734-7888, Chris Chan (213) 393-3735, or Tom Wong (213) 821-5472.

REECE'S R/C RACERS

1/10 Scale: 1st & 3rd Sundays at Spinner's Airport Raceway, 2nd & 4th Saturday's at Reece's R/C Racers, (209) 784-0922.

SROKA'S INDOOR R/C

1/10 Scale: 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.

HOBBY HAVEN RACEWAY

1/10 Scale: 1756 First Street, Livermore, CA 94550. For further info call (415) 443-5828 M-F 10 a.m. to 6 p.m.

FAST LANE R/C

Address is 25845 San Fernando Rd. #21, Saugus, CA 91350. Contact John or Darlene at (805) 255-2404. Racing is off-road, dirt oval, asphalt road course and asphalt oval.

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1/10 Scale: Saturdays 3 events per month, Off-Road, Monster Truck

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HOBBY HUT

1/10 Scale: 2665 Park Marina Dr., Redding, CA 96001, (916) 241-3737. Off-Road racing. Norcal Mini Off-roaders. Ask for Kevin.

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We race both indoors and out, gas and electric, in 1/12, 1/10 and 1/8 scales. The facility has carpet, and dirt tracks for road racing, off-road and oval. Race scoring is done via an auto count system, and there is AC power and a hobby shop on site. Parking isn't a problem, and there's even RV access. For more information call (707) 894-4468 or visit us at #1 Citrus Fair Dr., Cloverdale, CA 95425.

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Indoor 1/10 and 1/12 banked oval and road racing is in store for those who come to this track. In addition to the fine circuit racers can enjoy a fully stocked hobby shop, snack bar, AC power and scoring is done via an auto count system. The track is located at 1109 Black Diamond Way, Lodi, CA 95240. Phone them for our latest racing schedule at (209) 334-5681.

CANADA

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1/10 Electric Off-Road Sundays. 1044 W. 14th St., North Vancouver, BC Canada. 150' Straights/5' banks/moguls & jumps. Operated by the Western Canada R/C Club. Dana (604) 980-4504.

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1/12 carpet racing Tuesday, 1/10 carpet racing Wednesdays. Sept. to May, Asphalt & off-road in summer. Remote Racers of London, P. O. Box 7241, Stn. E. London, Ontario, N5Y4J0, Canada. Dan Engelbreth, (519) 668-0427.

S.T.A.R.C.

1/12 Scale: Wed. nite - STARC Club Series. Rockton, Ontario, Canada. Sam Burke (519) 621-5424.

S.O.R.C.R.C.C. 1/12 Scale: Southern Ontario Radio Control Race Car Club in Toronto, Ontario, Canada. Racing alternating Sunday nites Oct. - April Scott Reynolds 298-4941 or Gary Joi 421-9061.

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Racing for 1/12 scale electric on-road. The track is an indoor facility, and we race on a carpet surface. We also have a hobby shop, auto count, and have AC power on hand. We are located at 384 Richmond St., Chatham, Ontario Canada, N7M1PQ. Call us at (519) 354-5530.

CONNECTICUT

PANTHORN RACEWAY

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For further information call Wayne Rydzy at (203) 265-3939. Track is at 63 North Cherry St., Wallingford, CT 06492.

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1/10 Off-Road, from end of April to middle of October. Racing every Sunday weather permitting. Call Mike Belmonte at (203) 661-0145. Track is at Old Field School in Fairfield, CT.

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1/10 Scale: Route 163, Bozrah, CT. Racing every Sunday, May 1 to Oct. 30. For more info call (203) 886-9441, ask for Mike or Bob.

SNORR

1/10 Scale: Racing every 1st and 3rd Sundays. P. O. Box 438, East Haven, CT, (203) 469-2594 or (203) 481-5813, Dave Scales.

BUCKLEY SPEEDWAY

1/10 Scale: 37 Douglas Street, Hartford, CT. Every Sunday April 1st to Nov. 31st. Black top oval. For more info call "Ziggy" or Debbie Kwasnicki (203) 246-4778.

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1/10 Scale: Monday - Trucks; Tuesday - Sprint Cars; Sat. - 2WD 6 yrs. to 16 yrs.; Sunday - All classes indoor clay oval and road track fast, Stock & Mod classes. 111 Main St., Tr. 66, Hebron, CT 06248, (203) 228-4942.

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1/10 Scale: 735 Canal St., Stamford, CT 06902, (203) 967-7255. 7,000 sq. ft. complex, ample pit with power, fully stocked hobby shop. Organized racing held weekly. Call for details.

EAST LYME R/C KAR KLUB

1/10 Scale: Every Sunday starting May 20 thru Sept. Racing at 11 a.m. Located at Society Rd, East Lyme, CT (Behind the Junior High School). For info call Paul Johnson, 739-4070 eves. or weekends.

NERCAR

Racing for 1/8 and 1/10 gas on road. For info call Phil (203) 627-5410; Larry (203) 749-6281; Wes (203) 749-6281. Enfield, Conn.

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1/10 Scale: Thurs. & Sat. off-road; Fri. carpet, Sun. 2 p.m. 178 S. Kalamath, Denver, CO 80221, (303) 722-6766.

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

Indoor 1/10 off-road racing on Wed. & Sat. Complete hobby shop, AC & DC power. For info call Jess Brockman (303) 343-0151 after 3 p.m. MST. 155540 E. Batavia Dr., Aurora, CO 80011, (East on 17th Ave. at Chambers Rd.)

ROCKY MOUNTAIN MINI SPORTS

Racing for 1/4 scale cars has come to Denver. We race both off-road and oval, on dirt, indoors. Our facility has a hobby shop, snack bar and for counting accuracy we use an auto-count system. We are located at 6401 N. Broadway, Unit G, Denver, CO. You can reach us by phone at (303) 426-0110.

DELAWARE

HOT TRACKS/D.A.R.C.A.R.

Delaware's finest carpet track. The circuit is more than 200ft. around! We have racing for 1/12 & 1/10 on-road and off-road cars. The facility also includes a hobby shop, snack bar, AC power and an auto count system. For more information call (302) 674-9123. The track is located in the Blue Hen Shopping Mall, in Dover.

FLORIDA

JAY'S R/C

1/10 Scale indoor carpet oval and road course. 5018 14th Street West, Bradenton, FL 34702, (813) 756-6393, 758-2565, 746-8649.

LOU'S R/C HOBBIES & RACEWAY

Racing on Saturday is at 12:30 for 1/10th scale clay oval. Sunday racing is 1/10th off-road. Both tracks have handicap access. There is computer lap counting, a hobby shop and food available. The track is located at 4931 Oleander Ave., Fort Pierce, FL 34982. Call Lou at (407) 464-3207.

LAKE WHIPPOORWILL SPEEDWAY

1/10 oval racing every Saturday. Open practice other days. 12345 Narcoossee Rd., Orlando FL, 32827 - (407) 277-9586.

B & T R.C. CENTRAL

Racing for 1/10 off-road on the 2nd and 4th Saturday. Track at 811 Playground Rd., Fort Walton, FL 32548. Phone (904) 863-2666.

DOC'S INDOOR R/C RACEWAY

Florida's state of the art facility. Plenty of pitting space, slot car track, bathrooms, snack bar and hobby shop. Located at 16803 US 19 N. Clearwater, FL 34624. For information call (813) 538-3096.

BROWARD COUNTY R/C RACE CLUB

Racing for 1/10 and 1/8 cars in gas and electric models. We run on-road, off-road and paved oval. Racing is done outdoors, and there is AC power and an auto count scoring system. For those with motorhomes there is RV access. We race at 2201 N.W. 9th Ave., in Mill's Pond Park, Fort Lauderdale, FL. For further information call (305) 525-3304.

RIVER CITY R/C CAR CLUB, INC.

Racing for 1/12 and 1/10 on road electric cars. We race outdoors on asphalt and score with an auto count system. Club address is 9711 Sharing Cross Dr., Jacksonville, FL 32257. Call (904) 268-1948.

GEORGIA

GEORGIA HOBBY CENTER

1/8 and 1/10 off-road and clay oval every Sat. and Sun. at 2:00 p.m. 112 Kenwood Rd., Fayetteville, GA 30214. (404) 460-1753

SILVER WINGS HOBBIES & RACETRACK

Indoor 260 ft. 1/10 scale clay oval. Complete hobby shop, plenty of electrical. Racing Tuesday & Saturday 7:00 p.m. Snack bar on site. 5611 Riverdale Rd., College Park, GA 30346 - (404) 991-2225.

LAKE MAYER RACEWAY

Home of the S.C.O.R.E. 1/10 dirt oval and off-road track. Raceway is located at the Lake Mayer Park, Montgomery Crossroads, Savannah, Georgia. Please call (912) 355-6033.

IDAHO

CAPITAL DIRT BURNERS

Both gas and electric 1/10 scale cars are welcome here. We race dirt off-road and oval outdoors. Our track has AC power and computer scoring. We race every other Sunday. For more information call Mike (208) 345-3906 or Jim (208) 383-0426.

ILLINOIS

MACHESNEY PARK RACEWAY

1/4 scale, and 1/10 scale: Large asphalt oval racing alternating every Saturday and Sunday April thru October. 1220 Shappert Dr., Machesney Park, IL 61111, (815) 282-1311.

R & R HOBBY

1/10 Scale dirt track inside and outside, also 1/12 tracks inside and outside. 1414 N. 24th St., Quincy, IL 62301, (217) 228-1133.

THE INSIDE TRACK

1/10 Scale: Every Wednesday 7 p.m. and Saturday 6 p.m. For more info call (312) 898-5649. 725 Hill Ave., Aurora, IL 60505.

RECTOR'S R/C

1/10 Scale: Indoor dirt oval/off-road. Alternate months. 6 p.m. Saturdays, 2 p.m. Sundays. RR3, Albion, IL 62806. (618) 447-3282.

CARPETBURNERS R/C CLUB

436 East Main Street, (Rear) Danville, IL 61832, (217) 442-7466.

C & C HOBBIES AND RACEWAY

Off-road every Fri. night and Sun. 2081 W. Station St. Kanakee, IL Call Chris at (815) 935-2600 or Ken at (708) 485-6366.

AMERI-TRAC SUPER SPEEDWAY

400' center line high bank tri-oval. Large pit area, AC power, close to I-57. Phone (217) 234-8707. RR3 Box 242, Mattcon, IL 61938.

MIDWEST HOBBY TRAX R/C RACEWAY

1/10 scale indoor off-road and oval racing every Friday 8 p.m. and Sunday 10:00 a.m. AMB scoring, AC power, snack bar, full hobby shop. 114 Kirkland Circle - Unit A, Oswego, IL. (708) 978-RACE.

EAGLE SPEEDWAY AT PONTIAC

1/10 & 1/12 Indoor carpet oval and road course racing held Wed.,

Sat. and Sun. Practice on Tue and Sat. AMB counter hobby shop, snack bar, etc. 313 N. Plum St., Pontiac, IL 61764. (815) 842-1738.

R/C RACEWAY - CHICAGO

Racing for 1/12 and 1/10 gas and electric cars can be had at this indoor facility. There is racing for on-road and oval cars, and we race on carpet. The track has AC Power and a snack bar as well. To find out about or racing schedule call us at (708) 352-5354. We are located at 2745 W. 111th, Mt. Greenwood, IL 60655.

LEISURE HOURS R/C RACEWAY

Indoor carpet track 48 X 96. Racing for all racers who own oval and on-road 1/10 and 1/12 scale. We also have off-road carpet racing with jumps, bumps, tabletops, dips etc. AMB & Auto-Score, fully stocked hobby shop, food. For more information or if you would like to be on our mailing list please call (815) 439-1477 (store) or (815) 439-1777 (track). We are located at 24121 W. Theodore St., Plainfield, IL 60544.

INDIANA

RPM R/C RACEWAY

1/10 Scale Indoor off-road racing every Sunday at 12 Noon. 1112 S. 16th, Elwood, IN 46254. For more info call (317) 552-7758.

R/C RACEWAYS

1/10 indoor dirt oval. Wed. 6 p.m. oval. Fri. 6:30 p.m. Sun. 12 noon oval or off-road. Call (219) 747-6414. 2710 Nuttman, Ft. Wayne,

ARVIN'S HOBBY CENTRE

1/10 Scale: 2,600 sq. ft. carpet track with movable rails so we can change from oval to off-road. We run off-road and on-road cars on Sat., Sun., and Wed. 1403 E. Spring St., New Albany, IN 47150, (812) 945-3745.

RACEWAY PARK

Mishawaka, IN (Northern Indiana)

Winter - Large indoor carpet track - two Sundays a month. Summer - The Mid-West's Best Off-Road track - two Sundays a month. Off-road track is on N. Main Street. For info call Bob (219) 256-1020.

HOBBY WORLD RACEWAY AND HOBBIES

Indoor dirt oval and off-road. Racing every Wed. and Sat. at 7:00 p.m. Full hobby shop, AMB scoring, AC power and snack bar. 1508 N. Harlan, Evansville, IN 47711. (812) 421-1100.

RC ZONE & RACEWAY

Located inside the Indy Indoor Sports at 34th & Highschool Road, we feature an indoor carpet track with racing every Saturday - April through October. Rentals available for racing on Friday nights. Full service hobby shop and facility. For more information call Greg or Russ at (317) 290-0067 or write to 6380 W. 34th St., Indianapolis, IN 46224.

GONZO RACEWAY

1/10 outdoor off-road racing on Sundays May thru September. Racing starts at 10:00 a.m. Indoor carpet racing November thru March. Computerized scoring. For more information call (219) 980-8409. 418 Roberts Rd., Chesterton, IN 46304.

BJ'S RIVERSIDE RACEWAY

1/10 scale lighted 450 foot outdoor off-road dirt track. 1/10 scale 115 foot in-door high banked dirt oval with jumps. Outdoor racing Friday at 6:30 p.m. Bomber class (6-cell and bag motor, 6:00 min. heats) Saturday 6:30 p.m. oval racing (all classes, 4:00 heats) Sunday 6:30 p.m. off-road (All classes, 4:00 min. heats) A/C power, computer lap count, snack bar & R/C sped shop. 265 South Clay St., Jasper IN, 47546. Call Joe "BJ" Lorey (812) 482-3484.

P & T HOBBIES

1/10 off-road and oval racing on one of the midwest's finest circuits. Full service hobby shop on site and ample pitting with AC power. Oval is 220' long and off-road circuit offers more than 300' of racing. Racing Fri. night and Sat. R.R. #2, Box 450A, Mitchell, IN 47446, (812) 849-6666.

RIMFIRE RACEWAY

Racing for 1/10 scale gas and electric cars is what has made Rimfire Raceway the popular track that it is. The facility features an indoor and outdoor track, and they race both off-road and oval. Rimfire has a hobby shop, snack bar, AC power and an auto count system. The track is located at 8 Wood Ct., Hebron, IN 46341. Call them for the latest racing schedule at (219) 996-6288.

R/C WORLD OF INDIANA

This popular track has racing for 1/10 electric off-road cars. The facility features a hobby shop, snack bar, AC power, auto count system and there is RV access. For their racing schedule call (317) 874-2464. Or they

can be reached by mail at R.R. #2 BGHox 335, Lynn, IN 47355.

IOWA

BOB'S R/C SUPPLY & RACEWAY

1/10 Scale: Indoor carpet racing! Tues. 1/10 oval; Fri. 1/12 Road Course; Sat. Monster Trucks. Stock & Modified. Call Bob, Nancy or Kevin (319) 232-2235, 935 Sheerer Ave., Waterloo, IA 50701.

NORTH PARK R/C SPEEDWAY

1/10 & 1/12 electric, 1/8 gas and 1/4 scale: For info write c/o Mike Beisch, 805 S. Jerome, Algona, IA 50511 or call (515) 295-9352.

KANSAS

EBERSOLE HOBBY & R/C RACEWAY

1/10 Scale off-road and oval. Races Wed., Thurs., Sat., and alternate Sundays. 11417 W. Highway 54, Wichita, KS 67209. Len Ebersole, (316) 722-8888.

KANSAS R/C RACING CLUB

Every Second Sunday, Junction City; Every 4th Sunday Enterprise.

DEE & MEE HOBBIES

Two tracks; dirt oval and off-road, oval on Mon. and off-road on Fri. Both at 7:00 p.m. Carpet 1/12 on Tue. at 7:00 p.m. 628 Kansas, Topeka KS 66603. 357-4232.

EBERSOLE R/C SUPER SPEEDWAY

High banked asphalt oval, road course, dirt oval and off-road. Electronic lap counting. track at 11417 W. Hiway 54, Witchita, KS 67209. Phone (316) 722-8888.

RCRC RACEWAY

Outdoor dirt oval and off-road track with full hobby shop, AC power, concessions and lights for night racing. Track is 95 by 65. For more information contact Bob Dunker at (913) 626-3261 day or (913) 626-9681 nights. Track is 507 N. 4th St., Atwood, KS 67730.

R/C WORLD RACEWAY

Corky and Pam Green are your hosts for 1/10 electric off-road and dirt oval racing on their indoor track. This facility has a hobby shop, snack bar, auto count and AC power. Racing for the dirt off-road cars is Saturday and the dirt ovals race Thursday. Call (913) 793-2313 for current start times. They are located at 217 Brownie Ave., Scranton KS, 66537.

KENTUCKY

HOBBY CENTER

Hobby Center, INC. 2106 Triplett St., Owensboro, KY 42303. Phone: (502) 683-7611. Full service facility including hard surface flat track with a straight 75 feet long! Track indoors, regular racing every Thursday at 7:00 p.m. Track open daily for practice. Hours 11:00 a.m. to 7:00 p.m. Mon. - Fri. On Sat 11:00 a.m. to 5:30 p.m.

RIVER CITIES R/C RACEWAY

1/10 Scale: Racing at 5:30 Saturday evenings under a light area. Call Randy Aust (606) 836-4273 or Jason Graham (606) 836-2613. Ashland, KY 41101.

PIT ROW HOBBIES

Both gas and electric, 1/12 and 1/10 cars will find a home racing here. There are also classes for on-road, off-road and dirt oval cars. This complete facility features a Hobby shop, AC power and scoring is done by auto count. Pit Row races both indoors and out, and with the number of classes it's a good idea to give them a call for the latest schedule. They can be reached at (502) 782-2419. They are located at 281 New Porter Pike, Bowling Green, KY 42103.

LOUISIANA

CAJUN R/C & RACEWAY

1/10th scale off-road dirt track (outdoors) Complete hobby shop, A/C power, food. Races every Sunday at 1:00 p.m. Route 2, Box 288 - Hwy. 343 (Bosco), Church Point, LA 70525. For more info call Ray or Sandy at (318) 873-3855.

CAJUN R/C & RACEWAY #2

1/10th scale dirt oval track (outdoors). Complete hobby shop, AC power. Races every Saturday at 2:30 p.m. Address is 110 A Darbonne,

Sulpher, LA 70663. Call Randy or Sandy at (318) 527-9129.

MAINE

CENTRAL MAINE R/C SPEEDWAY AND HOBBIES

This facility features two carpeted tracks, an oval and a road course. There's also off-road racing. We have a complete r/c pro shop and race on Fridays and Sundays. This indoor facility also has a snack bar, AC power and an auto count system. The track is located at 18 Lithgow St., WInslow Maine. For information call (207) 877-2232.

MARYLAND

MASON DIXON R/C CAR CLUB

1/10 Scale: Every Sunday at 1 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.

CENTRAL MARYLAND ELECTRIC

RACING CLUB (CMERC)

Community R/C Speedway

1/10 Scale: Racing every Saturday dirt oval. Middletown Park, Middletown, Maryland. Contact John Mauchamer, (301) 698-9545. 1/12 Scale: Mark Coats (301) 694-7420.

TEAM R & R, INC.

1/10 & 1/12 scale indoor oval carpet racing. Every Sunday. for more info (301) 848-2144 or (301) 876-2983. Westminster, MD 21157.

MARYLAND R/C CLUB

1/10 & 1/12 racing indoor carpet. Toy World R/C, (301) 424-0430.

GPA HOBBIES, INC.

GPA Speedway races 1/10 off-road and 1/10 and 1/12 indoor road. For schedule information call (301) 805-9004 or write to GPA at 3498 Crain Hwy., (Collington Plaza), Bowie, MD 20715.

THE TRACK/MARYLAND R/C CLUB

1/10 & 1/12 carpet indoor banked oval and road course. Track at 16806-08 Oakmont Ave., Gaithersburg, MD 20877. (301) 417-9630 or 424-0430.

THE COCKEYSVILLE ASTRODOME

1/10 & 1/12 scale on-road indoor carpet track. Snack bar, hobby shop and auto count system. Racing Thursdays and Saturdays. C.A.R. Cockeysville Astrodome Racers, Inc., 10854 York Road, (Rear) Cockeysville, MD, (301) 666-1098., (410) 666-2521.

MASSACHUSETTS

BROCKTON INTERNATIONAL SPEEDWAY

1/10 & 1/12 Oval racing on Mon. 7:30 p.m. 1217 Main St., Brockton, MA. For information call (508) 588-9355.

R/C PERFORMANCE CENTER

1/10 Scale carpet oval and indoor off-road dirt track. Racing Tues., Thurs., Sat., & Sun. 4 Manley Street, West Bridgewater, MA 02379. Ask for John (508) 588-9666.

HOBBIES ETC. RACEWAY

1/10 & 1/12 scale: Every Sunday Racing at 1 p.m. Indoor on-road carpet. For more information call (617) 389-3331. Medford High School, Winthrop St., Medford, MA.

NORTH EAST AUTO RACERS (NEAR)

The club hosts 1/8 gas and 1/10 electric road racing. Track is behind Cobblestone's Restaurant. Races are scheduled May through October. For full schedule contact George at (508) 346-8456.

MEGADROME RAEWAY/BRCR CLUB

One of the largest facilities on the East Coast. Racing for 1/10 electric and nitro on, off-road and clay oval tracks. Track is located at North Adams Plaza, Rt. 8 Curran Hwy., North Adams, MA 01247

For race and practice information call Gordon at (413) 663-9593, Richard (413) 445-4777 or Warren (413) 442-2566.

WEST STREET HOBBIES RACEWAY

1/10, 260 ft. banked carpet oval. Racing Wed. & Sat. at 7 p.m. (508) 533-1231. 114C Main St., Medway MA 02053. NORRCA rules.

MICHIGAN

USA RACEWAYS

1/10 & 1/12 Scale: Road racing Wed. and Sat. 1/10 oval Friday and

Sunday. Stadium 1/10 on Saturday. 6083 Dixie Highway, Bridgeport, MI, (517) 777-7USA.

HARRISON INTERNATIONAL SPEEDWAY

1/10 Scale: Friday night high banked small oval. Sunday large flat oval. 3519 N. Clare Avenue, Harrison, MI 48625, (517) 539-7959.

GLASS CITY RADIO CONTROL

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

BAJA BAYOO R/C RACEWAY

1/10 scale off-road racing May through September. Racing every Sunday at 1:00 p.m. weather permitting. 5313 West 22 Mile Rd., Tustin MI. Track is 8 miles south of Cadillac. (616) 829-3447.

R & L HOBBIES

At this track you can race 1/10, 1/8 and now even 1/24 scale. The small cars run on an indoor carpet track, but we also have outdoor racing. There are classes for gas, electric, off-road, and dirt oval. This complete racing facility has a hobby shop, snack bar and AC power. You can reach us by phone at (616) 323-3686 or fax at (616) 329-1744. We are located at 9782 Portage Rd., Kalamazoo, MI 49002.

RIDERS SUPER SPEEDWAY

Racing for 1/10 and 1/12 electric cars. We have an indoor carpet oval course, with a complete hobby shop, snack bar, AC power and score by auto count. Located at 4415 S. Westnedge, Kalamazoo, MI. Call us at (616) 349-2666.

MISSISSIPPI

FASTRACKERS RACEWAY

1/10 scale off-road racing every weekend. One of the biggest and most challenging off-road tracks in Region 6 ROAR sanctioned. For more information and racing schedule, write - 4909 West Gate Hills Dr., Meridian, MS 39305 - (601) 693-8368.

JACKSON R/C RACING ASSOCIATION

Car and truck racing Sundays at 10:30 a.m. and Tuesdays at 6:00 p.m. Computerized lap counting, all classes pan stock and modified, gearbox stock and modified, truck, 4 X 4, Dominator class, and 1/12 if enough to run. Track is 2 1/2 miles west of Rt. 9 on Rt. 526, (908) 905-1593.

CROSS ROADS RACEWAY

1/10th off-road racing every weekend. Dirt banked oval and a road course in the center of the track. Come and race those modified motors on the Big Oval. For more information call (601) 287-7169. Chief Electronics/Radio Shack, Corinth, MS 38834.

MISSOURI

HOBBIES 'N STUFF RACEWAY

Off-road racing for 1/10 scale electric trucks and buggies every Wednesday, Friday and Sunday. Our 280 foot indoor carpet track is ROAR legal with 8 foot wide lanes and carpet jumps. Computer scoring by Victory Lane II. Hobby parts and food on location. Come see us at: 102 West Pearce Blvd. Wentzville, MO 63385. Phone (314) 327-6006 for more details.

FAST TRAX

This indoor track races 1/12 and 1/10 electric on-road cars. The track surface is carpet, and the facility includes AC power and auto-count system. Our phone number is (417) 725-4337. You can also write to us at 206 Water, Nixa MO 65714.

NEBASKA

OMAHA NEBRASKA RADIO OPERATED AUTO DRIVERS

1/10 & 1/12 Scale carpet and pavement racing. Oval and road course. (402) 331-2907.

OVER THE WALL GANG

Schedule: Nov.-Mar. 1/10th oval, 1/10th & 1/12th road course. Apr.-Oct. outdoor off-road and asphalt oval and road for 1/10th and 1/12th cars. On site hobby shop. Located at 401 Market Pl., Norfolk, NE 68701. Phone (402) 379-0879.

HOBBYTOWN USA

1/10 scale, 1/3 mile high banked dirt oval. Racing Tues. at 7 p.m. and Sun. at 1:30 p.m. May through October. Located in the East Park Mall; 66 & 9 streets, Lincoln, NE 68510. (402) 434-5056.

NEVADA

AMS R/C RACEWAY

Racing is 1/10th off-road Wed. nights at 7 p.m. & Sun. at 10 a.m. Track has a clay surface. On Sat. 1/10 oval/on-road racing on carpet at 7 p.m. This is an indoor track (110 x 44 clay off-road and 110 x 40 carpet track) and we have a hobby shop and snack bar. We are also only 2 miles away from the casinos and hotels. Open daily from 12-9 p.m., closed Monday. Track is at 1130 Icehouse, Sparks, NV 89431. For more information call (702) 355-8803.

NEW HAMPSHIRE

HOBBIES PLUS & R/C RACEWAY

Track is at 14 Celina Ave., Hashua, NH 03063. This is New England's largest (350 ft.) and fastest banked carpet oval. Also 26 x 72 flat carpet track dedicated to 1/12 road racing. Pit areas with electricity for over 200. Complete hobby shop, computer scoring. For more information call (603) 882-9200.

ACTION R/C RACEWAY

1/10 Scale & 1/12 on-road, 1/10 off-road cars and trucks. Indoor carpet high banked oval. Family Fun Hobbies, 201 Washington St., Claremont, NH. (603) 543-1022.

HOBBY ETC. RACEWAY

Indoor carpet banked oval for 1/10 and 1/12 scale. The 1/12 division also can road race. AMB scoring with a full hobby shop and concessions on the site. Telephone is (603) 595-8549. Rt. 101A, Amherst, NH 03031.

NEW ENGLAND HOBBIES AND R/C RACEWAY

Racing for both gas and electric cars, in 1/10 and 1/8 scales. This outdoor track features off-road and dirt oval racing every Saturday from May - October. There's an auto count system for scoring, and a hobby shop and snack bar. We are at 49 Eaton Hill Rd., Auburn, NH. Call Larry at (603) 483-8371 or Chuck at (603) 483-2274.

NEW JERSEY

AMERICAN HOBBIES

1/10: Thurs. Oval; Sun. Off-Road & Oval. Call (201) 446-2010.

PARLOR HOBBIES

1/10 & 1/12 Scale: Short track stock car racing on road courses. 1/10 on asphalt. Truck class with 1/12 on road, off-road. Rabbit Lane & 34 Broad St., Matawan, NJ, 566-3158.

KIM'S R/C PIT STOP

I.E.D.A. drag racing - 10 classes including bracket. Racing every Sunday on an outdoor asphalt track. We also have an X-Mas tree, and computer scoring and printout. Call for latest schedule at (201) 942-5955. We are located at 357A Union Blvd. Totowa, NJ.

AL & RICH'S R/C SPEEDWAY

Indoor carpet road course and 1/10 dragstrip. AMB system 20 and Dragmaster Timing System. Racing Friday, Saturday and Sunday with open practice on Thursday. Track is at 90 N. White Horse Pike, Hammonton, NJ 08037 (located at Texaco Station). For more information call (609) 561-7584.

NEW MEXICO

LAS CRUCES HOBBY RACEWAY

1/10 scale off-road and oval on a 7,200 square foot track. 1/10 gas truck and electric racing every Sunday. 1996-A S. Valley Dr. Las Cruces, NM 88001. Phone (505) 524-8530

RACER'S INN

Full hobby shop and concessions. 1/10 off-road every Sat. at 6:00 p.m. on outdoor 70x120 track. Also 1/4 scale Sprints and Grand Nationals. Oval and dirt oval. Call for schedule. Located at 4300 Rankin LN. N.E., Albuquerque, NM 87107. Phone (505) 345-5988.

NEW YORK

WALT'S HOBBY & CRAFT

1/10 & 1/12 Scale: Two indoor tracks. 1/10 clay oval, Mon. & Sat; 1/10 Gearbox carpet, Mon.; 1/12 & 1/10 carpet, Tues. Oval and Road Course. Weight Pulling Wednesday. 2 Dwight Park Drive, Syracuse, NY, (315) 453-2291.

REC. R/C RACEWAY

1/10 Scale Clay Oval. Saturday - Oval; Sunday Off-Road. Call Erin Clancy (914) 868-7715. Route 82 to Standfordville, NY 12581.

ROMAC

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

SCHENECTADY R/C SPEEDWAY

1/10 & 1/12 Scale: Indoor oval carpet and Monster Trucks. 955 State St. Schenectady, NY, (518) 3709-3747.

BROWNIE'S HOBBIES

1/10 Scale: Off-Road Dirt Track. Friday evenings 4WD & 2WD. Track open April - November. 124 Bennett St., Staten Island, NY 10302, (718) 727-2194.

RAPID TRANSIT RACEWAY

1/10 Scale: Mon, Tues., & Sat. - Practice. Wednesday - Stock & Mod.; Thursday Sprint Car; Friday Sportsman & Open Class. 2104 Broadway, Schenectady, NY 12306, (518) 372-0777.

CAPITOL DISTRICT R/C OUTLAWS

1/12 Scale 4-cell carpet. Oval and road course. Every Friday at 7:30 p.m. October to April. For further info contact Capitol District R/C Outlaws, 223 Fourth St., Scotia, NY 12302, or Sam (518) 374-3801.

QUEENS OFF-ROADERS

One of the biggest 1/10th off-road tracks in the country! Racing on Fri. at 8:00 p.m., Sat. at 3:00 p.m. and Sun. at 11:00 a.m. For latest information call (718) 392-5766. 42-12 13th St., L.I.C., NY 11101.

VICTOR R/C ASSOCIATION

1/10 scale clay oval track & off-road racing. Fridays and Sundays, May through September. 1309 Mertensia Rd., Farmington, NY. For information call Larry at (716) 394-3754.

BEACH HILL SPEEDWAY

Racing for 1/10 electric off-road and dirt tri-oval. Racing is done outdoors, and the track has RV access. There is also a snack bar and AC power. The speedway is located at 1760 Beach Rd., Watkins Glen, NY 14891. To call them dial (607) 535-2616.

R.C. WORLD HOBBY CENTER

Road racers who pilot 1/12 cars will find plenty of racing action at this indoor carpet track. Along with a hobby shop, there is a snack bar, AC power and scoring is done via an auto count system. Call them for their schedule at (718) 326-0002. They are located at 69-57 Juniper Blvd. South, Middle Village, NY 11379.

TRANSIT SPEEDWAY & HOBBIES

If you like to race 1/10 and 1/8 cars this is the place. At our track we have classes for gas and electric cars and racing for off-road, on-road and paved oval. Depending on the class we will race either outdoors or indoors, on carpet, asphalt or dirt. Our facility also boasts a hobby shop, snack bar, AC power and we have an auto count system. For a schedule please call us at (716) 684-7368. We are at 5319 Transit Rd., Depew, NY 14043.

P.R.O. SPEEDWAY

Electric racing for 1/10 and 1/12 scale cars can be found at this speedway. Classes for on-road, off-road and dirt oval are available. We race indoors and out, and our facility has a hobby shop, snack bar, AC power and scoring is done via an auto-count system. For the latest racing calendar call (716) 257-3101. Track is at 5 Washington St., Cattaraugus, NY 14719.

NORTH CAROLINA**DIXIE R/C HOBBY SHOP**

1/10th Scale: Every weekend Sat. & Sun. The races will alternate between oval and motorcross starting in May. P. O. Box 135, Ramseur, NC 27316, after 6 p.m. (919) 824-2770.

MID-CAROLINA R/C SUPER SPEEDWAY

1/10 & 1/12 high speed banked quad-oval and road course. Located on Flint Hill Rd., Off I-77/Carowinds exit, So. of Charlotte, NC. Fred Penland, (704) 373-2535 7:30 A.M. to 4:30 P.M.

ASHEVILLE HOBBY SPEEDWAY

1/10 & 1/12 scale asphalt oval-indoors. Racing Wed. & Sat. 7:30 p.m. Highway 25, Naples, NC 28760, (704) 684-9814 ask for Jack or Sharon Murdock. 1/10 Dirt Oval & Off-Road. Racing Sat. & Sun. 1st & 3rd weekends. 6200 McGregor Dr., Charlotte, NC 28227, (704) 545-0746

ask for Steve Hill.

RC HOBBY & RACEWAY

1/10 & 1/12 indoor carpet racing Nov.-Mar. Oval and Off-Road dirt racing every Saturday. For more info (919) 228-6809, 1358 S. Church Street, Burlington, NC 27215.

BOOGLE BAY R/C RACEWAY

600 foot asphalt oval raceway with 30 foot wide straits and 40 foot wide turns. The track races 1/10th, 1/12th and 1/4 scale. Racing set every month in advance every Saturday and Sunday. Rt. 1 Box 324, Linden NC, 28356 - (919) 488-5408.

C.O.R.R.

We race outdoor electric off-road 1/10 scale cars. The track has a hobby shop, snack bar, AC power, and an auto count. There's even room for RV's! For the latest schedule call (704) 827-7741 or 435-2912. You can write to us at 166 Griffen St., Stanley, NC 28164.

NORTH DAKOTA**NORTHERN MINI-RACERS**

1/10 Scale on-road, carpet, road racing. Saturdays Sept. through May. P. O. Box 415, Minot, North Dakota. For information call Pat (701) 839-8868 or (701) 852-6254. Roger (701) 839-4731 or (701) 839-5294.

KOUNTRY KLIN HOBBY

1/12 Scale small indoor carpet track & hobby store. Box 247, 324 Railroad Ave., N. Mohall, ND 58761, (701) 756-6307.

OHIO**TARCAR-TOLEDO AREA**

1/8 gas stock cars. Black clay tri-oval. Sundays late April thru Mid-October. For more info call Dave Scanes, (419) 893-1916.

1/8 RACERS OF TOLEDO

1/8 & 1/10 scale asphalt road course. Every other Sunday from Mid-April to Mid-October at the Woodville Mall rear lot. For schedule and info contact Brent Gottfried (419) 843-3231.

THE RACER'S CHOICE - RADIO CONTROL HOBBIES

Located at 1298 U.S. Rt. 42, Mason OH 45040. Large outdoor off-road track, over 400' long with 100' straight, elevation changes, jumps, moguls and banks. Lighted with large driver's stand. Also banked 40' - 100' oval. Organized racing weekly. Fully stocked shop, for details and schedule call Holly, Tony or Adrian at (513) 398-5539. Track located just north of Cincinnati, near Kings Island.

CORCAR - COLUMBUS, OH

Outdoor 10th scale off-road racing May through September and indoor off-road racing October through April. Contact Ray Williams before 9 p.m. (eastern) (614) 890-2983.

ALCAR INTER. R/C RACEWAY

1/10 Scale off-road Friday nights. 1/12 & 1/10 carpet Sundays. 33501-A Lake Rd., Avon Lake, OH 44012, (216) 933-6017.

ALTERNATIVE RACING ASSOCIATION

1/10 and 1/12 on-road. Two large tracks indoors and outdoors. 2600 17th SE, Canton, OH 47306 (216) 484-2587.

INNOVATIVE HOBBIES & LAKES SPEEDWAY

Large indoor multi-layou carpet track and outdoor oval. Racing Wed., Sat., Sun. 3425 Manchester Rd., Akron, OH 44319, (216) 645-1333.

AEROTECH RACEWAY

1/10 oval/tri-oval and off-road dirt. 409 Applegrove Rd. North Canton, OH. Call Ron at (216) 499-1300.

MODELER'S HAVEN RACEWAY

1/10 clay oval May thru October. Electricity, water, indoor restrooms and shaded pit area. Contact Bob at (216) 499-6000. 4255 Portage N.W. North Canton, OH 44720.

MID OHIO R/C RACEWAY

We race 1/10 off-road and dirt oval all indoors. There is a 300 foot oval track with the off-road track built inside of that. In addition to that, we have scale 1/4 mile slot car drag races. Call Bob at (513) 233-2807 for more information. Track is in Huber Heights, Ohio.

D & S HOBBIES AND RACEWAY

Racing 1/10 & 1/12 4-cell. Race days are Wed., Fri. and Sun. Closed Mondays. D & S Hobbies, 7701 Crile Rd. #3, Concord, OH 44077.

HOBBY MANIA

This complete facility has racing for 1/12, 1/10 and 1/8 cars. Gas and

electric classes can race on-road, off-road and on a stadium carpet track. We have a complete hobby shop, snack bar, AC power and there's RV access. Scoring is done via an auto-count system. We are located at 6597 State Rte. 224, Lowellville, OH 44436. Phone us at (216) 536-8282.

OKLAHOMA

R.C.A.R. OF TULSA

Racing for 1/10 scale indoor on-road racing. The track is carpet, and there is AC power. Track is at 12215 East Skelly, in Tulsa, OK 74128. For more info call (918) 663-8998.

RCRC OF OKLAHOMA

1/10th scale indoor dirt oval and dirt off-road. Racing on this large track is at 7 p.m. Tuesdays and 5 p.m. Saturdays. Complete hobby shop with plenty of pit space and AC power. 400 S. Vermont, #104, Oklahoma, OK 73108. Call (405) 947-RACE ask for Steve or Rick.

OREGON

R/C SPEED CENTER R/C ADDICTION

1/10 & 1/12 scale, banked dirt oval racing, dirt off-road racing, sled pulls, mudbog. 2810 N. Pacific Hwy., Medford, OR 97501, Call Gene or Betty Skelton, (503) 779-8298.

PENNSYLVANIA

CARCLUB-COCHRANTON AREA

Racing every Friday at 6 p.m.; Saturdays 9 a.m.; Sundays at noon. Large indoor carpet-dirt outdoor. Call for info Harry Turner, 120 W. Adams St., Cochranton, PA 16314. (814) 524-7788.

CEB MOTORS R/C DIVISION

This indoor facility races 1/12 and 1/10 electric cars. Racing is for both oval and road course designed cars. The track features a hobby shop, snack bar, AC power, auto score and the parking lot can handle RV's. Call us at (717) 375-4635, or stop by at 5743 Molly Pitcher Hwy., Marion, C.A.R. CLUB

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

WAGONHILL HOBBIES

Indoor 1/10 & 1/12 road racing every Fri. night. Off-road every Sat. night. 225 S. Board St., Grove City, PA (412) 458-4711.

TC'S R/C'S

Inside and outside race track and RC Shop. 1537 Freeport Rd., Natrona Heights, PA 15065, Call 226-8802.

PHILLY RADIO CONTROLLED RACERS R/C CAR CLUB

1/10 on-road paved track. Sundays, April thru November 11 a.m. 7790 Dungan Rd., N.E. Philadelphia. Jon (215) 224-4822 or Bernie (215) 831-1835.

EAST ST. RACEWAY AND ART CENTER

Over 4,000 Sq. foot carpet track. Computerized lap counting. Racing starts at 7 p.m. each night. Friday oval racing; Saturday stadium off-road. Located at 747 E. Railroad Ave., Verona, PA 15147 - (412) 826-0602.

SOUTH CAROLINA

BNS COMPETITION HOBBIES

Contact Bob Sanford, (803) 224-8591. Route 7, Box 380, Anderson, SC 29624. Racing and open practice Wed. 6:30 p.m. Every Saturday 1 p.m. 1/10 Dirt Oval.

RACER'S CHOICE

On-road racing for 1/10 and 1/12 scale is at this track. Racing is done indoors, on carpet. The facility has a hobby shop, snack bar, AC power and an auto count system for scoring. There is also RTV Access. The track is located at 4020 Fernandina Rd., Columbia, SC 29210. For a schedule of races call (803) 561-0000.

BEREA R/C SPEEDWAY

Fri. Nights 1/10 conc., banked oval; Sat. nights stadium off-road for trucks and buggies; Sunday unlimited oval; 707 Sulphur Springs Rd., Greenville, SC 29610. (803) 246-4702.

TENNESSEE

HITT'S HOBBY & RACEWAY

Tuesday Oval; Thursday Off-Road Stock; Saturdays Off-Road Novice; Sundays Off-Road Modified; Oval and Off-Road. 853 Wren Rd., Goodlettsville, TN 37072. Ben or Kent (615) 859-3465.

MSA R/C RACING

Racing for 1/10 and 1/8 cars, in both gas and electric versions. At this track a racer can find competition for on-road, off-road, dirt oval and paved oval. There's tracks both indoors and out, and the facility features a hobby shop, snack bar, AC power and scoring is done with an auto count system. Call them for the latest racing schedule at (615) 456-0027. They're located at Rt. 12 Box 489B, Crossville, TN 38555.

TEXAS

HAL'S R/C RACEWAY

Sat. is on-road asphalt 1/10. Sun. is off-road. Registration both days is at 11:00 a.m. 1440 Bessemer, El Paso, TX 79936 (915) 591-2213.

RIVER CITY RACEWAY

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

ARROW HOBBIES

Wed. - 1/10; Every other Friday 1/8 Sprint cars only; Saturdays 1/10 dirt oval. 2710 So. 1-35 West, Burleson, TX, (817) 295-2821.

VICTORIA HOBBY SHOP

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

COASTAL BEND SANDBLASTERS R/C CAR CLUB

Races first thru third Sundays, 2 p.m. start. Bill Witt Park, Yorktown Road, Corpus Christi, TX. Call Pete (512) 992-4448.

AMERICAN ANGLER TACKLE & R/C

HOBBY CENTER'S "AA" RACEWAY

Two dirt tracks, oval & off-road. Races every Sunday, 1 p.m. Tracks alternated. Races every Saturday 11 a.m. oval. Hobby shop on site. 1617 Toomey Rd., Austin, TX 78704, (512) 474-8277.

WESTSIDE HOBBIES

1/10 Racing every Sat. 1/10 on-road racing every Sun. on asphalt. Alternating oval and road course. 7214-A N. Mesa, El Paso, TX 79912. Call Tom, Mark or Tim at (915) 585-1864.

FINISH LINE HOBBY & RACEWAY

1/10 scale indoor off-road every Fri. and Sat. 8:00 p.m. 1/12 indoor carpet every Tue. 7:00 p.m. 11925 Jones Maltsberger, San Antonio, TX 78216. Call (512) 491-0088 for more information.

T & T EAGLE HOBBY

Headquarters for the "Killer Dillers" R/C Club, racing is on the first and third Sunday in front of the store. The first Sunday is road course and the third is oval. Emphasis is on fun racing. Trophies for novice class only, entry \$5.

HURRICANE SPEEDWAY

Racing Wed., Fri., Sat., Sun., alternating off-road and oval. Track is at 9600B Old Katy Rd., Houston, TX 77055. (713) 464-8020.

UTAH

I.R.C.D.R.A./HOBBY EXPRESS

Race indoor off-road every Saturday at 6 p.m. 3150 Brinker, Ogden, UT info call Hobby Express (801) 621-4013.

WASATCH OFF-ROAD RACEWAY

Operated by IRCDDRA. Races are indoor on an off-road and oval raceway. Races every Saturday at 6:00 p.m. Track at 3170 Brinker Ave., Ogden, UT 84401. Phone is (801) 773-0933.

VERMONT

MIKES HOBBIES & RACEWAY

Indoor banked 1/10 carpeted oval, on-road racing. Six classes every Wed. at 7:00 p.m. and Sun. at 1:00 p.m. Track at 162 N. Main St., Rutland, VT 05701 - (802) 775-0059. Ask for Lee or Chuck.

VIRGINIA

F/X CITY RACEWAY

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

WINNERS CIRCLE HOBBY SHOP & RACEWAY

Racing every Saturday night at 6 p.m. Large oval carpet. 3236 W. Clay St., Richmond, VA 23230 (804) 355-7076.

COOPER'S RC RACE CENTER

Racing indoor every Saturday night. Racing every Sunday 2 p.m. oval and off-road - June through October. Contact Norris (804) 724-4182. Rt. 4, Box 122B, Chatham, VA 24531.

FAIRYSTONE R/C SPEEDWAY

Dirt 1/10 scale 1/4 mile oval & figure eight racing every Wed. and Sun. eves. through Holloween. Hobby shop, concession stand. Rt. 4 Box 918, State Rd. 635, Stuart, VA 24171. Phone (703) 930-3984.

HOBBY HANGAR SPEEDWAY

Those coming to this track can race 1/12 and 1/10 cars in both gas and electric powered versions. There's racing on carpet and dirt, for road and off-road racing. The facility boasts a hobby shop, snack bar, AC power and uses an auto count scoring system. Hobby hanger is at 4433A Brookfield Corp. Dr., Chantilly, VA 22021. Call (703) 631-8820.

WASHINGTON

SPOKANE INDOOR RACEWAY

A 10,000 sq. ft. facility with carpeted on-road track & indoor dirt off-road. Large indoor pit area, computer scoring (AMB), full parts shop. Located at E. 6422 2nd Ave., Spokane, WA 99212. (509) 534-RACE.

WEST VIRGINIA

BIG BOYS TOYS HOBBY SHOP AND TRACKS

Dirt and carpet oval tracks. Racing every Sunday evenings; Monday and Thursday evenings. Bridgeport, WV, (304) 842-5799.

WEST VIRGINIA REMOTE CONTROL RACEWAY

Racing every Sunday. Doors open at 12 noon, racing starts at 1 p.m. The

track size is a 90 X 50 foot carpet oval. Prizes in all "A" mains. Track is at 601 Jefferson Rd., South Charleston, WV 25309. Call Russell Pauley (304) 346-7223 after 6 p.m.

R/C RACE PLACE

Racing on-road every Wed. night at 7:00 p.m. and carpet oval every Fri. night at 7:00 p.m. during the winter months. Racing outside for dirt oval every Wed. Fri. nights on lighted 260 foot track during the summer months. Full hobby shop. Contact Mike or Dennis at (304) 292-0811.

WISCONSIN

MADISON AREA R/C CAR ASSOCIATION, INC.

Dirt Oval on Sun. Carpet road racing on Sat. Carpet oval on 1st and 3rd Fri. Track is at 1810 S. Park St., Madison, WI. Call 273-0519 or 837-2033 J. G. S.

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

TRACKSIDE RACEWAY

Dirt oval Thur. night 6 p.m. Menomonee Falls, WI (414) 255-2040.

ABC R/C

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

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. Racing Wednesday nights at 6 p.m. Sat. & Sun. at 1 p.m. For more info call (414) 425-4060.

RC RACEWAYS AND HOBBIES

1/10 Indoor dirt oval Fridays & Sundays. Off-Road Wednesdays. Outdoor Asphalt Thursday (weather permitting). Fully stocked hobby shop. For more info (414) 764-9701. 181 W. Marquette Avenue, Oak Creek, WI 53154.

GARY'S HOBBY SHOP

Indoor banked concrete oval racing Tue. nights. Figure "8" Sun. afternoon. On site hobby shop with AC & DC power. For latest information call (414) 554-8884 or (414)554-8636. Address is 3701 Durand Ave., Elmwood Plaza, Racine, WI 53405.

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At Genesis we offer a custom high performance line of modifieds that will help you WIN!

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So, if you go to the track to win, contact your local hobby shop or call us today at (314) 939-4404.

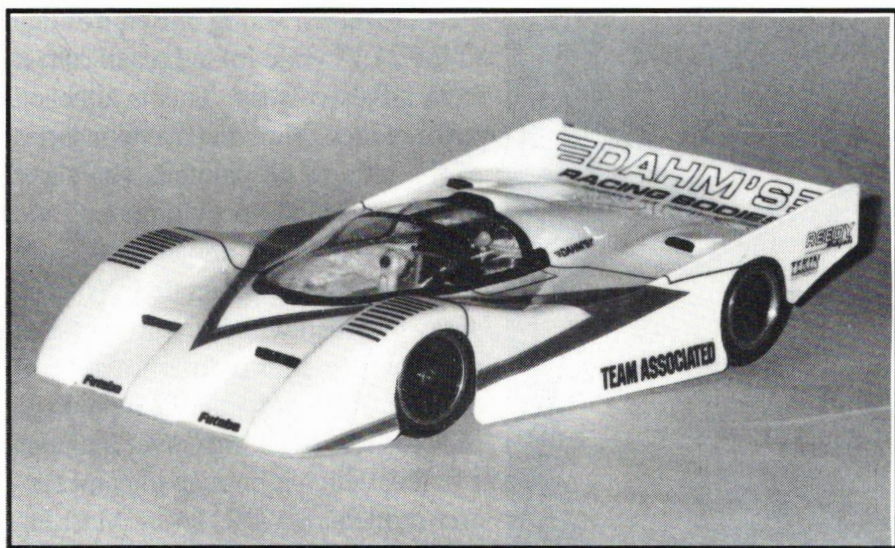
Genesis Racing Products, 1327 Brandywine Lane, St. Peters, MO 63376.



LOLA T92/10

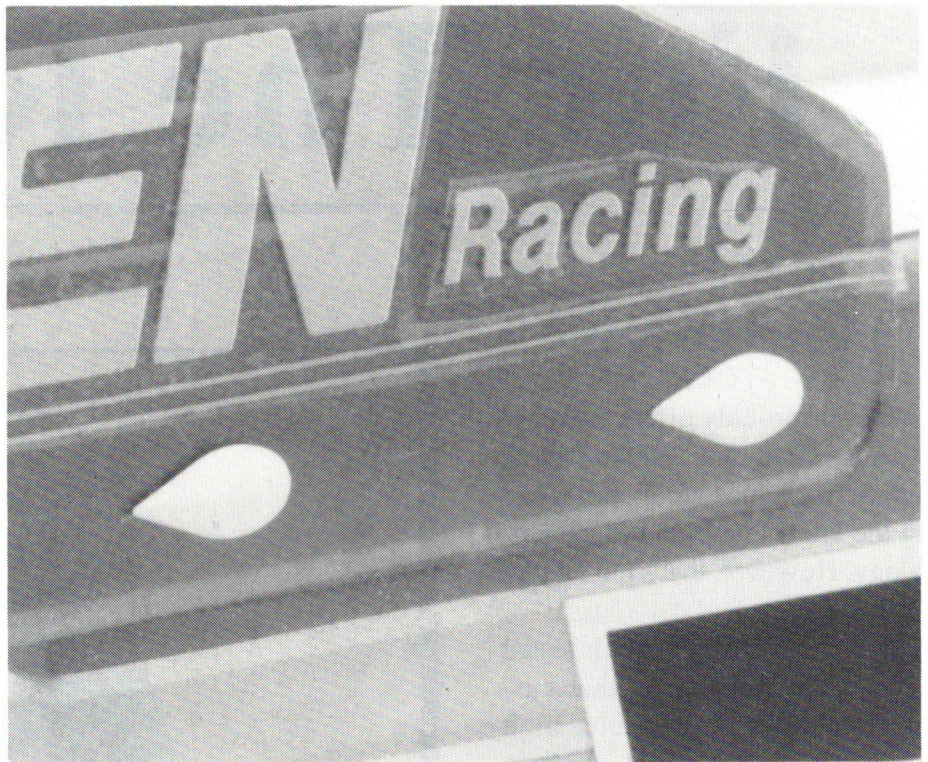
Dahm's Lola T92/10 is a great fit on the RC12L and most other 12th scale on-road racing cars. This exciting Lola racing body offers you outstanding aerodynamics, realistic styling, and fine detailing. The Lola is designed to improve handling and increase top speed for 12th Scale, standard width, on-road cars.

Lola features include a low-sleek profile, vents that can be cut open to direct cool air to the motor, batteries and speed control, optional rear spoiler for increased down force, trim lines, Dahm's decals and complete instructions with photos! Call Dahm's at (707) 792-1316 for more information. Dahminate the competition with Dahm's new Lola T92/10! Dahm's Racing, P. O. Box 360, Cotati, CA 94931-0360.



AERO-FASTENERS BY PROTOFORM

Protoform's new injection molded Aero-Fasteners are the perfect way to fashion lexan sheet or assemble wings. Unlike nylon pop rivets (that sometimes un-pop at the worst of times) or nylon bolts, these fasteners are neat and clean, very small and aerodynamic. The best part is that they stay attached in even the worst crash. They will fasten to any combination of material that is .020 to .040 in thickness and are most effective when used with a tiny drop of CA cement. Protoform, 5455 S. Western Blvd., Hamburg, NY 14075, (416) 646-7638, Fax (416) 646-2476.



NEW, EASY TO USE KYOSHO MASKING COVER SHEET OFFERS 100% PROTECTION AGAINST OVERSPRAY

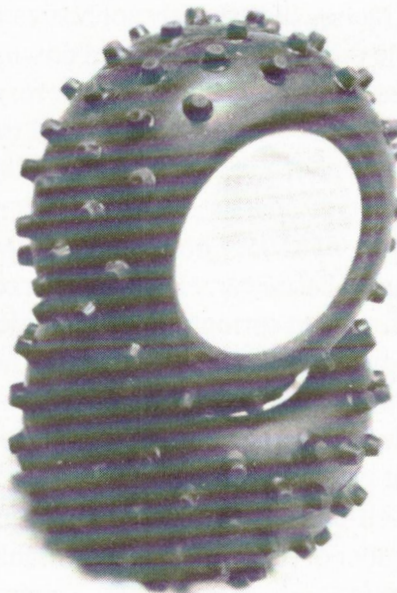
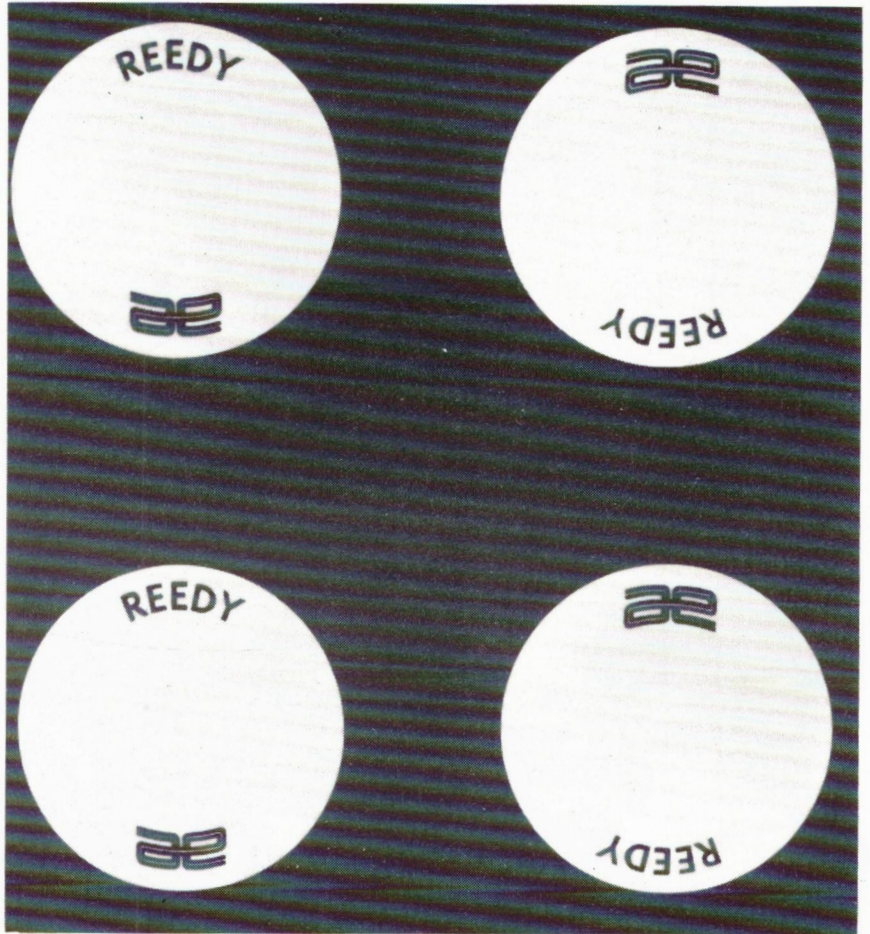
For hobbyists who want their models to have the highest-quality painted surfaces, Kyosho introduces the inexpensive, easy to use Masking Cover Sheet. Used with either aerosol or brush-on paints, Masking Cover is a simple, effective way to keep paint off of model surfaces that you don't want painted. It's easier to work with than masking



tape and newspaper, and leaves much cleaner results. Along one entire edge of the 21.7" wide folded plastic sheet is an adhesive strip. This is attached to the model, following the boundaries of the area to be painted. The sheet then is unfolded - providing a plastic cover to wrap over and around every surface requiring protection. You can spray or brush without worrying that paint will splatter onto unfinished or already finished parts. Each package of Kyosho's Masking Cover includes 115 feet which is enough to paint several models. KYOR1040 - Masking Cover Sheet, Suggested Retail \$15.99. Great Planes, P. O. Box 9021, Champaign, IL 61826-9021, Phone (217) 398-6300, Fax (217) 398-1104.

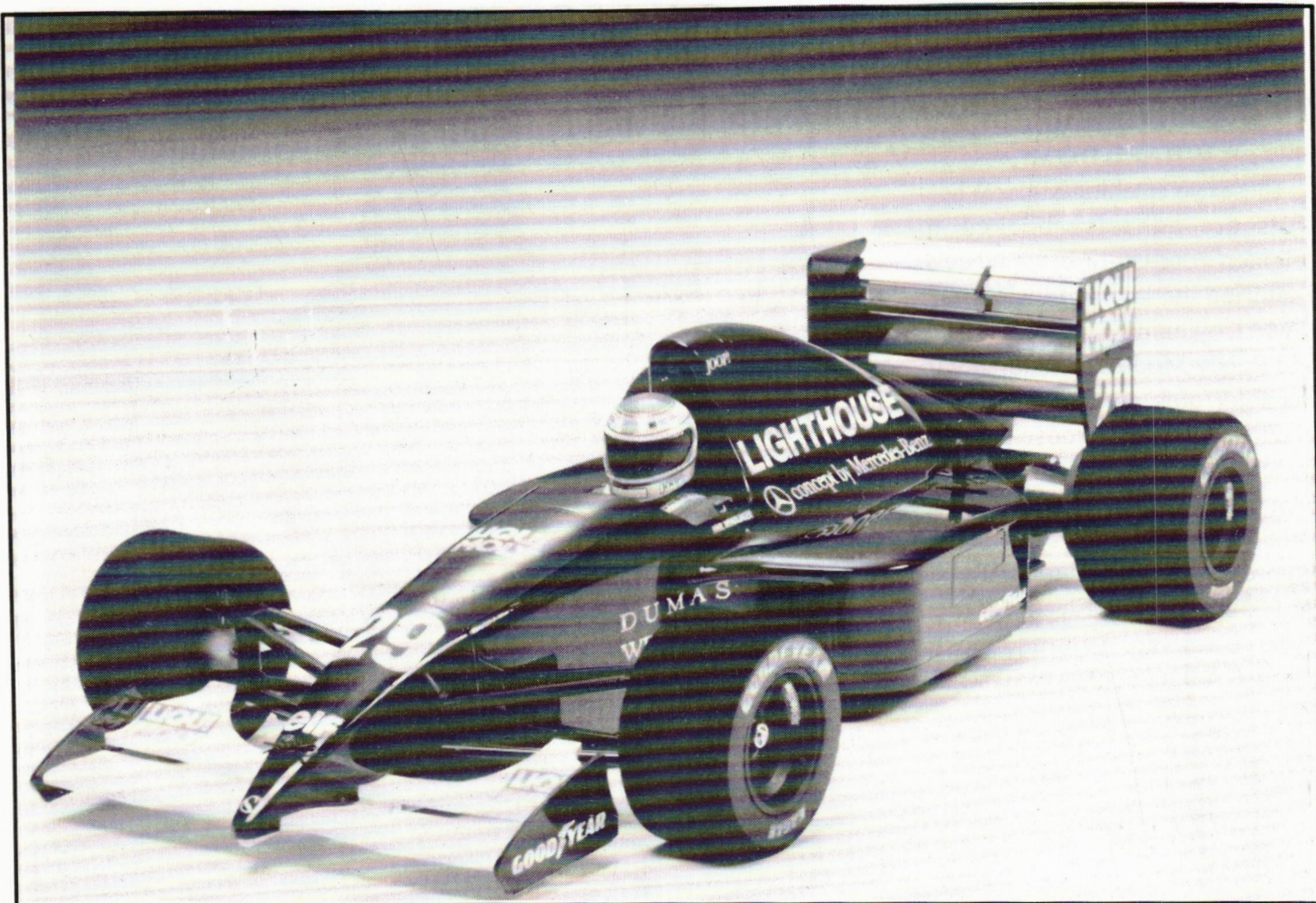
ASSOCIATED/REEDY WHEEL DOTS

These eye-catching Mylar Wheel Dots are adhesive-backed to brighten your car or truck wheels. Featuring the logos of the 12 time IFMAR-winning Team Associated and Reedy Modifieds. Four 2 5/16 diameter dots per package. Four blazing colors to choose from to match your body colors. Fluorescent pink - #6855, Fluorescent red - #6856, Fluorescent green - #6857, Fluorescent yellow - #6858. Retail \$2.00. Associated Electrics, Inc., 3585 Cadillac Avenue, Costa Mesa, CA 92626, (714) 850-9342, Fax (714) 850-1744.



"DIGGER" OFF-ROAD TIRE SET BY BOLINK

This new set of off-road tires for our Digger is made for fun! The set includes narrow grooved fronts and knobby rears - perfect for performing those Digger-ific stunts just about anywhere! Part Number BL-3202, \$24.95. For our complete catalog send \$3 to: BoLink R/C Cars, Inc., 420 Hosea Road, Lawrenceville, GA 30245, Phone (404) 963-0252, Fax (404) 963-7334.



TAMIYA F1's FAST BECOMING NATION'S MOST POPULAR CLASS OF R/C RACERS

Asphalt rivalries are heating up, especially with the advent of Tamiya's R/C Championship Series national racing program. At these events and many others, Tamiya F1's are rapidly ascending to the top of the popularity charts among R/C enthusiasts of all ages and skill levels.

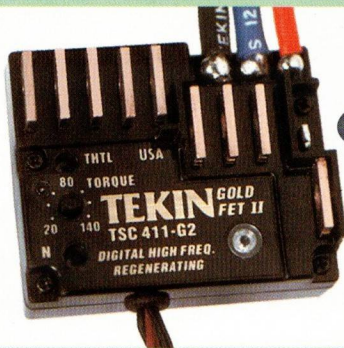
Designed to put the fun back into R/C racing, these highly sophisticated, 1/10 scale machines are detailed to look like their full-size counterparts. But while the cars may be scaled down, the racing action definitely is not! Each of these vehicles delivers pulse-pounding action, from the hair-trigger responsiveness of the F102-based chassis cars to the evolutionary advancements of those that are designed around the new F103 chassis. Included in the F101 group are the Ferrari F189 late version, #58084; Tyrrell 019 Ford, #58090; Lotus 102B, #58095 and Jordan 191, #58103. All feature FRP semi double-deck type chassis, 540 type stock motor and sophisticated three-point suspension systems. The Williams FW14 Renault, #58105; Footwork FA13 Mugen Honda, #58114 and Benetton B192, #58118 comprise the group of F102 chassis-based cars. Like their famous predecessors, these kits come competition-ready. The Benetton, for example, has front springs and rear single point R-plate suspension with an oil filled rear shock absorber and rear axle-supporting sealed ball bearings. The drive trains of these F102 cars have ball type diffs - 17-tooth pinion gear and 63-tooth spur gear - with hexagonal diff rings to prevent slippage.

These F1 replicas have highly detailed, scale-accurate bodies of tough, durable polycarbonate. They ride on sponge tires that are fitted to lightweight F1 spoke racing wheels. The kits come complete with driver figures and comprehensive sheets of easy to use, self-adhesive stickers, which include markings of the full-size racers. In addition to stock features, there are a number of hop-up options available, including racing motors, carbon graphite chassis parts, ball bearings, aluminum motor mount and more. Tamiya America, Inc., 2 Orion, Aliso Viejo, CA 92656, (714) 362-2240, Ext. 834.

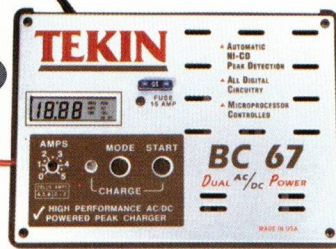
NEW

NEW - GoldFET II Speed Control

More Fets. More Amps. More Power! Every Possible feature, and More. New Wire-Terminal Solder-Posts let you easily replace the power wires yourself, so they are always just the right length. VERY convenient. Will also drive big twin motor trucks, with up to 4 servos. #411-G2. Also available, the new #411-P2.



BC 67



NEW - BC 67 AC/DC Powered Peak Charger

Convenient operation with High Performance design. All Digital electronics with LCD readout of Volts, Amps and Time. Three different Charge Profile modes for Ultimate Performance. Compact and Rugged, with 5 Amp output, and Built to Last. #BC 67. Also available, #BC 48, DC Powered version.

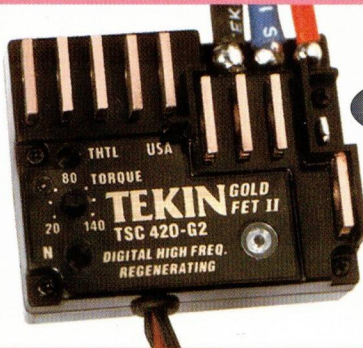
411-G2

PRODUCTS

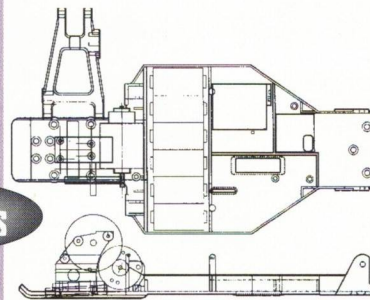
FROM

NEW - High Voltage Speed Control

For those real Insane and Record-Breaking Drag Runs, this is THE speed control. ALL GoldFET II transistors and special internal construction to drive AND stop the latest motors, up to 20 CELLS. With 10 Gauge Wire-Terminal Solder-Posts, and massive amp capabilities, it's the latest thing. #420-G2.



420-G2



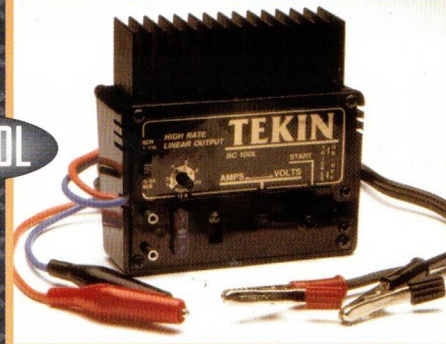
Chassis

NEW - Chassis Kit

Molded Carbon Fiber (Graphite) Mid-Engine, high performance replacement chassis kit with the Tekin Active-Link rear suspension for the RC-10 Stealth and RC-10T. Delivers noticeably quicker, improved and more Sure-Footed handling response. Reduces annoying spinouts. Actually drops most lap times by .1 - 1.0 seconds. Includes all hardware and fittings, and saves about 3/4 ounce. #ACK-B01 and #ACK-T01.

NOW.

BC 100L

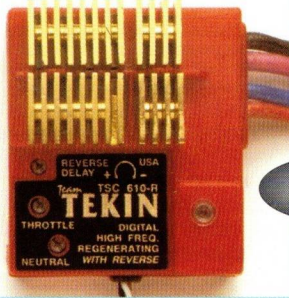


Not NEW - A Charging Classic

A compact, dependable, automatic, high performance, rapid charge peak detector. Adjustable 1/2 to 10 amps. Linear or pulsed output, it gives a great charge, time after time. Runs off most any 12 volt source. #BC 100L.

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Powerful 12 fet high-frequency operation delivers smooth, proportional, forward, brake and reverse throttle control. Famous operation makes wheelies, stunts, 180's, chase scenes and realistic operation, all a breeze. Adjustable reverse delay 0 - 5 seconds, plus reverse lock-out option. Try one today! #610-R.



610-R

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Team built the RC10GT.

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

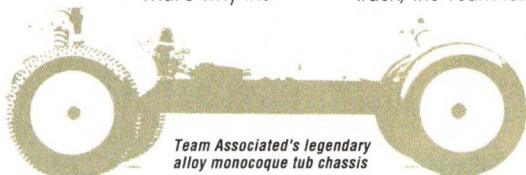
While it might be enough for some to simply drop an engine and a fuel tank into an electric truck, the Team takes this kind of



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

The most advanced, high performance vehicle of its kind, the RC10GT features competition proven, four wheel suspension with precision, coil-over shock dampening. Our World Famous Team Associated Stealth ATC gearbox is also adapted to the RC10GT, to get all that nitro power to the ground and our race-ready disc brake gets it all slowed down in a hurry. And like all our kits, hardware and materials are nothing but the best. And because Team Associated understands RC racers, and their

powertrain transfusion seriously. The RC10GT is a completely integrated package created to take maximum advantage of gas power yet versatile enough to accommodate all popular .12 and .15 size engines.



Team Associated's legendary alloy monocoque tub chassis

The RC10GT is based on our Championship RC10T Team Truck.



RACING LIKE THE TEAM.

budgets, the RC10GT is available with either bushings or ball bearings and for both pull and non-pull start engines.

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

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

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



RC10GT

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

Associated Electrics 3585 Cadillac Avenue, Costa Mesa, CA 92626



Turbo Inferno

Inferno 10

Introducing two new ways to get world champion Inferno performance



Perhaps you already know that the Kyosho 1/8 scale, gas-powered Inferno off-road buggy has won such races as the 1992 IFMAR Worlds, the 1992 3rd Annual Gas Off-Road World Challenge, the 1992 and 1993 Kyosho/Car Action Southeast Gas Off-Road Challenges and was named *R/C Car Action's* 1993 Car of the Year. What you may not know is that the Inferno has spawned a whole line of champion performers to meet every racing need.

New 1/8 Scale Turbo Inferno.

Kyosho's World Champion just got even better. The new Turbo version not only includes all the built-in hop-ups

Inferno ST

Inferno DX



Get \$150 worth of improvements and additional features at no extra cost with the new Turbo Inferno:

- *O-ring sealed differentials*
- *New Teflon™-coated shocks*
- *Mousetrap spring fuel tank lid*
- *Molded nylon wing*
- *Clutch bell*
- *Front stabilizer bar*
- *New tires*
- *New wheels*
- *Blue anodized chassis*

that made the Inferno a champion right out of the box, but adds \$150 worth of add-ons and improvements at no additional cost.

New 1/10 Scale Inferno 10. More affordable and easier to assemble than 1/8 scale, this Inferno offers many of the same design features as the original world champion.

The Inferno 10 is available with or without an O.S. .12 CZ-R engine that includes a tuned exhaust system and can be run on any 1/10 scale track.

1/8 Scale Inferno DX. An economical way to enter the world of 1/8 scale gas racing, the DX delivers more standard competitive features than higher-priced cars, with more potential and lower add-on costs down the road.

1/8 Scale Inferno ST. If the mud-slinging action of stadium truck racing is what revs your engine, this one's the biggest and baddest of 'em all. It offers the same basic layout and many of the same features as the affordable DX.

Whatever style you prefer, get the name that means champion in gas off-roading...Kyosho Inferno.



Kyosho brings world champion performance to 1/10 scale with the Inferno 10.

For a free brochure and the location of the dealer nearest you, please call 1-800-682-8948, ext. 102P.



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