

March, 1990

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THE R/C CAR MAGAZINE

- HOUGE'S Illusion Rail
- HOW TO: Tricking Out The Kyosho Lazer

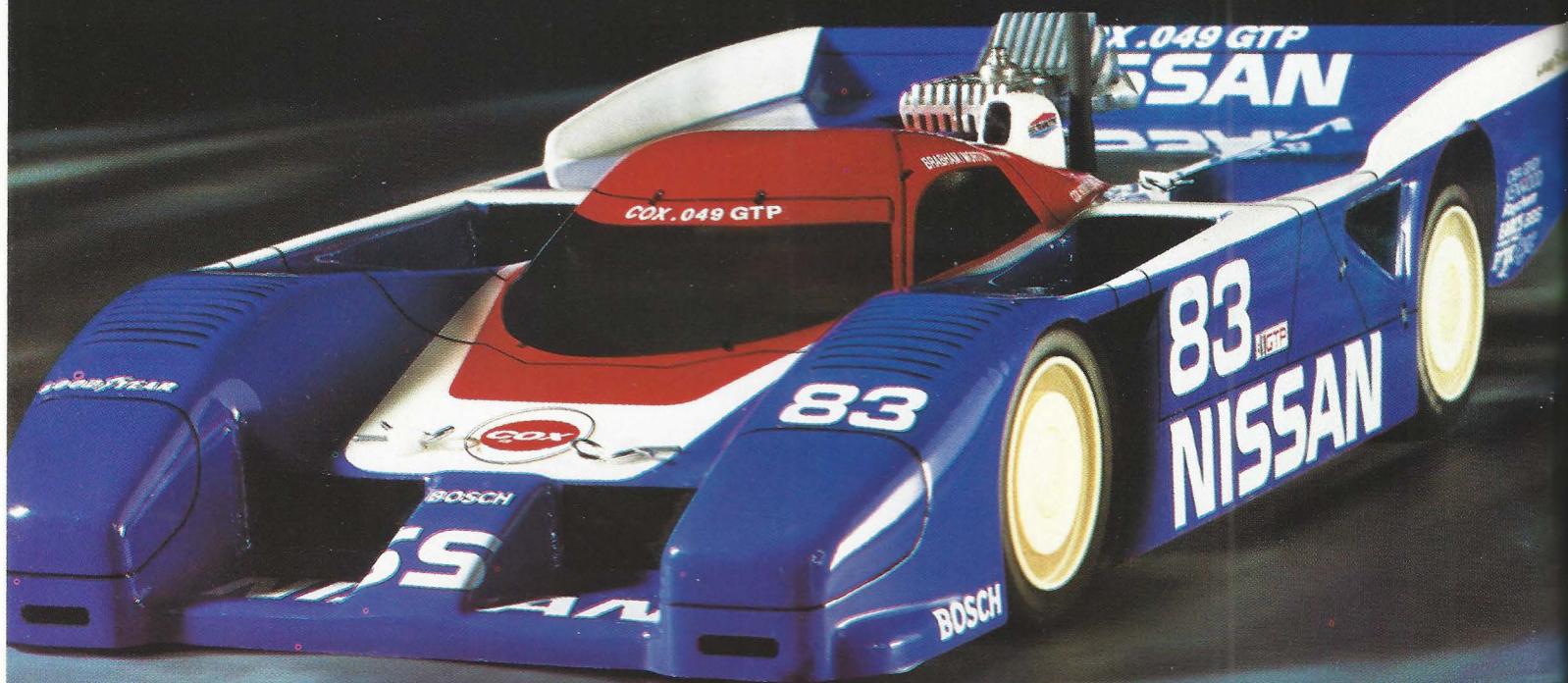
- JCAR'S Dirt Oval Ultima

Mike

- CRP'S Cell Lab

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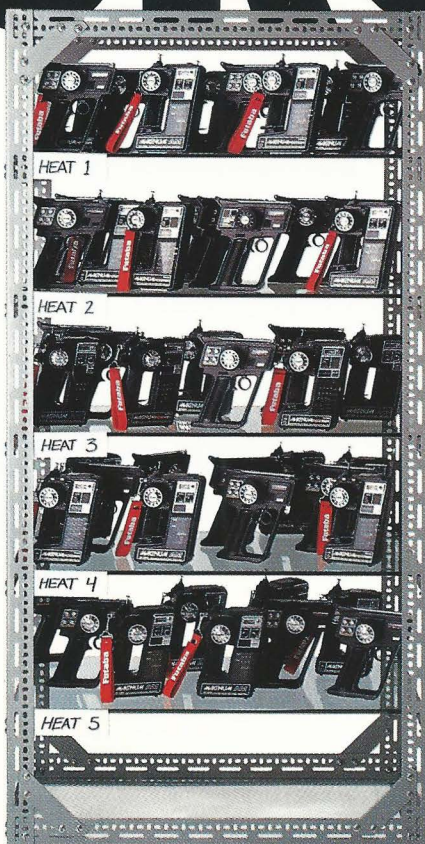
Tony Neisinger wins the 1989 Futaba Grand Prix with Magnum.

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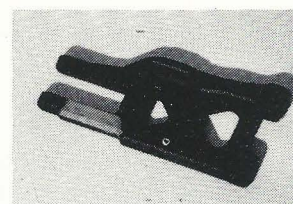
PLUS

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HOW TO: Tricking out the Kyosho Lazer

Rick Hohwart's tips on setting up this car for the winner's circle.



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CRP'S CELL LAB

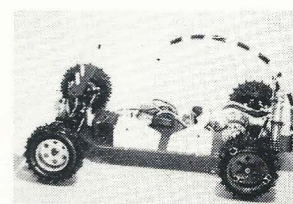
Jeff Palmer's look at this new product from CRP.



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JCAR'S DIRT OVAL ULTIMA

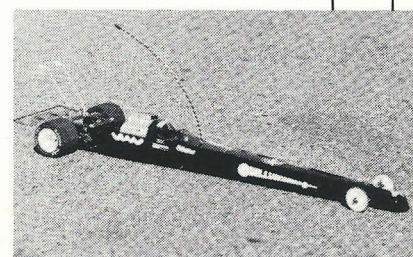
A very multi-purpose car for summer or winter racing.



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HOUGE'S ILUSION RAIL

Most of us will never get the opportunity to drive a real rail, but Hougé will provide you with the next best thing.



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About The Cover

While Reedy was able to handle the R/C competition he was no match for the slamming Queen Kong. She was just one of the many people who were out to celebrate Mike Reedy's 50th Birthday.

MAILBOX

MORE! MORE! MORE!

Dear Sir or Madam,

I just finished reading Mike Walker's excellent article, "Competition Tricks - Understanding Weight Transfer" in your December 1989 issue of Competition Plus. I have been involved with RC cars with my step-son Steve for about 1 1/2 years and this business about weight transfer has been a mystery to me. Mike is finally clearing it up. Please encourage him to continue to write about other aspects of this issue as he said he would in the article. I was so impressed with the article I decided to subscribe to your magazine.

In future articles could he address the following related issues.

A) What role does squat and toe-in play in weight transfer? On our JRX2, we can adjust rear anti squat. Why would less anti squat in the rear give more high speed steering as suggested in the manual? Would it act like softer shocks (less anti squat)? Wouldn't more anti squat act like stiffer shocks and increase the rear roll resistance causing understeer? But why just in high speed steering?

B) Why is it that different shock stiffnesses have different effects on low and high speed steering? For example on the JRX2, a softer front spring supposedly gives more low speed steering and a stiffer front spring gives more high speed steering. If these questions would be answered by Mike, I would appreciate it. I am the kind of person who likes to understand why things happen and Mike has already gone a long way to help me. Thanks!

Sincerely,

Richard Hirschman
Kent, OH

6 OR 7 CELLS?

Dear Mr. Barana,

More and more, I hear people complaining about the ever-rising costs of R/C racing. ROAR (as I'm certain you are well aware of) has come under considerable fire lately for not "doing something" about the problem. Well, ROAR's Executive Committee is considering something to do just that: the six cell limit.

In your column, you agreed that a 6 cell limit would increase the life of modified motors (and I believe the same would hold true for stock motors as well). Six cell packs are obviously at least one cell less expensive, and added up over several packs, that can become a substantial savings. Let's face it: nobody shows up with one pack anymore. I imagine there would be some minor savings in drivetrains with less torque being applied, as well. Will the 6 cell limit help reduce the cost of racing? On paper, yes! In reality, probably not!

You believe that a 6 cell limit will widen the gap between the "haves" (sponsored and/or cubic dollar drivers) and the "have nots" (everybody else). Here I must disagree with you. If your reasoning is true, 4 cell racing must be harder to win in than 6 cell. It's just as difficult to be competitive against a sponsored 4 cell racer as a 6 cell (or 7 or 8 or whatever) racer. To win in racing takes talent, and lots of it. However, given equal amounts of talent, it's usually the driver who spends the most money who wins. It's a fact of racing. ROAR is, in my opinion, considering doing SOMETHING to address the cost issue in an attempt to quiet (temporarily) those people who (erroneously) blame the organization for the costs of

racing.

I saw a NASCAR driver being interviewed on television about the problems his team was having getting into the winner's circle. He admitted they had yet to finish first in a race, but talked about how they had "won" third place a few weeks before. Why must racing always be equated with winning first place? Why can't we, as individuals, and people such as yourself, with the power of your publication, begin to de-emphasize the "importance" of winning, and begin to concentrate more on the excitement of competing? Would you rather run away with a main by several laps, or match skills in a closely-fought battle for sixth place? I think if everyone were to honestly answer that question, the real problem facing R/C racing today would come out.

Sincerely,

Paul E. Lindwall
Toadsucker Race Team

ROAR 1990 RULES MORE ON BATTERIES

Suggestion from Gene Husting
Concerning 6 or 7 cell battery packs in all 1/10 Off-Road Modified classes.

The biggest complaints electric racers have had over the last 15 years have always concerned motors and batteries. Together they both equal power. The problems first surfaced in 1/12 electric Modified class. As hotter motors were being used, more and more people were dumping before the 8 minute finish. Everyone complained because someone else always had better motors and batteries. You've heard this excuse a million times.

So right now in the 1/10 Off-Road Modified classes, we actually have cars that are a little

overpowered on slippery tracks, and have just about the right amount of power on good bite tracks. The way it is right now, it's possible to de-tune the power for slippery tracks, by going to a softer motor, or as Gil Losi Jr. did, run 6 cells instead of 7 cells. Gil won the Florida Off-Road Championships using 6 cells.

And on good traction tracks, such as the last 2 ROAR Nationals, in Detroit and Antioch, and all the other great tracks in the country, all the racers needed 7 cells, to keep from dumping. If we would have had a 6 cell rule for the ROAR Nationals in Detroit and Antioch, more than half of the cars would have been dumping. Then we would have had the same old complaining about motors and batteries. As it was, we didn't experience those complaints at the Nats, and we wouldn't have had the problem for the last 5 years, on any high bite tracks. Why in the world do we want to introduce those pro-

blems into our very successful 1/10 programs?

Right now, we have stock classes that promote good close racing. When a driver feels he's ready, he can move up to the Modified class. With 7 cells, he can tune his power to the track and not worry about dumping. With 6 cells on good tracks, he's got a serious dumping problem, and once he has that problem, ROAR has the problem. It simply doesn't make any kind of sense to push ROAR back into the same problem that 1/12 racers have had for years. It also doesn't make any kind of sense to even think of changing something that's worked so well up to this point. If we change the present battery rule, we'll be making the biggest mistake possible. Please think about it.

Actually, what we should be doing right now, because this is the best possible time to do it, is to change the 1/10 On-Road Modified to 7 cells. This class is

already starting to be a battery war, which is the worst possible situation for ROAR to be in. Now's the time.

The following is a quote from Cliff Lett, published in the November 1989 issue of R/C Model Cars, page 72. He knows what he's talking about.

"I truly believe that the more you can make the rules so that the car is overpowered, the better it will be for the sport. Then you're not going to have a power problem like you do in 1/12 and 1/10 scale on-road racing. If you can have too much power, then it becomes a thing of a chassis setup (to get power to the ground) and driving ability. Now it's better racing! When you have nothing but a really big power advantage, then all you have is people complaining and people quitting racing, because they can't get the power or it's just not available to them.

You know, the U.S. is the only
(Continued on Page 10)

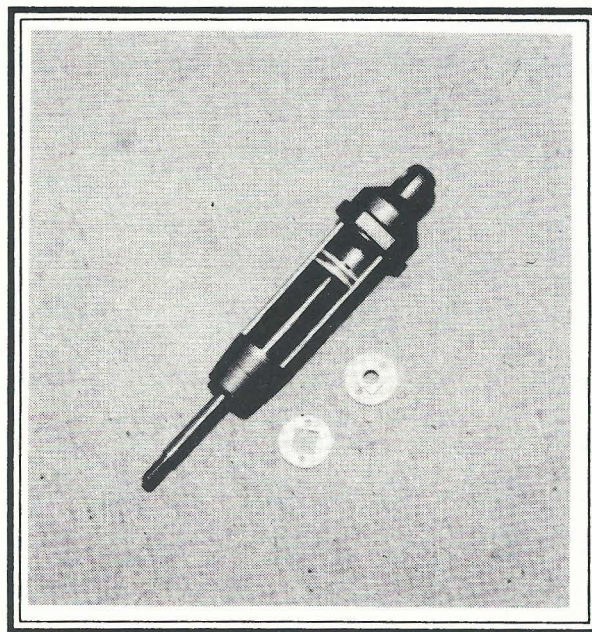
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THE McCOYS BACK!!!

Tell me . . . when is a scale said to have died, when it really isn't dead, so we can make sure it doesn't die? Confused? You need not be. The answer is very simple. We, or let me say I, do this when we're talking about the McCoy Race and its importance to 1/8 scale.

I'm sure you can all remember back a few months when I wrote my article on the McCoy 1989 event. Sure a lot of people missed the point and assumed that I was calling 1/8 scale dead. Evidence of this can be found in many places. For those of you who are ROAR members and read your Rev-Up magazine, you probably noticed that many of the regions were quick to print reports that went something like, "Contrary to some reports, 1/8 scale is alive and well in this region . . ." One supposedly national publication on R/C cars even went so far as to use the title of, "Not the last McCoy," a most original line when compared to our title the previous month, The Last McCoy.

The point that should be evident here is that 1989 saw more discussion on 1/8 scale than in the previous 10 years. Even the most ardent proponent of my article would agree to that.

Now to bring you up-to-date. It's been about eight months since all the talk about 1/8 scale started. A few weeks ago, not to my surprise, I received a phone call with the dates of 1990 McCoy race. Oh yeah, there IS going to be 1990 race. The event will be held in El Cajon, CA on June 4-10, 1990.

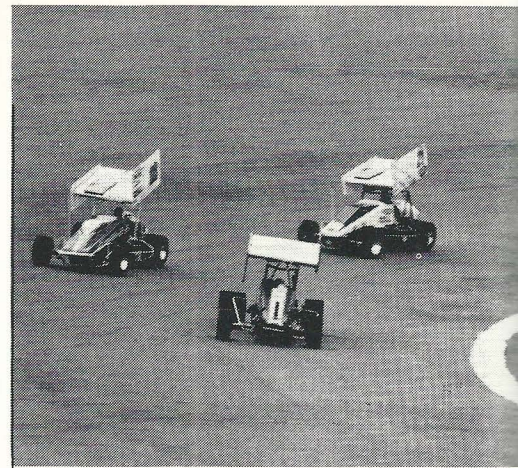
Okay, so we dodged the bullet this time. All the hype and attention prevented this race from fading away. But we still have a problem. What happens when the day comes, and I sure hope this day never arrives, when we're faced with the FINAL McCoy race. If we don't establish another race, somewhere close to this magnitude, 1/8 scale racing in the US as we know it will cease to exist.

The ROAR Nationals, and a World Championship every 6 years in this country will not supply enough exposure for 1/8 scale. WE NEED ANOTHER BIG RACE! The thing that gets me . . . the thing that really blows me away is not a single 1/8 scale manufacturer planned any big race during the eight month limbo period of the McCoy race's status. Not one!

Now I have to be honest here. The future success or failure of 1/8 scale is irrelevant to the future of Competition Plus. I received comments a few months ago, and I'm sure to get them again from electric car manufacturers about why bother with 1/8. In fact, this is the second month in a row this page has been devoted to 1/8 scale. Well I confess. I'm being selfish. You see I'm a big fan of 1/8 scale. My first car, even my first race was with an 1/8 scale car. Way back when I ran the state-of-the-art RC300. No diff, no suspension, no 4WD, just fumes, noise and power! I've never lost my love for this scale.

Well I'm going to stop now. This probably will be the last piece on this scale for a little while. In closing, let me just encourage 1/8 manufacturers to make your future. Please put together another big 1/8 scale event to take the weight off the McCoy.

Keep Having Fun!
PETER BARANA



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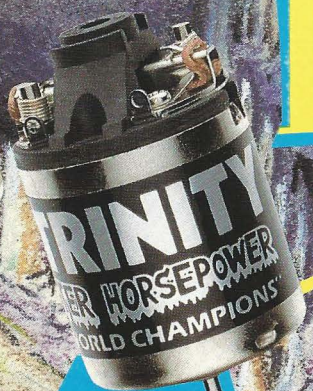
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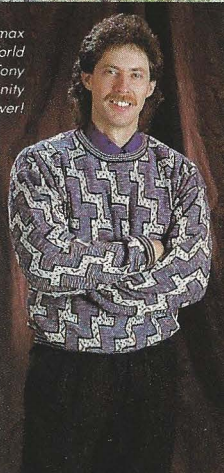
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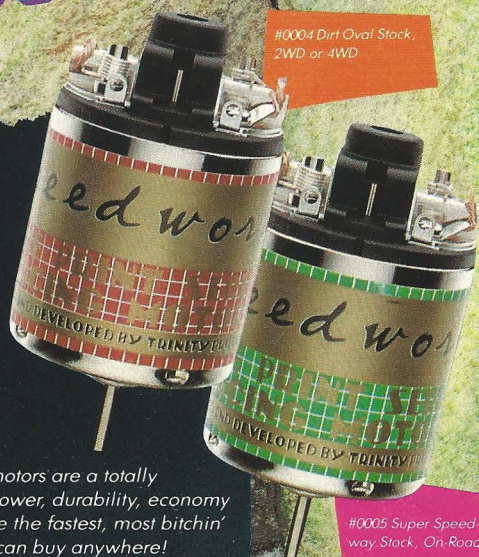
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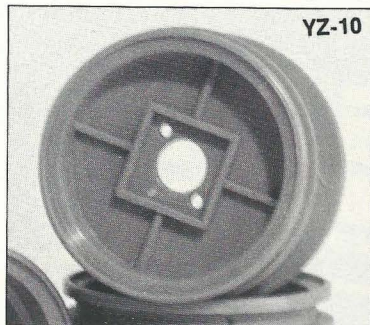
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(Continued from Page 7)
country that manufactures its tracks. Other countries' tracks are so poorly kept that 6 cells is all they can handle. They practically have no use for 7 cells."

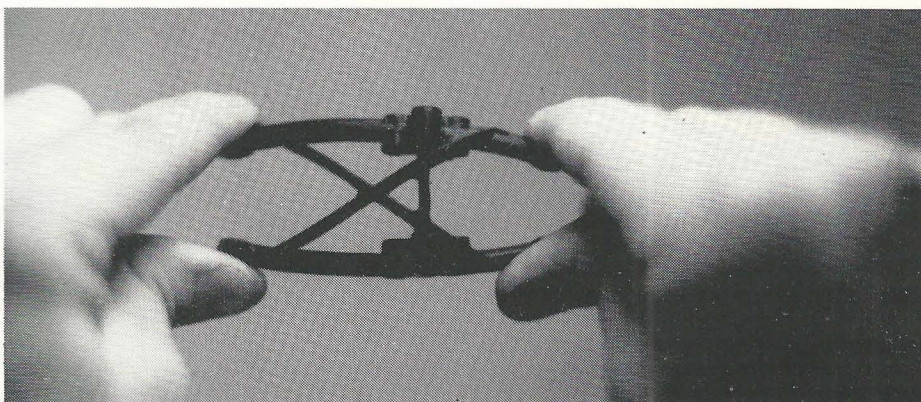
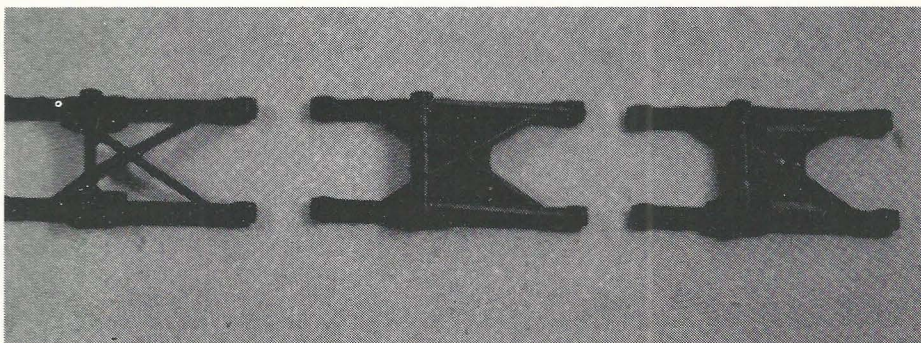
PARTS AIN'T PARTS Appreciation and Understanding

Dear Mr. Barana,

As a college student minoring in business, and an avid R/C car racer, and an East Coast city boy, this past summer I had the rare

Losi. I am writing to you, rather, to share an experience of mine there, that is not only technically very interesting, but that also addresses two problems I see in the hobby: a lack of appreciation for manufacturers, and the flawed mentality of many consumers.

I had been there about three weeks and had yet to see the actual Team Losi Manufacturing facility. I was told that it wasn't anything incredible - shelves and shelves of parts, some machinery,



and fantastically exciting opportunity to work at one of the most renown R/C car facilities in the country - the Ranch Pit Shop in Pomona, California. Anyone who has ever shopped or raced there will know what I am talking about. Not only is the store itself a racer's dream (if they don't have it, you don't need it), but the racing is some of the best in the nation. Top both of these off with the expertise, helpfulness and friendliness of the staff (if you've got a problem they can't help you fix they you REALLY have got a problem). However, I wrote you neither to extol the virtues of the store nor to plug Team

offices for a couple of draftsmen, and storage space. I still wanted to see it and so Marcus, the "wizard" they called him, offered to take me. We got to the plant and he gave me the grand tour. Although I was interested, it was, in all honesty, nothing amazing. We ended up in the draftsmen's room. Only one person was there at the time, Brooks was his name. Brooks immediately put down what he was doing and was more than glad to begin answering some of the burning questions I had. It was my last question that is the seed of this letter.

I wanted to know the evolution of a Team Losi part - from its

genesis in Gil Losi Junior's cerebrum to store shelf, and all the steps in between. Brooks decided to show me the development of the most recent part (at that time) for the JRX2: the H-Arm suspension kit. The part began, he said, first as one of Junior's ideas - a part was needed to solve the problem of a nose-diving JRX2 and to hook the car up on tracks where the stock 5 link didn't perform well. The idea was then sketched out by Junior and brought to the draftsmen. Junior told what he was looking for, what he was trying to accomplish, so that initial mechanical drawings could be made. After these drawings had been made, approval was gotten and the plans were sent out to a molding company for prototypes. When the first prototypes came back, I was told Junior simply laughed - the arm was grossly flexible, exactly the opposite of what is ideal in such a part. Junior, Brooks and others literally went "back to the drawing board." It was decided that the part should first be "skinned" and that additional side rail support should run from the apex of the part, down the long section extensions of the arm. New plans were then made and sent out for prototypes. They came back and Junior only chuckled this time - the arm was much stiffer than before, but the flex in it still caused unusual and unpredictable handling when put on the car. Once again, new modifications were added to the part - side rails (now going to both ends not just the longer side), bulkier supports all around, and other minor changes. Again, mechanical plans were drawn up and sent out. What returned was almost the part you buy. I say almost because they then went through experimentation with several different plastics - some indeed made the part very stiff, but were brittle. Others were more forgiving but compromised the part's stiffness. Ultimately a plastic was decided upon and production ordered. All in all, it's my guess they went through at least a dozen different combinations of part geometry and plastic before they arrived at the

final design.

Now you may be asking why I wrote this letter. Was I asked to? No! Am I getting something in return? No! I chose to write this letter because I feel we can all learn two important lessons from this story. First, Team Losi and many other manufacturers are really looking out for us, the racers. Sure, making a good product is good business - satisfied customers always come back and unsatisfied ones usually do serious damage (I think the statistic is something like every happy customer tells two people he/she is satisfied, while every disgruntled customer tells ten people his/her grip). But don't you think Gil Losi, Jr. could've opted to settle for one of the more flexible H-Arms? Sure a world class driver like Junior can discern subtle changes in a car's handling due to slight changes in setup. But do you think you, or any of us mortal drivers, could do the same? I think not. The fact of the matter is that Gil, Sr. chose to incur the extra expense of developing a perfect part when he probably could've had just as many satisfied customers with a good, or near-perfect part, for a much lesser cost. My point is this - Let's recognize the fact that at least some R/C car manufacturers are behind us, trying to help us become the best racers we can be. Appreciation of this sort can only help our hobby as other manufacturers will see that extra effort does not go unnoticed.

My second point stems from the first. In trying to recognize what has gone into the development of a part, we should, in turn, make an attempt at really questioning whether we need that part or not. Let's take my example - recognizing what has gone into the H-arms we should then ask ourselves what that part addresses: What does it do? How does it work? How will it change the car's handling? And (once aware of that change) is that change suitable to my driving style? To stress my point, I vividly remember the time a young racer came in and wanted to buy a differential for his car. I showed him several and he decided on the most expensive. He paid and

was about to leave when he then casually asked me, "Um... What does this do anyway?" This kid just shelled out 60 dollars for something he had no clue about - he had probably heard so much talk about slipping diffs, tight diffs, and diff setting that he thought he just had to have one, whatever it was (and to be completely honest with you, I think many adults are just as bad; they just aren't as honest as this young man was). How can a part you don't understand help your driving? It seems to me that such lack of understanding can only confuse you and worsen your driving. We should all try to better understand a product before we decide we can't live without it. Knowledge begets understanding. Understanding begets improvement. And I have yet to meet a racer who can't improve (sorry Junior).

Sincerely,

Christopher Miksovsky
Maplewood, NJ

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1984-85 IFMAR WORLD CHAMPION/TONY NEISINGER/RC12i/REEDY



1986-87 IFMAR WORLD CHAMPION/TONY NEISINGER/RC12L/REEDY



1988-89 IFMAR WORLD CHAMPION/MASAMI HIROSAKA/RC12L/REEDY

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A WINNING TRADITION

One team, Team Associated, has won at every World Championship for 1:12 scale cars in the 80's. A clean sweep against the toughest competition anywhere.

And in 1988 the Team sweeps the top three places in the A main for the second consecutive time! In fact, Associated RC 12L's finished first, second, third and fourth in the IFMAR World Championships in Holland. You might say it was a real Baarn Burner of a race.

When the Team goes racing, we go racing to win. That's why top racers all over the world win with Associated cars. They know they have the edge with the only team to win seven IFMAR World titles.

THE POWER TO WIN

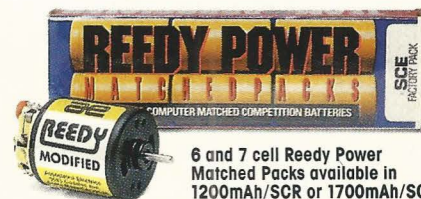
World Class drivers know it takes more than a great

1988-89 IFMAR WORLD CHAMPIONSHIPS/BAARN, HOLLAND				
First	Masami Hirose	Japan	RC12L/Reedy	
Second	Tony Neisinger	USA	RC12L/Reedy	
Third	Christian Keil	West Germany	RC12L/Reedy	
Fourth	Kent Clausen	USA	RC12L/Reedy	

car to win the World Championship. It takes great motors and great batteries, too. That's why Mike Reedy's motor lab is the nerve center for electric car racing at Associated. And that's why the Team depends on Reedy Matched packs and Reedy Modified motor for the extra power needed to win.

Take a tip from the pros and go racing with the Team.

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Masami Hirose (center), Tony Neisinger (left) and Christian Keil (right) led a united nations sweep of the 1988-9 World Championships.

STRAIGHT LINE FEVER

By Bob Boucher

The 1990 IEDA WINTER NATS
Drag World, Colton, CA
Jan 18, 19, 20, 21

By all accounts the First Annual IEDA Winter Nats was a big success. First of all the wet weather that had been threatening to ruin the race moved out of the area and we had beautiful California sunshine all weekend long. The sky was clear and you could see the snow capped Sieras in the distance. Two days of practice were provided on Thursday and Friday, so that the visitors from Florida, New York, Colorado, and Arizona could practice on our track and get used to our lights. On Saturday, Jan. 20 we ran three rounds of qualifying. A fourth round of qualifying was run at 8 a.m. on Sunday morning. Eliminations began at 10 a.m. Sunday. Eighty-six cars were entered in the seven different events. The racing was very close and a number of new national records were established.

RACE RESULTS

Bracket (eighteen entries). In bracket racing there are no motor or car specs. Each driver declares his own handicap. The computer subtracts the handicaps and gives the slower driver a head start equal to the difference between the declared handicaps. If both drivers run a perfect race they will both arrive at the finish line together. The driver who runs closest to his handicap will win, except that if a driver runs faster than his declared handicap he automatically is disqualified by the computer. The race results were:

1st - Stan Wagner
 2nd - Mike Rachwitz
 3rd - Bill Brier

Pro Stock (nineteen entries). Maximum number of cells is

eight. Allowable cell capacity 600mahr to 1200mahr. Minimum allowable weight is 36 ounces.

1st - Terrence Holt
 Agitator/Twister
 Bat - 8x1200 Wt. - 37.0
 ET - 2.261
 2nd - Ned Morris
 Scratch/Twister
 Bat - 8x1200 Wt. - 39.8
 ET - 2.504
 3rd - Phill Simms
 Houge/Cam
 Bat - 8x900 Wt. - 36.9
 ET - 2.451
 4th - Tom Prokop
 Agitator/Revolution
 Bat - 8x900 Wt. - 37.5
 ET - 2.472
 5th - Luther Dillon
 Agitator/Astro
 Bat - 8x1200 Wt. - 43.0
 ET - 3.090

Pro Comp (nine entries). Maximum number of cells is fourteen. Allowable cell capacity 600 to 1200mahr. Minimum allowable weight is 36 ounces.

1st - Ken Hively

Houge/Twister
 Bat - 14x600 Wt. - 40.3
 ET - 2.269
 2nd - Jill Simms
 Houge/Cam
 Bat - 14x600 Wt. - 41.6
 ET - 2.218
 3rd - Jamie Colon
 Firefox/Astro
 Bat - 14x600 Wt. - 44.6
 ET - 2.210
 4th - Magic Valentine
 Outlaw/Astro
 Bat - 14x900 Wt. - 43.0
 ET - 2.310
 5th - Robbie Popp
 D and E/Astro
 Bat - 12x900 Wt. - 49.0
 ET - 2.440

Top Alcohol Funny Car (four entries). Maximum number of cells is ten. Allowable cell capacity is 600 to 1200mahr. Minimum allowable weight is 38 ounces.

1st - Gary Reeter
 Scratch/Astro
 Bat - 10x600 Wt. - 45.0
 ET - 2.477

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2nd - Mike Myhre
Scratch/Revolution
Bat - 10x600 Wt. - 40.4
ET - 2.372
3rd - Jim Shauer
Firefox/Revolution
Bat - 10x600 Wt. - 41.0
ET - 2.470
4th - Steve Kennicott
Thundercar/Reedy
Bat - 10x900 Wt. - 42.4

Top Fuel Funny Car (five entries). Maximum number of cells is fourteen. Allowable cell capacity is 600 to 1200 mahr. Minimum allowable weight is 38 ounces.

1st - Chris Fine
Firefox/Astro
Bat - 14x600 Wt. - 41.0
ET - 2.185
2nd - Vern Tripp
Scratch/Astro
Bat - 14x600 Wt. - 47.0
ET - 2.470
3rd - Dennis Hill
Houge/Twister
Bat - 14x600 Wt. - 40.5
ET - 2.340
4th - Calvin Grant
Houge/Astro
Bat - 14x600 Wt. - 43.1
ET - 2.230
5th - Magic Valentine
Outlaw/Astro
Bat - 12x600 Wt. - 40.2
ET - 2.450

Top Alcohol Dragster (seventeen entries). Maximum number of cells is ten. Allowable cell capacity is 600 to 1200 mahr. Minimum allowable weight is 36 ounces.

1st - Jill Simms
Houge/Cam
Bat - 10x900 Wt. - 38.2
ET - 2.253
2nd - Don Monesco
Houge/Cam
Bat - 10x900 Wt. - 37.4
ET - 2.226
3rd - Tom Beville
Houge/Astro
Bat - 10x900 Wt. - 41.1
ET - 2.372
4th - M. Chester
Firefox/Trinity

Bat - 10x900 Wt. - 37.9
ET - 2.200
5th - Dave Arrelano
Houge/Twister
Bat - 10x900 Wt. - 38.6
ET - 2.280

Top Fuel Dragster (sixteen entries). Maximum number of cells is twenty. Allowable cell capacity 600 to 1200mahr. Minimum allowable weight is 38 ounces.

1st - Mike Houge
Houge/Astro
Bat - 20x600 Wt. - 47.2
ET - 1.910
2nd - Jamie Colon
Firefox/Graupner
Bat - 20x600 Wt. - 45.8
ET - 1.865
3rd - Phil Simms
Houge/Cam
Bat - 18x600 Wt. - 42.6
ET - 2.080
4th - Calvin Grant
Houge/Astro
Bat - 14x600 Wt. - 39.6
ET - 2.030
5th - M. Chester
Firefox/Graupner
Bat - 20x600 Wt. - 45.3
ET - 1.910
6th - Bob Harris
Firefox/Graupner
Bat - 20x600 Wt. - 46.2
ET - 2.010
7th - Eric Scott
Houge/Astro
Bat - 20x600 Wt. - 45.1
ET - 2.008
8th - Mike Russo
Scratch/Checkpoint
Bat - 14x600 Wt. - 40.2
ET - 2.430
9th - Don Monesco
Houge/Astro
Bat - 18x600 Wt. - 42.9
ET - 2.050
10th - Ken Hively
Houge/Twister
Bat - 16x900 Wt. - 40.7
ET - 2.134
National Top Fuel Record
Jamie Colon
E.T. = 1.865 seconds
National Top Alcohol Record
M. Chester

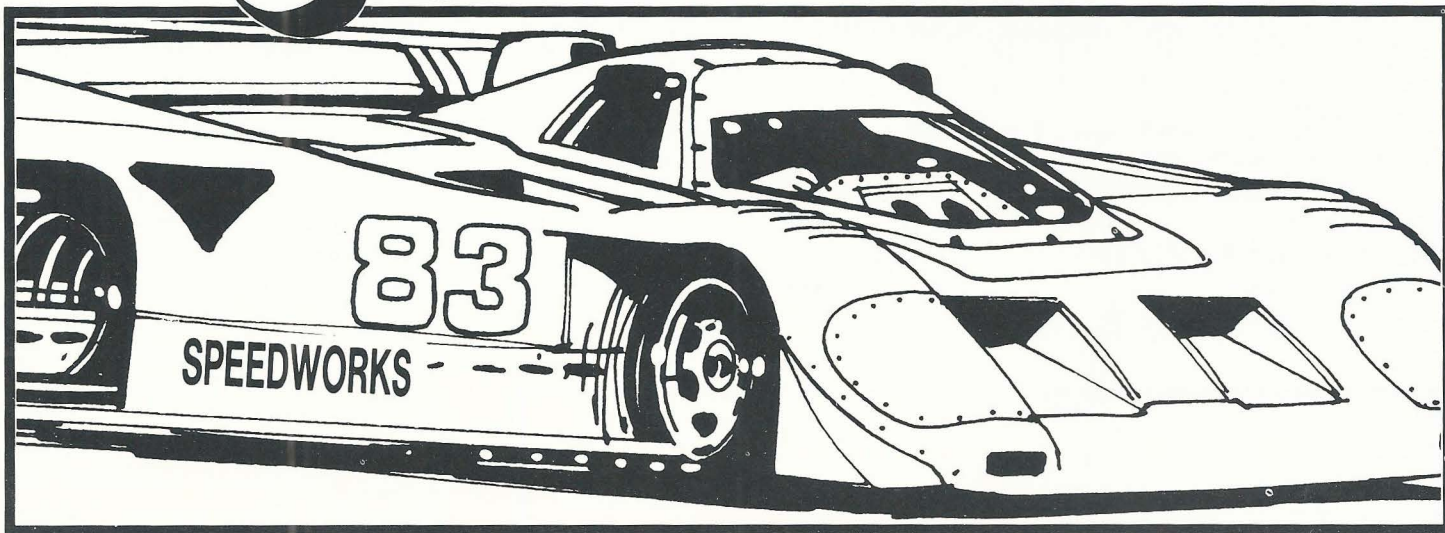
E.T. = 2.180 seconds
National Pro Stock Record
Terrence Holt
E.T. = 2.190 seconds

It was quite evident that this was a very fast race. National records were being broken every few minutes. The 1.9 second barrier has been broken and the 1.8 second barrier is being challenged. In all but the Top Fuel Dragster classes any motor can win. The results show that Astro, Cam, Checkpoint, Revolution, Reedy, Twister all had winning times in the lower power classes that allowed fourteen or fewer cells. Top Fuel Dragster allows twenty cells. In this class you need to run Cobalt to win. And you need to run a larger motor. The winning Astro Top Fuel II motor is about 33% larger than a Yokomo. The runner up Graupner Ultra 900 is about 50% larger than a Yokomo. In the next few months we should see the true potential of these powerful motors as drivers begin to fine tune their cars to harness the power available. I am very confident that the 1.8 second barrier will be broken soon. Question; if larger cobalt motors are so good in 20 cell top fuel cars, why didn't they win in the lower eight and ten cell classes? Answer; because each motor size has evolved to match a particular battery size. The Yokomo is well suited to 8 cells and 10 cells can survive 14 cells if handled with care. The popular Astro Top Fuel I motor can run on eight cells but loves to run on 10 to 14 cells. It can survive 16 cells if handled with care. The Astro Top Fuel II and Graupner Ultra 900 motors love 18 and 20 cells but they can't get out of their own way on 10 cells.

I would like to thank Tom Acosta, Stan Wagner, John Wagner, Marty Wagner, Michele Boucher, and Herb Semelmeyer for making the First IEDA Winter Nationals a great success.

CP

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TEAM TRIAD

Trinity, TRC and Compositecraft have joined forces to produce a new "SUPER TEAM" to campaign on the on-road and off-road circuits. These three companies have joined their racing teams together to produce one super power. The current TEAM TRIAD line up consists of:

Joel "Magic" Johnson
Tony Neisinger
Bob Light
Andy Dobson

The Team will campaign with Trinity motors and batteries, TRC tires, and TRC/Compositecraft Lynx II cars.

Look for the TRIAD TEAM at a race near you!!



SANYO

TRIPLE CROWN RUMORS

This is all unofficial but the latest word from Detroit is that after two races of the Triple Crown completed the standings are as follows:

1st - Joel Johnson - 998 pts.
2nd - Louis LeBlanc - 997 pts.
3rd - Chris Doseck - 994 pts.
3rd - Andy Dobson - 994 pts.
5th - Joe Lawrence - 992 pts.
5th - Tony Neisinger - 992 pts.
7th - Mike Blackstock - 991 pts.
8th - Carl Christy - 989 pts.
9th - Bob Light - 988 pts.
9th - Bill Jeric - 988 pts.

Watch for the heated battle to continue at the last leg of the Triple Crown: the ROAR 4-Cell Nationals in Detroit, Michigan on March 29 and April 1, 1990.



NEW ADDITION!

PRO-LINE U.S.A. President Joe Warren is pleased to announce the addition of Richard Grant of Colorado Coast Marketing to the PRO-LINE team.

Mr. Grant's primary marketing responsibilities will include product and race promotion, distributor and dealer relations, as well as advertising and public relations. Emphasis, however, will be placed on working one on one with distributors to devise product and merchandising programs which improve dealer profitability.

"It's an opportunity to be a part of one of the RC industry's most respected companies," said Grant. "I have been very impressed with their enthusiasm and dedication towards setting standards in the RC industry."

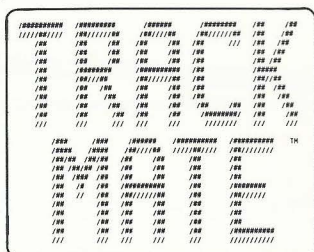
Mr. Grant has a BA degree in Marketing from Western State University and brings 10 years of product marketing expertise to PRO-LINE. His company, Colorado Coast Marketing is located in Steamboat Springs, Colorado. The firm specializes in marketing hobby and recreational products and services worldwide.

For further information, contact: Richard H. Grant, COLORADO COAST MARKETING, P.O. Box 849, 820 Broad Street, Steamboat Springs, CO 80477, (303) 870-0849 FAX (303) 870-0850.



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The latest edition to the Trinity motor line was designed by Dave Willems especially for 1/10th high banked oval racing. This motor produces a great amount of torque due to its single wind, is excellent on tight tracks and has the proper power band for oval racing. This is the wind



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TrackMate comes in three sizes to fit your track and budget. TrackMate Jr. is perfect for small, hand-count only tracks like Master Raceway while TrackMate Pro handles the regional and national event tracks like Lake Whippoorwill. Standard TrackMate is just right for all those mid-range tracks that either hand-count or use the AMB System. All three versions offer automatic race series points management for your drivers.

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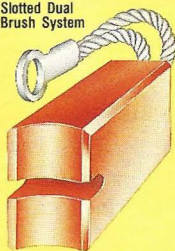
with TRINITY BRUSHES

No matter what type of racing you do, there is a high horsepower, low friction, long wear Trinity Motor brush to suit your needs!

Trinity brushes are molded, not cut like cheap copies, which are prone to stress related breakage. These brushes are designed as replacements for all Trinity, Orion, Yokomo, Kyosho and Air Supply motors.

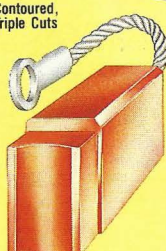


Slotted Dual Brush System



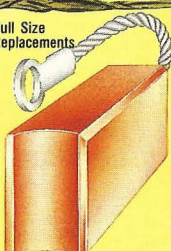
The first new brush designed for today's motors! Dual shunts for lowest resistance, new non-glazing formula. Slotted face for less arcing, less heat build-up and a more positive brush to commutator contact area. These are the only brushes that allow the hottest 8 thru 14 turn modified motors to produce maximum horsepower. #4103-\$3.50

Contoured, Triple Cuts



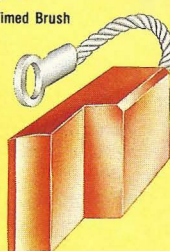
For 1/12 scale, on-road cars. Gives more torque and less arcing by maximizing the ratio of current draw vs friction on the commutator. For 14 to 20 turn motors. Speedworks 0007, 0012. #4034, soft compound for 4-cell #4037, for 6-cell \$4.99

Full Size Replacements



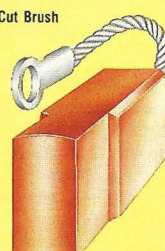
#4005, \$5.25 Soft compound comes in stock Trinity and Speedworks motors. w/springs. #4038 \$3.00 Hard compound for longer life in off-road motors. In Trinity modifieds 1700 to 1704. #4046 \$3.00 Soft compound produces higher rpms in stock and on-road motors. #4065 \$1.99 Same as 4038 but without terminal.

Timed Brush



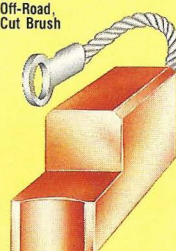
Shape increases timing and RPM's in stock motors. These work so well they should be illegal! For Trinity 2000, 2020, Speedworks 0004, 0005, 0444 and all Yokomo and Kyosho stock motors. #4007 - \$4.79

Cut Brush



The narrow face increases RPMs, reduces arcing. Designed for oval racing or motors with lots of timing advance. #4006 - \$4.79

Off-Road, Cut Brush



For on and off-road motors with 14 turns and more. Less friction on commutator gives higher rpm's and more torque. Hard compound for longer life. Used in Trinity 1705 thru 1711 and Speedworks 0001, 0002, 0003, 0008, 0009 & 0555. #4035 - \$4.79



Trinity Products, Inc.

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that has been so popular at the legendary Super Speedways, and is what all the Pro racers have been running. Don't be left behind, Get your own monster now!

Part number: 1712; List price: \$80.00; Availability: January 30th.

Technical Specifications: Can type: Trinity, Magnets: New High Density 2 Stage Wet Magnets 3.0; Endbell: High temp graphite filled composite; Ball bearings: 2 high precision, grade 7; Brushes: Trinity 4038; Springs: Trinity medium tension; Wind: 13 turn single; RPMs: 47,000; Timing: User adjustable; Additional parts: Brush and hood heatsinks, capacitors, leadwires included!

ONLY 43 LAP CLOCKED!

Joel Johnson won the Modified class with his Trinity/Corally combination at the second leg of the SANYO Triple Crown. The race was the Winter Championships in Grand Rapids, Michigan. Joel was the only one to go 43 laps the entire weekend!

SECOND LEG COMING

The second leg of the Reedy Race of Champions will be held in Lyon, France in April. Drivers from the USA in attendance will

be:
Jay Halsey
Butch Kloeber
Rick Hohwart
Kris McElroy
Kris Moore

WELCOME ABOARD!

Joe Warren of PRO-LINE, U.S.A. (Beaumont, CA) announced that Brian Klammer of Hanover Park, Illinois has joined the PRO-LINE/RED Racing Team. Klammer, who is considered one of the midwest's top racers, will run RED Racing Tires for Off-Road competition and PRO-LINE Tires for on-road and monster truck competition. PRO-LINE bodies and wheels will also be used. Brian will also be responsible for providing technical assistance and promotion at regional raceways in Northern Illinois, such as Metro Fast and Metro Park. For more information, contact: PRO-LINE U.S.A., 201 W. Lincoln St., Beaumont, CA 92220. Telephone (714) 849-9781.

OTHER INFO FROM DETROIT

GTP bodies will be required at both the ROAR 4-Cell Nationals and the 1/10 & 1/12 scale On-Road Nationals for 1990. Also in

accordance with the 1990 rules auxiliary battery packs to power only a vehicle's radio equipment will be allowed in both 1/10 & 1/12 electric classes.

REEDY INVITATIONAL RESULTS

At the 4th Annual Reedy Invitational Race of Champions 27 of the fastest racers from England, France, Germany, Japan and the USA all competed in this special International race.

The race was held at Radio Controlled Hobbies in Costa Mesa, California. This first big race of 1990 was another fantastic one. Each racer competed in a separate 2WD class and then a 4WD class. The combined points were then totalled to determine the winner.

1st - Cliff Lett
RC10/Yokomo/Reedy
2nd - Rory Cull
RC10/Schumacher/Reedy
3rd - Rick Hohwart
RC10/Kyosho/Peak Perf.
4th - Masami Hirosaka
ZRC10/Yokomo/Reedy
5th - Chris McElroy
RC10/Yokomo/Peak Perf.
6th - Jack Johnson
JRX2/Kyosho/Revolution
7th - Jurgen Lautenbach
Schumacher/LRP
8th - Jay Halsey
RC10/Yokomo/Reedy
9th - Mark Pavidis
RC10/Yokomo/Reedy
10th - Rick Vehlow
RC10/Yokomo/Reedy

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McAllister Minitch MRC
Miracle Speedway MRP
Norcal Novak Pactra
Paragon Parma Pitstop
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Power Pak Pro Line
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RC Perf. Spec.
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Revtech RPM
RochesterRaceway
Rockbusters Scat
Robinson Racing
Sassy Chassis SRS
Sermos Speedworks
Shinwa Stage III T&A

Stormer S.T. (Skis)
T.A. Emerald Industries
Team Hammer Tekin
TeamSmoothTechnacraft
Thorp TM TMS Traxxas
Track Master TrinityTRC
Twinn-K Twister Ungar
You-G Universal Energy
Victor VRP WSS, Inc.
Zeta

NEW COMPANIES

Branson
(Ultrasonic Cleaners)
Bullet Racing ESP
Fast Racing Maui
Premier Designs
Redline Royal
Smokin'

If you do not see it
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WHAT'S NEW?

1. Thorp BF telescoping axle kit,
2. Ultrasonic cleaners,
3. Twister-- Pocket Rockets,
4. Fluorescent Race Cases,
5. Batmobile Body,
6. Thorp 48 pitch RC10 gear box,
7. JG Stadium Race Truck,
8. FRP brush alignment tool,
9. Marui Big Bears,
10. MCS brush cutting tool,
11. MIP Slippers.

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TRIVIA

1. Who was the race director for the first 1/12 Scale IFMAR World Championships in 1982?
2. Which company makes the HI-IQ Charger?
3. What is the minimum number of turns for a ROAR legal 1/10 Stock motor?
4. What color is frequency 27.195?
5. Famed racer Rick Hohwart has been sponsored by many companies in his racing career. Which company has not sponsored Rick?
 - A. BoLink
 - B. Associated
 - C. Parma
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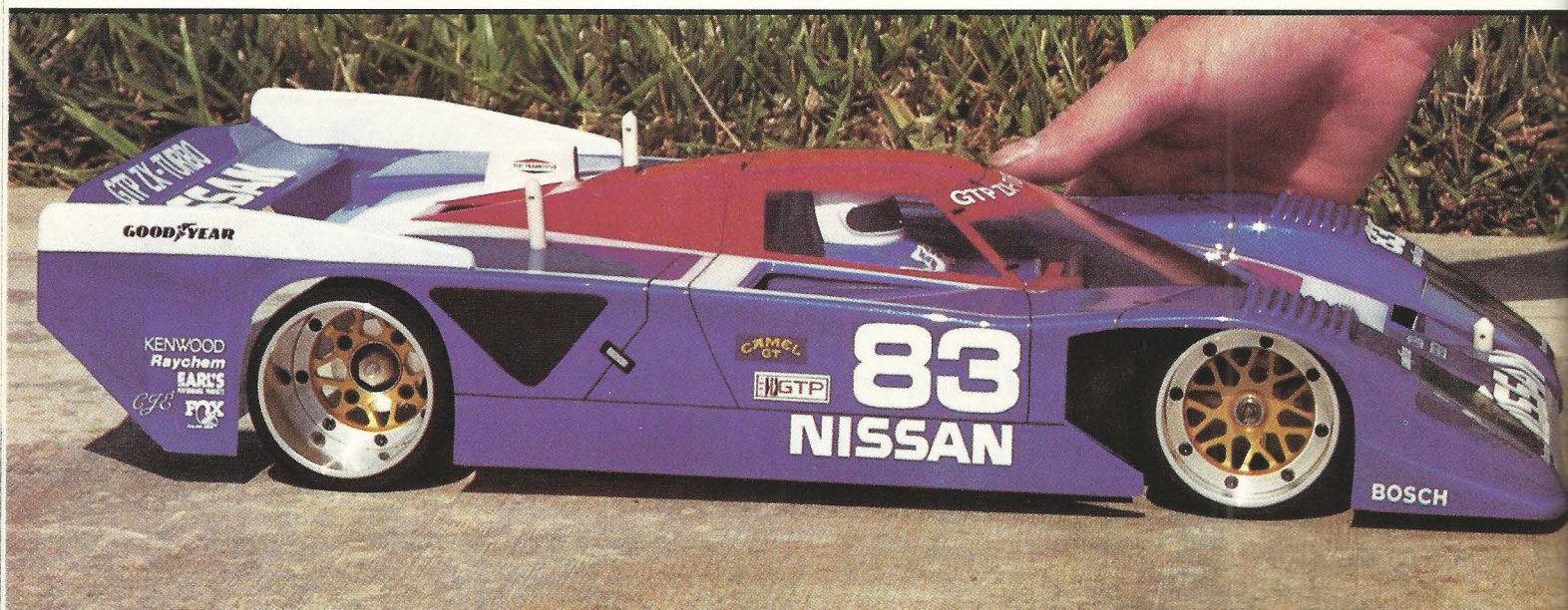
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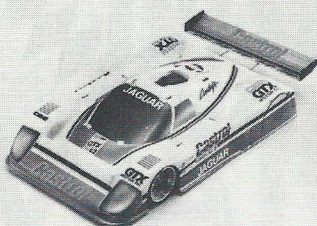
3022
HEATHEN "OFF ROAD"



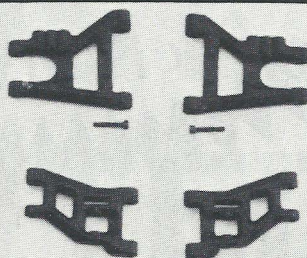
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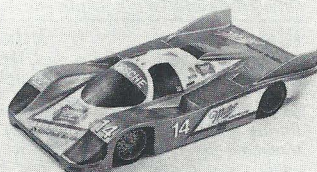
3412 RC-10 - 3512 ULTIMA
FRONT BUMPER MOUNT "OVAL"



3030
JEEP COMANCHE TRUCK BODY



3026
APACHE WARRIOR - YOKOMO



3140
PORSCHE 962 GTP



3023
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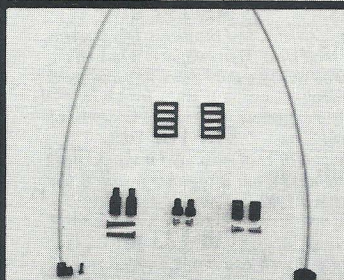
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1/10 Scale On-Road

World Champion

Vacant

ROAR Modified National Champion

Rick Hohwart, California

Driver	Last Month	This Month
Rick Hohwart	1st-946 pts.	1st-946 pts.
<i>Hohwart's National Championship win was fresh in everyone's mind as he solidly captured the number one spot.</i>		
Kent Clausen	2nd-815 pts.	2nd-815 pts.
<i>Clausen's electric road racing prowess continued to impress all that voted. Kent had a solid performance in Birmingham and it is reflected in the ranking. Clausen was runner up to Hohwart, finishing in second place.</i>		
Tony Neisinger	3rd-800 pts.	3rd-800 pts.
<i>Although he only ran about 2 laps in the recent Nationals A Main, Tony did capture the TQ honors. One can only guess how the race may have been effected if Neisinger had made it through the opening lap slam session.</i>		
Joel Johnson	4th-538 pts.	4th-538 pts.
<i>The "Magic Man" seems to have a little problem in adjusting to the larger 1/10 road racers. Joel just outpointed Terry Rott to capture fourth on the ranking line up.</i>		
Terry Rott	5th-523 pts.	5th-523 pts.
<i>One of the drivers that seemed to benefit the most from our division of 1/12 and 1/10 road is Terry Rott. In last month's 1/12 and 1/10 combined ranking Terry was put in ninth. He remains in that position for 1/12, but took a big jump in the 1/10 category. Rott was in the TQ spot for a few rounds and eventually wound up second on the grid at the Birmingham Nationals. Terry complimented his qualifying position with a third place finish.</i>		
Bob Light	6th-515 pts.	6th-515 pts.
<i>Stopping just one notch under his 1/12 ranking, Light comes in sixth. He had a very solid performance in Alabama with a fourth finish and a third spot earned at qualifying.</i>		
Chris Doseck	7th-300 pts.	7th-300 pts.
<i>Doseck had a respectable performance at the 1989 Nationals. He qualified only seventeenth overall, but finished second in the B Main with a very fast run. If you compare his 17,401.5 performance with the A main times, it would compute to a third place finish.</i>		
Kevin Mercadante	8th-192 pts.	8th-192 pts.
<i>Kevin already made the Top 10 list in the smaller 1/12 cars, and the larger 1/8. It seems only natural to see him in the medium sized 1/10 road class. Mercadante just missed the A main and qualified eleventh overall. This was followed by a third place finish in the B Modified, just 2 seconds back from the leader.</i>		
Shawn Ireland	9th-161 pts.	9th-161 pts.
<i>The voting was close between Mercadante and Ireland in 1/10 road, and it should have been. Although Shawn had qualified only eighteenth, he put it together in the B. He finished in fourth, just 2/10's of a second behind Mercadante in a very close finish.</i>		
Ralph Burch, Jr.	10th-123 pts.	10th-123 pts.
<i>Obviously more recognized for his 1/8 performance, Burch can throw an electric 1/10 car around a corner with the best of them. Burch had an excellent performance at the Nationals with a sixth place finish in the A.</i>		

1/10 Scale Off-Road

World Champion 2WD - Masami Hirotsaka, Japan

World Champion 4WD - Masami Hirotsaka, Japan

ROAR 2WD Mod. National Champ - Jack Johnson, CA

ROAR 4WD Mod. National Champ - Cliff Lett, CA

Driver	Last Month	This Month
Cliff Lett	1st-985 pts.	1st-1,000 pts.
<i>Although he didn't capture the world title, two top five finishes in the recent world finals kept him on top of our list. Lett finished 3rd in the 2WD final and 4th in the 4WD final. Lett has been on top of our list from the beginning.</i>		
Jay Halsey	3rd-715 pts.	2nd-829 pts.
<i>Another driver who qualified for both the '89 world finals was Jay Halsey. The 1985 Stock World Champ finished 2nd in 2WD and 10th in the 4WD program.</i>		
Butch Kloeber	4th-592 pts.	3rd-771 pts.
<i>If there has been a driver who has been making a steady climb up our ranking list its been Butch Kloeber. On our first voting a few month's back Kloeber squeaked in a tie for 10th place. Our next tally had Butch climbing 6 spots to 4th. This month Kloeber moves up again as he comes in 3rd. This climb was spurred on by a 2nd place overall finish in the 4WD final. This coupled with a win in the 2WD World B final; and Jack Johnson slipping a bit with only one world final placing. The next few months will be interesting as many expect Kloeber to climb still higher.</i>		
Jack Johnson	2nd-838 pts.	4th-686 pts.
<i>As was just mentioned Johnson did slip a little, but still is holding strong in 4th. Johnson finished in 8th for the 2WD class, but 7th in the 4WD division. Still making a world final is a major accomplishment and Johnson is rewarded with 4th on our list.</i>		
Rick Hohwart	7th-285 pts.	5th-557 pts.
<i>When Rick first made our top 10 list in the off-road division, a lot of eyebrows were raised. What is an on-road driver doing on an off-road list? Well a few months later there is no question as to why Hohwart is on this off-road list. Hohwart finished in 3rd among the world 4WD finalists, and supported that with a 3rd in the 2WD B final.</i>		
Rick Vehlow	9th-208 pts.	6th-400 pts.
<i>Another Rick on the climb is Rick Vehlow. Mr. Vehlow finished 5th among the 2WD finalists and in 4WD he was the 6th highest US finisher.</i>		
Joel Johnson	10th-200 pts.	7th-275 pts.
<i>During our last poll we took note of how Johnson had not had a great Off-Road Nationals for 1989. Joel has bounced back from that performance with a finals qualification at the recent Off-Road Worlds. In the 2WD division Joel finished 9th overall, 6th among the US drivers.</i>		
Ron Rossetti	8th-269 pts.	8th-200 pts.
<i>Although his point total dropped, Rossetti still came up in 8th spot. Rossetti has been one of the most competitive off-road racers throughout the 1980s and at this world's Ron was no exception. Ron made the B final in the 4WD, and was an A finalist in the 2WD division.</i>		
Mike Dunn	—	9th-186 pts.
<i>Dunn was just one of three US drivers to make both world finals. That fact may have prompted some to say he came in on our list a little low. Its tough to break into the list, and remember the voting is not based solely on one event. Now that Dunn is on the list, it's no doubt it will be easier to move up. Dunn finished 4th in 2WD and 8th among the 4WD. With continued performances like the one turned in at the worlds, there's no doubt he'll now move up quickly.</i>		
Kris Moore	5th-400 pts.	10th- 85 pts.
<i>Yes, Moore did slip quite a few spots, but he holds onto 10th spot with two B main performances in the worlds. Actually when counting US drivers Moore finishes 8th in 2WD and 7th in 4WD.</i>		

Racing's

MOST WANTED

1/12 Scale On- Road

World Champion - Masami Hirosaka, Japan
ROAR Mod. National Champion - Kent Clausen, CA

Driver	Last Month	This Month
Joel Johnson	3rd-761 pts.	1st-900 pts.
<i>Joel finished the highest among those drivers that were on last month's 1/12 list. This no doubt gave him enough voters to put him on top this month.</i>		
Tony Neisinger	1st-923 pts.	2nd-883 pts.
<i>Last poll's number one was Tony Neisinger. Tony slipped one notch, no doubt to finishing in fourth at the Indoor Champs. The fourth place finish was one spot lower than number one pick Johnson who finished third at that race.</i>		
Chris Doseck	6th-508 pts.	3rd-817 pts.
<i>Doseck jumped three spots this month, the biggest climb among those previously on the Top 10 list. Chris was the TQ in Cleveland by a good margin.</i>		
Rick Hohwart	4th-764 pts.	4th-617 pts.
<i>Rick didn't have a great Cleveland race, but he did manage to stay in the B Main. In this event Rick wound up second to Carl Christy.</i>		
Kent Clausen	2nd-792 pts.	5th-600 pts.
<i>After not making the A Main at the Indoor Champs Kent Clausen slipped from second to fifth.</i>		
Bob Light	5th-569 pts.	6th-550 pts.
<i>After finishing ninth in the Modified final in Cleveland Light slipped one position. Always a competitive driver don't be surprised, however, if he bounces right back up in our next poll.</i>		
Andy Dobson	—	7th-450 pts.
<i>When we had 1/10 and 1/12 combined back in August of 1989 Dobson came out number 10. Since then Andy has not made the 1/12 scale list. This month, after an exciting win in Cleveland, Dobson comes in number seven. a couple of victories more and Dobson could be contending for the number one spot.</i>		
Shawn Ireland	7th-415 pts.	8th-250 pts.
<i>One might think that making the C Main would drop you further back than one spot. Shawn, however, has a solid history of being an A Main contender, and is a previous Cleveland race winner. This no doubt stuck in the back of many of our voter's minds.</i>		
Terry Rott	9th-154 pts.	9th-167 pts.
<i>As of this survey Terry Rott's position is unchanged.</i>		
Louis LeBlanc	—	10th-133 pts.
<i>Louis was one of the surprises of 1989. He finished in second, just behind Dobson in the final. Now on the list LeBlanc will have to continue to produce results similar to Cleveland if he desires to move up.</i>		

1/8 Scale On-Road

World Champion - Lamberto Collari, Italy
ROAR 4WD National Champion - Ralph Burch, Jr., TX

Driver	Last Month	This Month
Ralph Burch, Jr.	1st-1000 pts.	1st-1000pts.
<i>After his ROAR Nationals win Ralph is still the unanimous chose of all voters.</i>		
RePete Fusco	2nd-749 pts.	2nd-821 pts.
<i>The 1987 World Champion held on to the number two position again this month. Among the American team Fusco was fourth fastest qualifier at the 1989 Worlds in Holland, and finished the event fourth overall among our drivers.</i>		
Mike Swauger	9th-200 pts.	3rd-734 pts.
<i>Mike made a jump from ninth to third because of his second place victory in the ROAR Nationals. Quite a hop for the young driver, watch out Ralph, Mike is just around the corner!</i>		
Butch Kloeber	4th-633 pts.	4th-649 pts.
<i>Long time 1/8 racer Butch Kloeber remains in fourth place with no changes.</i>		
Cliff Lett	4th-633 pts.	5th-597 pts.
<i>Cliff Lett dropped one spot this month. Lett finished the second highest of the US drivers at the recent worlds.</i>		
B. Grossenbacher	7th-356 pts.	6th-588 pts.
<i>Barry moved up one spot this month. Barry is a very consistent 1/8 scale driver and is always in the thick of it.</i>		
Kevin Mercadante	3rd-678 pts.	7th-427 pts.
<i>Kevin slipped from third to seventh due to his inactivity lately. Kevin qualified second among the US drivers at the Worlds.</i>		
Gary Kyes	8th-344 pts.	8th-402 pts.
<i>Gary's position remained unchanged this month. His performance at the McCoy was all it took to hold a Top 10 spot. The multi-time National Champion was an A main finalist at the '89 race and finished in fourth.</i>		
Gil Losi, Jr.	6th-456 pts.	9th-305 pts.
<i>Losi has not been racing for quite a while in this scale, however, the voter's still feel he can be very competitive.</i>		
Curtis Husting	10th-167pts.	10th-143 pts.
<i>After a solid performance at the Worlds in Holland, Curtis moves into the Top 10. His World's performance, sixth finisher among U.S. drivers, obviously convinced more voters of his ability.</i>		

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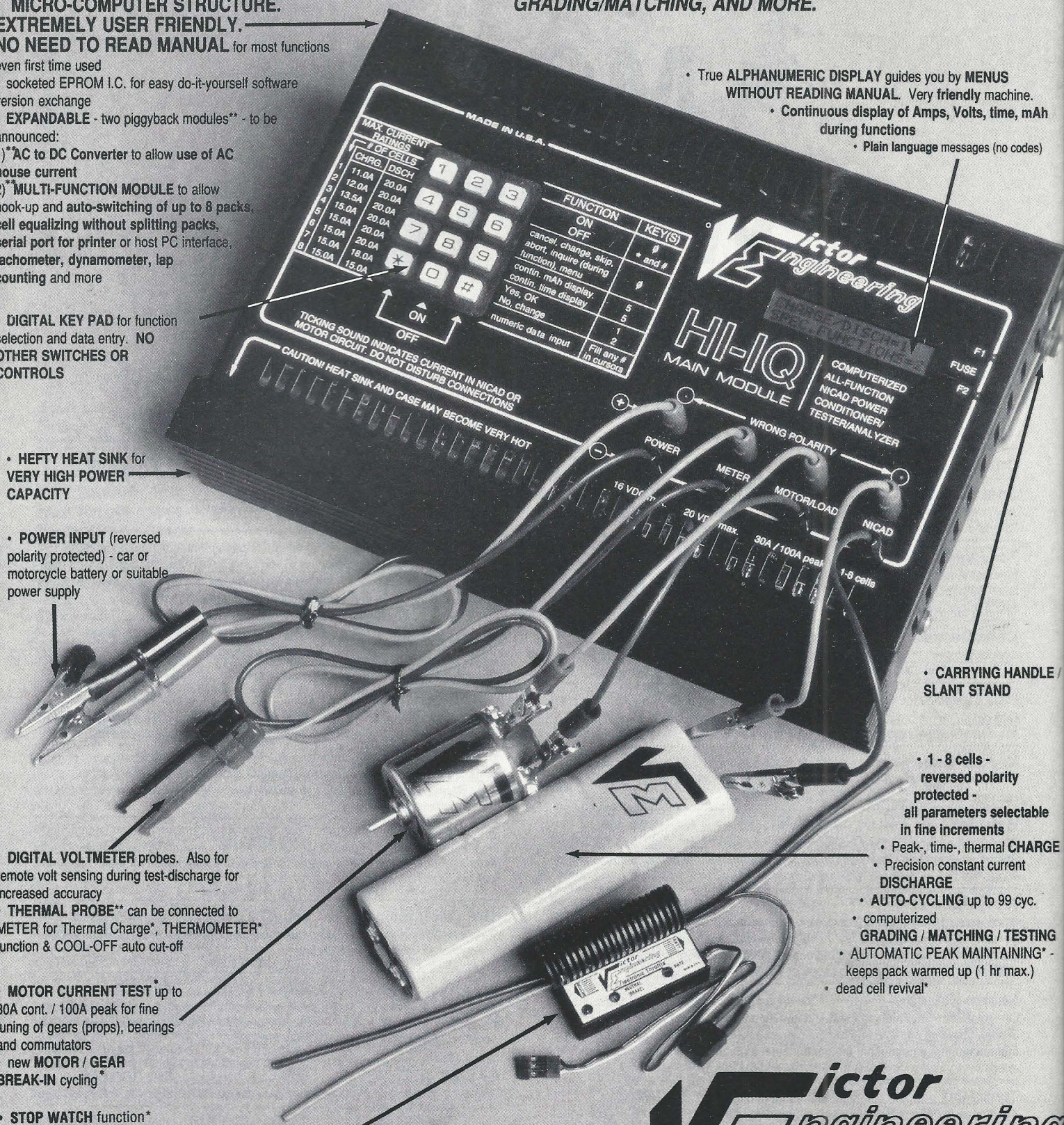
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HARD CHARGING

By John Thawley

As reported in a previous column ROAR has made a change in the location of our office facilities. The information center was officially relocated to our Michigan office during November of '89. As with any move of this magnitude the transition has been a slow and cumbersome one. The good news is things are starting to settle. The new Administrations Office should be in place by the time you read this. Our new space is larger and will allow for additional staff and growth. This relocation will not necessitate an address change for the Administration Office so please continue to forward all business correspondence to the address at 288 E. Maple #266, Birmingham, MI 480009. Phone and fax numbers will also remain the same.

Those of you who have received your membership and club renewal notices will have noticed a new address for processing memberships. Please understand, this is an outside service company doing contract work for ROAR. There is no one at that address to answer questions or give any information regarding ROAR. This company has spent the last three months updating ROAR membership files and bringing our computer software into the 90's. Their service to ROAR is strictly that of an outside contractor to process our individual and club memberships. The intention is to allow the Administration Office to concentrate strictly on the business of running ROAR. The address for membership and club affiliation processing is once again ROAR membership, 9305 North 56th St. Suite 189, Temple Terrace, FL 33617.

If you have recently received your renewal form you will have noticed an increase in the cost of

a ROAR membership. Full memberships will now cost \$25. Family memberships will cost \$25 and \$10 for each additional family member. While this does reflect an increase in cost it also reflects an increase in the services and membership benefits you now receive. During '89 we were able to increase our liability insurance to \$2,000,000. Double what it was. We were also able to increase our accidental health coverage from \$2,500 to \$10,000. And, while complete rule books cost \$15, in the past the new completely revised 1990 rule book will be included in the price of the membership. And let's not forget the benefits of REV-UP being mailed via second class. This should be a great improvement over the old bulk rate service. The new manner in which we are processing memberships will also provide us with quicker turn around time and result in a more complete package being sent to our new members.

While we are on the subject of turn around time it is important to address our affiliated clubs and call attention to the processing of the memberships they sell and collect money for. These membership applications must be forwarded to ROAR within 7 days. The importance of this cannot be stressed enough. When someone signs up at a race they are immediately covered by ROAR's liability insurance. Failure to process their application in a timely manner results in slow return of membership cards, delayed processing of REV-UP mailings, slow revenues to ROAR, bad publicity to our organization and last but not least one very unhappy Administrator. (You remember him, the guy who the unhappy new member lays into!) Please, affiliated clubs and tracks get those ROAR

applications in as soon as possible. It's important to us all. Our new processing methods will allow us to send the new member his card, rule book, and a current REV-UP in the first mailing he gets from us. We are trying to look good to these newcomers. Please help us out.

We apologize for the slight delay in getting updated applications to you, but once again this was one of the snags in moving. Many forms and supplies required updating and address changes so again we ask you to be patient and work with us.

I would like to close with just a couple of updates in the 1990 ROAR Super Tour Nationals schedule. The Off-Road Nationals being held at Hobby Haven in Livermore, CA has been shifted by one week to July 19-29 and the 1/8 Gas Nationals hosted by R.C.R.C. of Dallas will move to the week of Labor Day to accommodate the resurfacing of the race site.

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Gas Nats
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Dallas, TX
Joe Sullivan
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NR/CTPA NEWS

By Dave Sproul

As the New Year starts, I thought I would take a moment to make some observations about the R/C pulling sport.

I think it is safe to say that all of us want to see this sport continue to grow and prosper. However, there is one issue in particular that has plagued the sport since it's beginning. That issue is weight. Not truck weights but sled weight or pulled weight. For some reason (which I have not been able to determine), a lot of R/C truck pullers are convinced that the pulling sport is a weight game. In other words, they think that the only way to win is to pull more and more weight. Everybody wants to brag about how bad their truck is because it pulled "x" amount of

weight. But, the pulling sport is NOT a weight game, it's a distance contest. In full-scale pulling you never hear, "My truck pulled 60,000 pounds!" That's because everyone in a given class pulls the same weight and the one who pulls that weight the FARTHEST wins. The object is distance! The weight is only used to slow down and stop and pull the vehicle somewhere on the track. Therefore the weight in the sled is only a tool used in the pulling sport, not the goal. As an example, at our world championships the 2WD Open II Class needed to pull 350 pounds in the final pull-off. Gary Kmit of Ambridge, PA clinched the World Title in this class not because he pulled 350 pounds,

but because he pulled it farther than the other trucks in the pull-off. They all can say they pulled 350 pounds. This does not detract from Gary's accomplishment, though, as his truck outdistanced the others putting him in the number one spot.

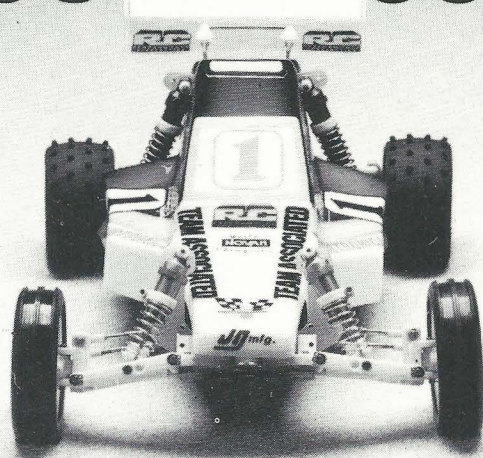
A number of people have asked why we do not have a "Record Weight Pulled" statistic. The main reason stems from the above commentary and the fact that such "Record Weight" does not exist in full-scale. The other reason is the different variables that come into play. Many things can affect how much you can pull. Track conditions and type, pulling sled design, and rule limitations are just a few of these variables. Take a truck that has pulled 300 pounds under one set of conditions, change the variables one way and it will have a tough time moving 100 pounds. Change them another way and it might pull 600 pounds! The point I'm trying to make is that we have gotten far too concerned with how much weight is in the sled. We need to concentrate more on expanding the sport and attracting new pullers.

In light of this situation some rule changes were proposed and passed by the rule book committee in an attempt to lower or at least stabilize the sled weights. These changes have been implemented in the 1990 NR/CTPA Rule Book.

1990 RULES

The 1990 NR/CTPA Official Rule Book is now available. Some important changes are included, so make sure you get your copy now! If your membership began October 1, 1989 you will automatically receive one free 1990 Rule Book. If you joined prior to October 1, 1989 please send \$1.00 to cover shipping and handling.

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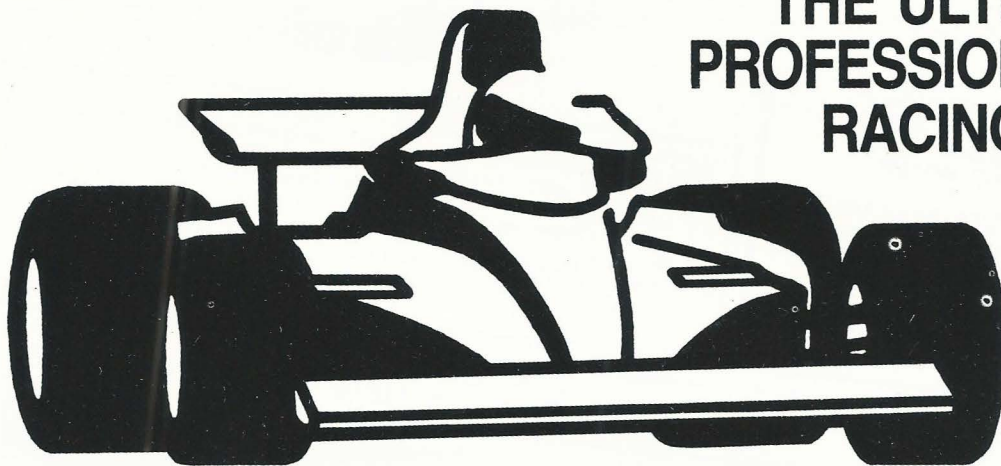
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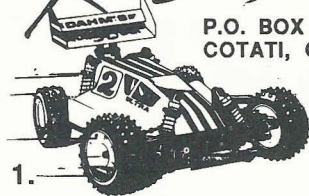
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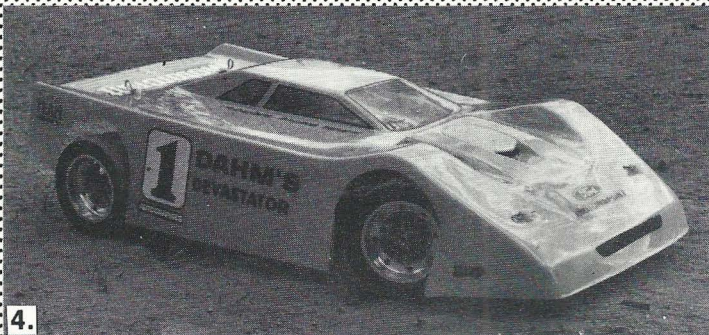
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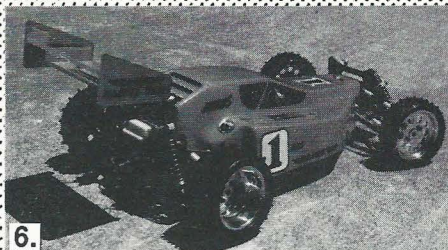
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NEWSLINE

THE OASIS HOBBY PARK Houston, TX

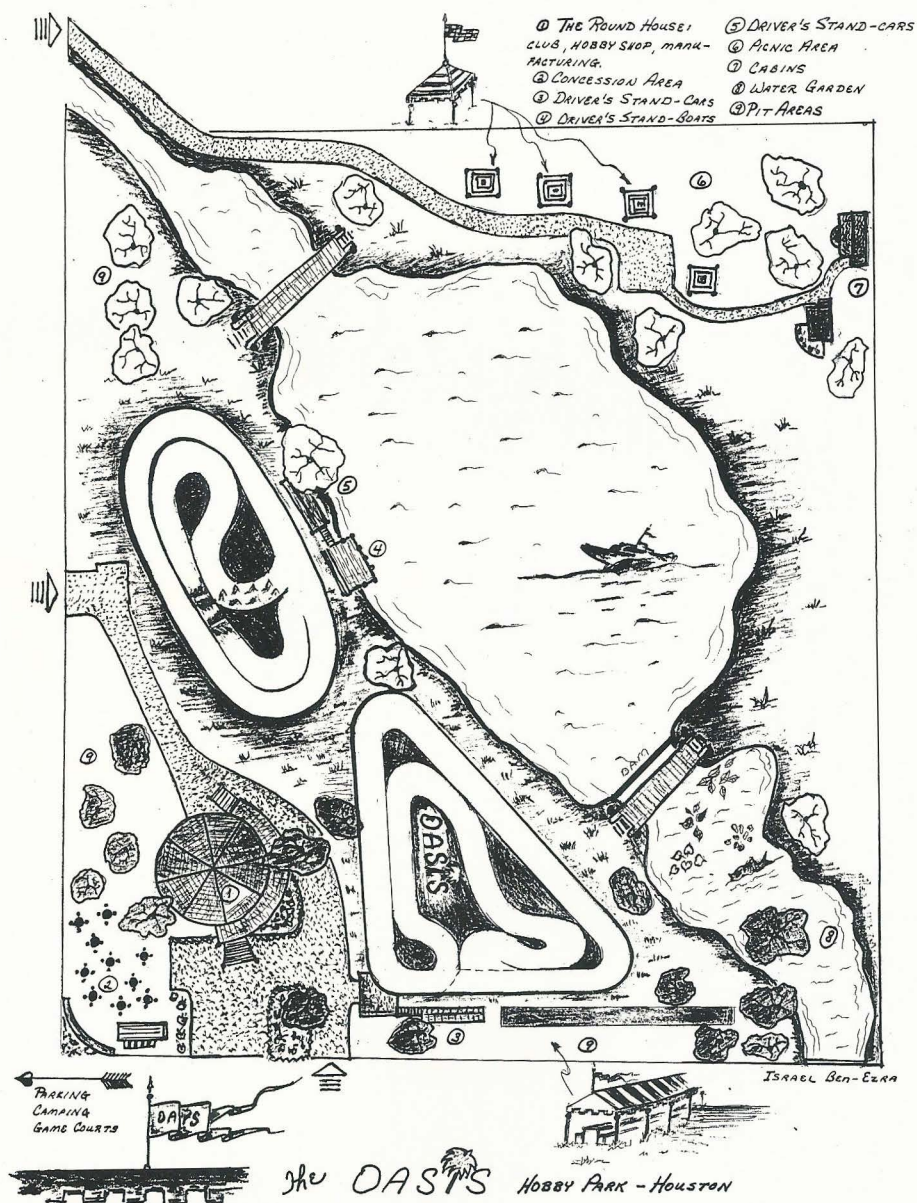


The sport of R/C racing takes on a new dimension for Houston hobbyists this Spring, as the beautiful new OASIS HOBBY PARK opens in North Harris County.

THE OASIS features a three angle banked asphalt On-Road track and an Off-Road track with both oval and road courses. The tracks are engineered to challenge the old masters yet designed to provide the novice with the experience necessary to excel. The tracks are designed for all standard scales and conform to ROAR/NORCCA track specifications for hosting Regional and National competitions. R/C boat racers are included in the fun, with two competition ponds on site.

THE OASIS was designed and planned to provide Houston area families, as well as national and international racers, with a one-of-a-kind facility adjoining a major family park and playground.

THE OASIS adjoins one of America's outstanding Arboretums and Botanical Gardens - Mercer Park. Visitors to THE OASIS should schedule a walking tour through these famous public gardens - admission is free. Within a few minutes drive are several major tourist attractions including Olde Towne Spring, Splashtown, The Goodyear Blimp Base



and Cypresswood Golf Course.

THE OASIS is located on Treaschwig Road at Whittaker Way, just north of FM 1960 and only a few miles north of Houston Intercontinental Airport.

THE OASIS is being developed by Israel Ben-Ezra, a veteran R/C business owner and by the Ralph Shirley Companies. Mr. Shirley, whose home adjoins Cypress Creek, has been a long time sponsor of the "Cypress Creek Park Plan." He and Mr.

Ben-Ezra are making their dreams a reality, as they orchestrate the building of a major tourist attraction and family park facility. Upon completion, THE OASIS will feature lots of naturally wooded family park amenities. Next door to the R/C park will be: frisbee golf, volleyball, putt-putt, badminton, horse shoes, campfire circles, recreational pavilions and many other outdoor activities. Camping facilities will be forthcoming.

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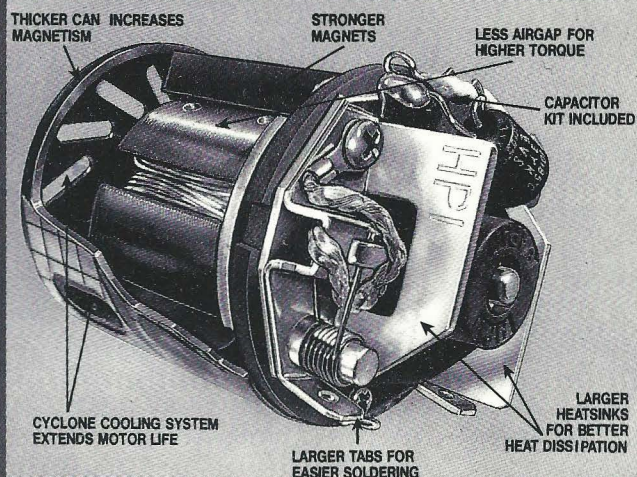
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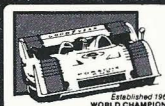
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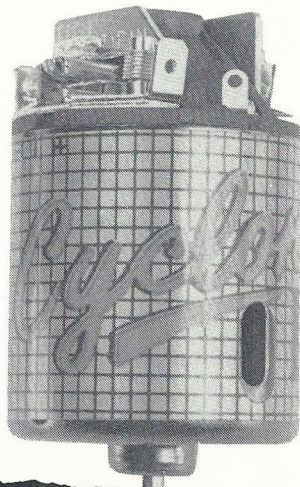
THE OASIS features a 3-story Round House, home to a clubhouse and hobby shop - the view from the third floor is magnificent! The store and race tracks are managed by Tony and Randy Minchew . . . familiar names on the Houston racing scene. Between them, their experiences cover all aspects of R/C, including their current venture, Chu Manufacturing, which is housed at THE OASIS also. Randy and Tony have assisted Mr. Ben-Ezra in the construction of the track facilities.

The Grand Opening, scheduled for March, 1990 will include several events, highlighted by the "Cypress Creek Crawfish Regatta and Remote Control Race Fest." The event will feature lots of food and fun. A street dance is planned for after the races and contests of fun and skill will capture the spirit of the weekend.

THE OASIS race schedule has been designed to please both the serious R/C Hobbyist and the families desiring a fun activity for all members. Weekly races will be divided between fun-runs and trophyed events for the "real" racing crowd. Special events will once again be of two types -those for "Fun and Frolic" and ROAR/NORCCA Sanctioned Races. Several bids are already being submitted for Regional and National ROAR races. To assure the professional status and quality control of the tracks, track manager Randy Minchew lends his knowledge as a ROAR Region IV Official.

Media response and community support for THE OASIS has been outstanding. Local educators, politicians, and park people as well as civic leaders, are singing the praises of THE OASIS.

"Finally," says Dr. Joe Benke, former Superintendent of Schools in the area's Spring School District, "we have a facility where the entire family, young and old, can race, participate and play together in a relaxed outdoor sport environment and spend valuable



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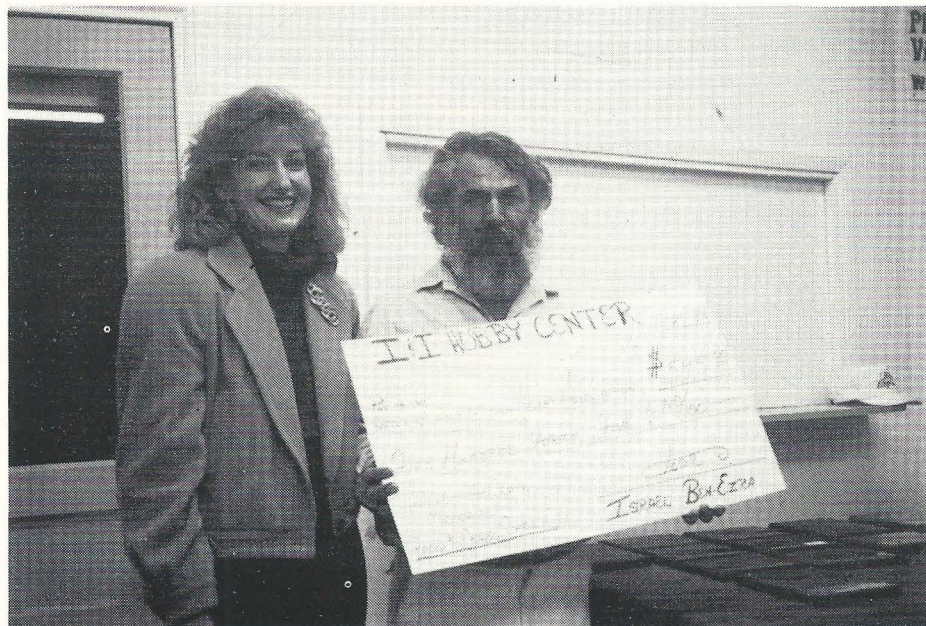


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time together without spending lots of money. I look forward to watching THE OASIS become the Nation's outstanding Hobby Park right here, adjoining other

those in Florida and California" has been the oft heard reaction.

Over 30,000 people live within ten minutes drive of THE OASIS and almost 500,000 people can



Israel Ben-Ezra with an American Heart Association representative, presenting race proceeds to the AHA from a benefit race.

park and tourist facilities on Cypress Creek."

The response from both local and national champion racers has been no less enthusiastic. "Finally, a facility to overshadow

drive here in less than 30 minutes.

The developers are men of vision and determination; perfectionists with a love of family and a love of the sport. They'll



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ABOUT THE DEVELOPERS

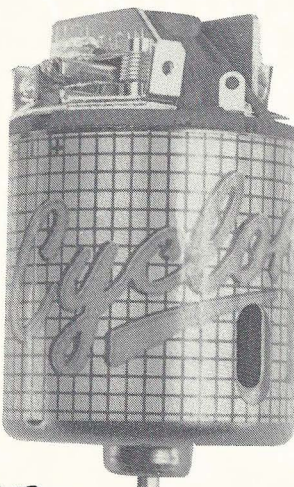
The developers share a dream for THE OASIS. They envision a World Class facility, featuring good clean family fun, in an ecologically attractive atmosphere.

RALPH SHIRLEY is the grandfather of ten. Three live next door to "The Oasis," four live just a few blocks away, and three just a few miles away. Mr. Shirley serves on the Board of Directors of the "San Jacinto River Authority," and has been recognized as Founding Father of Houston's FM 1960 - Cypress Creek area.

He developed the Houston Intercontinental Oil Center, Inwood Park, Spring West, Ponderosa Trails, Kuykendahl Park and several major subdivisions including Sandpiper, which adjoins THE OASIS. He is pursuing the development of a major retirement community, also adjoining Mercer Park. His goal of improving the quality of life within the family structure, envisions blending children with the elderly here at THE OASIS.

Tourism and park development have been a dream of Mr. Shirley for many years. His wife, Lou, is the past Chairman of the Board of the Houston Northwest Chamber of Commerce. She has served on the Board of Trustees of nearby Houston Northwest Community College and currently directs most of her energy and effort to various civic and charitable endeavors.

Israel Ben-Ezra is an entrepreneur in the true sense of the word. His family was among the first settlers in the new country of Israel. He came to Texas in 1986 and opened I & I Hobby Center in Houston. His design of the Texas Speedway Race-tracks at I & I has brought him praise even from racers overseas, where a feature article was written about the facilities. He has designed, built, and maintains businesses in Israel, including a general contracting firm, retail businesses and a sidewalk cafe, frequented by the artistic community. He was recently named a regional finalist as one of Israel's Outstanding Men of the Year. He has been a leader in organizing community development activities in his native country. He has translated those talents into pro-



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motion of the R/C Hobby Industry in Houston, supporting charity functions, special event races, and various festivals bringing the family into focus within the sport.

Cooper's R/C Race Center Holds Second Annual Fall Challenge

Cooper's R/C Race Center has done it again. This time, they have successfully produced their Second Annual Fall Challenge Race. With every race at Cooper's, they seem to compile all their previous experience and expertise to produce an event that tops all their prior. If you haven't been to Cooper's you're missing out. The complex is located among the beautiful rolling hills and mountains of southern Virginia. With six cities and towns within a 20 minute drive, there is not only plenty for one to do, but there is also a sense of "down home" charm that has helped win racers' hearts from everywhere. There is always someone "new" at Cooper's every week because of their good reputation and quality racing. Each is welcomed and encouraged to pursue his interest in the sport of remote control racing.

This year's Annual Fall Challenge Race opened up on Thursday for practice and settling in for the racers who had never been to Cooper's. There wasn't much excitement on Thursday, but the rest of

the weekend proved to be a racing haven. Qualifying began on Friday with heats run in the Sprint, Two Wheel Modified, and Four Wheel Stock classes. Saturday rounded out the heats with qualifiers run in Two Wheel Stock and Four Wheel Modified. Top qualifiers went into the competition on Sunday with pole positions for their main events.

Those racers were: Jerry Adams from Charlotte, NC Sprint TQ; Win Carter of Vinton, VA, grabbed the pole for Two Wheel Modified; Four Wheel Stock TQ was Charles Hucabee from Virginia Beach, VA (also a new track record); nine-year old Shawn Hamby, a Graham, NC native, took the pole position for the Two Wheel Stock Class; and Seth Ward from Portsmouth, VA, was the TQ for Four Wheel Modified.

Bright and early Sunday morning, the competition could be felt in the air. Double A mains and a trial test of the Trackmate software system proved to pull of a very well run and exciting day.

Windell Minter (Figsboro, VA) topped off the Sprint class when he won both A mains. Ricky Smith (Cyclone, WV) went home with the second place trophy and Ed Lands(Charlotte, NC) roun-



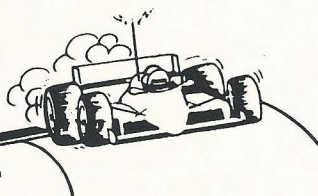
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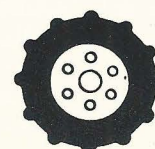
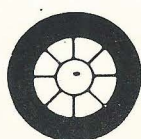


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ded out the top three in the Sprint class.

When the Two Wheel Stock competition rolled around, Eric Tipton (Fieldale, VA) was ready for whatever anyone else had to dish out. At the sound of the horn, Tipton jumped out front and never looked back, leading every lap at a track record pace. Tipton ended up with top honors, also with 34 laps in 4:06.24 in Two Wheel Stock, followed by Kirby Cranford (High Point, NC) in second and Tommy Ferguson (Vinton, VA) in third.

Two Wheel Modified competition was as exciting as ever. Tommy Ferguson, a Roanoke, VA native took both A mains by storm and Craig Perry (Franklin, NC) was right behind him in both. Overall third winner was Kirby Cranford from High Point, NC.

The Four Wheel Stock races were probably the most trouble-free of the entire weekend. Charles Huckabee (Newport News, VA) grabbed the pole position with his new track record. After the first round, Shawn Hamby was in the top spot. In the second A main, however, Jeff Floyd (Petersburg, VA) got the better start and led the pack for several laps until he ran into trouble and Hamby assumed the lead. A few laps later, Shawn was knocked into the wall and Seth Ward took the first place trophy home to Portsmouth, VA. Second place went to Gary Krichbaum (Staunton, VA) and Jeff Floyd took away third.

As always, Four Wheel Modified was the most exciting. Custom Works' Dominator was driven by the majority of the field, and Dominators were in the top 10 spots. This race had to be seen to be believed. But, after the dust had settled, Seth Ward took his second first place trophy. Finishing second was Charles Huckabee and a close third was Warren Darby (Petersburg, VA).

It seemed to be the day for Virginians, as they took the top spot in every event.

Cooper's R/C Race Center would like thank all participants and spectators and invite you all back again to our races in 1990. A special thanks goes to factory sponsors who contributed to our race and our staff for their relentless pursuit of excellence. Also, we'd like to invite everyone to our NORCCA sanctioned Old Dominion Dirt Oval Cham-



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pionship, March 23-25. Other races are our East Coast Dirt Oval Championship, June 22-24; ROAR Region I Dirt Oval Championship, September 15 & 16; and our Third Annual Fall Challenge Race, November 2-4. For information or entry forms contact: Norris L. Cooper, Cooper's R/C Race Center, Rt. 4 Box 122-B, Chatham, VA 24531. (804) 724-4182 or (804) 724-7342.

Sprint A Main

- 1st - Windell Minter
- 2nd - Ricky Smith
- 3rd - Ed Lands
- 4th - Daryl Fogle
- 5th - Randy Carter
- 6th - Billy Dees
- 7th - Sam Straughan
- 8th - Jerry Adams
- 9th - James Stroudt
- 10th - Scott Swain

2WD Stock A Main

- 1st - Eric Tipton
- 2nd - Kirby Cranford
- 3rd - Tommy Ferguson
- 4th - David Kiser
- 5th - Windell Minter
- 6th - Buzz Singleton
- 7th - Roger Foley
- 8th - Ray Turner
- 9th - Cordie Burnette
- 10th - Shawn Hamby

B Main

- 1st - Brian Roinberger
- 2nd - Danny Rosenbaum
- 3rd - James Wingo

C Main

- 1st - Tommy Mooneyham
- 2nd - Steve Wright

3rd - David Horton

D Main

- 1st - Chad Harris
- 2nd - James Smith
- 3rd - Mark Alley

E Main

- 1st - Ken Swindell
- 2nd - Rodney Jordan
- 3rd - Gary Briant

F Main

- 1st - Joe Vaughan
- 2nd - Michael Morgan
- 3rd - Joseph Briant

G Main

- 1st - Ken Long
- 2nd - Alan Duffy
- 3rd - John Lavoie

2WD Modified A Main

- 1st - Tommy Ferguson
- 2nd - Craig Perry
- 3rd - Kirby Cranford
- 4th - Shawn Hamby
- 5th - James Stoudt
- 6th - Shane Kocher
- 7th - Randy Bartlett
- 8th - Tommy Mooneyham
- 9th - Ed Clements
- 10th - Win Carter

B Main

- 1st - Rich Icker
- 2nd - David Horton
- 3rd - Casey McKay

4WD Stock A Main

- 1st - Seth Ward
- 2nd - Gary Krichbaum
- 3rd - Jeff Floyd
- 4th - Shawn Hamby
- 5th - Billy Morris
- 6th - Charles Huckbee
- 7th - James Doby
- 8th - Ricky Williams

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CHECK PAYABLE TO: NATE & ANDY'S RACEWAY, 2488 MEADOW GLEN, LEWISVILLE,
TX, 75067 214-315-3213 ADD'L INFO. CALL TEXAS DIR. LONNIE COATS 817-481-6887.

NORRCA # _____ CP

9th - Paul Doby
10th - Ed Clements

B Main

1st - Chris Dippel
2nd - Billy Russell
3rd - Doug Piner

C Main

1st - Russel Brown
2nd - R.J. Heinrich
3rd - Billy Agee

**4WD Modified
A Main**

1st - Seth Ward
2nd - Charles Huckabee
3rd - Warren Darby
4th - Sean Glazer
5th - Craig Perry
6th - Win Carter
7th - Jack Rimer
8th - Chris Dippell
9th - Tom Adams
10th - James Griffith

B Main

1st - Jeff Floyd
2nd - Bobby Bearrd
3rd - Graig Carey

C Main

1st - Lee East
2nd - Doug Piner
3rd - Vernon Lofink

D Main

1st - Jason Hunt
2nd - Randy Fisher
3rd - Steve Hodsdon



**Sideways City
1st Anniversary Race**

By Greg Johns

With racers converging from Michigan, Illinois, Indiana, Ohio, the racing at the Sideways City 1st Anniversary Celebration was sure to be the highlight of our first year of oval cement racing. With top name drivers such as Dave Pulfer, Bernie Piatt, Mike Reniger, Mike Johns, Jay Bowman, Chris Schneider, the list seems endless, we were in for some of the most awesome 1/10th scale racing ever seen anywhere.

At the closing of registration we had one hundred and thirty-seven racers entered. The racing format of the day was three, four minute qualifiers and four minute main events. As always at Sideways City the third qualifier was a NO marshall race.

Huge first through sixth place trophies for the "A" mains. First place trophies for "B" on down with second and third place gift certificates.

Fifty Heavy Stockers, fifty Super Stockers, 3 heats of Super Mods, Modified Sprint Cars, Sport class and a Ladies race.

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The A & B Mains: The ladies took the track for the first main event of the day. Martha Lyons of Hastings, MI, driving her brand new Traxxas Radicator took the early lead and was never closely challenged in the main. Marchia Jameson of Plainwell, MI raced to a second place finish with her metallic blue Ferrari and Carol Gust rolled in for third.

The "A" Sport Main was up next with Jamie Mason of Battle Creek, MI sitting "on the pole." When the start buzzer sounded, Mason "blasted off" to the lead and it appeared that she would run away from the pack, however, mechanical problems developed and she faded back into the pack. Rick Benedict of Schoolcraft, MI took over the lead and continued on to the win. Dan Harman of Holland, MI drove his Pinto Super Mod to second and Jim Rister of Grand Rapids, MI with his Camaro finished third.

"A" Heavy Stock - With the top six drivers, from a field of over "fifty" heavy stockers, on the starting line the excitement was really starting to build. Dave Tippet of Holland, MI was TQ but

when the buzzer sounded Brian Daugherty of Caledonia, MI jumped to the lead spot with Chuck Rencurrel, Cascade, MI in tow. Daugherty and Rencurrel put on a incredible display of "hard charging" and "slick moves" as they dived for the lead in and out of lapped traffic. At the three minute mark Rencurrel was starting to show some dominance and drew away to a straight away lead to win the huge first place trophy. Top qualifier Tippet charged hard from a poor start to capture second spot, just beating out Daugherty, who finished third.

"B" Heavy Stock - Joylynn Meyers of Gun Lake, MI and Bud Snyder of Kalamazoo, MI were never more than eight feet apart for the entire four minute main event. Meyers led the first three minutes, then in a minor accident, lost the lead to Snyder. It was Snyder, Meyers, and Doug Cutler of Dorr, MI one, two, three at the finish.

"A" Super Stock Main - It was obvious from the beginning that only best of the best would get into this Super Stock "A" Main
(Continued on Page 68)

HOW TO

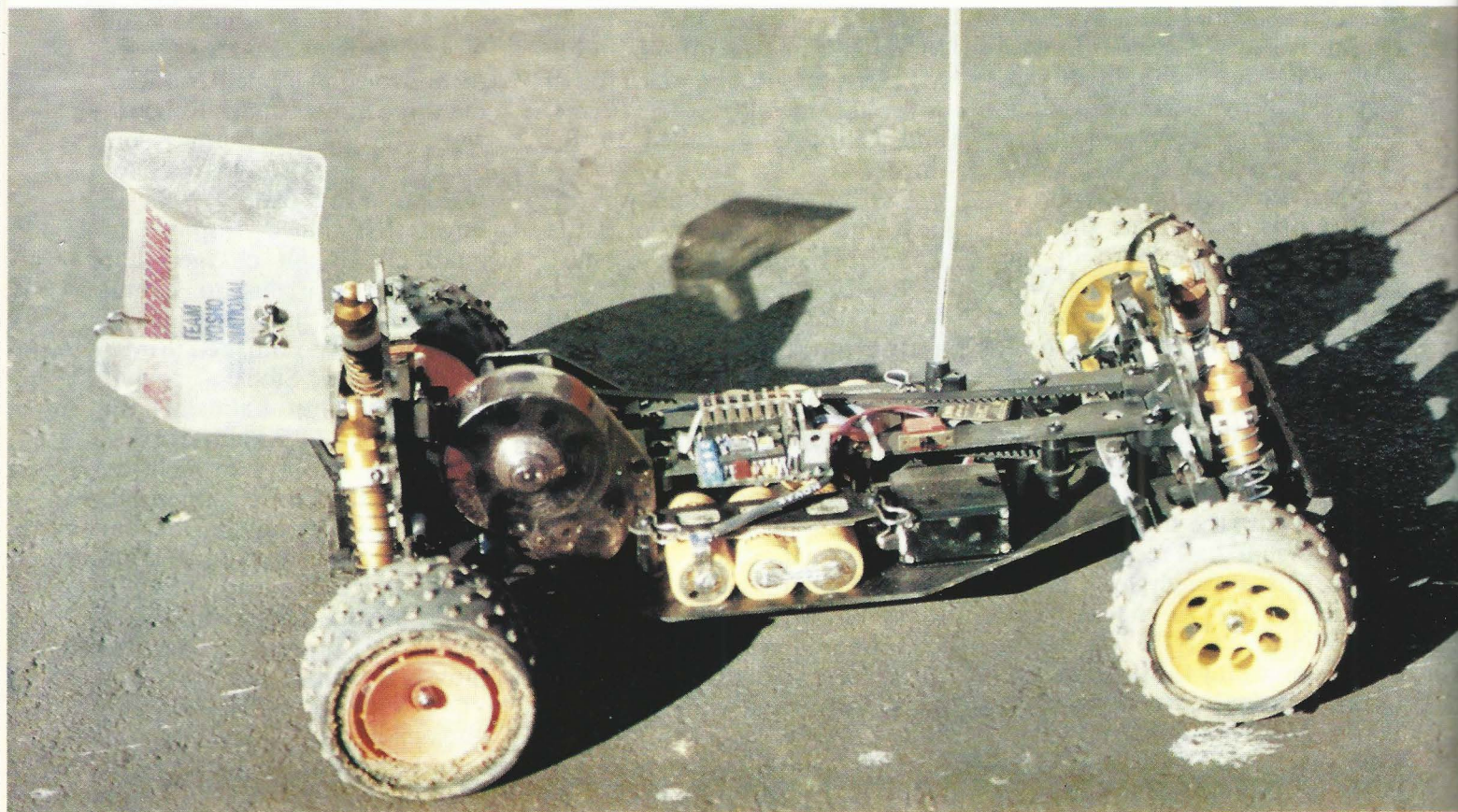
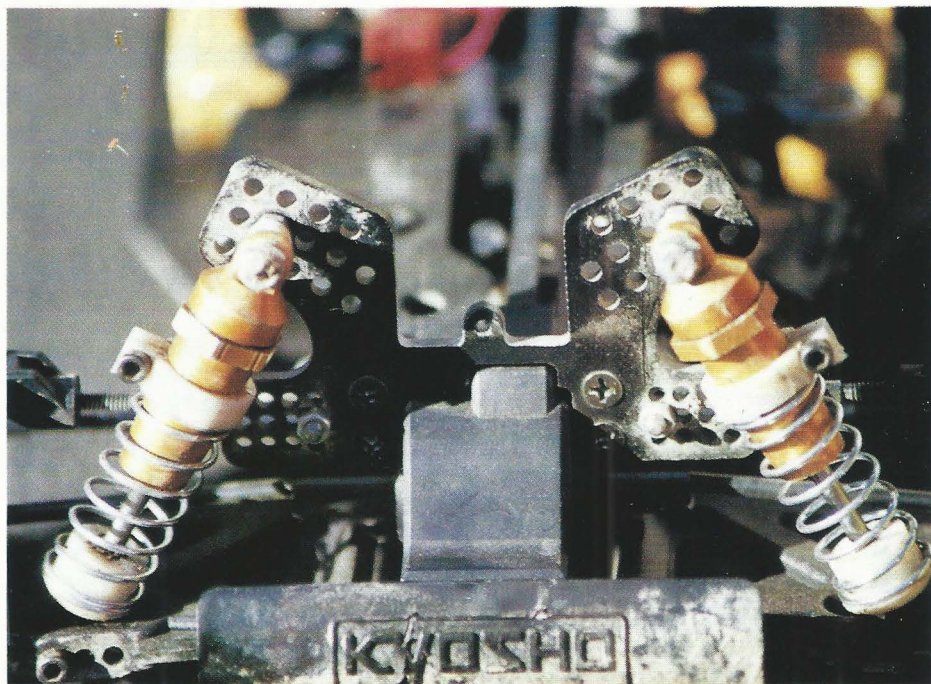
Tricking Out The Kysoho Lazer

By Peter Barana

Hundreds of analogies can be drawn to describe the importance of a car to a champion driver. In today's super competitive racing world, the equipment a driver uses is now more important than ever. If you don't believe me just ask World Class driver - Rick Howart. For years Rick has been one of the top road drivers in the World. Then a few years ago, Rick began to focus some of his talents on the Off-Road Worlds.

While he is competitive in

Right: Although the Lazer comes with a decent set of shocks, Rick prefers to use the Associated shocks. Also different than stock are the shock towers. These are made of graphite as opposed to aluminum which are stock. Below: This gives you a good overall view of Rick's Kyosho Lazer.



TOP: For more effective steering it is important to notch out a portion of the front suspension arm. The yellow area shows the area that is to be carved out. Middle: This photo shows you the completed arm. Yellow stripes indicate the area that was notched out. Bottom: This shot gives you an overall view of the rear of Rick's Lazer. Note the blue part on the chassis at the rear suspension arm. This is the part that is reamed out to give you more toe-in in the rear.

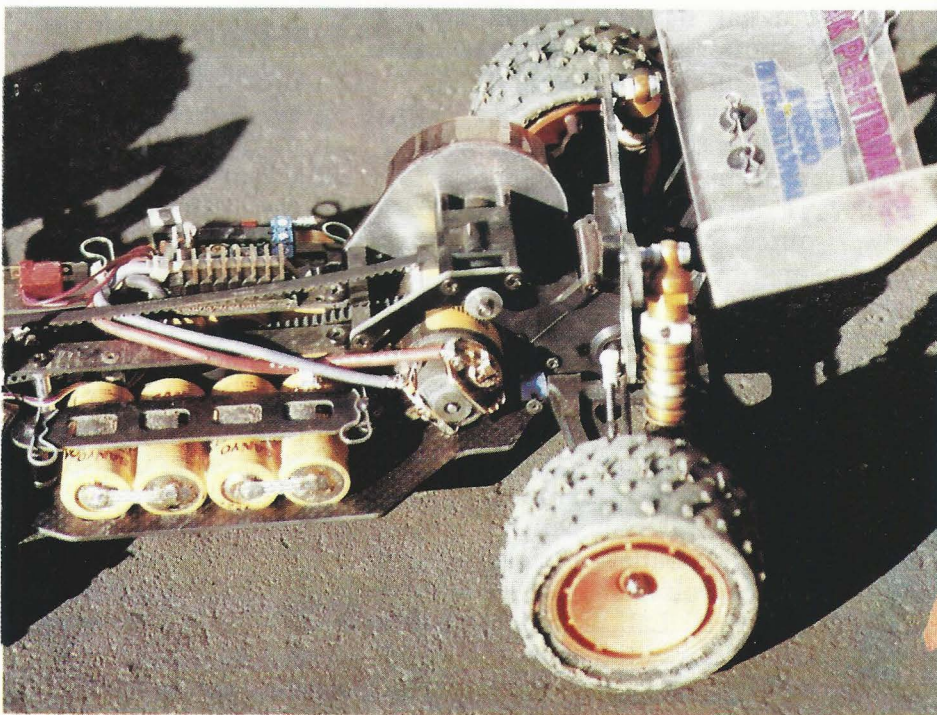
both 2WD and 4WD classes, he excels in the later. Many drivers who have come from the road racing divisions have found greater success in 4WD, no doubt due to the driving styles required in the 4WD class.

For a while now Rick has been using the Kyosho Lazer car in the 4WD class. This, as you know, is a very popular car and has many race victories to its credit worldwide. Recently we had a chance to sit down with Rick and look at his Lazer. Hohwart was kind enough to share some of his "Speed Secrets" with us, and we thought it would be interesting to those of you who own a Lazer, or are planning to buy one soon.

It might come as a surprise to you when I say that Rick really doesn't have that many aftermarket parts on his car. The Kyosho Lazer comes with, as they say, "Most of the good stuff already on it." Good gears, a graphite chassis and excellent shocks are just some of the standard equipment that comes in this kit.

The first look at Rick's car comes from the angle of the shocks. While it is true the Lazer comes with excellent shocks standard, Hohwart prefers to use Associated shocks. While it is true the Kyosho gold shocks that come in the kit are excellent, many feel they have a tendency to make the car bottom out. Besides that, Rick feels he knows the Associated shocks a little better. Fit your Lazer with the Associated long fronts in front, and the Associated long rears in back. While spring selection will

(Continued on Page 55)



CRP'S Cell Lab

By Jeff Palmer

Late last year CRP introduced many new products, two of which were the Digital Challenger Charger and the Cell Lab. These two products marked CRP's entry into the cell matching field. With the Digital Challenger Charger either individual cells or packs could be peak charged (see April '89 issue of Competition Plus) and then matched using the Cell Lab. Although the Cell Lab is a stand alone unit, not requiring the Digital Challenger Charger, it does require a charger designed to charge individual cells. The Cell Lab is a discharger with some added versatility; it allows the operator to set the cut-off voltage. That's unique!

OPERATION

To operate the Cell Lab, a 12 volt power source is required, such as a car battery or well regulated power supply. Power the Cell Lab on by connecting it to a 12 volt power supply via the large battery leads. If "Lo Bat" is displayed in the upper left hand corner of the unit, check the power source. The "Lo Bat" display means the power source is less than 11 volts. If the power source is connected correctly and is providing proper power, the Liquid Crystal Display (LCD) will come on with random numbers in the display. Press RESET to clear the display to zero. At this point the Cell Lab can be used to discharge batteries/packs or measure DC voltage.

To use the Cell Lab to match individual cells, a cutoff voltage needs to be set. The most com-



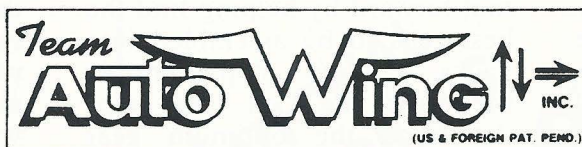
mon cutoff voltage value used is .9 volts per cell; this is the value used by most other dischargers like Lavco's Cell-Mate. The Cell Lab will accept any value in the .5-12 volt range, however, for our example .9 volts will be used. To set the value:

- 1) Set the SELECTOR switch to the "V" setting.
- 2) Press the SET V button and hold it.
- 3) Turn the V ADJ knob until a value of .90 or lower is displayed in the LCD display.
- 4) Stop turning the V ADJ and release the SET V button.

Now, the cutoff voltage is set. A second set of leads from the Cell Lab needs to be connected to the NiCd cell. Please note the

polarity of the leads and the cell, place the RED lead on the positive (+) terminal of the battery and the BLACK lead on the negative (-) terminal. Failure to observe polarity will result in a blown 30 amp fuse. If the Cell Lab and the NiCd are connected correctly, the LED in the middle of the Cell Lab will glow GREEN and we're ready to start, so, press START. The LED will turn RED and stay RED until the cutoff voltage is reached, discharging the cell at a steady 10 amps. If no settings have changed, the LCD display is showing the cell voltage of the cell being discharged. Change the SELECTOR switch to "mAh" to view the power being dis-

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charged. Once the cell has been discharged, the LED will turn GREEN once again. Record the mAh value as this value will be larger than the value normally bantered around at the track of 650-750 for Sanyo SCEs. The 650-750 number is the number introduced by LAVco and represents the number of seconds it took to discharge a cell at 10 amps to a cutoff voltage of .9 volts. The mAh value can be converted to the LAVco value by dividing the mAh value by 2.77.

To discharge a pack, follow the same procedures outlined for the single cell, except multiply the single cell cutoff voltage by the number of cells in the pack:

4 cells * .9 volts = 3.6 volts,

6 cells * .9 volts = 5.4 volts

7 cells * .9 volts = 6.3 volts

The Cell Lab can handle a maximum of 7 cells or 8.4 volts, DO NOT exceed the value.

The real worth of any instrument of this type is at the track, where it will help you win! The

Cell Lab has already put its first foot forward by helping find the best cells to be assembled into packs. It doesn't stop there. At the track, the Cell Lab helps determine the optimum gear ratio for your car. If the pack didn't dump, use the Cell Lab to determine the amount of energy left. This amount of energy could allow you to alter the pinion/spur ratio for faster lap times. For example:

1) In 12th scale, if there is over one lap of time left in the battery, then increase the pinion.

2) In 10th scale oval, if there is over 2 laps worth of time left, then increase the pinion.

3) In 10th scale off-road, if there is 4-5 times the average lap time left in the pack, increase the pinion.

The Cell Lab doesn't give your batteries more energy, it helps you use more of it.

Another great use of the Cell Lab is to track the condition of packs. Once a month, charge the

packs and discharge them using the Cell Lab. Record the information on a log sheet for that pack each time this cycle is done and compare the current results with past results. This simple procedure will allow you to monitor the condition of your pack.

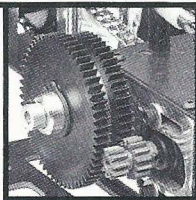
A word of caution: Make sure the Cell Lab is properly cooled. A fan should be pointed on the heat sink of the Cell Lab at all times when the unit is in use. Failure to provide proper cooling will damage the Cell Lab. CRP makes a good 12 volt fan that could share the power source with the Cell Lab.

Up to now we've discussed the function of the Cell Lab, let's put this knowledge to work. As you know, when a manufacturer assembles a cell, the cell is made to certain tolerances. These tolerances are usually in the 2-5% range. Since the tolerances can be +2-5%, the variance from cell to cell can be 4-10%. Those cells that get +5% are the exceptional

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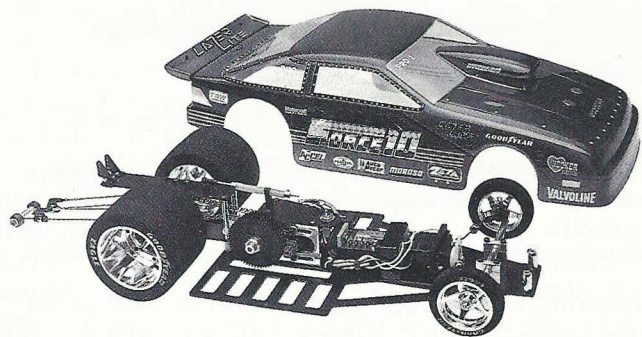


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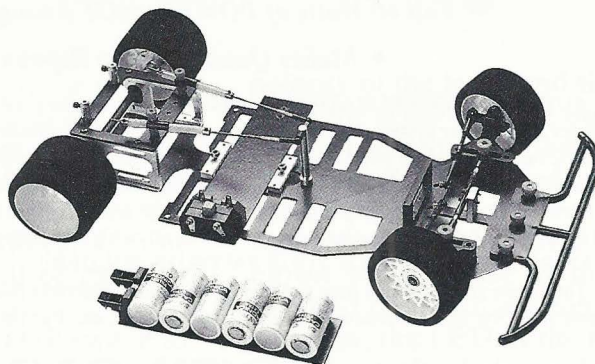


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Photos and Design by BRACKETT

cells that everyone hopes to find. The -5% are good cells and perform within the "nominal" range of performance but not at the same capacity levels as the +5%. It is these differences which are detected by cell matching. The basic idea of "matched" cells is for all of the cells to run out of capacity at the same time. Another way of looking at "matched" cells is, they will allow you to go longer but not faster.

Normally to match cells the following steps would be executed:

- 1) Charge the cells
- 2) Discharge each cell using the CELL LAB.
- 3) Record the mAh value of each cell (I use small labels).

The process should be repeated 6 times to uncover any mistakes or inconsistencies that might have occurred during the charging or discharging steps; i.e. false peaks.

For demonstration purposes, 2 matched packs of Reedy SCEs were measured with the following readings (6 cells each):

Reedy Pack #1

Cell 1 1956 - Cell 2 1928
Cell 3 1881 - Cell 4 1895
Cell 5 1920 - Cell 6 1903

Reedy Pack #2

Cell 7 1936 - Cell 8 1933
Cell 9 1917 - Cell 10 1884
Cell 11 1875 - Cell 12 1889

The first 6 cells were bought in one matched pack and the last 6 cells were bought in a second matched pack. If the packs had been assembled in the units they were bought in, the first pack would have had a capacity of 1881 mAh and the second pack's capacity would have been 1875 mAh. Note: These figures use the accepted standard - "a pack's capacity is only as good as the capacity of the weakest cell in the pack." As can be seen, by picking the best cells from each group, a pack of greater capacity can be built. Cells 1, 2, 5, 7, 8, 9 would make up a higher capacity pack with a capacity of 1917 mAh - 36 mAh more capacity. Cells 3, 4, 6, 10, 11, 12 make up a second pack with a capacity of 1875 mAh. The first pack's 36 mAh increase over its original pack capacity might

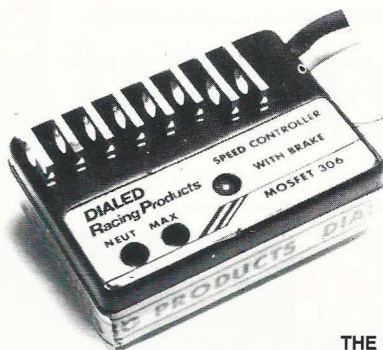
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Braking Amps	Not Listed	26	70	Not Listed	26	120
Peak Amps	Not Listed	Not Listed	1260	Not Listed	Not Listed	1440
Voltage Drop	.004Ω	.0045 VA	.00350Ω	Not Listed	.003 VA	.00250Ω
Response	Not Listed	15-20 MSEC	9 MSEC	Not Listed	15-20 MSEC	9 MSEC
BEC Volts	5.5 V	Not Listed	5.5 V	5.5 V	Not Listed	5.5 V
Reverse Voltage Protection	NO	NO	YES	NO	NO	YES
List Price	\$115.00	\$115.00	\$129.95	\$150.00	\$180.00	\$179.95

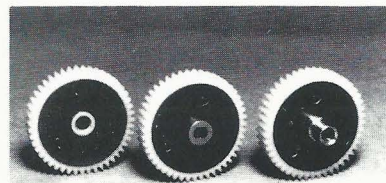
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be the extra lap or two you need to with the 'A' main.

Another function of the Cell Lab is its ability to serve as 20 VDC volt meter. By setting the SELECTOR switch to "EXT" and plugging in the volt meter leads, you're ready to go. It can be used to monitor the charging of a cell or pack or the voltage used to break in a motor. Using the Cell Lab as a volt meter has some restrictions:

1) Only DC voltage can be measured

2) A maximum of 20 volts can be measured.

Any attempt to measure AC (household electricity) may damage the unit.

Since cell matching has become an important aspect of today's racing, the Cell Lab is an important tool in improving the performance of your packs.

Til next time, Good Racing.

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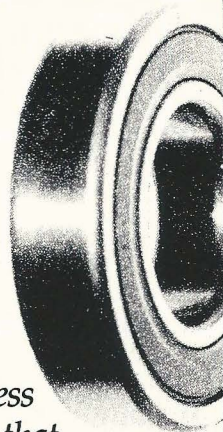
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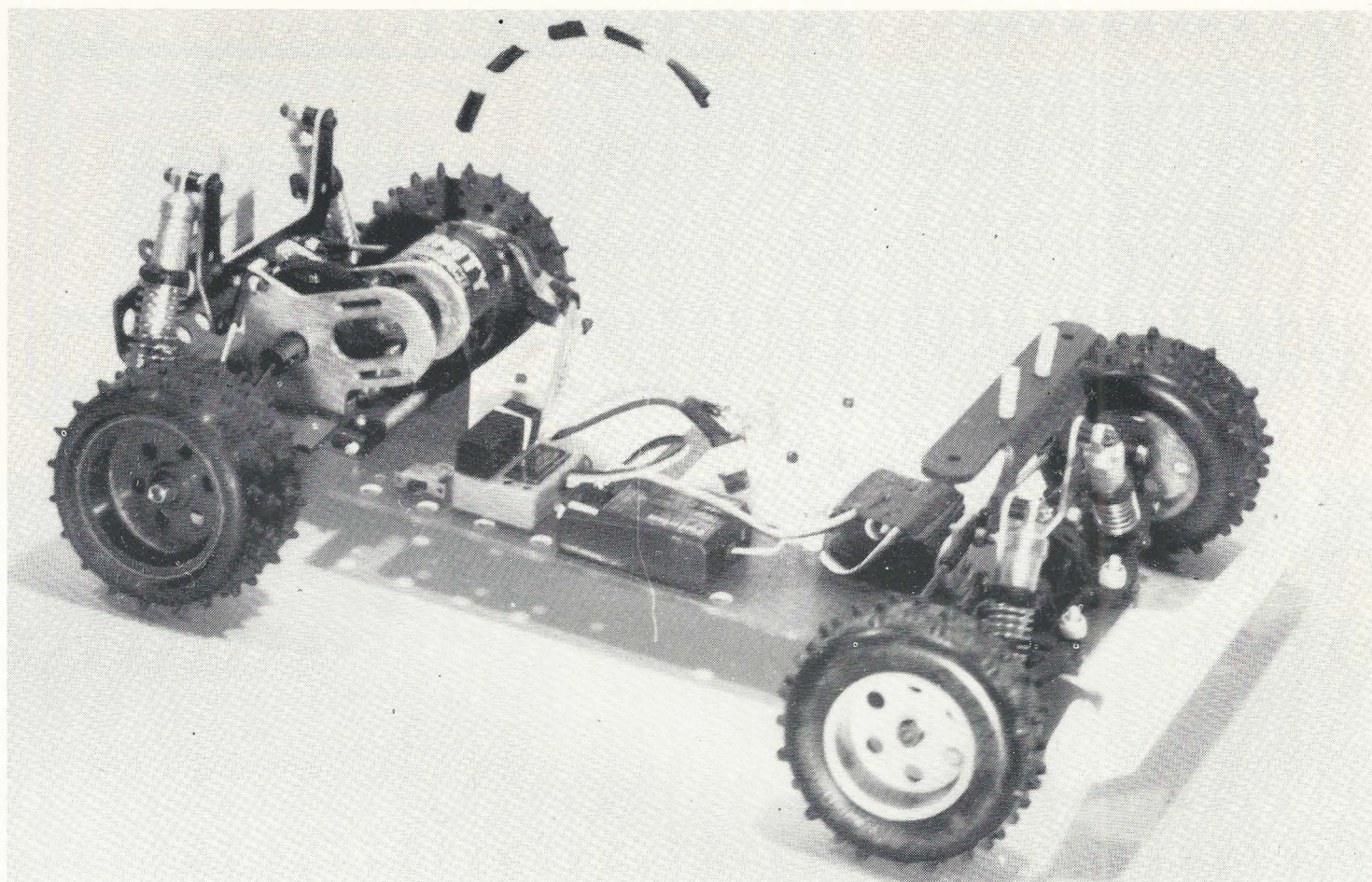
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JCAR

Dirt Oval Ultima

By F. Dale Cauthen



When using modified powerplants, stick to mild motors like this Trinity's "Pure Gold" and use the smallest pinion you can find.

Over the past several months we've had the privilege of racing the JCAR Invader, JCAR carpet/pavement Ultima and now the latest from Jay Hawley of Norwich, Connecticut; the dirt oval C-US (Ultima Suspension) chassis.

This is the chassis I've had the most time to work with, beginning back during the winter carpet racing season to compete in

"off-road car" class on the carpet oval. For those of you who live in snow country, this may be the primary function of the car as it is a natural competitor in this class. Come summer, we took the car out to play on the flat dirt oval and found it to be as easy and fun to drive as it is fast. Then to get familiar with the off-road track for this year, I mounted up a Coyote body and wing and ran

it in my first off-road race of the year while waiting (not too patiently) for Associated to get their new graphite RC10 on the dealer's shelves so I could start working on my 2WD car for the Nationals. Sound versatile enough? Thought so! This car gives you guys who want to race your Ultima year around the means to do so, and at a reasonable cost.

Ready to build on? Okay, let's

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go. You've just come home from the hobby shop with your new C-US chassis and DDS transmission and have a clean workbench to work on. What do you do first? Well dig out those all important instructions, of course. It looks too simple you say? It is simple. Also, the folks at JCAR assume you have intimate knowledge of the Ultima already. For the sake of this article, we'll assume you have never built an Ultima and don't have the Kyosho instruction booklet in front of you. Let's say you walked into the hobby shop and browsed the shelves with some help from the shop owner or a local Ultima racer and simply picked out all new parts to build an oval Ultima from the ground up.

In front of you, you have JCAR's DDS-U Ultima transmission, the C-US JCAR chassis, a big pile of parts bags for suspension, shocks, and wheels and probably no idea what some of this stuff is. Welcome to the wonderful world of the Ultima, 1987 Off-Road World Champion car.

The designers wouldn't have recognized Joel Johnson's world champion car and they wouldn't even suspect your new creation of being their baby pet Ultima without a close inspection. This is going to be a JCAR. Make no mistake about that. Let's start from the back of the car and build the DDS transmission first.

This is the heart of the car that owned this year's Reedy Race of Champions. Rob Cutman used this diff to not only win the invitational class but to break the old track record by two laps on the way and left the rest of the field choking on his dust. In that same Reedy Race of Champions, John Peterson won the Sprint car "A" main with a DDS, breaking that track record by a lap and a half. Enough of these transmissions showed up in the "A" mains to start everybody saying the DDS transmission was such an unfair advantage that you could you no longer be competitive without one.

Assuming you have either purchased the complete diff kit

or have already had your diff's pressure plates turned down for Associated style drive rings, start by cleaning up the old Thorpe or Kyosho drive ring/pressure plates with lighter fluid or another good cleaner to remove all traces of old oil. Do the same to a new set off TRC drive rings. Now use a small file to cut shallow grooves into the surface of the pressure plate, making a star of David on the surface where the drive rings will mount, then polish off any raised burrs. Now apply a light coat off green Zap Lock to each mounting surface, press on a drive ring and set the pressure plates aside to set up.

If you are starting with new outdrive bearings, you can minimize this bearing cleaning step. But for those of us who started out with old disassembled Ultimas, this is a most important procedure. You must remove every bit of ground in dirt from your old bearings. If the weather allows, go outside, put your back to the wind, and blow the bearing out thoroughly with motor spray

Get your hands on a

The newest winner from **Kyosho** is the 2WD **Ultima Pro XL**. It's hot with technology and design to give you the competitive edge for the 1990s.

Improvements are significant: ■ 3/8" longer carbon fiber graphite chassis for more stability.
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first. Otherwise its back to the lighter fluid or solvent. Soak the bearings long enough to loosen up all the old dirt in the bearings. If you are starting with old bearings, you may as well do all this to your front and rear wheel bearings at the same time. Pick up each bearing in turn and spin it on a paper towel while holding the center motionless between thumb and little finger until gunk stops coming out of the bearing. Then throw it back in the solvent. A couple of times through the cleaning cycle and either the bearing will be spinning like a new once again or it is obviously in need of help. Drop any that need further help into a bowl of Break Free or other thread cleaning lubricant. Once all bearings are perfectly cleaned out and no longer feel gritty at all, work Penzoil 20w motor oil into them. Then clean all excess off the outside of the bearing housings. For carpet racing, repeat cleaning is necessary only when drag becomes apparent. You dirt racers will need to clean

your bearings after every race, not just on this car but on any off-road or dirt oval car, to maintain maximum performance and minimize wear on other components.

Now use Associated diff lube to coat each diff ball in a Kimbrough 93 toooth 48 pitch spur gear. Use Bud's Ultra Precision diff balls to replace all 18 of your diff balls every couple of race days. Also replace the TRC drive rings anytime a scratched in the ring becomes obvious to the touch where the diff balls run.

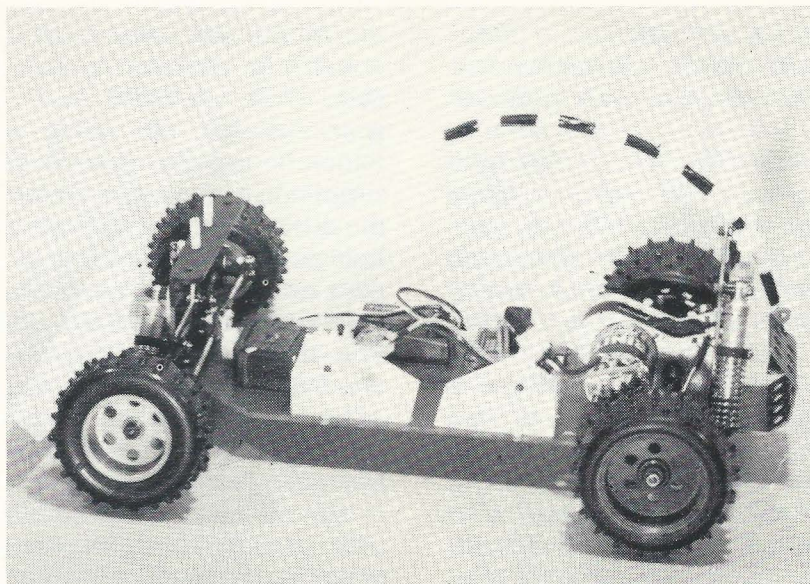
When the diff is complete, the diff adjustment screw is going to be on the right side of the car. Whatever you do, DO NOT disassemble the center shaft (adjusting screw) section of the diff. The adjuster rides on the tiniest ball bearings you'll ever see. Just blow the middle of the diff out with the adjuster in place and then follow with some WD40. On the left side of the diff, place an outdrive bearing on the output shaft, follow with a pressure plate/diff ring set. Now on the right side,

slide an outdrive bearing onto the longer output shaft. Slide on the aluminum spacer, then the remaining pressure plate/drive ring. Now sandwich the drive gear between the drive rings remembering the gear bushing supplied in the diff to make up the difference in size between the hole in the original diff gear and your new gear. Tighten down the adjusting screw just until it holds everything together. Once the diff is installed in the car, tighten the adjuster down; all the way stiff for dirt use, as tight as it will work for carpet racing.

Wipe off any excess diff lube with a Q-tip and set the diff plates onto the sides of the diff. Using the shortest four screws in the DDS screw set, mount the transmission to the back of the chassis. Note that two of the screws are very short. Use these in back and the longer two in the front mounting holes. Remember that the adjusting screw should now be on the right side of the car, putting the drive gear closer to the left side of the diff housing.



Race into the '90s . . . and get your hands on a winner.



Ultima owners will love this chassis for its lack of a top tray which provides easy access to all components and allows total versatility.

Using a cut off wheel on your Dremel tool, cut the original Ultima rear bulkhead (the one that mounts to the front of the differential case) down to the center of the "X" bracing as shown on the JCAR instructions. This leaves you just enough to

bolt down to the chassis and have the rear suspension arm pins mount up.

Included with your DDS transmission was a graphite rear shock tower. Using two of the 33/8" 4-40 cap screws, attach the shock mount to the diff sides

using the center holes in the shock mount. The outer holes are for the upper suspension rods. Attach those using 3/4" 44-40 cap screws and locknuts. Mount your outboard rear bulkhead to the chassis, flat side toward the gear. Now slip the inner arm pins through a set of stock Ultima rear arms and secure to the chassis using a Robinson Racing RRP-30005 "Trackers" unit in place of the rear arm mount. The RRP-3005 allows adjusting the rear toe and can be the deciding factor in making this or any dirt car a winner on varying track surfaces once you've learned to adjust it to the track condition. To initially set the toe-in, just get one of your buddies who is using the new 3 degree blocks on the back of his RC10 to let you hold the bottom of your car up to the bottom of his and set the toe the same. This is good a starting point as you could hope for. For more bite and increased stability on "loose" surfaces, set the backs of the tires

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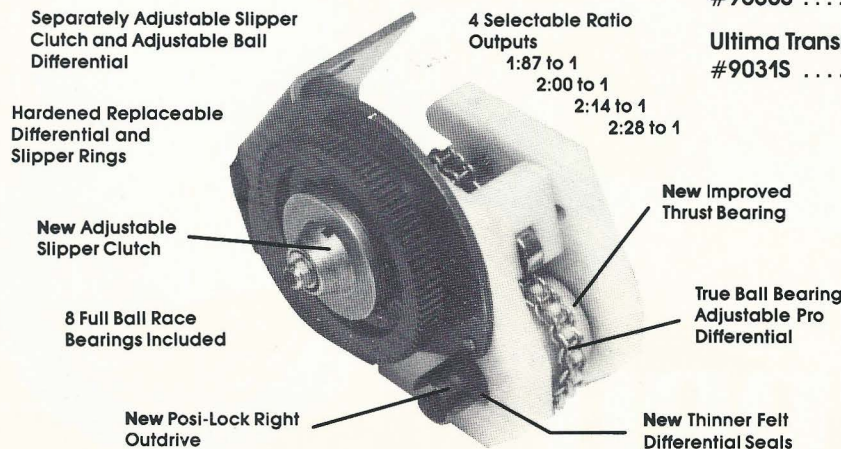
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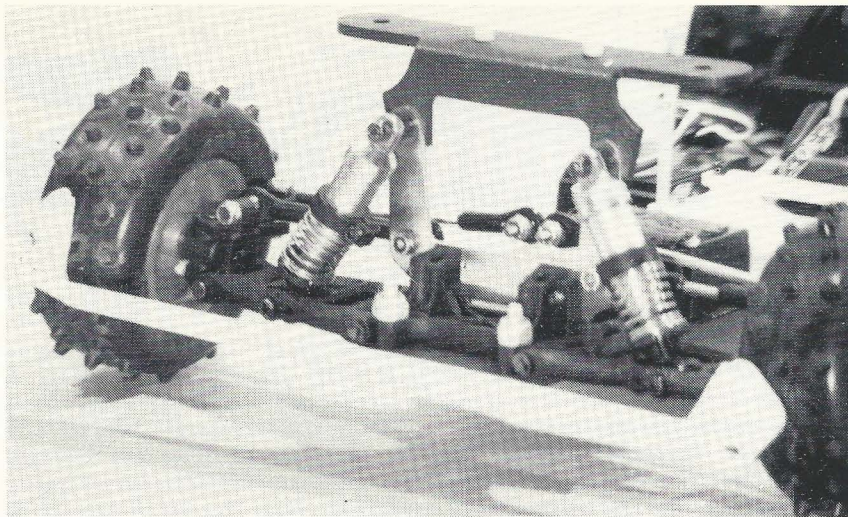
farther apart. For more acceleration where traction is not a problem, remove some toe-in to get more speed instead.

Attach a JCAR B-U, Ultima Bumper (\$7.95) and an Ultima front bulkhead to the front of the chassis. Since the method of adding caster to this car involves inserting 12L 2 degree blocks until the desired angle is achieved, we'll short cut this process by mounting the bumper under the bulkhead, on top of the chassis. Just run the screws for the front of the bulkhead (1" long Associated 8x32s work nicely) through the holes in the back of the bumper and don't tighten them down beyond the point of bringing all the parts together. Now run two more screws from the bottom of the chassis through the rear of the bulkhead. Add locknuts (Associated again) to the tops of all four screws and tighten by turns until all four are down will enough to stay put. If more camber is desired, now 2 degree 12L shims can be added on top of the bumper to make the car more stable at low speed and a high speed steering control.

To complete the front end. Add a stock shock mount, the metal one from the original Ultima, a set of Andy's front arms, and Kyosho short "Golds". Use a length of model airplane fuel line between the shock piston and the bottom of the shock to shorten the shock about a half inch so the arms just sit level. A JG Products oval body mount fastened to the rear of the shock mounting screw on top of the shock mount will allow use of most any oval body.

Steering gear is setup like a 12L with lengths of 4-40 rod and your favorite brand of rod ends. We used the Futaba S148 servo for its strength, the large BEC receiver and a Tekin 190 speed control. An RC10 battery box is mounted lengthwise down the left side of the car.

Refer to the article in the July Competition Plus on the carpet/asphalt car for setting the car up mid-motor if you wish to experiment with this modification. The mid-motor setup works well with foam tires on carpet tracks but is not recommended for use on dirt



This is the setup for smooth dirt ovals. For rough tracks, shorten the internal shock spacers and lighten shock spring tension.

as dirt tends to collect in the gearbox with the motor toward the front of the car. With the rear motor setup, almost no dirt stays in the gearbox, even under muddy track conditions.

Schumacher Cat hard pins-pikes provide consistent traction on the rear, while the new Losi "Stagger Ribs" provide exceptional grip up front. The setup in the photos used wide front wheels and tires. This setup proved unacceptable for two reasons. First, the rims were fragile and shattered easily. Second, the tires added too much drag and slowed the car down.

BU, Ultima Bumper - \$ 7.95
C-US Ultima Chassis - \$336.00
DDS-U Transmission - \$80.00
All from JCAR
552 Perkins Ave.
Norwich, CT 06030
Ph. (203) 887-6476

If you already have an Ultima, your existing bulkheads, lower arms, etc. will work with the DDS transmission and C-US chassis. If not, add about another \$50.00 to the total for a shaft set, lower arms, bulkheads, drive washers and swing-shafts. As stated in the July article on the on-road car, the swing-shafts are by far preferred over the old style dogbones as the swing-shafts function more smoothly, last better and are infinitely more trouble free.

Should you not already have a Turbo Ultima or Thorpe ball diff, JCAR now offers complete diff kits. A Thorpe diff with the rings cut for Associated rings, with the rings and your choice of gears installed will run you \$65.00.

If your taste runs to RC10s, a

complete transmission is available. The complete kit includes; dogbones, shock tower, machined diff with your choice of gears, output bearings in the larger and more efficient 8x14 size, Thorpe outdrives, all hardware and some nifty JCAR decals all for a list price of \$160.00. The JCAR DDS transmission will mount up on any chassis that would accept your original gearbox.

Mounting the DDS transmission on your stock chassis will allow you to use any diff gear up to a 93 tooth 48 pitch. Relieving the chassis slightly will allow use of the new 96 tooth Kimbrough gears.

This setup, using the DDS transmission and C-US chassis produces a versatile Ultima based JCAR that can be raced year around on a variety of tracks. This car has been in a number of races on varying surfaces and setup in varying configurations. During all this racing, only two parts have broken; one a front wheel when I got out of shape coming off a turn at speed and slapped a wall, the other a front bulkhead that was destroyed when a competitor who I was passing "lost control" and sent me head-on into the wall. Not a bad reliability record for any car and certainly better than most of the cars we've raced. While it was never meant for off-road, the JCAR is a strong contender to win any oval race, indoors or out.

Our thanks to Jay Hawley from JCAR.
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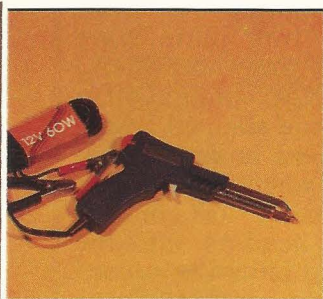
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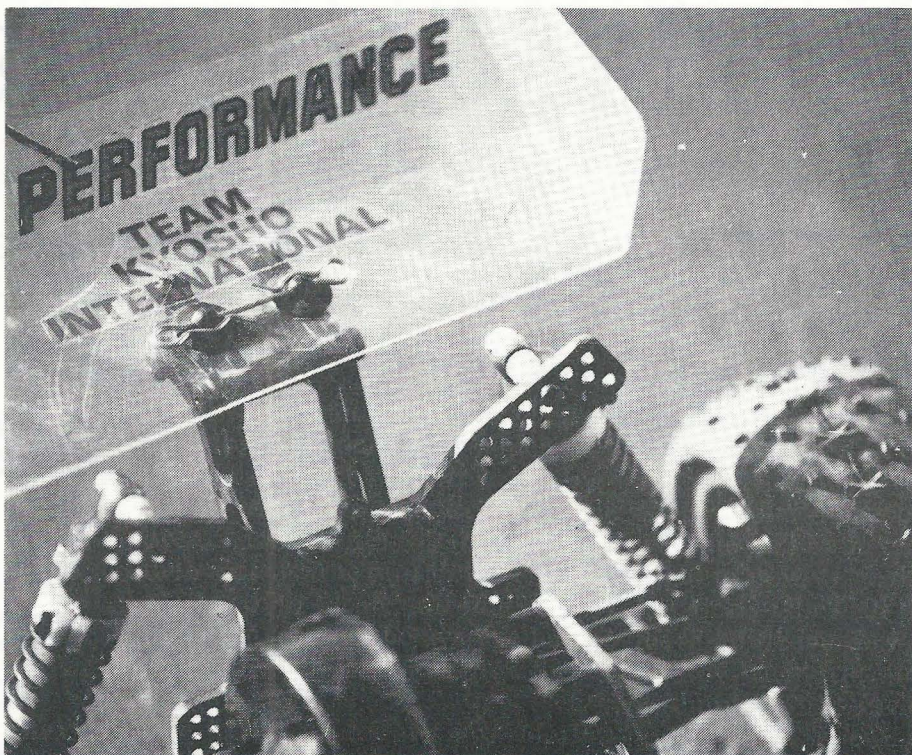
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CP



Rick's preference for rear shocks are the Associated long rears. Again it is important to change the material of the shock towers because the metal ones that are stock are prone to bend.

(Continued from Page 39)

vary from track to track, Rick suggests using silver springs all the way around. A good shock oil choice would be 20-30 in the rear, and 30-40 in front. Associated's silicone oil works best.

The next suspension modification comes in the shock tower area. While the stock shock tower is adequate, the tower's construction material is not. The stock towers are made out of aluminum. While this material will not be prone to breaking, it can bend. A slight bend in the towers can really upset your car's handling. If this bend is slight, and goes overlooked, it can be a nightmare trying to figure out what is going on. The best thing you can do is to use your shock towers as a template and make your own out of a material like fiberglass. Although Rick uses graphite, fiberglass will do just fine. There is also a possibility that by the time you read this, one or more enterprising manufacturers will have come out with an aftermarket shock tower as well.

As we work our way down the

front of the Lazer we should take a look at the front end of Rick's car. Rick chose Associated tie end rods to replace the stock parts. This is done to enable the car to have no bind in the front end at any angle.

The front suspension arms are also notched out to eliminate any bind or limitation with respect to the Lazer's turning and suspension functions. This is a little thing that will really increase the performance of this machine.

The next item to look at is not a little thing. Ball diffs for both the front and rear are probably the single most important improvement one can do to the Lazer. While the Lazer comes with the external parts necessary for these diffs, (like the belt pulley) the internal parts such as drive rings, diff balls, etc. are not standard. These parts can be purchased separately. The diffs you want were originally designed for the Optima Mid, another successful Kyosho 4WD car. These mid diffs slide in with no modifications required.

While there are several good

diff lubes on the market, "The Master" suggests R/C Performance Specialties grease. Like all ball diffs, it is important to keep good diff balls installed for best performance.

Another item to look at on the drivetrain is the slipper. It is suggested to lock the slipper on the Lazer. This is done by taking the balls out and locking down on the screw.

As we move to the rear of the car we notice a few changes Rick has made. For starters, install Kyosho universal joints in the rear. These parts are stock for the front, but need to be purchased for the rear. The second change to the rear is to increase the toe-in. This is achieved by using the

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wider rear toe-in mount, and reaming out the front inner A arm mount. Your objective is to achieve more toe-in than is possible in the stock configuration. To hold these pins in place, drill one 4/40 size hole on each side of the pin mount and install a screw to keep suspension pins from working free.

The responsibility of holding this package to the track falls on the tires. In order to widen the front end, the three piece Kyosho rims were mounted up there. The tires of preference here are the Losi X patterns or Hot Laps TF-5.

Finishing touches on this Lazer are an Associated wing, and the SP Kyosho body. Electronics are always important and Rick recommends the Tekin 700 unit.

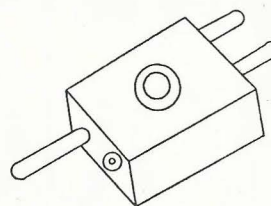
What we have here is an excellent car, that was just made better. All of the parts described in the article are available

nationwide and are moderately priced.

The big shocker in this package is the low number of parts one needs to buy. There simply isn't that many aftermarket parts required. While tracks and race conditions may vary, the modifications described will be effective at most of the tracks you encounter.

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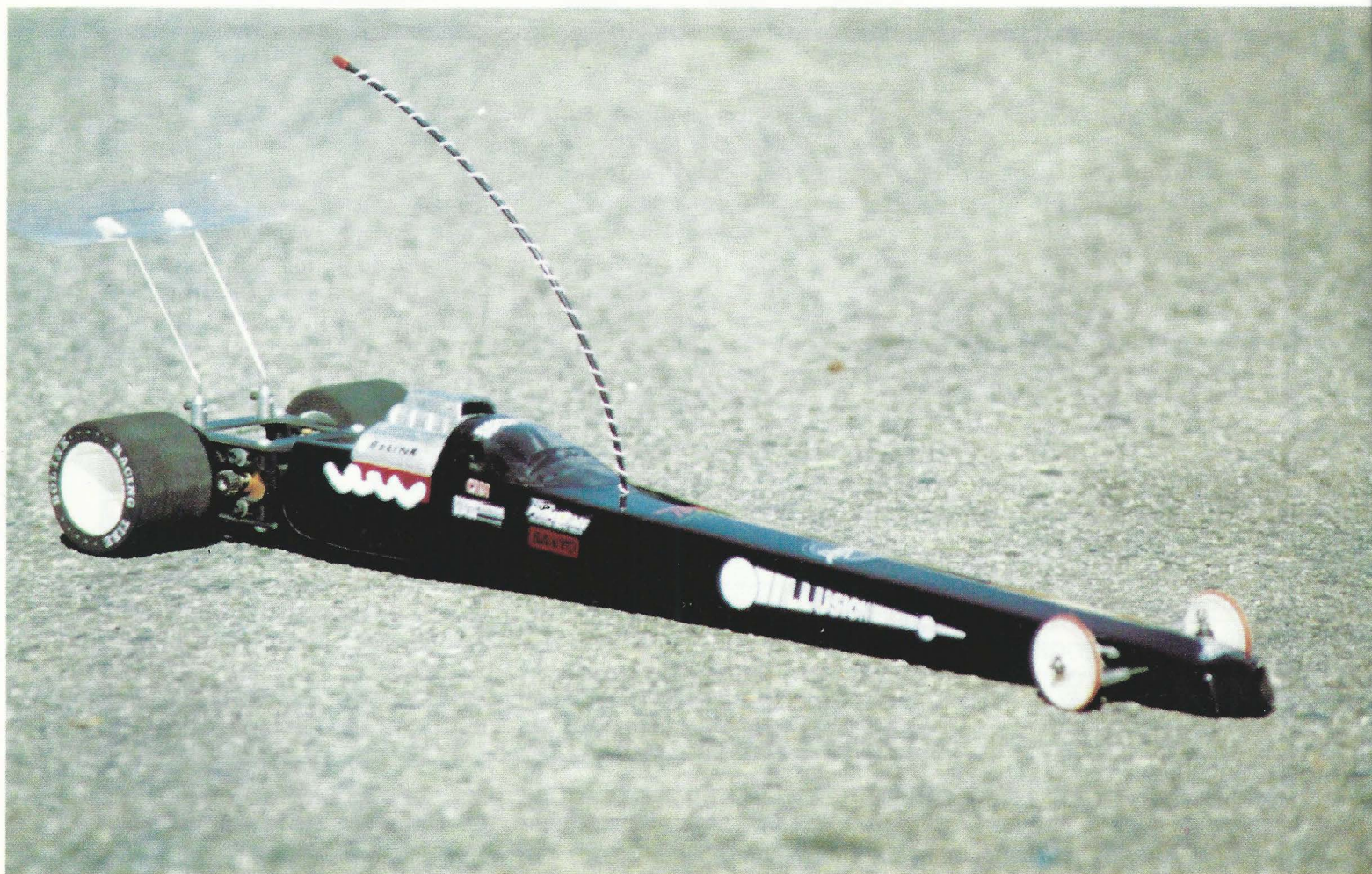
By Jeff Palmer

Stop for a moment and let your imagination put you behind the wheel of sleek rail. The sun glistens off the metallic paint and chrome that encases the vessel that's about to hurl you through the next 1,320 feet at over 200 mph. A quick glance at the grandstands reveals people cheering and gesturing wildly but to no avail, because all sound is drowned out by the relentless ignition of your nitro burning engine. Now your attention turns to the task at hand and all con-

centration focuses on the array of lights before you; yellow, yellow, yellow, GREEN. Your foot pushes the accelerator to the floor and the power that has been screaming in your ears now pushes you back into your seat as the smell of burning rubber fills your nostrils. You're holding on to the steering wheel for dear life as a thousand thoughts flash through your mind but in the passing of a moment you're crossing the finish line. All the pent up tension is released with

the successful completion of another race.

Most of us will never get the opportunity to drive a real rail, but Houge will provide you with the next best thing, the Houge "Illusion" Dragster. This car features a full graphite chassis, Delta type front end, adjustable rear axle height, and a pro-dif rear end. The chassis design is a "U" shaped descending channel that runs from the nose of the car up to the rear power pod where the chassis turns into a flat plate.



The "U" shaped portion of the chassis is structurally very rigid front-to-back, while the flat portion provides torsional flexibility for the suspension to maintain optimum traction. The front end is a work of art and a study in simplicity. It's designed after the standard on-road type of front end made famous by Delta. Steering is provided by a single bell crank tied to the front steering blocks via tie rods. Mike Houge has engineered this car to be a winner.

Construction

The instructions are divided into two sections, the written instruction section and the photo section. Splitting of the instructions into two sections is a little inconvenient and complicates the assembly process unnecessarily. The written portion of the instructions is well done, however, the photo section needs some work. Many of the photos do not print well, thus eliminating some of the required detail. The photo section needs one additional photo, and overhead view of the completed car with receiver, servo, batteries and motor installed. The instructions do not provide a list of tools that will be required to assemble the kit, so here they are:

- 1) Phillips screwdriver,
- 2) Small flat file,
- 3) 4-40 Allen wrench,
- 4) 600 grit sandpaper

A few extra items that will help are:

- 1) A tube of Loctite "Thread-lock 242" to secure many of the screws in place,
- 2) Paragon's "Ultralon" to lubricate the bearings. Use the "Ultralon" on all of the bearings. To do this, thin the "Ultralon" with Lacquer; a 50/50 ratio of "Ultralon" to Lacquer Thinner should be sufficient.

Enough - let's check out the instructions.

The instructions are composed of 15 pages, of which 9 are text, 5 are photos plus a cover page. This makes the car sound more difficult than it is. In fact, the car

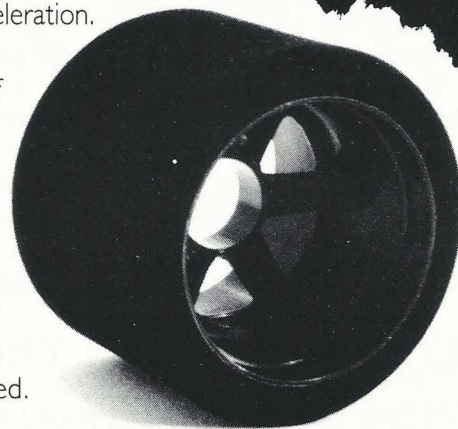
has many of the same features found in most top quality on-road cars, of which simplicity is the most important. The first page and a half discuss safety and the organization of the parts bags. The actual assembly process starts with the filing of the battery strip slot edges, in order to prevent the sharp edges from cutting the battery straps. From here, it proceeds to the front end assembly. For anyone who has

built an on-road car, this assembly is typical. Start with polishing the king pins by placing one of the king pins in a drill or motor tool. Spin the king pin while holding a piece of 600 grit sandpaper briefly on its surface. Then test the king pin by sliding the steering block on it. If the steering block slides smoothly and easily then the king pin is done correct. If the steering block binds, repeat the polishing pro-

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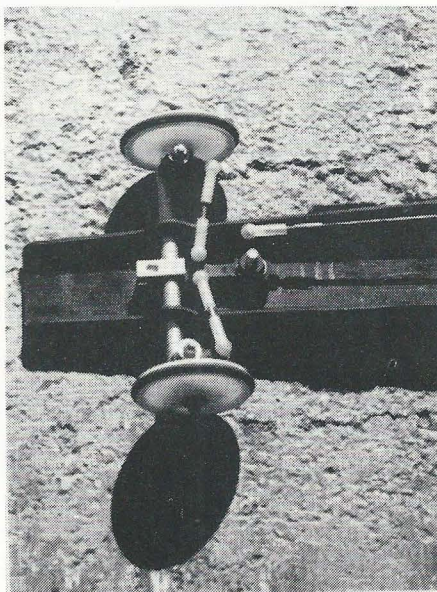
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cess. Now assemble the rest of the front end.

The rear power pod assembly is next. The only secret to assembling this unit is to use the diff axle to line up the two motor brackets. Assemble the rear pod as instructed in the manual but **DO NOT** tighten the screws. Install two height adjusters of the same height with bearings in the motor brackets. Install the diff axle. Tighten one of the bottom screws on each of the brackets but not tight. Spin the diff axle again. If it spins freely, tighten one of the bottom screws. If it binds, loosen the screw and adjust the brackets until it spins freely when tightened. Repeat this process for all of the screws, both top and bottom, on the rear pod. This process will eliminate any bind put on the rear axle by motor brackets that are not parallel. The rear axle will spin easily and allow the car to go faster.

We're down to assembling the diff. The "Illusion" does not come with either the spur or pinion gears, so you will need to buy them. Start with an 86 tooth spur gear and a 14 tooth pinion - 48 pitch gears. While you're buying, pick up a set of precision diff balls, say Houge's #130 "Diff Balls" and assemble the spur



This photo shows the Delta type front end.

gear, they'll provide a smooth and even action on the diff. Install one of the axle spacers on the axle and slide it down the axle until it butts into the back-side of the aluminum hub. Install the axle into the parallel motor brackets. O.K., one more tip; when the left side wheel hub is assembled on the axle, don't tighten the allen screws down all the way. Tighten them only to the point where the hub will barely move on the axle. Move the hub back and forth about 1/8 inch and then remove it from the rear axle. Check the axle for marks

left by the allen screws. If there are two good sets of marks, remove the axle from the rear pod, else tighten the allen screws a little and repeat the process. Use a small file and slightly flatten the spots on the axle where the allen screw marked it. Flatten the bottom of each of the allen screw and re-assemble the rear axle. These flattened spots will prevent the non-drive hub from slipping during high torque starts.

It's decision time. You'll need to decide which servo, receiver and electronic speed controller you want to use. The "Illusion" was designed for a Futaba S32 servo, but most servos of a similar size will fit. I used a Futaba S132H since it was sitting on the shelf and it works really well. I plugged the servo into a Futaba R102H micro receiver and chose a PDI Drag electronic speed controller(ESC). I had a Tekin, a Novak and a Kyosho ESC's available but the high voltage and current requirements of the car when it's braking will burn out the brake MOSFETs on most of these units. The PDI Drag ESC has special circuitry to deal with this problem. The brake on the PDI controller is called a "soft brake". This means:

1)There is a timing delay between the request for brakes and the application of power to the braking MOSFETs.

2)The power applied to the brakes is about 50% less than full braking on most electronic speed controllers, thus the car needs greater distance to slow down or come to a stop.

A motor for the "Illusion" is a tough decision. Drag racing in Dallas comes in two flavors:

- 1)ROAR sanctioned and
- 2)Non-ROAR sanctioned.

For the ROAR sanctioned races, I use a Trinity 12 turn Drag Motor. For open racing, I use an Astro Flight Drag motor, "Top Fuel". With either motor, Sanyo 900 SCR batteries are used.

Road Testing

The diff on the "Illusion" is

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Track Records

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Triangle Hobbies, Durham, NC/Dennis Fields (1-23-90)

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Matched 6 cells 480+ packs **\$32** each

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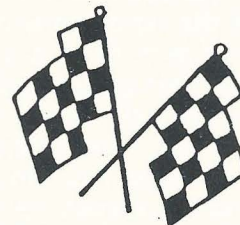
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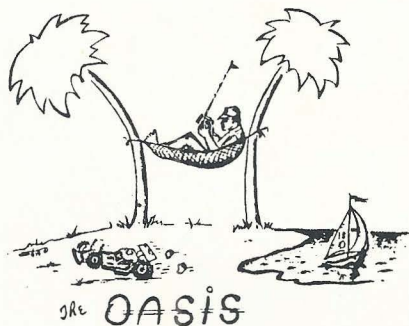
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ENTRY FEES: Stock \$35.00 (w/Stock Handout Motor)

Modified \$25.00

Late Fee: \$5.00 (After March 24th)

Classes: Oval Class - 1/10 Stock 2WD ☐ 4WD ☐ Modified 2WD ☐ 4WD ☐

Hot Rod ☐ Sprint ☐ Heavy Metal ☐ Unlimited ☐

On-Road Class 1/10 & 1/12 - 1/10 Stock ☐ 1/10 Modified ☐ 1/12 Stock ☐ 1/12 Modified ☐

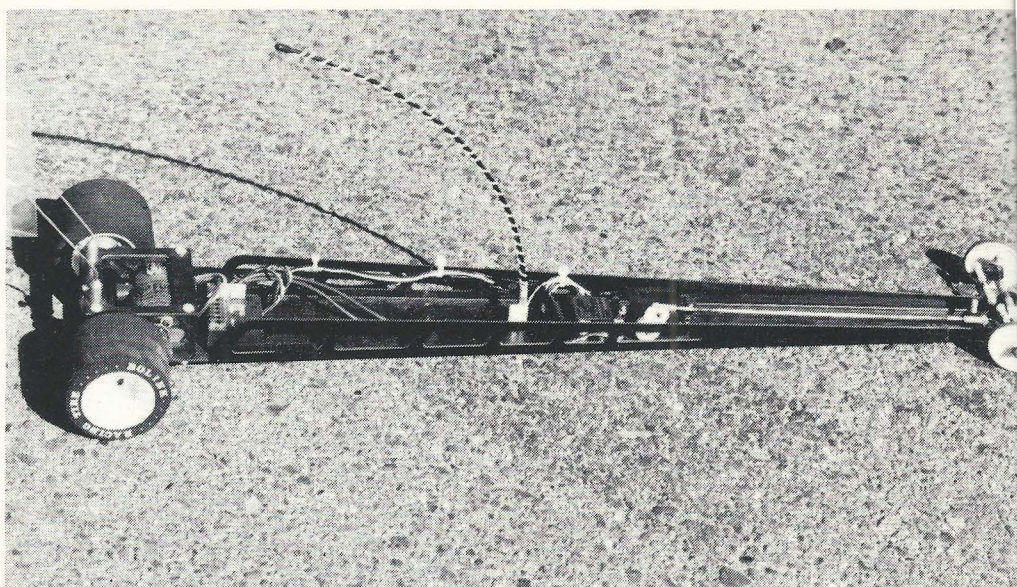
FIRST 200 ENTRIES ONLY

typical of most on-road cars and should be set up the same. Tighten the diff nut until the spur gear cannot be turned with your thumb when both wheels are held. Set the caster for 2 degrees and make sure the front wheel toe-in is correct per the instructions and we're ready to blast off. **MAKE SURE** everything is correctly aligned. At 70 MPH things happen quickly.

I took the car down to my local club drag race, held at a nearby Wal-Mart parking lot and put the Illusion through the paces. The first time out, it lost traction and got out of shape. I re-checked the front end alignment, re-adjusted the diff and added Paragon's "Ground Effect" to the tires. The next time out, it clocked 2.42; not bad for an amateur. On my final run, it clocked a 2.31. These aren't great times but keep in mind it was my first time out with this car and my first time drag racing; my reflexes need work.

Conclusion

IT'S FUN and a great break



The chassis design is a "U" shaped descending channel that runs from the nose of the car up to the rear power pod where the chassis turns into a flat plate.

from the rigors of off-road or on-road racing. A small work of caution - **DON'T BLINK**. It's so fast that it's hard to relate. In order to relate to the speed, get a stop watch and without looking, try to start and stop the watch in two seconds. It's tougher than it sounds. Mike you've got a win-

ner, but please clean up the instructions a little. 'Til next time, **GOOD RACING!!**

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Mail this entry form or a copy, along with you check payable to:

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NOTE: Entry deadline is March 17, 1990 ... there will be no entries on race day!
Hobby Haven will confirm your registration by mail as soon as possible after receipt.

Entry Form

Name _____ ROAR Membership # _____
Address _____ Car _____
City _____ Motor _____
State _____ Zip Code _____ Radio _____

Circle Class(es)

2wd Stock
2wd Modified
4wd Stock
4wd Modified
Truck Stock
Truck Modified

Choice of alternate frequencies (your crystals)

1st _____ 2nd _____ 3rd _____
1st _____ 2nd _____ 3rd _____
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1st _____ 2nd _____ 3rd _____

Entry Fee: \$35.00 each stock class -- \$25.00 each modified class **TOTAL ENCLOSED \$** _____

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CAR KIT SPECIFICATIONS

KIT:

Manufacturer.....Houge
Model.....Illusion
Type.....Dragster
Scale.....1/10

CHASSIS & BODY:

Chassis Type.....Pan
Material.....Graphite
Body.....Bolink Top Fuel
Material.....Lexan

ELECTRICS:

Motor.....not included
Receiver.....not included
Speed Controller.....not included

WHEELS:

Front.....Houge
Rear.....Bolink

GENERAL:

Weight(compl./6 cell).....31.26 oz
Wheelbase.....23.75 in
Track(front/rear).....3.75/5.9 in
Length.....27.75 in
Width.....7.8 in
Height.....3.25 in
Bearings.....bearings

SUSPENSION:

Front.....Springs
Rear.....Flex Plate

DRIVE TRAIN:

Type.....Direct drive/ball
Ratio.....5.4:1
Gears(pinion/spur).....14/86

TIRES:

Front.....Houge "O" Ring
Rear.....Bolink Green Dot

OPTIONS:

WHEELS:

Front.....Stock
Rear.....Stock

ELECTRICS:

Motor.....AstroFlight Drag
Receiver.....Futaba R102H
Speed Controller.....PDI Drag
Batteries.....Sanyo 900 SCR

TIRES:

Front.....Stock
Rear.....Stock

CHASSIS & BODY:

Chassis.....Stock
Material.....Stock
Body.....Stock
Material.....N/A

COMMENTS:

Chose the PDI ESC for its design. AstroFlight for its power and speed.

ROAD TEST

HANDLING:

Acceleration.....Excellent
Cornering.....N/A
Rating.....Excellent

COMMENTS:

The thrill is back. 0 to 70 MPH in 2 seconds.

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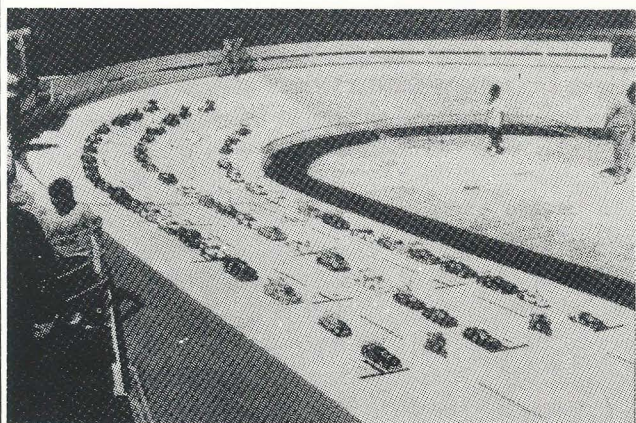
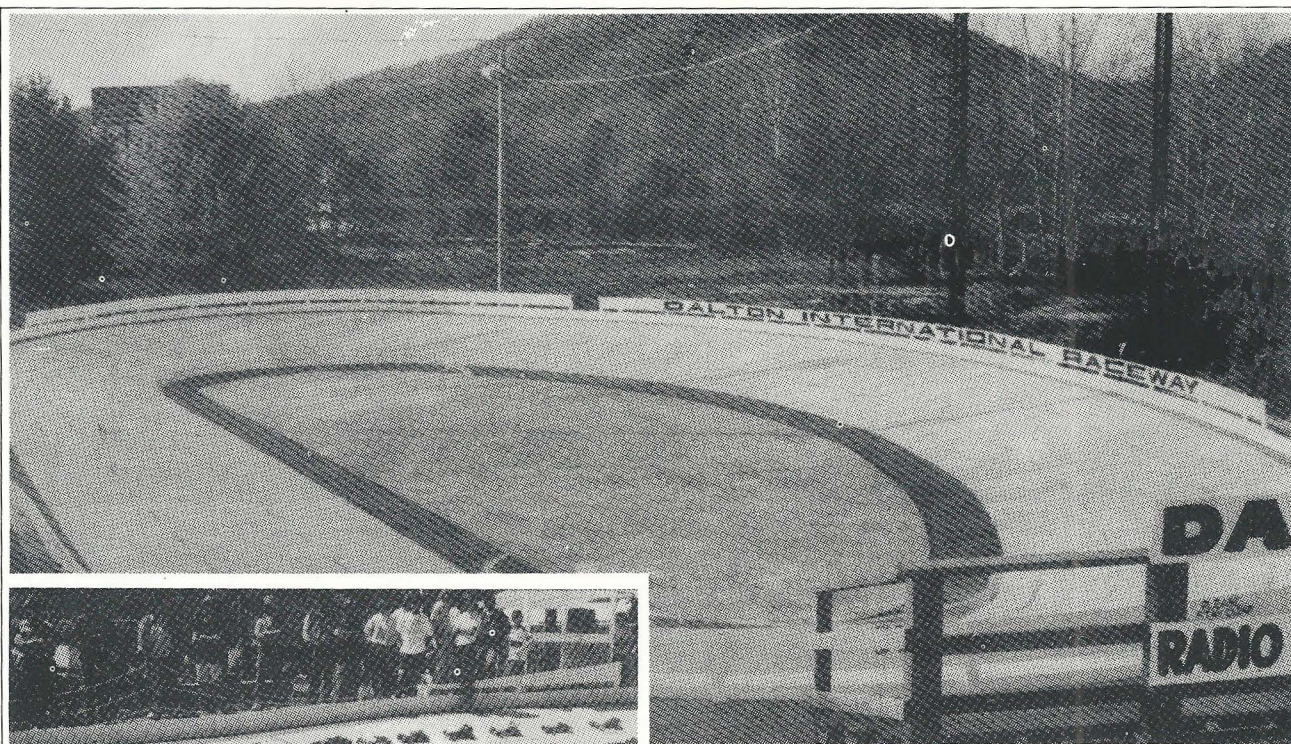
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On July 4th, 5th, & 6th, Dalton International Raceway and Bolink will host the 1990 ROAR Region 2 Concrete Ovals - with a spacious new hobby shop and car parts. We think Dalton International Raceway is the place to be in 1990. We take pride in our friendly personnel and we are here to help you with any questions about RC.

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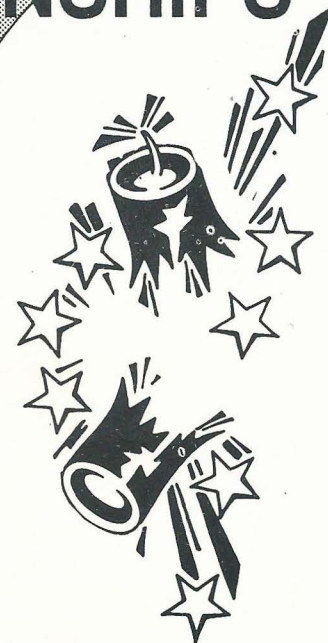
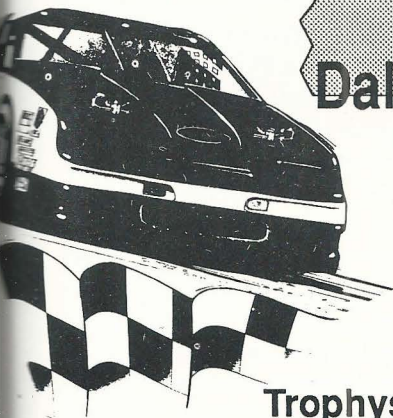
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1st 2nd 3rd

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Limit: 250 Entries

Entry Fee: \$40.00 Stock (includes stock motor & T-shirt)
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Make checks payable to:

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Upon receipt of paid entry, information packet will be sent.

ROAR Rules Apply. ROAR Membership Required (available at track).

For further information call: Danny Sane (404-226-6699).



A great overall view of the track at Sideways.

(Continued from Page 37)

event. TQ, Josh Jameson from Plainwell, MI was out gunned by Mike Johns of Wayland, MI at the start but mechanical problems put Johns on the sideline after only three laps. Jameson took over the lead and cruised to victory. Back in the pack however, things weren't so easy. Brother, John and Larry Oppenhuizen, both of Zeeland, MI were

doing the "Family Feud" for second spot while Dave Pulfer of Tipp City, OH and Mike Reniger of Battle Creek, MI were right there to pick off the survivors. Somehow, Pulfer worked his way through to get away with second, Johnny Oppenhuizen third and Reniger fourth and Larry Oppenhuizen fifth. Second through fifth were all on the same lap.

"B" Super Stock - Thomas

Wideman of Grandville, MI was TQ but Doug Collier of Byron Center and Jay Bowman of Kalamazoo, MI got off to a real good start and occupied the top spots. Collier was driving a flawless race and Bowman could only follow in anticipation of Collier making a mistake. Finally, at the two minute mark, Collier slipped and Bowman shot past. Bowman gradually pulled away for the win, Collier second and Wideman third.

"A" Super Mod - Every time the Super Mods came to the starting line the outside perimeter of the track was shoulder to shoulder on-lookers. Awesome drivers and awesome race cars put on an endless display of skill and speed! Chris Schneider of Mattawan, MI was TQ and when the buzzer sounded for the start of the "A" Main only a faint "vapor" trail was left for the other drivers to follow. Schneider was gone! He lapped the field and "crushed" the old track record posting a 52 lap run. Dave Pulfer of Tipp City, OH drove hard and ran fast to finish a comfortable second. Mike Reniger of Battle Creek, MI and Bernie Piatt of Dayton OH battled the entire four minutes for third and fourth. Reniger got the last pass to grab third, Piatt finishing fourth.

"B" Super Mod - Jeff Rey of Antioch, IL was TQ, but when the cars launched from the start line Randy DeBoer's beautiful orange and gold Chevy Lumina had the lead with Roger Boeske of Dorr, MI and Rey close behind. It was an awesome three car battle for the lead to the 2 minute mark. Boeske moved to the lead and gradually stretched a half a lap lead to win, Rey second and DeBoer third.

"A" Sprint Car - Josh Jameson of Plainwell, MI was totally untouchable all day with his sprint car. He TQ'd and won the "A" main going away. Gary Meyers of Gun Lake, MI comfortably drove to a second place finish. Rick Benedict of School-

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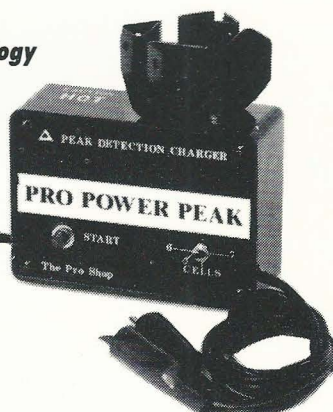
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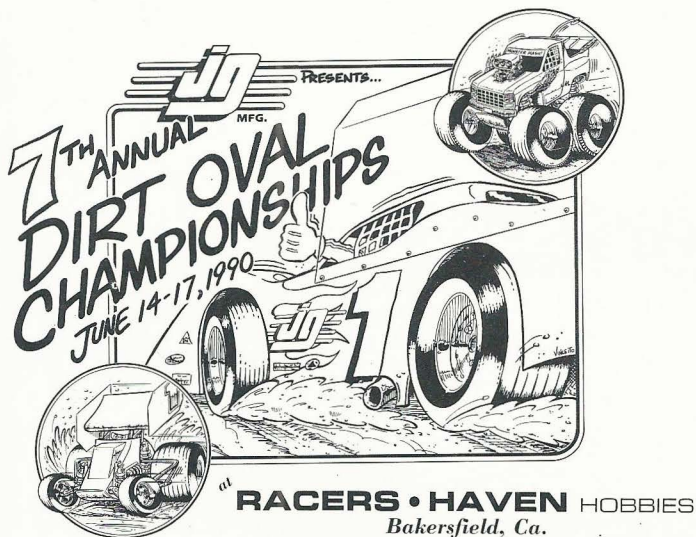
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 2WD Mod. Monster Truck - 4WD Mod. Monster Truck

- Everyone runs in a main - 1st, 2nd, 3rd place trophies
- Running Concours - 1st place trophies - Sprint Car/Full Bodies/Trucks
- Trophy Dash - Fastest four/two minutes - 1st place trophy
- TQ Run - TQ's in each class will run against each other, with handicap start - 4 minutes - 1st place trophy
- Best Engineered - 1st place trophies - Sprint Car/Full Bodies/Trucks
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OVAL RULES

1. American cars only. Outlaw Stock ASA - NDRA Grand National Bodies Only. Handmade or Prototype okay. Spoilers and side dams no limit.
2. 4 minutes heats - 4 heats per class
3. All A Mains are twin (2) 4 minute mains to determine winner.
4. Sprint Car Class - 2WD modified motors. 7 cell, wings, guts! Top wing 6" x 6" max. Sides 4 1/2" x 6 1/2" max.
5. Sprint car minimum weight 3 1/2 lbs. steel or aluminum cage, nerfs, rear bumper, headers may be lexan, top wing mandatory, front wing optional.
6. 2WD Modified minimum weight 3 1/4 lbs. and 4WD Modified minimum 3 1/2 lbs.
7. Maximum wheel width all classes 9 7/8".
8. 2WD and 4WD Modified cars, no CanAm or Off-Road type wings.
9. 2WD and 4WD Modified cars, rear spoiler must be attached to extreme rear of car BODY. Side dams no limit.

MODIFIED 2WD & 4WD MONSTER TRUCK CLASS RULES

1. Wheels: Minimum diameter of 2.2" Width minimum 2".
2. Tires: Minimum diameter of 3 1/2".
3. Shocks: No limitation.
4. Speed Control: Any speed control may be used.
5. Body & Chassis: any chassis may be used. Only American truck bodies may be used.
6. Steering: No limits.
7. Weight: Minimum 4 1/8 lbs.
8. Batteries: Sub "C" type with 7 cells maximum.
9. Motor: Modified class as designated in "Modified Class" rules.
10. Side Fins & Wing: Side fins are not allowed. Wings are not allowed.
11. Spoiler: A spoiler may be used off the rear of the body with a maximum height of 2 1/2".
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Lowest qualifiers must be able to change bands.

craft, MI had to come from the rear to finish third with Kevin Mohr of Jackson fourth and Larry Meyers, also of Jackson fifth.

"B" Sprint Car - Paul Mazzone of Kalamazoo, MI was out accelerated off the line by Scott Meyers, of Gun Lake, MI. Meyers was really flying low, putting a full lap on the field. At the three minute mark, Meyers was beginning to show signs of running out of battery. Mazzone continued to drive hard and with only 10 seconds left in the race passed Meyers to grab the win. Meyers finishing second and Dennis Ingold of Vicksburg, MI third.



GROWTH IN THE HOBBY BUSINESS

In June of 1986, trying to make the most of a small area, we constructed an indoor clay track (31' x 23') in our store. Being located in Syracuse, New York, there was a definite necessity to have an indoor track. We were tenants in the basement (3,200 sq. ft.) of a commercial building. Like most small business owners, we dreamed of our own large store with a big race track. Well the "little" track proved to be successful and brought in many new customers. Our business in general grew: cars, boats, planes, helicopters, etc. For over two years we looked for a suitable building or land on which to build in our area. We finally found the land. Overcoming a "few" obstacles, we were able to have the grand opening of the new Walt's Hobby on June 17, 1989.

Our building is 12,000 sq. ft. The tracks (one clay 62' x 35' and one banked carpet 72' x 28') are in a room that is 6,400 sq. ft. In the middle of the room is an elevated drivers' stand (32' x 4'). In the center of the clay track is a 35' x 5' loose dirt pulling pit. Built in benches with plenty of electrical access plugs surround the room and will provide pitting for as many as 150 racers. There is still adequate space for spec-



Clay track during race; driver's stand in background; pulling pit covered by plywood in middle.

tators to watch the competition. Besides the increase in track space, we have retail space of 4,000 sq. ft., a meeting room, storage room, work shop, office, shipping room and an "extra" room. Our 100' x 50' off-road outdoor oval will be in operation by spring and future plans include a drag strip and outdoor pulling pit.

We've already held a successful summer season of scheduled races and pulling competition and can finally plan for big events in the future without having to worry about weather conditions. When we put in the first clay oval, we were very fortunate to receive a lot of volunteer help. Well once again we were very fortunate. We would like to express our gratitude to all those who painted, hauled clay, etc. and to our paid employees you did all that was asked of them and more. In the end, it's people that make all the effort seem worthwhile.



THE NORRCA PAVED OVAL NATIONAL CHAMPIONSHIPS

By Steve Saik

Mind-blowing, pedal-to-the-metal, red hot action just begins to describe NORRCA's 1989 Pavement Oval Nationals, which

electrified Racer's Haven in Bakersfield, California. Drivers with a hot hand at oval racing came from all over California to participate in this speed burner. The weather was hot, but not the normal scorchers, for which Bakersfield is famous, making conditions prime for this three-day battle which ensued.

Thursday night before qualifying rounds on Friday, the large, sweeping banked oval at Racer's Haven was thoroughly washed down with a huge fire hose; and the crew at Racer's Haven did a superb job in readying one of the best tracks in the country for the speed soon to be laid down on Friday, Saturday, and in the Mains on Sunday.

FRIDAY

Before light broke on Friday morning, drivers hurriedly made their way into the pits as the level of anticipation began to rise. The banners of the racing teams went up; and familiar faces of old pro's and young, eager hotshots could be seen, working to prepare for the soon to come qualifying. The first thing out on every pit table was the tire truer, which turned out to be the crucial tool that weekend for many racers. Almost before dawn, the



A portion of the Parade of Cars held prior to the mains.

loud whine of engines could be heard as drivers wasted no time in dialing every carefully worked on car to the track. Soon following the sound of engines, came that of Lexan bodies crashing, as T-boning, slamming the door and cutting off were all part of practice before the big race.

Practice lasted until 11:25 a.m. on Friday; and every minute was used to its fullest as racers worked with tire compounds, gear ratio, and handling. All this figuring and experimentation is essential due to the time of the race. NORRCA pavement oval time for 10th scale is a five minute race; six minutes in 12th scale. Most racers had friends timing them, and shouts of "minutes down" and "laps" echoed out from under the driving stand.

Practice soon wound down, and the drivers' meeting was held at 11:25 a.m., where the rules were laid out and questions discussed with NORRCA president, J.R. Sitman. At noon the qualifying went off amid cheers and the excited voices of announcers Martin Buchanon and J.R. Sitman.

Gearbox began the qualifying with neck 'n neck racing between

Gary Demory. Associated driver from Costa Mesa, and Revtech driver Charles Reisbol; as they set down impressive times. In the heat to follow, Ted McDonald, Roger Pane, and John Hammer Smith clashed for the lead, with Smith winning.

The Ballistic Direct Drive Modified races followed, with the dominant racers showing to be Gary McAllister of McAllister Racing; Gary Demory, who sets the TQ; Ken Moon, who turned the fastest laps yet and Erik Steenhoven, knocking on the TQ spot.

The Stock Gearbox class was lead by Chris Nolan and John Vandervort with other racers only a lap behind.

The Direct Drive stock heats took the field next, in a blur of speed in which Joe MacGregor looked to be the one to beat as he kicked butt.

The 12th scale found unknown Chuck Howell from Bob & Jim's in Riverside dominating, along with Dick Smith, shocking many accomplished drivers.

Tire setups proved to be an interesting combination, as the track temperature soared in the mid-day heat and tended to be cooler in the morning and late

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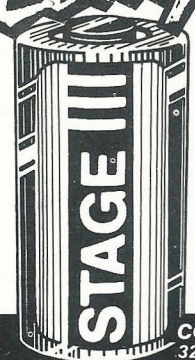
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afternoon. For some drivers, that track temperature meant a change in tire compound. Foamies worked well, but for many drivers, one new set would be worn down in each race. This was especially true with the 1/12 scale drivers, as new tires needed to be added each race. Generally, a hard, blue-orange compound of foam was best suited for the front tires; many drivers agreed-yet some used cap foam tires, especially in the gearbox classes. Yellow-green compound was the racers' consensus for the rear end, but direct drive racers and others found blue rears working perfectly.

Concourse competition found Joe MacGregor again victorious with his stock car body, and detailed interior looking sharp. This guy is amazing-in that he also won concourse honors at the Off-Road Nationals and the NORRCA Dirt Oval Nationals! Leonard Lee took second place and third was Eddie Mondragon, who has a race car in every

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SATURDAY

Qualifying got started early, as the drivers had been out early, tuning their cars in for the day's final qualifiers, two left to be exact-the final hope for an A-Main spot for many drivers whose luck had eluded them on Friday. The driving on Saturday saw a new track record and some upsets in top qualifying positions. The competition was intense, where tenths of seconds separated drivers after the day's racing concluded. I don't think I ever saw drivers run so fast in my life as when NORRCA President, J.R. Sitman, announced that the Mains were posted after qualifying rounds.

The Top Qualifiers after Saturday's racing in the Gear Case Open Class were drivers Charles Reisbol, who made it known he was top gun at 39/5:06.75, with Gary Demory only a lap off the pace. The TQ Gear Case Stock was Chris Nolan with 34/5:03.31 and looking unbeatable all weekend long. Lightning fast Bill Rainer broke the directs drive stock record on Saturday, unseating a few drivers with his 38/5:05.57; and he was cooking! Direct Drive Open competition was extremely close-the tightest of any class all weekend. Greg Banks was the Top Qualifier at 42/5:02.70; but three other drivers were on the same lap, breathing down his tailpipes, separated by seconds. Chuck Howell blew the TQ wide open with intense speed and cool driving at 46 laps/6:05.50 in the 12th Scale Stock Class.

After the excitement of Saturday's qualifying was over, NORRCA and Racers Haven provided a free BBQ for all racers, which gave everybody the chance to relax and meet other drivers under less intense cir-

cumstances. I enjoyed the opportunity to meet many of the drivers at the event; one such was Jon Vandervort, a high school student from San Diego, who represented Hobby Town and was making himself known as a contender, qualifying third in the Gearbox Stock Class.

Gary McAllister from McAllister Racing displayed on one large pit table his new Lexan bodies, including the New 300Z-Car, and his new stock and GTP driver interiors. Twister driver Brian Landgraff showed me a new CompositeCraft prototype car, with which he was doing very well-it looked awesome. I talked with some of the other drivers, Stock Direct Drive racer Joe MacGregor, the concourse winner. Joe sported a cool Associated graphite 10L car and is a RevTech sponsored driver from San Luis Obispo. I learned that Direct Drive Open Top Qualifier, Greg Banks, is also a RevTech driver and he uses an Associated 10L with a McAllister Thunderbird body. Speaking with Chuck Howell, the TQ in 12th Scale Stock, he told me that he runs an Associated 12L, swears by Buds Motor Dyno, and drives for a self-proclaimed Sledge Hammer Racing. You're not going to believe this(!): extremely dedicated driver Dave Cummings qualifies Friday, gets married on Saturday and is back racing on Sunday in his Main. NORRCA President J.R. Sitman acknowledged this dedication and offered his congratulations by giving wife Kim a brand new Panda Stock RC car. Congratulations Dave and Kim Cummings.

SUNDAY

Sunday morning brought up the Top Qualifier Speed Runs where the four Top Qualifiers in each class get to race against each other in a two

minute race. Having three minutes shaved off the actual five minute race time means gearing high and going at insane speeds to determine the fastest car on the track. The first Speed TQ run was the Gear Case Open Class in which Gary Demory pulled out front and was never seen or heard from again by the other racers (Charles Reisbol). Demory won this race at fantastic speed. Next, the Direct Drive Open TQ Run was a super human battle between Erik Steenhoven and Greg Banks; the lead was swapped back and forth between them, with Steenhoven prevailing and taking first, Banks second. The Gear Case Stock Run found Jon Vandervort blowing by TQ Chris Nolan to win the race, with Nolan finishing second. The Direct Drive Stock speed run saw Steve Lantz take the lead, only to be passed by Joe MacGregor who took the win, with Mike Eads barely scraping into second position within the last ten seconds of the race.

What could have possibly been more thrills than the TQ Speed Runs? No kidding, it was the Panda Run. Panda's are entry-level stock cars, distributed by Hobby Shack in Fountain Valley, CA. The TQ in each class gets to drive and equally-prepared Panda, sharing the road with a few other drivers, such as Dan Moynihan, from Dan's RC Stuff, a race sponsor. I've followed Panda's at many races since their inception. I've also watched in awe as Hot, California, air-brush artist Mike Ogle has applied his painting talents to their transparent bodies, creating objects of sleek and fiery beauty. Now I was thrilled to watch the Pandas in neck 'n neck racing as never seen before! At the starting tone, Dan Moynihan took the lead, leaving crashing Lexan in his wake. Charles Reisbol managed to find a clear path as he grabbed the lead, followed by Chuck Howell close on his heels. Dan Moynihan got popped by an out of control car and lost more ground to the leader Reisbol; but as time ticked by, slowly and surely Moynihan made his way forward through the pack, gaining on Reisbol and Howell. In a flash, Reisbol was taken out by more flying Lexan; and Chuck Howell moved into the lead. On the final turn, with twenty seconds to go, Moynihan caught up with Howell and they tore neck 'n neck for the finish line. As the tone sounded,



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Moynihan broke away by inches to win; and the crowd erupted into a wild cheer.

Enough of the craziness-it was time for the Mains. So far, the top team racing points were held by Team McAllister; in second place was RevTech; B & R Motors was third; and Team Radio Controlled Hobbies fourth, knocking on their door. The Mains would decide the final standings for the coveted Team Cup.

GEAR CASE OPEN "A" MAIN

The Gear Case Open Drives made their way up to begin the first of the A-Main events. The tone sounded and Gary Demory took the lead, only to get his doors blown off by Charles Reisbol, who rocketed by him to go on and claim victory with awesome speed. Reisbol's run in this event was even faster than his TQ pace! Demory was lightning fast, finishing in second place, with John Hammer Smith a lap behind in third.

DIRECT DRIVE OPEN "A"

MAIN

This was the most volatile race yet with four who had each turned a 42 lap pace. Direct Drive Open Top Qualifier was Greg Banks (Victor, Dan's, Cheetah, Composite, Source).

Now - to the action! Erik Steenhoven powered into the lead at turn three, with TQ Greg Banks right on his tail, and Roger Vorba pulling up third position. Gary Demory made his move, passing Vorba and doing battle with Banks for the second spot. As they powered along, Lexan went flying as Demory was slammed out of the way. Slightly after half-way down in the race, the leader Steenhoven faltered on back traffic and got onto the infield, while, with a blaze of speed, Greg Banks, with Vorba, went whizzing by. Steenhoven, not out yet, began his run back on leader Greg Banks. With time running out, Steenhoven passed Roger Vorba in second and set his sights on regaining the lead. With thirty seconds to go, he took Banks and went on to win as the time ran out. First went to Erik Steenhoven; second Greg Banks; and third to Roger Vorba.

GEAR CASE STOCK "A"

MAIN

Gear Case Stock took the field next and had close racing all weekend long. The real top gun would be decided here. Top Qualifier was Cris Nolan (Reedy).

This is another excitingly close race as Chris Nolan takes the lead with Jon Vandervort only inches behind. Vandervort gets around Chris Nolan in a straight-away battle; but Nolan puts pressure on leader Vandervort as Steve Saik makes his way into the third position. Vandervort and Nolan clash again and spin each other out, with Vandervort on the throttle the quickest, pulling again into first place, but not without cutting a tire. As Vandervort's handling is decreased, Nolan grabs the lead on an inside move. Steve Saik, who was only inches behind Nolan,

had radio interference, yanking Saik off the track and into a wall. He recovers and jumps back in, passing cars, while Nolan powers his lead home, with Vandervort in second place, and Saik in third.

DIRECT DRIVE STOCK "A"

MAIN

Direct Drive Stock looked like it would be another down to the wire thriller, with two drivers who had 38 laps and the other eight drivers at 37 laps a piece and separated by only tenths of seconds in qualifying. Top Qualifier was Bill Rainer (Dalton's, Tekin, T&A)

As the race starts, Bill Rainer and Steve Lantz pound each other for the first position and crash. Greg Hamilton takes the lead, followed by Lantz and Rainer. Greg Hamilton gets taken out and Steve Lantz swoops into first spot with TQ Rainer on his heels, while Jeff Hamilton makes his way into the third position. Nailed by a back marker, Lantz relinquishes his spot, and Rainer takes the lead with authority. Bill Rainer holds on to finish in first place, with Lantz in second and Jeff Hamilton in third.

1/12TH SCALE STOCK

"A" MAIN

TQ Chuck Howell gets out from the start to take the lead, followed by John Trino. Howell is pouring it on until his car goes crazily out of control. John Trino takes over the lead, followed by a flying Edwin Barr, who eventually passes Trino. Not giving up, Trino catches back up to Barr - they battle for the lead and both spin out. The new leader is Gary Brannon, who was patiently holding in second place the entire time. An undaunted Trino manages to get rolling again, and with thirty seconds left in the race, Trino passes Gary Brannon in a burst of killer speed to win the event. In first, John Trino; 2nd, Gary Brannon; 3rd, Benjamin Steele.

Shortly after the main events finished, trophies were awarded,

amid cheers from the crowd, to the winning drivers. Although some racers didn't win trophies, almost everyone won a prize donated by the manufacturers sponsoring this national racing event. The "Sportsmanship" award went to Chuck Howell, a man of outstanding character who takes the time to help his fellow racers. Congratulations to Team McAllister, who finished first in the Team Cup standing, to RevTech second, RCHR third and to B & R, who finished fourth.

The level of driving in all mains showed exceptional skill, not only in the "A" Mains but in the lower mains as well. These racers gave it their all; and their smiles, whether from winning a trophy or from finishing a good race, proved their enjoyment and satisfaction. Toting my equipment on the way out of Racers Haven, I asked John Trino, the 1/12 Scale Stock First Place Winner, what his aim in racing was. "Just to have fun," he replied, "just to have fun!" So true! Special thanks for all their support goes to: Gary McAllister of McAllister Racing, Bud Bartos of Buds Racing Products, Dan Moynihan of Dan's R/C Stuff, Bob Novak of Team Novak, Rob Robinson of Robinson Racing, James Yim of Model Craft, Neil & Peggy McCurdy of RevTech, Tony Minchu of Race Master, Don of TMS Racing, Lou and Lori Peralta of R/C News, Marie and Peter Barana of Competiton Plus, Earl & Doug of Action Trophy, Roger Curtis of Team Associated, Andy & Craig of Andy's R/C Products, Carlos Turano of Cheetah Racing, Della & Bruce Wilson of Autographics, and Dan Perkins of Varicom/Hobby Shack. Also a personal thanks from NORRCA President J.R. Sitman to all of the NORRCA and Racers Haven staff who made this event a big success.

Gear Case Open A Main

- 1st - Charles Reisbol
- 2nd - Gary Demory

- 3rd - John Smith
- 4th - Ted McDonald
- 5th - Roger Pane
- 6th - Steve McAfee
- 7th - Larry Dunn
- 8th - Eddie Mondragon
- 9th - Rich Landown
- 10th - Rick Atwood

Direct Drive Open A Main

- 1st - Erik Steenhoven
- 2nd - Greg Banks
- 3rd - Roger Vorba
- 4th - Steve Allen
- 5th - Gary Demory
- 6th - Rob Bishop
- 7th - Brian Landgraff
- 8th - Mike Dalton
- 9th - Joe Mac Gregor
- 10th - Dave May

B Main

- 1st - Gary McAllister
- 2nd - Carlos Turano
- 3rd - Brian Bowler
- 4th - Curtis Strawn
- 5th - Gary Hamilton
- 6th - Charles Reisbol
- 7th - Mike Eads
- 8th - Neil Van Order
- 9th - Charles Ferrari
- 10th - Sean Young

C Main

- 1st - John Jenkins
- 2nd - Tom Owens
- 3rd - Tatsuro Watanabe
- 4th - Bryan Blaser
- 5th - Jim Benincasa
- 6th - Barry Hedrick
- 7th - Jerry Meisenzahl
- 8th - Mark Trent
- 9th - Ken Moon
- 10th - Ernie Prince

D Main

- 1st - Kevin Stevens
- 2nd - Brian Rush
- 3rd - Leonard Lee
- 4th - Harry Komatsu
- 5th - Eddie Mondragon
- 6th - Tony Iafrati
- 7th - Dan Henley
- 8th - Tom Rotella
- 9th - Dan Moynihan
- 10th - Ichiro Inokuma

E Main

- 1st - David Mayhew
- 2nd - Nicholas Schons
- 3rd - Ed Winn
- 4th - Darin Ishitani
- 5th - Greg Lund
- 6th - Ed Allen
- 7th - Luis Mejia
- 8th - Sterling Banks

F Main

- 1st - John Smith
- 2nd - Bob Carlos
- 3rd - Ronald Brown
- 4th - Brad Russell
- 5th - Mike Vercason
- 6th - Steve Crosswhite
- 7th - Michael DeRoussett
- 8th - Steve Pritchett
- 9th - Bev Pritchett

Gear Case Stock A Main

- 1st - Chris Nolan
- 2nd - Jon Vandervort
- 3rd - Steve Saik
- 4th - Linda Winans
- 5th - Jim Collis

- 6th - David Goss
- 7th - Mark Soderberg
- 8th - Craig May
- 9th - Gaby Halcovich
- 10th - Ted Maddux

Direct Drive Stock A Main

- 1st - Bill Rainer
- 2nd - Steve Lantz
- 3rd - Jeff Hamilton
- 4th - Joe Mac Gregor
- 5th - Mike Eads
- 6th - Joe Ward
- 7th - Rick Blake
- 8th - Craig Hamilton
- 9th - Gary Hamilton
- 10th - Todd Wheaton

B Main

- 1st - Tommy Komatsu
- 2nd - Chuck Howell
- 3rd - Tatsuro Watanabe
- 4th - Matt Nolan
- 5th - Pete Gamari
- 6th - Rick Atwood
- 7th - Fred Lewis
- 8th - Don Winans
- 9th - Ichiro Inokuma
- 10th - John Jenkins

C Main

- 1st - Jay Mendosa
- 2nd - Jim Benincasa
- 3rd - Jon Vandervort
- 4th - Ted Maddux
- 5th - Jim Collis
- 6th - Roger Hsu
- 7th - Gary Lewis
- 8th - Ed Lewis
- 9th - Jim Brady
- 10th - Don Franchi/DNS

D Main

- 1st - Ed Allen
- 2nd - Michael Ost
- 3rd - Michael Frey
- 4th - Allen Williams
- 5th - Allyson Trent
- 6th - Jason Wynn
- 7th - Dave Cummings
- 8th - Patric Herring
- 9th - Chad Smith
- 10th - Steven Wilson/DNS

E Main

- 1st - James Mondragon
- 2nd - John Buxton
- 3rd - Barney Barnhill
- 4th - Michail De Roussett
- 5th - John Rodriguez
- 6th - Mike Vergason
- 7th - Steve Blair

1/12TH Stock

A Main

- 1st - John Trino
- 2nd - Gary Brannon
- 3rd - Benjamin Steele
- 4th - Tony Gammel
- 5th - Edwin Barr
- 6th - Dick Smith
- 7th - Jerry Craft
- 8th - Ronald Brown
- 9th - Chuch Howell
- 10th - George Lane/DNS





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KRIS MOORE DEVASTATES HAWAIIAN OPEN

Honolulu, HI — TEAM TWISTER blew through our 50th state like a hurricane. And when the devastation was over, Kris Moore had used two powerful combinations to take both the 2WD and 4WD classes. In 2WD Kris made the most of his hot **TWISTER #1002** motor, while in 4WD it was a **TWISTER #501** that powered him to a runaway victory. Naturally, Kris used **TWISTER #105 SCE Matched Batteries** to ensure he had plenty of power to finish what he started.

TWISTER SWEEPS THROUGH NORRCA OVAL NATL'S

Bakersfield, CA — New TEAM TWISTER member Brian Landgraff got off to a great start as he, his **TWISTER #2003** Motor and #105 SCE Matched Batteries blew away the 4WD competition at the 1989 NORRCA Oval Nationals. In 2WD, Eddie Knoles Jr. used his **TWISTER #702** Motor and #105 SCE Matched Batteries to dominate over the country's 2WD oval specialists.

MAGRUDER REIGNS OVER MIDWESTERN OVAL CHAMPS

Oklahoma City, OK — Privateer Nathan Magruder needed an "Unfair Advantage" to beat the factory drivers at the Midwestern Oval Champs. And he got it! Using a store-bought **TWISTER #2003** Motor and #105 SCE Matched Batteries he went out and put the big guns away in 4WD with an incredible display of power and driving talent. **TWISTER** welcomes Nathan to "The Unfair Advantage"!

TWISTER RIPS THROUGH WINE COUNTRY

Sonoma, CA — The peace and splendor of California's magnificent wine country were shattered by Team Twister. At the Region 6 Oval Championships, Brian Landgraff TQ'd, set a new track record, and won the 4WD class going away. In 2WD, it was vintage Eddie Knoles Jr. as he and his **TWISTER #702** blew the competition back into the vineyards. And in the Spring Car class, Jimmy Gouge took a solid TQ, powered by his **TWISTER #2004**. The Region may never be the same.

DREYFUSS DOMINATES MONSTER TRUCKS

Las Vegas, NV — Brandy Dreyfuss used a hot **TWISTER #202** to run away from a hungry Monster Truck field in the 1st Annual Las Vegas Race.

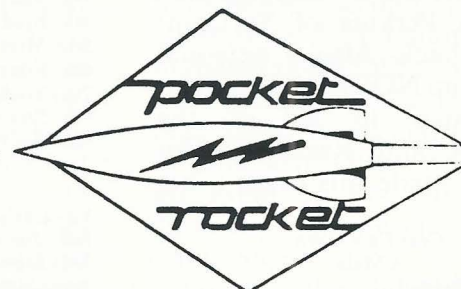
TWISTER'S NEW "POCKET ROCKETS"

TWISTER'S "POCKET ROCKETS" are a hot new line of sportsman motors designed to help keep costs down and performance up. On the street or track, POCKET ROCKETS will keep you ahead of the competition! Pocket Rockets are ROAR and NORRCA legal for Modified Class.

- #3001 — 17T-Bushing 4WD Offroad — \$28
- #3002 — 20T-Bushing 2WD Offroad — \$28
- #3003 — 15T-Bearing 4WD Offroad — \$45
- #3004 — 19T-Bearing 2WD Offroad — \$45

FREE TWISTER "R/C MOTOR TUNING GUIDE"

TWISTER'S new "R/C MOTOR TUNING GUIDE" is available FREE. It details the care and tuning of the electric R/C car motors with tips to help you get maximum performance and long life from ANY R/C motor. To get your copy, or just for tuning assistance, call the **TWISTER MOTOR HOTLINE** NUMBER: 818-914-6177, write us, or stop by our shop at 657 E. Arrow Highway, Suite H, Glendora, CA 91740.



RC10L TOPS 70MPH!

CLAUSEN CAUGHT SPEEDING IN CALIFORNIA

With factory ace Kent Clausen at the controls, an Associated RC10L ran through the traps at the Thunderdrome Oval at a record breaking 70MPH.



Fiberglass or Graphite chassis

THE RC10L
Team Associated's Newest Champion.

NiCd saddle pack, electronic speed control, body and radio not included.

The RC10L is a winner on the road, too, with Rick Hohwart taking the ROAR 1:10 Scale/Modified National Championship in Alabama.

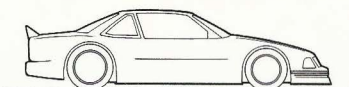
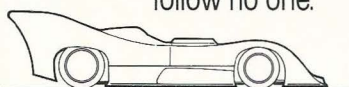


Complete ball bearing kit and graphite rear axle included.

A WINNING RACING HERITAGE

The RC10L has a tough act to follow, being first cousin to the 2-Time World Champion RC12L.

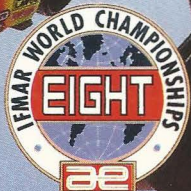
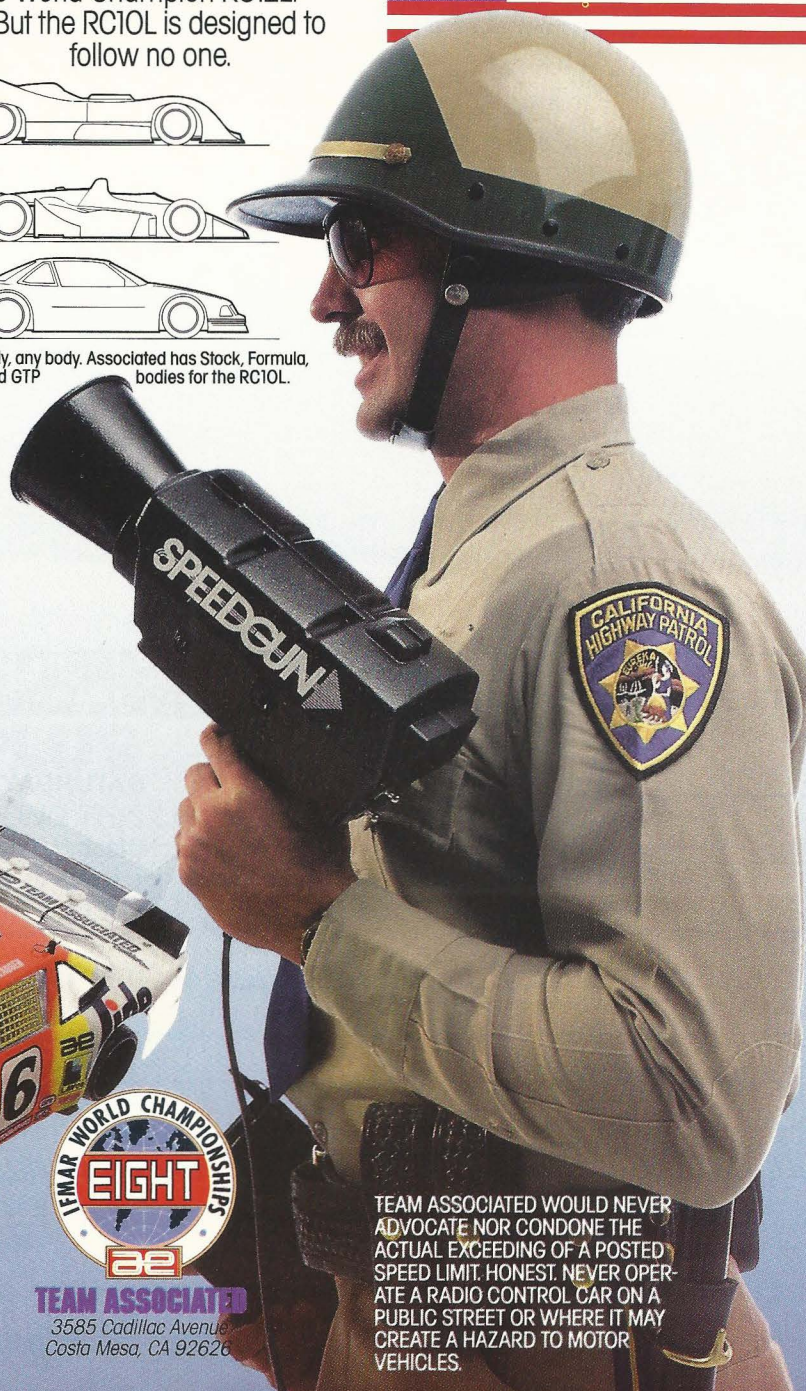
But the RC10L is designed to follow no one.



Pick a body, any body. Associated has Stock, Formula, Sports, and GTP bodies for the RC10L.

Strong, simple and easy to dial in, the RC10L is already rewriting the record books, indoors and out. Lay out a track and the RC10L wins on it. The RC10L's T-ball, monoshock rear and independent coil spring front suspension can be quickly tuned to all smooth racing surfaces.

Get an RC10L and start speeding, too.



TEAM ASSOCIATED
3585 Cadillac Avenue
Costa Mesa, CA 92626

TEAM ASSOCIATED WOULD NEVER ADVOCATE NOR CONDONE THE ACTUAL EXCEEDING OF A POSTED SPEED LIMIT. HONEST. NEVER OPERATE A RADIO CONTROL CAR ON A PUBLIC STREET OR WHERE IT MAY CREATE A HAZARD TO MOTOR VEHICLES.

2nd Annual MEMORIAL WEEKEND DIRT CHALLENGE

Offroad Sat. May 26, Dirt Oval Sun. May 27
Race Either Day or Both. 1:00 PM Race Time

AT WAGONHILL RACEWAY,

SLIPPERY ROCK, PA

JUST OFF INTERSTATES 79 & 80

Come Check Out Our New Indoor Facilities!

CLASSES:

- >1/10 2 WD Stock-Handout motor. 6 cell. 3.25 lbs. min.
- >1/10 4 WD Stock-Handout motor. 6 cell. 3.5 lbs. min.
- >1/10 2 WD Modified-7cell. \$80.00 Roar Motor.
- >1/10 4 WD Modified-7cell. \$80.00 Roar Motor.
- >1/10 or 1/12 Truck Open - 3 1/2" Minimum tires. Truck Bodies Only.

ENTRY FEES: (Must be received by May 16th)

- >Stock: 1 Day - \$30.00; Both Days - \$35.00 (includes 1 motor)
- >Modified: 1 Day - \$20.00; Both Days - \$25.00

FORMAT:

- >2 Heats & everyone runs a main both days.
- >Trophies 1-2-3 all mains both days. Each day is a separate program.
- >Points system for 2-Day winner.



All entries **must** be received by **May 16, 1990**. Questions? Call Jeff at (412) 458-4711

Name _____

Address _____

City _____ State _____ Zip Code _____

Phone # _____

SATURDAY

Class _____

FREQ 1) _____ 2) _____

Car Type _____

2nd Class _____

FREQ 1) _____ 2) _____

Car Type _____

SUNDAY

Class _____

FREQ 1) _____ 2) _____

Car Type _____

2nd Class _____

FREQ 1) _____ 2) _____

Car Type _____

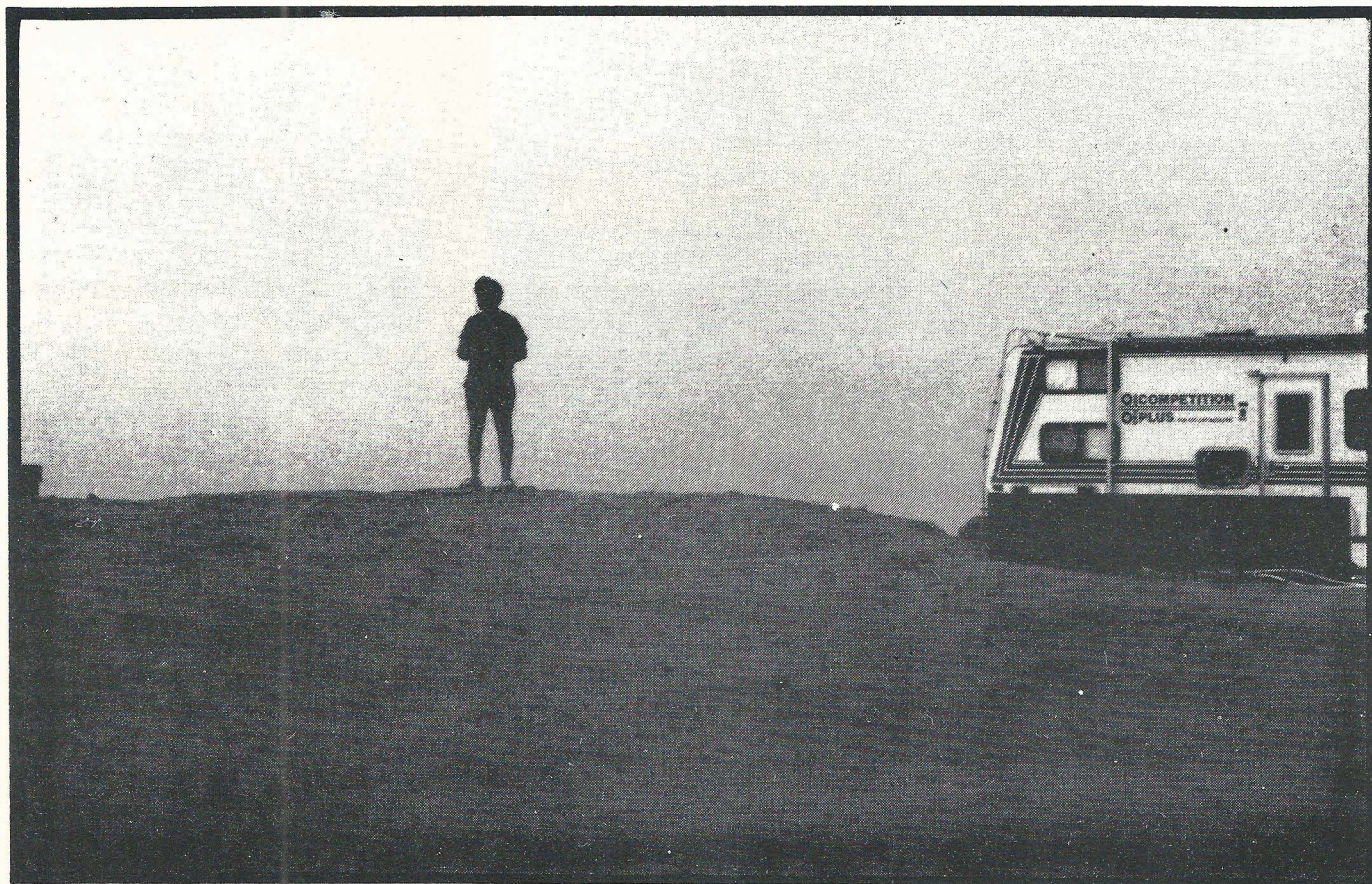
Make Check To: **Wagonhill Hobbies**
225 S. Broad St.
Grove City, PA 16127
Ph. (412) 458-4711

Entries Limited to first 250 Cars.
Last Year we had 217 Cars.

AC Power - New AMB Lap Counting - Manufacturer's Prizes - Refreshments.

As long as there is one driver left

there will always be Competition Plus.



 COMPETITION
 PLUS THE R/C CAR MAGAZINE

CUT ALONG THIS LINE AND MAIL TO:

COMPETITION PLUS

16582 Gothard Street, Unit Q - Huntington Beach, CA 92647 - (714) 842-3881 - (714) 846-0403 - FAX (714) 848-2969

☐ \$22.95 1 Year - ☐ \$42.95 2 Years - ☐ \$60.95 3 Years

Name

Address

City, State, Zip Code

☐ Check ☐ Mastercard ☐ Visa Amount \$

Credit Card # Exp. Date

Signature

Add \$10.00 for First Class & Canada - Overseas Air Mail \$55.00 - Overseas Surface \$35.00

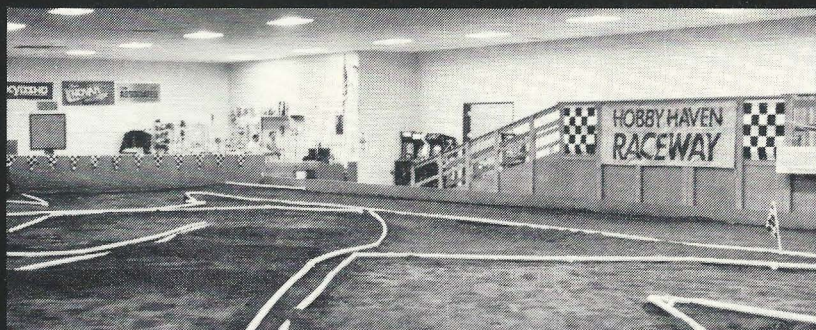


SITE OF THE 1990 ROAR OFF-ROAD NATIONALS

Hobby Haven Raceway
LIVERMORE, CA

HOME OF THE ANNUAL

Reedy Top Gun Championship &
Twister Off-Road Challenge

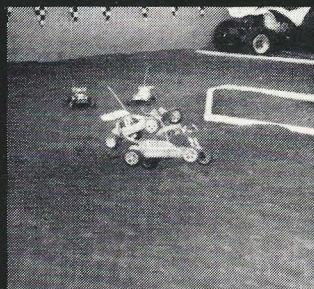


What people are saying about Hobby Haven Raceway:

"It's a high speed track".. Mike Reedy/Reedy Modifieds

"10".. Eustace Moore Jr./MIP Products

"One of the best"... Mike Walker/Twister Motors

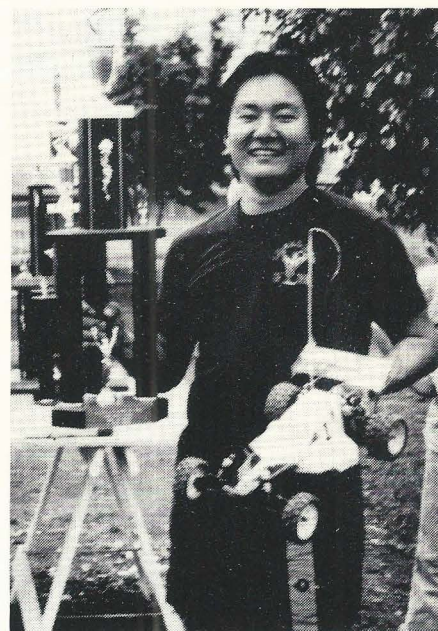


- One of the Largest Indoor Facilities in the Western United States —16,000 Sq. Feet.
- Ample Paved Parking with R.V. Access.
- Complete Parts Department
- Climate Controlled Racing Environment-A/C & Heating
- Complete Deli/Snack Bar
- Easy Freeway Access From S.F./Oakland Bay Area and Sacramento Area.
- Rental R.C. Cars Available
- Weekly Races and Practice Times — Call For Information

Hobby Haven Retail Center
72 South N. Street
Livermore, CA 94550
415/443-5828

Hobby Haven Raceway
3983 First Street
Livermore, CA 94550
415/443-7826

AUTO WING TAKES HAWAIIAN WIN!



Champion Dan Auho with his First Place car equipped with the Auto Wing.

In a critical moment Day Auho chose the Auto Wing for use on his 2WD car and clinched the 2WD points Championship for 1989. He also won the Pacific R/C Racing Association's State Championship.



PRO-LINE RACE NEWS

Just received word from PRO-LINE on their fantastic race results at the Winter Nationals of Dallas, TX. The race, held in early January was at Norm's R/C Hobbies & Raceway. Scott Montgomery of Irving, TX had a great weekend finishing first in the A Main of the 2WD Truck class and second in the A in 2WD Modified. Montgomery used Pro-Line No. 1045 Trac-Ta-Gator front and rear tires on the truck with dyable deep dish front and rear rims. In the 2WD Modified class Scott's choice was the No. 7015 Pro-15 (Red) 2.1 fronts and No. 7020 Pro-20 (Red) 2.0 rears.



Racing Schedule

— 1/8 & 1/4 Scale —

OUTLAW MOTOR SPEEDWAY

Every first & third Saturday - 1/4 Scale
Dirt Oval. 7920 Webster, Highland, CA.
Call (714) 864-1770

THE RANCH PIT SHOP

1655 E. Mission Blvd., Pomona, CA
91766. (714) 623-1506. Every second
Sunday.

MACHESNEY PARK RACEWAY

1/4 Scale - Large asphalt Oval and Drag
Strip. Racing every Saturday April thru
October. 1220 Shappert Dr., Machesney
Park, IL 61111. (815) 282-1311.

CAJON R/C SPEEDWAY

1875 Joe Crosson, El Cajon, CA 92020.
(San Diego County) - Asphalt Oval/
Road - Dirt Off-Road. Race Schedule
Hot Line (619) 449-0788; Track Info (619)
449-9948: 1/12, 1/10, 1/8, 1/4 Scale Rac-
ing. Monthly schedule available at track.
Race Every Sunday, Tues. nite, Friday
nite.

HOBBY CORNER RACEWAY

Large indoor dirt oval track - racing year
'round - 1/8 scale racing Wednesday
evenings - 1/8 and 1/4 scale racing Satur-
days. 2195 E. Garfield, Decatur, IL
62526. (217) 429-4477.

— 1/10 Scale —

G & S OFF-ROAD RACEWAY

Every Sunday - San Carlos & Meridian
Avenue, San Jose, CA.

KANSAS R/C RACING CLUB

Every 2nd Sun. - Junction City - 1 p.m.
Every 4th Sun. - Enterprise - 1 p.m.

CENTRAL NEW YORK

Lawrence Race Park

2509 Macedon Center Road, Palmyra,
NY 14522. (315) 597-6429. 1/10 and 1/12
electric auto racing. Nov.-Mar. Carpet
racing 1/12 scale. Oval and road racing.
April-Oct.

REECE'S R/C RACERS

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

PANTHORN RACEWAY

Panthorn Park, Burrill St., Southington,
CT. Every Saturday May 1st to Nov. 1st.
Off-Road, Oval, Baja, Truck Pulling.
Call (203) 628-9345 Ben Carr. 272-9326
Pete Church. 237-6976 Bob Lavoie. 879-
2316 Steve Magnani.

R/C HOBBIES RACEWAY

Route 163 Bozrah, CT

Racing Every Sunday - May 1 to Oct. 30.
For more information call: R/C Hob-
bies. (203) 886-9441, ask for Mike or Bob.

R & R HOBBY

We have 1/10 scale dirt tracks both
inside and outside, also 1/12 tracks both
inside, also 1/12 tracks both inside and
outside. R & R Hobby -1414 N. 24th St.,
Quincy, IL 62301. (217) 228-1133.

HAL'S HOBBY SHOP

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

RIVER CITY R/C OFF-ROAD

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

MASON DIXON R/C CAR CLUB

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

SNORR

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

TEAM RACE R/C CAR CLUB

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

F/X CITY RACEWAY

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

RIVER CITY RACEWAY

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

WALT'S HOBBY & CRAFT

2 Dwight Park Dr., Syracuse, NY 13209,
(315) 453-2291. New 12,000 sq. ft. bldg.
Two indoor tracks. 1/10 Clay Oval, Mon.
6:30 p.m. & Sat. 12 Noon; 1/10 Gearbox
Carpet, Mon. 6:30 p.m.; 1/12 & 1/10 Car-
pet Cars. Tues. 6:30 p.m. Oval and Road
Course; Wed. Evenings Weight Pulling.
Daily Practice. Computerized scoring.

HITT'S HOBBY AND RACEWAY

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

CARCLUB - COCHRANTON AREA

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

QUEEN CITY R/C RACEWAY

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

PDQ RACEWAYS & HOBBIES

1/8, 1/10, 1/12 Scales

Call times and details. 429 Bankhead
Highway, Mableton, GA 30059, (404)
941-2626.

GROUND ZERO RACEWAY

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

SROKA'S INDOOR R/C

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

FLINT R/C CAR CLUB

Flint, MI. Summer: Every other Sun.

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

MILE-HI R/C SPEEDWAYS

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

AMERICAN HOBBIES

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

C.A.R. CLUB

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

ARROW HOBBIES.

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

BLASTERS OFF-ROAD CLUB

Dirt Oval and Circuit Off-Road Course.
47 Riel Dr., St. Albert, Alberta. Contacts
Dean M. Simpson, (403) 481-8634, 17319
69th Ave., Edmondton, Alberta, Canada
T5T 3S7.

BUCKLEY SPEEDWAY

37 Douglas Street, Hartford, CT. Every
Sunday April 1st to Nov. 31st Black Top
Oval. For more information call "Ziggy"
or Debbie Kwasnicki (203) 246-4778.

HOBBY HAVEN RACEWAY

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

RADIO OPERATED AUTO RACING OF ROCHESTER

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

7:00 p.m. - Monday Pro Night
7:00 p.m. - Tuesday Boy Scout Nite
7:00 p.m. - Wednesday Teen Night
7:00 p.m. - Thursday Indoor Clay
7:00 p.m. - Friday Roar Meetings
7:00 p.m. - Sat. & Sun. Family Days

HOBBY HUT

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

USA RACEWAYS

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

Every Thursday Oval & Off-Road
Every Fri. Indoor Carpet Oval

R.C. BUGGYWORLD & RACEWAY

7511 Hamilton Ave. - RT. 127, MT.
Healthy, OH 45231. 522-0809. Wed-
nesday night off-road and oval on alter-
nating weeks. Also carpet races on
Monday nights 40 x 80 banked oval.

OUTLAW MOTOR SPEEDWAY

7920 Webster, Highland, CA, (714) 864-
1770. Tues. Tamiya Off-Road; Thur. Off-
Road & Dirt Oval; Fri. 1/10 & 1/12
on-road; 1st Sun. Dirt Oval; 2nd Sun. 1/
10 & 1/12 On-Road; 3rd & 4th Sun. Off-
Road.

LITTLES HOBBIES

Monday Nite - 1/10 Trucks
Tuesday Nite - 1/10 Sprint Cars
Wed.-Fri. - Open Practice Available

TEAM ASSOCIATED

Excitement is in the Airrrr!



1990

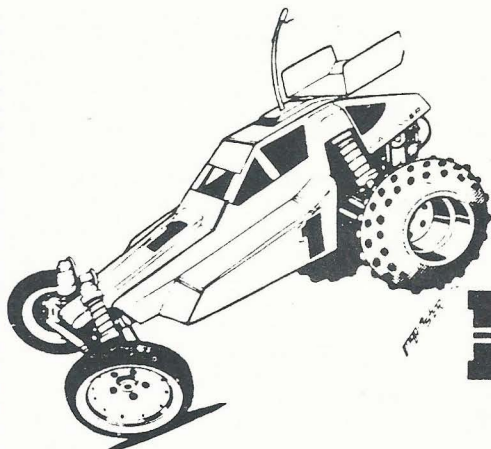
PRESENTS

IN CONJUNCTION WITH

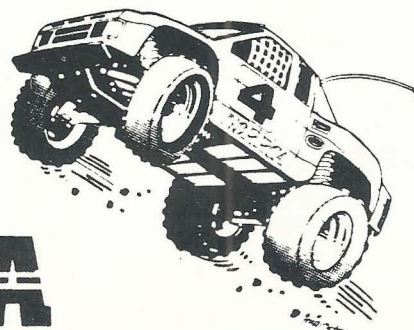
Mickey Thompson

OFF-ROAD CHAMPIONSHIP GRAN PRIX®

MARCH 31, '90
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HOUSTON, TEXAS



HOST HOTEL
LA QUINTA
9911 BUFFALO SPEEDWAY
HOUSTON, TX 713-668-8082
YOU MUST ASK FOR THE
NORRCA RACE RATE.



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NATIONAL ORGANIZATION FOR RACING
RADIO CONTROL AUTOS

NORRCA WILL DUPLICATE THE FULL SCALE TRACK AND USE THE LAYOUT FOR THE 1/10TH SCALE OFF-ROAD RACE * BRING YOUR OWN PIT TABLE & POWER * RACE PARTICIPANTS AND SPECTATORS CAN PURCHASE TICKETS TO THE FULL SCALE RACE INSIDE * NORRCA MEMBERSHIP IS REQUIRED * (MEMBERSHIP IS AVAILABLE AT THE RACE OR THROUGH NORRCA) * NORRCA T.O. PINS FOR TOP QUALIFIER IN EACH CLASS * CONOURS TROPHIES 1st - 3rd * ENTRIES LIMITED TO 200 * PRE-ENTRIES ARE \$15.00 1ST CLASS & \$10.00 FOR EACH ADDITIONAL CLASS * ENTRIES DAY OF RACE \$20.00 1ST CLASS & \$15.00 EACH ADDITIONAL CLASS * RACING STARTS AT 9 AM * LATE ENTRIES CLOSE AT 8AM * 2 ROUNDS AND THE MAINS * PRE-ENTRIES CLOSE MARCH 28TH

NAME _____				MICKEY THOMPSON HOUSTON				PHONE _____			
CLASS(ES):	2W STOCK _____	2W OPEN _____	4W STOCK _____	4W OPEN _____							
SUPER STOCK TRUCK _____		4W OPEN TRUCK _____		OPEN TRUCK _____		NOVICE _____					
2W FREQUENCIES 1. _____		2. _____		3. _____		4W FREQUENCIES 1. _____		2. _____		3. _____	

NO ENTRY REFUNDS. FOR ADDITIONAL INFO CALL NORRCA AT 714-981-9641 OR TEXAS DIRECTOR LONNIE COATS 817-481-6887. MAIL YOUR ENTRY AT LEAST 5 DAYS EARLY SEND ENTRY & CHECK PAYABLE TO: NORRCA, 1530 W. 8TH ST. #117, UPLAND, CA 91786

NORRCA # _____ CP

Sat. - 11 a.m. 2WD 6 yrs. to 16 yrs.
Sun. - 11 a.m. - All Classes Indoor Clay Oval and Road Track Fast -Stock & Modified Classes. Bolink AMB Lap Counter. 111 Main St., Rt. 66, Hebron, CT 06248. (203) 228-4942.

R/C WORLD & TRACK

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

FAST LANE R/C

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

RPM R/C RACEWAY

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

REC. R/C RACEWAY

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

MADISON AREA RADIO CONTROL CAR ASSOCIATION, INC.

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

THE RANCH PIT SHOP

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

COMPETITION HOBBY

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

CONNECTICUT AUTO RACING TEAM
1/10 Off-Road and Sprint Car Oval. 37 Douglas Street, Hartford, CT 06114. Zig (203) 246-4778.

HOBBYTOWN

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

Tues. - 7 p.m. - Lincoln
Wed. - 7 p.m. - Omaha
Sat. - 1 p.m. - Lincoln & Omaha
Sun. - 1 p.m. - Lincoln & Omaha

ROMAC

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

COOPER'S RC RACE CENTER

Racing every Sunday 2 p.m.
Open Wed. and Fri. 6 p.m.

Open Sat. & Sun. 12 noon
Oval and Off-Road

Contact Norris, Rt. 4 Box 122B, Chatham, VA 24531. (804) 724-4182.

VICTORIA HOBBY SHOP

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

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

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

HOBBYTOWN RACEWAY

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

BNS COMPETITION HOBBIES

Route 7, Box 380, Anderson, SC 29624, (803) 224-8591. Contact Bob Sanford. Racing and Open Practice Wed. 6:30 p.m., Every Saturday 1:00 p.m. 1/10 Dirt Oval.

DESERT HOBBIES & RACEWAY

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

TAIT'S HOBBY SHOP

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

J.G.S.

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

TRACKSIDE RACEWAY

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

WAGONHILL HOBBIES

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

DIXIE R/C HOBBY SHOP

Every weekend Sat. & Sun. The races will alternate between oval and motocross starting May 14 with oval and May 15 with motocross. Dixie R/C Hobby

Shop, P. O. Box 135, Ramseur, NC 27316, after 6 p.m. (919) 824-2770.

BREMEN RACEWAY

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

WEST TEXAS R/C RACEWAY

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

JIM'S R/C SPECIALTIES

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

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

ACTION SPEEDWAY

Indian River's Facility

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

THE INSIDE TRACK

Every Wednesday - 7 p.m. and Saturday 6 p.m. Classes: 2WD Stock and Modified, 4WD Stock and Modified and Monster Trucks. For more information call (312) 898-5649. 725 Hill Avenue, Aurora, IL 60505.

ABC R/C

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

TC'S R/C'S

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

BROCKTON INTERNATIONAL

SPEEDWAY

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

SONOMA COUNTY RACEWAY

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

ALL IN 1 RACEWAY

5612 S. 108th St. Hales Corners, WI. 1/10

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

THE SQUARE ROUNDHOUSE SPEEDWAY

Saturdays - 3 Events per month -Off-Road, Monster Truck Pulls and Oval Race. Oval dirt track and Off-road track. 1468 Lander Avenue, Turlock, CA 95380. (209) 668-4454. Ask for Harold Lindquist.

COASTAL BEND SANDBLASTERS R/C CAR CLUB

Races first thru 3rd Sundays, 2 p.m. start. Bill Witt Park, Yorktown Road, Corpus Christi, TX. Call Pete Broadway (512) 992-4448.

CAJON R/C SPEEDWAY

1875 Joe Crosson, El Cajon, CA 92020. Fastest paved oval & road course in CA. 1/10 & 1/12 scale. Please call for off-road dates. Hot Line (619) 449-0788/Track info 449-9948.

RADIO CONTROLLED HOBBIES & RACEWAY

Indoor Off-Road racing every Tuesday & Thursday evening beginning at 7 p.m. and Saturdays at 5 p.m. Open 7 days a week. 2011 Placentia Ave., Costa Mesa, CA 92627. For more info call (714) 631-1555.

R/C RACEWAYS

1/10 indoor dirt oval. 100' straightaways. Wed. 6 p.m. oval. Friday 6:30 p.m. oval. Sunday 12 noon oval or off-road. For more information call (219) 747-6414. 2710 Nuttman, Ft. Wayne, IN 46804.

R/C PERFORMANCE CENTER

Indoor high banked carpet oval. 170' x 90' off-road dirt indoor track. Racing 4 Days a week; Tues., Thurs., Sat. & Sun. Open 10 a.m. - 10 p.m. 7 days a week. 4 Manley Street, West Bridgewater, MA 02379. Ask for John (508) 588-9666.

PARLOR HOBBIES

1/10 on Asphalt - Full bodies -Grand National or ASA bodies preferred. Rabbit Lane & 34 Broad St., Matawan, NJ 566-3158.

R/C SPEED CENTER R/C ADDICTION

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

BROTHER-IN-LAWS R/C RACING

1/10 scale dirt oval. Racing every Sunday. Signups 10 a.m. Open Practice 12-6 Tues. - Sat. pit tables, 110 volt power. Call Bob (619) 949-5252. 16175 Main Street, Hesperia, CA.

CORCAR - COLUMBUS, OHIO

1/10 off-road racing May thru Sept. every Sunday. Signups start at 10:30 a.m. Excellent dirt track, computer scoring and picnic area. For information call Ray Williams (614) 890-2983.

MACHESNEY PARK RACEWAY

1220 Shappert Dr., Machesney Park, IL, (815) 282-1311. Racing every Fri. - Clay Track - Summer; Racing every Sat. - Large Asphalt Oval - Summer; Racing every Sat. - Drag Racing - Summer; Racing Every Sat. - Carpet - Winter.

CENTRAL MARYLAND ELECTRIC RACING CLUB

(CMERC) Community R/C Speedway

Middletown Park, Middletown, Maryland. 100' x 50' dirt oval, 14' wide lanes, 2' banked turns, No electricity available. Every Saturday. Contact John Mauchamer, (301) 698-9545.

SCHENECTADY R/C SPEEDWAY

Indoor Oval Carpet Racing. 1/10 & 1/12 and Monster Trucks. 955 State St., Schenectady, NY, (518) 370-3747.

THE COCKEYSVILLE ASTRODOME

C.A.R. Cockeysville Astrodome Racers, Inc., 10854 York Rd. (Rear) Cockeysville, MD, (301) 666-1098. High Bank Oval racing on concrete (indoors). Benches, Power, Grandstands. 7 p.m. Mon. - Open Practice; 7 p.m. Tues. - Rookie & Stock Practice; 7 p.m. Wed. - Computer Organized Racing; 7 p.m. Thurs. - Modified & Ultra-lite Practice; 7 p.m. Fri. - Trucks & Buggies Practice; 5 p.m. Sat. - Computer Organized Racing; 1 p.m. Sun. - Computer Organized Racing. Art LaPole (301) 889-2070.

BOB'S R/C SUPPLY & RACEWAY

Indoor Carpet Racing! Tues. 1/10 Oval; Fri. 1/12 Road Course; Sat. Monster Trucks. Stock & Modified. Snack bar. Call Bob, Nancy or Kevin (319) 232-2235, 935 Sheerer Ave., Waterloo, IA 50701.

EBERSOLE HOBBY & R/C RACEWAY

Off-Road and Oval. Races Wed., Thurs., Sat., and alternate Sun. 11417 W. Highway 54, Wichita, KS 67209. Len Ebersole, (316) 722-8888.

METRO-FAST RACEWAY & HOBBIES

125' x 48' indoor carpet track, pitting for 140+, power, hobby shop, video entertainment, food bar. Oval - Fri., Kid's racing every Sat. morn and alternate Sun. on on-road & off-road. 950 W. Irving Park Rd., Hanover Park, IL 60103, (312) 213-3977.

MID-CAROLINA R/C SUPER SPEEDWAY

The speedway is located on Flint Hill Rd. Off I-77/Carowinds exit. So. of Charlotte, NC. 1/10 & 1/12 High-Speed Banked Quad-Oval and Road Course. 385 ft. plus 26 degrees banking in turns concrete track. Fred Penland (704) 373-2535 7:30 a.m. to 4:30 p.m.

BROWNIE'S HOBBIES

Off-Road Dirt Track, hobby shop. Wed. eves and Sat. afternoons for practice. Racing - Fri. eves. 4WD & 2WD. Track open April - November. 124 Bennett St., Staten Island, NY 10302, (718) 727-2194.

ROADRUNNER R/C CENTRAL

5620 Bellaire, Houston, TX 77081, (713) 661-7574. 1/12 Carpet Oval or Road Course Thurs. Nite. 1/10 Carpet Oval Tues. & Fri. nite & Sun. pm.

ROADRUNNER R/C NORTH

12760 Veterans Memorial, Houston, TX 77014, (713) 537-7758. 1/10 Dirt Oval Wed, Fri. nite. 1/10 Dirt Off-Road Sat. & Sun.

ROADRUNNER R/C SOUTH

12902 Player, Houston, TX 77014, (713) 728-2277. 1/10 Indoor Dirt Off-Road Wed., Fri., & Sat.

NORTHERN MINI-RACERS

NMR Raceway, P. O. Box 415, 3524 E. Burdick, Minot, North Dakota 58701. 1st & 3rd Sun. 1/10, 6 cell. NASCAR bodies.

oval racing on carpet. Roger Lee, (701) 839-4731, 839-5294; Pat McWethy, (701) 839-8868, 852-6254.

ASHEVILLE HOBBY SPEEDWAY

Racing Wed. & Sat. - 7:30. 1/10 & 1/12 Asphalt Oval -Indoors. Hwy. 25, Naples, NC 28760, (704) 684-9814. Jack or Sharon Murdock.

HOBBY CENTER

High banked carpet oval track. Racing Fri. -7:30 p.m. 1/10 NASCAR, trucks, 2WD gearbox hot rod, 4WD wedge bodies, 1/12 scale. Any body ROAR stock motors all classes. Open practice during store hours. (502) 683-7611. 1233 Sweeney St., Owensboro, KY 42301.

R/C MOTORPLEX & HOBBY

Outside Tracks: One of Midwest's largest paved oval (160 x 115) with paved infield road course. Indoor Tracks: Dirt off-road & dirt oval. Carpet road course & oval. 1/12, 1/10 & 1/8. Snack bar, game room R/C hobby shop. 303 Herbert Rd., McHenry, IL 60050, (815) 385-1240. Bob Oaks or Jim Bostrom.

SACRAMENTO MINI-WHEELS RACEWAY

Indoor racing with 1/10 & 1/12 scale. Two tracks with off-road, dirt oval, and on-road. The on-road track is etched concrete. Racing Wednesday (off-road). Fri. (on-road). Every other Sat. (dirt oval). Sun. (off-road). 8711 Elder Creek Rd., Sacramento, CA 95826. Paul or Marge Schiager (916) 383-4011.

RAPID TRANSIT RACEWAY

2104 Broadway, Schenectady, NY 12306, (518) 372-0777. Summer Store Hours: Mon. - Fri. 4 p.m. - 10 p.m., Sat. 11 a.m. - 5 p.m.. Race Schedule: Mon, Tues, & Sat. Open for Practice. Wed. 7:30 p.m. Stock & Mod. Thurs. 7:30 p.m. Sprint Car. Fri. 7:30 p.m. Sportsman & Open Class.

NORTHERN ALBERTA SCALE CAR AUTO RACING

1/12 and 1/10 On-Road Racing, 1/12, 4 cell indoors on carpet during winter. 1/10, 6-cell outdoors during summer. Dean Simpson (403) 481-8634. 17319 69th Ave., Edmonton, Alberta, Canada T5T-3S7.

HOBBY CORNER RACEWAY

Sun. - alternating oval & off-road 1 p.m. Tues. - oval racing 7 p.m. Large indoor dirt oval track with 4 foot banks. 2195 E. Garfield, Decatur, IL 62526 (217) 429-4477.

PHILLY RADIO CONTROLLED RACERS R/C CAR CLUB

Announcing the opening of a paved race track for R/C 1/10 on-road. ROAR rules. Sun., April - November. 11 a.m.. 7790 Dungan Rd., N. E. Philadelphia. Jon (215) 224-4822 or Bernie (215) 831-1835.

ARVIN'S HOBBY CENTRE

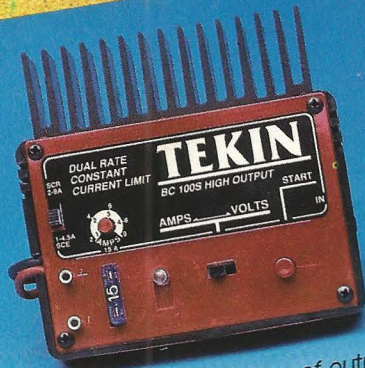
1403 E. Spring St., New Albany, IN 47150, (812) 945-3745. We have a 2,600 sq. ft. carpet track which has moveable rails so that we can change the layout from oval to off-road. We run offroad and on-road cars on Saturday, Sunday, Wednesday nights.

ISLAND HOBBIES & RACEWAY

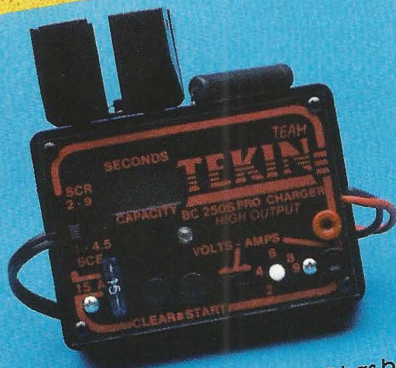
Mon.: 2WD Monster Trucks - Stock. Monster Trucks 6-cell Mod.; Tuesday 1/10 Off-Road Stock, 1/10 Sprint Cars - Open; Wed. 1/10 On-Road, Stock NASCAR bodies, On-Road 6-cell Mod. GTP bodies; Thurs. 4WD Trucks - Open.

TEKIN

COMPETITION R/C ELECTRONICS



BC100S CHARGER - 2 types of output. Soft pulse for SCE cells, and hard pulse for SCRs. Get more power, life, and run time from your cells. From the inventors of peak detection charging.



BATTERY CHARGER MODEL BC250S has built in digital coulomb meter to estimate battery capacity and run time each time you charge your pack. From the inventors and leaders of peak charging - now with soft pulse circuit.

**COMING SOON
NEW HIGH POWER ESC**



ESC 700

TEMPFET SPEED CONTROLS



Competition type aftermarket speed controls handle high power modified motors. Tempfets mean no overheating; extra strong braking action. New BEC circuit design improves radio reception, especially with "BEC" Receivers. Model 600 has hand selected mosfets and now 13 gauge wire for absolute maximum power. Model 600 also now uses "Soft Pulse" motor current, so the motor runs cooler and develops more power. Smooth response improves driver performance. Mini size, lightweight, high performance, and reliable, dependable operation.



ESC REVERSE MODULE - Adds proportional reverse to most competition type ESCs. Simple plug in installation. Easily handles 6-7 cells, and motors down to 17 turns. #ERM-80 Fut J, air, KO (Available December '89)



MICRO RECEIVER - 1.2" square, 0.4 oz., much smaller and lighter than most stock receivers, and it works. Crystal filter provides maximum noise rejection available in a mini receiver. Resists speed control noise. Available for most AM radios.

NATIONAL AND WORLD CHAMPIONS

Everything we make is the best of its kind. For reliable, dependable, hassle-free equipment that delivers performance to compete at the highest levels, TEKIN is it.

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Available at competition oriented, hobby shops everywhere.

Racers Haven

REEDY
Modifieds

NOVAK

Presents

the 1990 Reedy-Novak Race of Champions **Dirt Oval, April 14 -15**

- What:** Racers Haven proudly hosts the most prestigious dirt oval race of the year. The Reedy Novak Race of Champions has been known to bring out the best dirt oval racers in the country, and this year's race will be no exception. Commitments have already been received by several current National Champions as well as past and defending Race of Champions Invitational class winners. Don't miss the opportunity to see the nation's finest battle it out on the all new Racers Haven dirt oval track.
- When:** Friday, April 13: Open practice 10am-10pm
Saturday, April 14: 3 rounds qualifying, 10am
Sunday, April 15: Concourse, 1 round qualifying, Trophy Dash, and Mains, 9am
- Where:** Racers Haven 7401 White Lane #9 . Bakersfield, CA 93309
- Classes:** 2WD Stock, 2WD Open, 4WD Stock, 4WD Open, Sprint
Invitational Class (By invitation only: 2WD Open & 4WD Open)
- Awards:** 1st - 3rd all classes, Invitational: Top 10 finishers
- Track:** All new 120x60 cushion track (Bring your knobbies!)
- Hotel:** Travel Lodge Plaza Inn 1030 Wible Rd. Bakersfield, CA 805-834-3377
- Rules:** ROAR rules apply & ROAR membership required.
- Entry Fee:** \$20 for 1st class, \$15 each additional class. ROAR membership \$25 annually.
- Information:** For more information: Mail a 4x9 S.A.S.E. to Racers Haven. 805-835-0441

Detach entry form and mail to: Racers Haven 7401 White La. #9 . Bakersfield, CA 93309 (If you desire entry confirmation, include a 4x9 S.A.S.E.)

the Reedy-Novak Race of Champions

Name _____ **Phone** _____ **ROAR#** _____
Address _____ **City** _____ **State** _____ **Zip** _____
Classes: 1. _____ Frequencies 1. _____ 2. _____ 3. _____
2. _____ Frequencies 1. _____ 2. _____ 3. _____
3. _____ Frequencies 1. _____ 2. _____ 3. _____
Sponsors: _____

Make checks payable to Racers Haven. Total amount enclosed: _____

4WD Cars - Open, 1/12 On-Road Stock 6-cell. All racing starts at 7 p.m. Open practice Sat. & Sun. Contact Dave at (516) 234-7428.

D & T HOBBIES

Two tracks, off-road & high speed concrete oval. 1/10 & 1/12 Wed., Fri., Sat., and Sun. For specific, please call (219) 674-8533. 55575 Ash Rd., Osceola, IN 46561.

TEXAS R/C RACEWAY

Home of the Plano Outlaws

Tues. and Sat. - 1/10 On-Road; Fri. NAS-CAR nite; Sun. 1/12 On-Road. 75 Central Expressway at 15th St. Exit 29, Palisades Square Shopping Center, Plano, Texas. Call Jim (214) 517-7485 or Dean (214) 519-0324.

RACEWAY HOBBIES

Wed. 7 p.m. - 2WD & 4WD Off-Road; Sat. 1 p.m. - Off-Road & Oval. Lexington Shoppes, 6845 So. U.S. A. Port St. Lucie, FL 34952, (407) 468-4338.

TEAM R & R, INC.

Westminster, Maryland 21157. Indoor oval carpet racing, 1/10 & 1/12 scale. Racing every Sunday. For more info, phone (301) 848-2144 or (301) 876-2983.

SUMMIT SPEEDWAY

Indoor Dirt Oval - Every Friday Night 7 p.m. Sundays indoor or outdoor (weather permitting) off-road or oval at noon. Call (219) 489-RACE (7223). 1706 W. Till Rd., Fort Wayne, IN 46818.

K & M R/C SPEEDWAY & HOBBIES

735 Canal St., Stamford, CT 06902, (203) 967-7255. One of New England's Largest Indoor Tracks. Weekly Hours Mon.-Fri. 4 p.m.-10 p.m.; Sat. & Sun 12 p.m.-10 p.m. 7,000 sq. ft. complex, ample pit area with power, 110' x 35 sq. ft. track anti-static carpet, fully stocked hobby shop. Organized racing held on a weekly basis. Call for details.

ALCAR INTER. R/C RACEWAY

Off-Road Fri. nights, 1/12 & 1/10 carpet Sundays. Closed Mondays. Hobby shop & snack bar. 33501-A Lake Rd., Avon Lake, OH 44012, (216) 933-6017.

MARYLAND R/C CLUB

1/10 & 1/12 Scale Racing

Indoor Carpet racing

Contact Toy World R/C, (301) 424-0430.

R.C.A.R. of TULSA

Indoor Racing, 10404 E. 55th Place, Unit A, Tulsa, OK. March 3, 10, 17. Track Opens 6 p.m. Qualifying begins 7 p.m. For more info call Dave Cole (918) 745-9898.

HOBBIES ETC. RACEWAY

Medford High School, Winthrop St., Medford, MA. Every Sunday. Doors open at 12 noon. Racing at 1 p.m. Indoor on-road carpet course for 1/10 and 1/12 scale. Computer lap counting, trophy and gift certificate awards. Ample parking, AC power, technical aid, hobby shop and concession stand on sight. For more info call (617) 389-3331.

AMERICAN ANGLER TACKLE & R/C HOBBY CENTER'S "AA RACEWAY"

1617 Toomey Rd., Austin, TX 78704, (512) 474-8277. 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.

REMOTE HOBBY'S INDOOR RACING
Shop (803) 736-9446, Track (803) 699-0528. 9005 C Two Notch Rd., Columbia,

SC 29223. Fri. nites - Oval 1/10 Pan/Trans. Sat. nites - Road Course 1/10 Pan/Trans/Trucks. Pits for 40+, Parts, Power and Refreshments.

MackKAY RACEWAYS

1/10 Electric Off-Road Sundays. 1044 West 14th Street, North Vancouver, BC Canada. 150' straights/5 banks/moguls & jumps. Operated by the Western Canada R/C Club. For info call Dana Shaw (604) 980-4504.

ANTIOCH RACEWAY

1/10 dirt oval racing every Fri. 7 p.m. / 10 off-road every Wed. 7 p.m. All Classes. Sat. & Sun. 1/10 dirt oval and off-road 10:30 a.m. Also night racing. Pit Tables, Power, open 7 days a week. 5631 Lone Tree Way, Antioch, CA 94509. Call (415) 754-5700 Jack Hanson.

CLEVELAND RADIO RACEWAY

3209 Lorain Avenue
Cleveland, OH 44113

For more info contact Troy Singer (Owner) (216) 741-1649 or Rick Moore (Race Coordinator) (216) 255-5429 Fri. 7-Midnight Oval or Off-Road; Sat. Noon - 6 p.m. Practice; Sun. 10 a.m. - 6 p.m. Oval or Off-Road. Classes: 2WD Stock & Modified; 4WD Modified & Monster Trucks.

SWEET UNION R/C RACEWAY

1/10 Dirt Oval & Off-Road. 388D Quarry Rd., Monroe, NC 28110. 300' 4 Turn Oval, 520' 19 Turn Off-Road (Shortest Line Measurement). "TrackMate" Lap Counting & MGT System. Racing Sat. & Sun. 1st & 3rd Weekends. Covered Driver's Stand, Trophies & Door Prizes Each Race Day. For more info Call (704) 289-3621.

NORTHSTAR RACEWAY

Featuring Minnesota's first indoor & outdoor clay oval and off-road surfaces. Fully stocked, specialized hobby shop. 10751 University Ave., Blaine, MN 55433, (612) 757-0374. Tues. - 7 p.m. off-road; Thur. - 7 p.m. oval racing; Sat. - 11 a.m. off-road racing. Send S.A.S.E. or call for complete schedule.

SIDEWAYS CITY

22,000 sq. ft. Building, racing every Tues. & Fri. nite and Sun. afternoon. Hobby shop, hot food concession, video game room, and kiddie land. The track is a super speedway cement oval. Dirt track open May thru September. Call (616) 792-2004 for further info. Located in Wayland, MI. Take US 131 to the Wayland Exit, turn East to light, turn North 1/12 mile.

RIVER CITIES R/C RACEWAY

Ashland, Kentucky 41101

Racing at 5:30 Saturday evenings under a light area. Radio impound, concession booth, IBM Computer, Brimstar Management System, and AMB Lap Counter and P/A system. The track is a semi-hard dirt oval, 90' straight with 12' lanes and 60' across. Corners are banked approximately 15 degrees with 14' lanes, ample room for passing. Call Randy Aust (606) 836-4273 or Jason Graham (606) 836-2613.

— 1/12 Scale —

FLORIDA STATE SERIES

March 23 & 24 - Jacksonville

April 28 & 29 - Fort Lauderdale

October 13 & 14 - Pinellas Park

November 10 & 11 - Naples

GLASS CITY RADIO CONTROL

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

S.T.A.R.C.

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

TEAM RACE R/C CAR CLUB

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

NORTHERN MINI-RACERS

NMR Raceway, P. O. Box 415, 3524 East Burdick, Minot, ND 58701. 1st & 3rd Sat., 1/12, 4-cell, Can-Am/GTP bodies, road racing on carpet. Roger Lee, (701) 839-4731 or 839-5294. Pat McWethy, (701) 839-8868 or 852-6254.

KOUNTRY KLIN HOBBY

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

USA RACEWAYS

6083 Dixie Highway, Bridgeport, Michigan 48722, (517) 777-7USA

Tue. Nite On-Road; Sat. Nite On-Road; Every Other Sat. Eve. Stock On-Road

THE RANCH PIT SHOP

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

OMAHA NEBRASKA RADIO

OPERATED AUTO DRIVERS

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

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

Southern Ontario Radio Control Race Car Club in Toronto, Ontario, Canada. Racing Alternating Sun. nites October - April. 6 p.m. to 10 p.m. Scott Reynolds 298-4941 or Gary Joi 421-9061.

CENTRAL MARYLAND ELECTRIC RACING CLUB

COMMUNITY R/C SPEEDWAY

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

HOBBIES PLUS & R/C RACEWAY

1/10 & 1/12 scale indoor carpet racing. Tri-Oval & on-road, 60+ pit areas w/ electric, hobby shop, 7 days, open practice. Also Sun. A.M. 1/10 off-road dirt (150 x 70) and 1/8 gas off-road. 650 Amherst Street, Nashua, NH 03063, (603) 882-9200.

CARPETBURNERS R/C CLUB

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

CAPITOL DISTRICT R/C OUTLAWS

4 Cell Carpet Cars. NASCAR bodies, Oval and Road Course. Every Friday Night at 7:30 p.m. October to the End of April. For further info contact Capitol District R/C Outlaws, 223 Fourth St., Scotta, NY 12302, or Sam Roberts (518) 374-3801.

CP

PRO-CAT

Advancing the Sport-Improving the Breed

Into the spotlight comes the Schumacher Pro-Cat. From the same team that developed the World Championship winning 4WD Cat and innovative 2WD Topcat, the Pro-Cat has been designed for all levels of competitor to be the ultimate in 4WD 1/10 scale off road racers straight from the box.



Trinity has the 'Cats
Trinity has the parts

We are proud to announce that we are now the sole importer for all Schumacher 'Cats and have **all** parts instantly available. If your local hobby shop isn't stocking them, have them give us a call. Now is the time to drive the latest and the best 4WD Pro-Cat.

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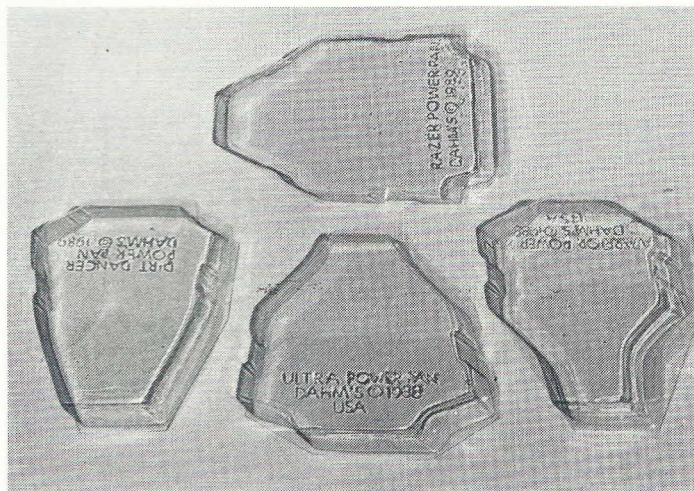
NEW PRODUCTS

Parma International presents an all new bumper for the YZ-10 and nerf wings that are adjustable to fit all cars. Both of these fine products are made from damage resistant 1/8" black kydex. The bumper and nerf wing will absorb all impacts that normally would have ended your race. No. 13222 - Yokomo YZ-10 Front Bumper - \$5.50. No. 18625 - 1/10 Nerf Wing Adjustable for all cars - \$5.00. Parma International, Inc., 13927-M Progress Parkway, North Royalton, OH 44133.

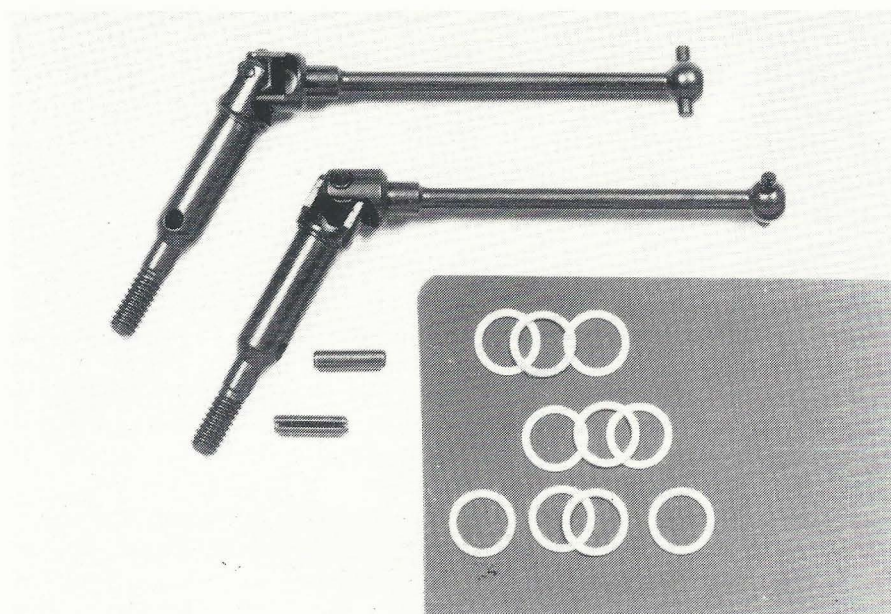
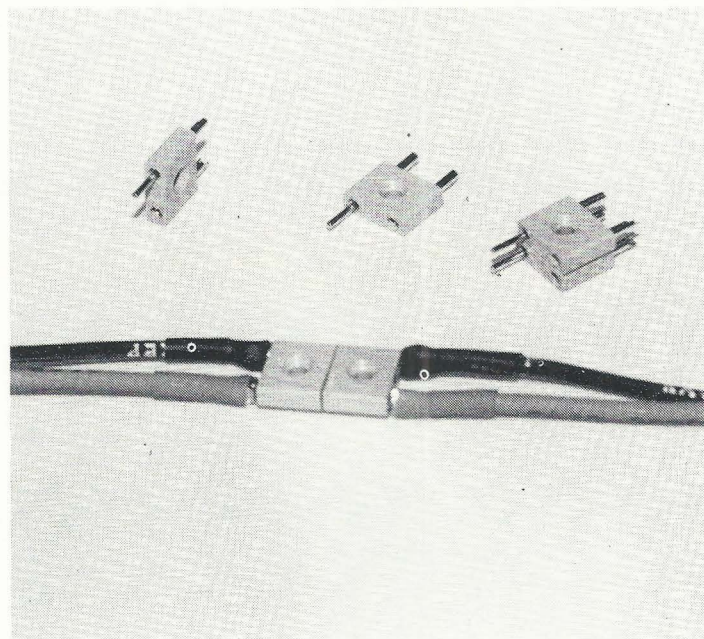


Formula 1 Motor Spray, Part Number F1007 - \$6.95. A superior blend of high quality solvents, Formula 1 Motor Spray is designed to rid your motor of foreign particles and brush deposits there by increasing power, performance and longevity. Formula 1 has been tested extensively. Not only does it yield higher RPM's than other popular sprays, it's effect also lasts longer while racing. Comes with adjustable spray nozzle (low, medium, high), extension tube and is now in a brighter can. As always, Formula 1 is ozone friendly. For a catalog of Paragon Racing Products send \$2.00 for shipping and handling to: Paragon, Dept. CP2, 690 Industrial Circle So., Shakopee, MN 55379.

Dahm's Power Pans - Retail \$10.98. Power Pans are heavy-duty lexan underbodies that make your car even more aerodynamic, and help seal out dirt and moisture. The Warrior Power Pan No. D140 fits Dahm's Warrior racing body. The Ultra Power Pan D145 fits Dahm's Ultra racing body. The Razer Power Pan No. D155 fits Dahm's Razer racing body. The Dirt Dancer Power Pan No. D165 fits Dahm's Dirt Dancer racing body. Dahm's Racing Bodies, P. O. Box 360, Cotati, CA 94931-0360.

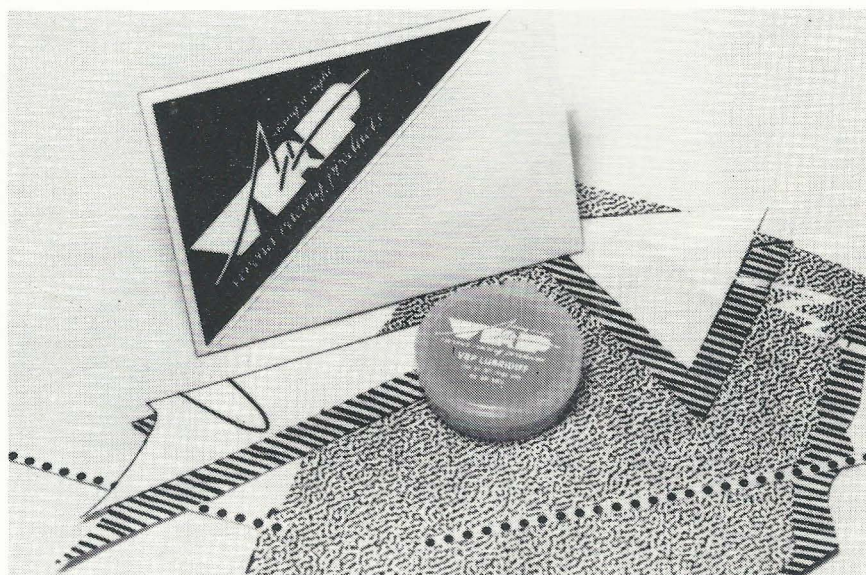


PowerPipe Connectors. A totally new connector system for electric R/C cars and boats! The PowerPipe connector contains many features asked for by the serious competitor. Small and rugged it has been proven in R/C car racing competition. Designed to connect the speed control to the battery and the motor, its unique design prevents reverse plugging that can destroy expensive electronic components. The gold plated, machined pins mean no power loss even after hundreds of insertions. They are easily stackable to carry the high current of modified motors. Their small size (.75" x .44" x .13") makes them very useful. PowerPipes are available for \$1.85 each or 5 for \$7.50. Bold Creations, 1305 Abbey Rd., Round Rock, TX 78681, 1-800-628-8863.

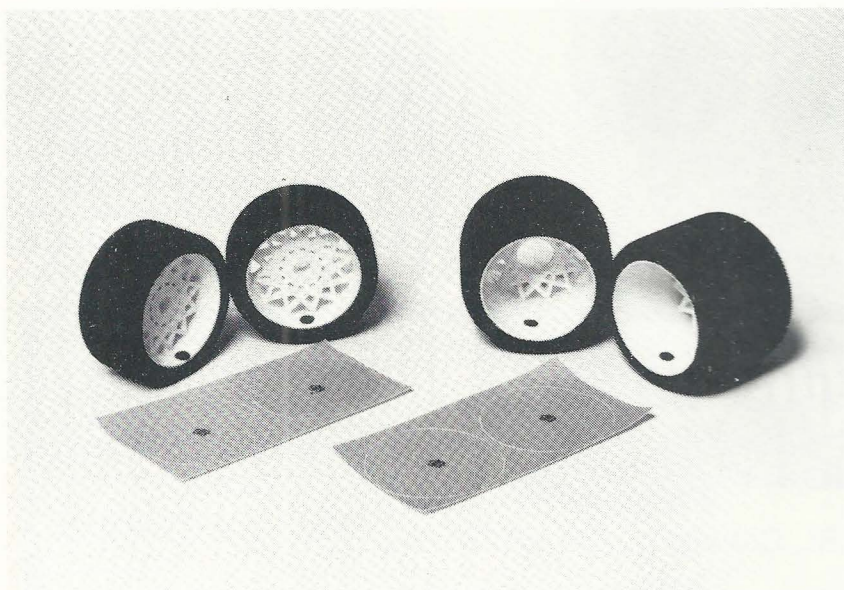
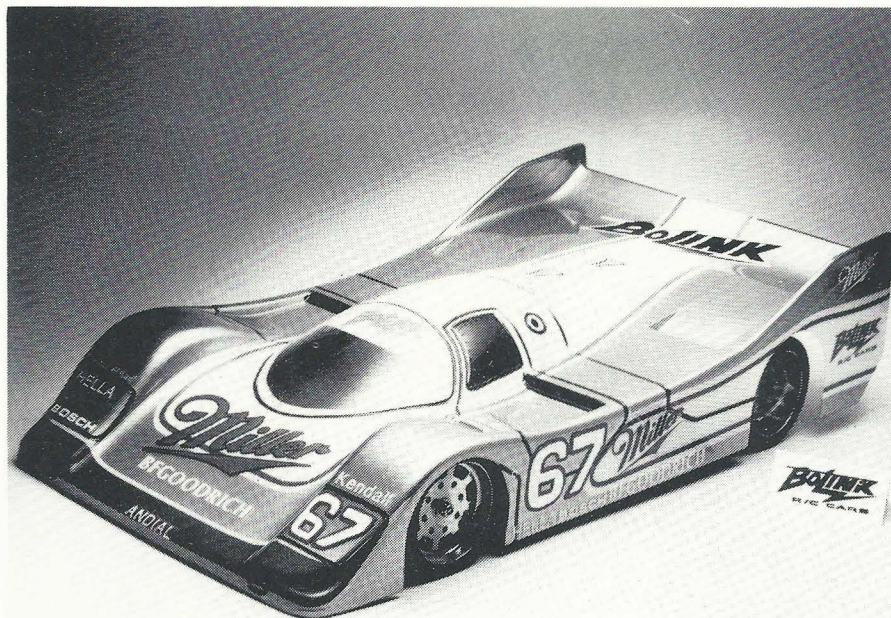


Associated Universal Dogbone/Stub Axle. This rear universal dog/bone/stub axle combination permits free, unhampered, suspension movement during acceleration. Included are pins and precision shims, allowing accurate alignment from transmission to hub carrier. Fits RC10, RC10 Graphite, TQ10. Part No. 6371. Associated Electrics, 3585 Cadillac Avenue, Costa Mesa, CA 92626.

VRP Lubridiff (LD928) is a high-tech synthetic grease for use on all ball-type diffs. It has a very high traction coefficient which allows the diff balls to grip the rings without unnecessary tightening of the diff. The unique properties allow the diff to work smoothly and efficiently. Unlike other diff lubes that are base silicone greases, this product was specifically formulated for its intended purpose on R/C cars. This hot-pink product has become the racers' choice and is winning across the country! VRP Racing Products, 4555 Groves Rd., No. 15, Columbus, OH 43232, (614) 861-4555.



962 Porsche - \$18.00. Road Racers take note, are you looking for that one special body that's everything you ever wanted in a road course body? Look no further BoLink's new 1/10 scale 962 Porsche (BL-2337) is that body, it's lean and low and ready to go. Remember you don't have to be Andretti to drive a Porsche. Mount one up and make a run for the checkered flag. Complete information on all BoLink Products is available by sending \$3.00 for the latest catalog/price sheet, and a FREE "He Who Dies With The Most Toys Wins!" bumper sticker. Write to: BoLink R/C Cars, Inc., 420 Hosea Rd., Lawrenceville, GA 30245.

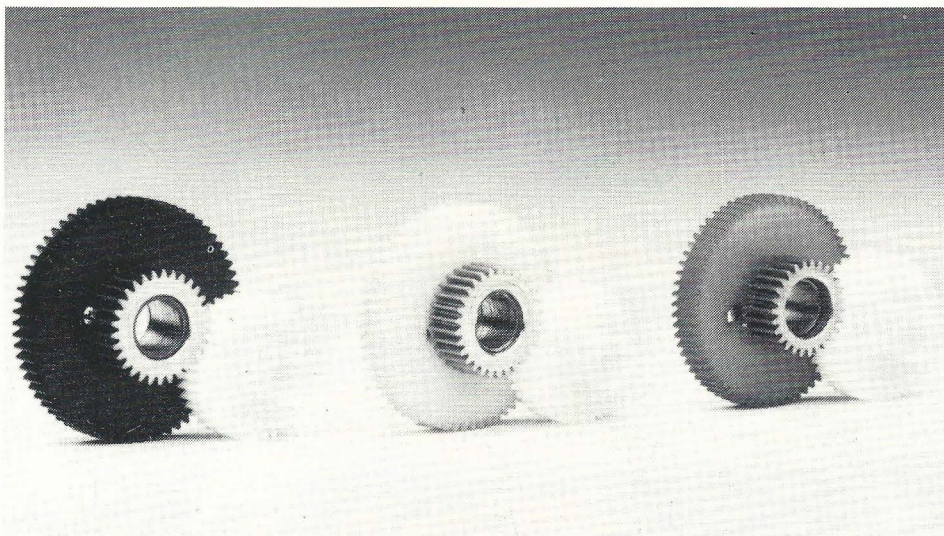
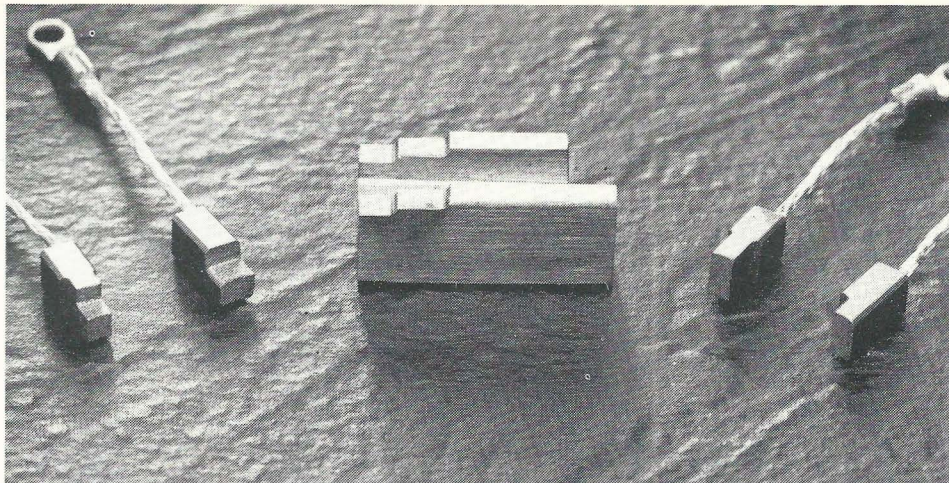


Twinn-K UFRA Black Dots have been designed and are manufactured specifically for the upcoming racers and the current "pro" racers nationwide. UFRA Black Dots offer long wearing characteristics and superior handling performance on all types of surfaces - concrete, asphalt, clay, carpet, dirt, and most types of weather conditions. Twinn-K has offered UFRA compounds in donut form for 1/8 scale racers for many years. UFRA is available mounted and trued for 1/10 racers (#9836 fronts @ 26.00 pr. and #9837 rear @ 29.50 pr.) and 1/12 scale racers (#0854 fronts @ 13.95 pr. and #0864 rears @ 13.95 pr.). TWINN-K, P. O. Box 31228, Indianapolis, IN 46231.

Treatment "Final Detail" Model Wax. The most innovative product to hit the model and hobby industry. The world's only pure Carnauba pre-softened wax designed for model cars, boats and planes. This specially formulated carnauba wax is manufactured by Treatment Product, Ltd., a highly specialized automotive chemical company with over 20 years experience. The Final Detail can be used to deepen color and help remove minor imperfections. Model Wax Division, Treatment Products, Ltd., 3057 N. Rockwell, #100, Chicago. IL 60618, 1-800-747-1WAX.



Leading Edge - Motor Brush Cutting Jig. Unique new tool that enables anyone to custom cut their own brushes. All popular cuts are made easy with this tool and any file. List Price \$14.95, Part No. LE3000. Available now! Contact Leading Edge, 3224 Fourth Street, Wyandotte, MI 48192, (313) 282-3586.



0501 - 66 tooth Optima-Ultima Overdrive kit; 0502 - 64 tooth; 0503 - 62 tooth. The above mentioned are 48 pitch overdrive kit, which includes cluster gear and outdrive gear, excellent for stock motors. Color coded spurs for easy identification. 0504 - 66 tooth Optima-Ultima Underdrive Kit; 0505 - 64 tooth; 0506 - 62 tooth. These above are a 48 pitch underdrive kit, which includes cluster gear and outdrive gear, excellent for modified motors. Color coded spurs for easy identification. The kit prices are \$27.95. Trinity Products, 1901 East Linden Ave., #8, Linden, NJ 07036, (201) 862-1705-08.

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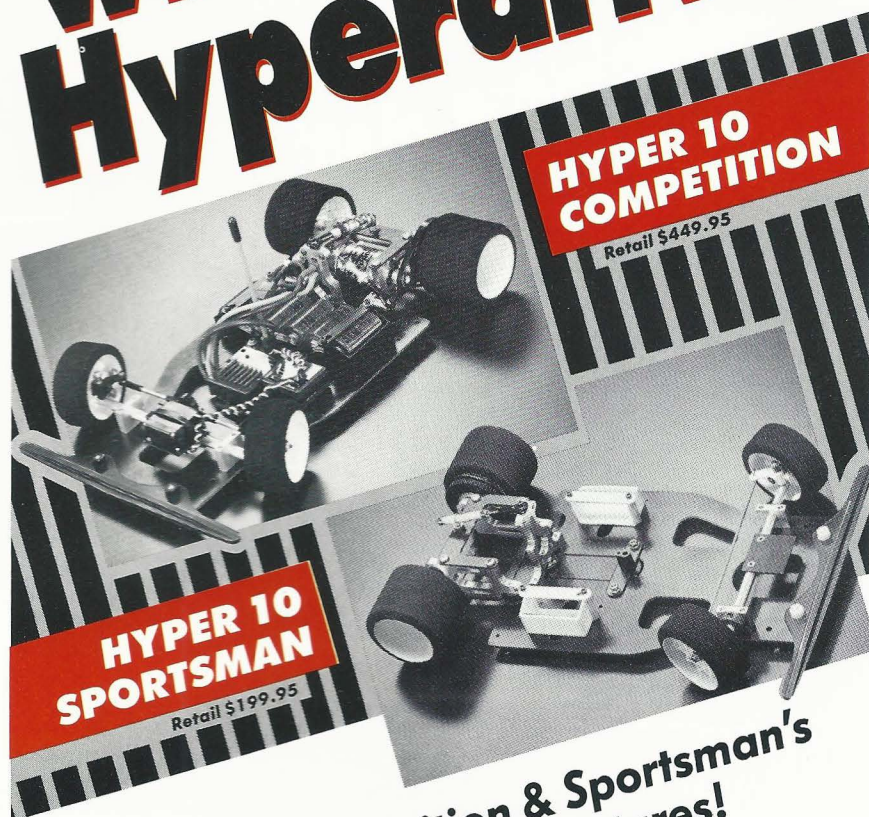
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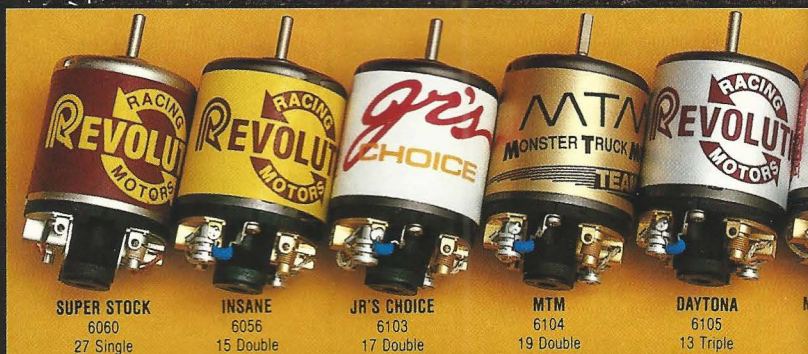
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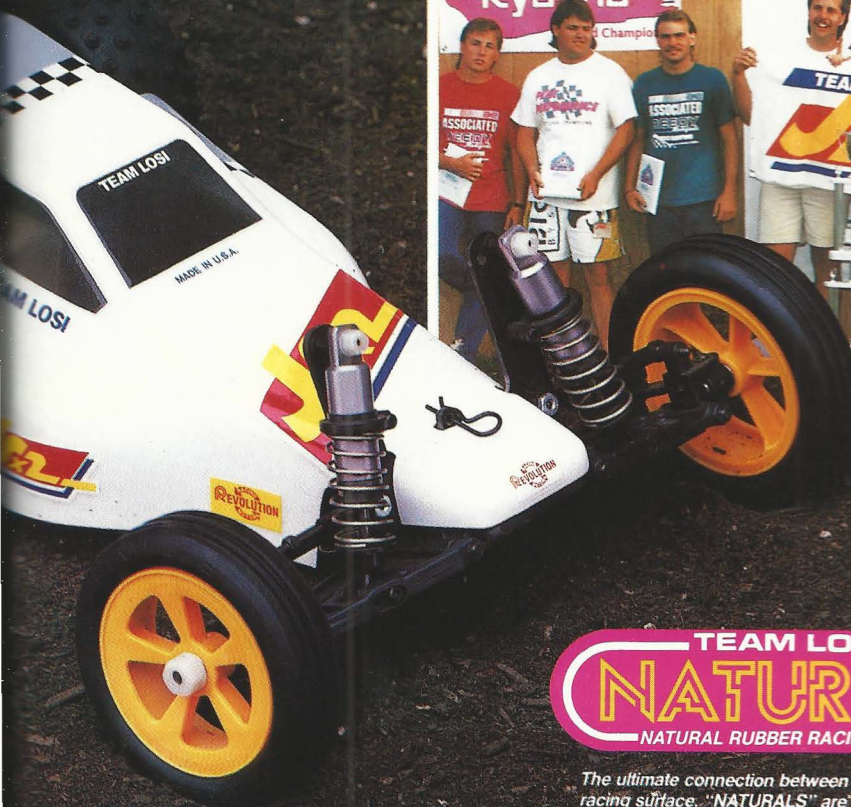


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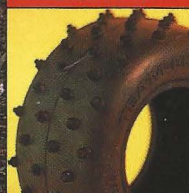
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