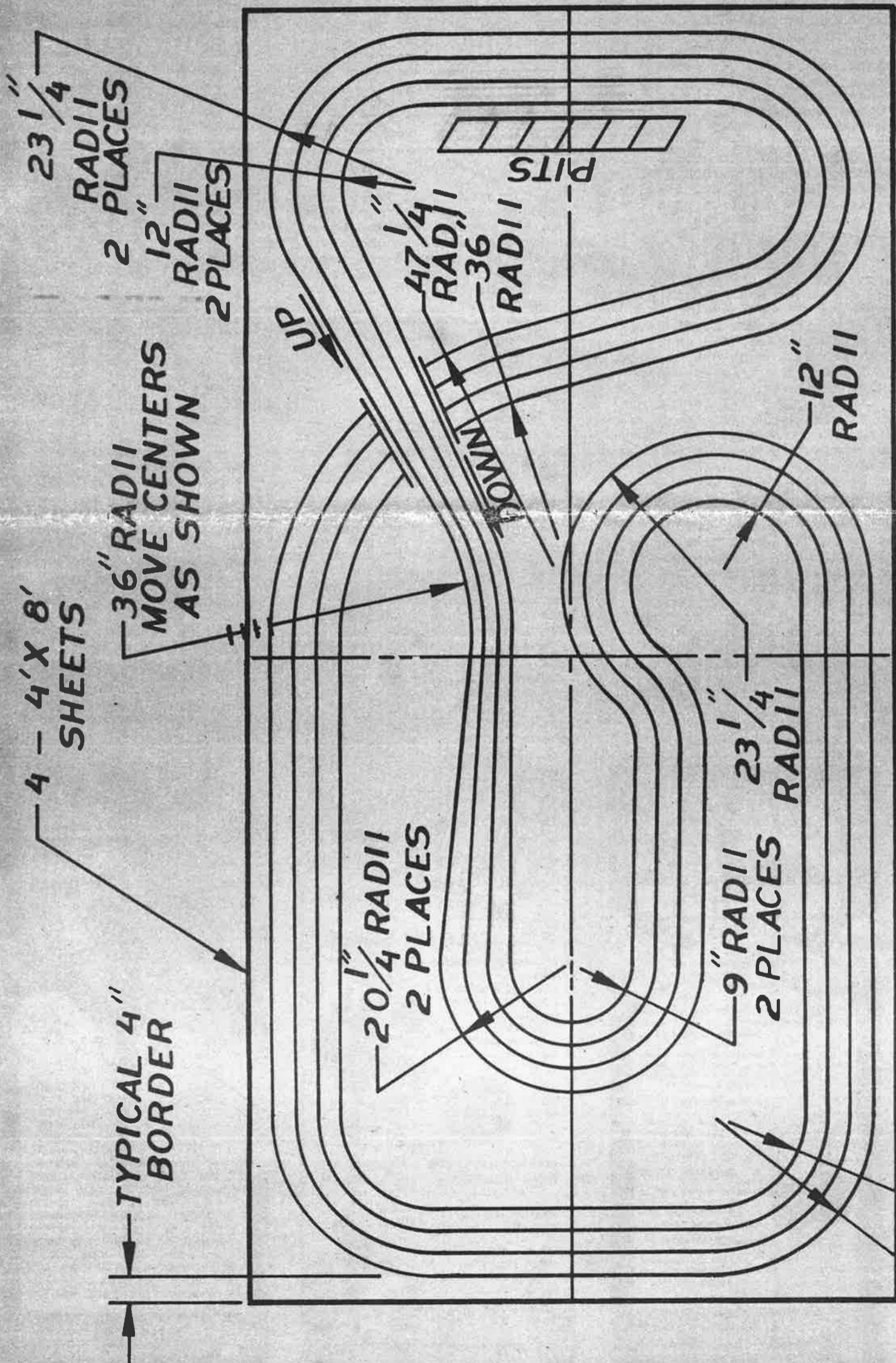


MINIATURE AUTO Racing

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MINIATURE AUTO RACING

NEWSPERMAGAZINE

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FOR YOUR INFORMATION:

As you can see, MAR is back in its original newspaper format. It's faster to print and distribute a newspaper than it is a magazine. Therefore, in the interest of speed, we have returned to our original concept.

Beginning next month we are phasing out the regular columns and are replacing that space with hard core "how to" photo/caption pieces, such as the "Body Mounting" article in this issue.

We'd appreciate hearing from you regarding our new look. If you like it (or if you don't like it) TELL US. We want to produce a newspaper that suits you.

slot racing west

ron granlee

"Fast Earl" Campbell added another track record to his list by turning a 3.70 on the Crash & Burn Blue King, during the first USRA Series race. Earl used the same Big O Riggen chassis that he used to set the record on Monaco's track last month. In both cases, he used a Bob Green hand-wound Vulcan armature.

The race was close and competitive in spite of the fact that the hot power burned everybody's available armatures, including Group 20's. Bob Johnnis, the San Diego Charger, finally achieved his ambition of setting fast time AND winning the race. He was followed by locals Bill Edwards and Mitch Rader.

In the amateur race, Steube armatures were the most popular while the new Associated Speed Secret bodies were used by 22 entries. Cox gears barely beat out Faas, and Chargers Chassis (Iso) beat out Big O's, except for the drivers who built their own.

In the pro race, 14 out of 20 drivers turned in the 3's. With motor changing a big factor during the race, Earl Campbell was leading by a comfortable margin, when his motor started to slow in the last few seconds of the 7th heat. They made the motor change, but when the power came on for the last heat, the car went backward, so he had to switch wires; by the time he was back, Bob Bernhard and Pepe were fighting it out for the lead, with Bob winning it by six feet over Pepe. Both ran for Checkpoint and Earl held on to third.

There were only three Vulcan armatures in the race, but they all qualified for the main, driven by Campbell,

Aguirre and DeBelle of Team Mura. However, Steube's Team Checkpoint armatures were the most popular among the pros, as were the Associated Speed Secret bodies. Faas gears were used by just about everyone, while Pepe's Neat Things chassis were the most popular, followed by Big O and Aguirre.

In the January issue, I mentioned that we thought Jim Aguirre had set a record for an Orange track, but since then I received information from John Strachan that Monty Montague of Team Camen turned a 3.09 on Parkwood Model Raceway's Orange track in Girard, Ohio. If anyone knows of any faster times, let me know.

I understand from Terry Anderson that there is a new track in Lincoln, Nebraska, Merl's Miniature Auto Raceway, near 33rd & Holdridge, with a good racing program on an American Orange track, from Group 15 to Open Group 20. If you live in the area, or will be passing through, drop by and say hello.

Associated Speed Secret bodies have really become popular with the racers. The new Lola SS, modeled after the Lola 310, was the most popular and now they have a McLaren SS available and another body style in the works.

slot racing midwest

jim bandagaski

The Parkwood bucks race is over and for those of you who didn't go (or were wondering about the place), Parkwood is located in Girard, Ohio, just outside of Youngstown. It's a rather small place, sporting only its Orange track, but it is amazing that that type of race would be held there, not because of it only having an Orange track, but because Parkwood is almost a club track. In fact, that is what it started out as. When the area track

closed down, the racers in that area had nowhere to run, the closest track being Parma's. But four of the guys - Mel Hamer, Dick Hall, Ted Lint, and Gramp Wells - opened their own track, strictly for club racing, but found out that there were others who wanted to race as well. Hence, Parkwood Raceways.

Along with Parma and the Slot Shop in Elyria, Parkwood races are part of this area's Midwest Can-Am series, which started back at least in 1968, maybe further. It always not been the same name, the name changing a number of times as well as the system it operated under, but as far as I can tell, it is probably the longest running series going, with the possible exception of the Texas USRA series. And while the number of raceways has dwindled from six to three, the number of races in a series has returned to six with the addition of Group 27 cars in races at each track, along with the usual Open cars.

Don't look now, but there is a USAC dirt racer out there who is also racing scale. His name is Jerry Miller, from out of the Indy area, and he has run in races like the Hoosier 100, running without a sponsor, though. He did a nice second time of 3.10 behind Montague's record-breaking 3.09, over at the Parkwood race. Jerry's another of the Tri-State boys, and it seems like group racing does nothing but grow.

Back to the Tri-State guys, if you haven't received the Tri-State letter, the rules have changed slightly, the major change being that you do not have to run teams, as in the past. You can come and race on your own. Qualification will be timed laps, whenever possible. In the letter, Bob Kennedy states that the Cincy area is expecting a new King track, so good luck to them.

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interview

by jukka moisio

bill steube



Who's the best driver? I want to stay alive!

Bill Steube was born in Los Angeles, California on March 2, 1925. He's a versatile fellow, holding an Operating Engineer's diploma in steam engines and refrigeration, with 15 years experience as a chief executive in an important powerplant. He also holds a commercial flying license.

Bill, now 47, has raced sports cars and motorcycles (which accounted for the loss of one leg). He started fiddling with slot cars in 1960 with Strombecker cars. He set up Checkpoint's famous raceways in the sixties. The Checkpoint name is also displayed above his garage.

Bill rewound his first slot car motor, using a Russkit armature and #30 wire.

Team Checkpoint was created when Gene Husting put together the "Rod & Custom" race series. Terry Schmid and Bill Steube, Jr. were the members originally. Mike joined them later on.

Terry won the championship with Mike tied for third. The following year, Terry won it again, with Mike second. Mike won it the following year and Terry took second.

The factory team competition at that time was very tough, yet Team Checkpoint regularly beat everyone.

Terry then went to race for Mura, and Mike won the championship again. He won every year until 1971, when Earl Campbell edged Billy Steube, Jr.

Team Checkpoint won the only N.C.C. championship, too, and most of the other biggies held until 1971, such as the

Mura-Cobra spectacular at Buzz-a-Rama in New York, and the Dallas race. This year, in California, Team Checkpoint members won more races than anyone else.



Slot racing is picking up again, now that "junk time" is over. I wouldn't be surprised to see more new tracks opening here and there.

Q. What does the slot car scene look like to you?

A. It has become very specialized, and there's no room anymore for junk equipment. I try to give more attention to every little detail. I try to have not only the fastest, but the best looking slot car motors on the market.

Q. What year do you consider the best racing year for Team Checkpoint? Do you think the Mura-Cobra race was the highlight of the team?

A. Every year gets better, as far as I'm concerned. The competition gets tougher, more interesting.

Certainly the Mura-Cobra race was one of the highlights but more important for me is the consistent way my motors are winning races. Just imagine how proud I felt after this year's Gasparilla race, when Dave Willits, using the only Checkpoint motor in the race, won in front of 7 Pooch motors!

Here in California, at home, I can do a lot of experimenting with the two main members of my team, my son Billy and that crazy Frenchman, Philippe. Their suggestions help me determine what the racers want.

Q. Today, it seems that slot racing in the U.S.A. is beginning to flourish, once again. Do you agree, and if so, what would you say is the reason for this?

A. It's picking up. More people are getting interested, and I wouldn't be surprised to see new tracks opening up here and there. This is due

to the fact that it's more serious now, and extremely competitive.

Q. What are your plans for the future?

A. Team Checkpoint is in constant evolution. Mike is not racing anymore; I'll have to find someone else. I try to keep the team to a minimum, as it is really expensive. I try to find the fastest, most serious racers. My team members right now are Philippe de Lespinay, Billy Steube, Jr., and Chris Burlew. I help others, such as Bob Crane,

Don Aspenson, Herb Wade, etc.

Mike has been my best racer yet, getting fantastic results for the team in the five years he raced for me. Philippe seems to be the most consistent yet, and he's fairly new to the game.

Q. You have been an influential factor in the world of pro racing. Could you please tell us, on the basis of your experience, what pro racing is really all about?

A. Pro racing is the toughest

(Continued on page 4)

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MORE: INTERVIEW
(Continued from page 3)

expression of general capabilities of a team. It requires cooperation between the driver and the motor builder, which happens rarely. I had good luck with Mike, because he is my son. I have a hard time with anyone else, and it gets tougher.

For the driver who is his own chassis builder and sets up his own cars, it's really rough. He's under a lot of pressure to get things done

in time, drive hard and intelligently in order to get a sit-out in the main, then race and win sometimes, and cool it until the next one.

For the motor builder it's the constant pressure and pain to re-do everything again and again.

After the race, when you've won, the racer often doesn't even think to say thank you.

I hope slot racing is going to develop in the same process as model airplanes, with better, less expensive equipment and new tracks.

Q. You are known as a brilliant motor builder. Could you please tell us how a Steube motor gets its birth?
A. Well, I do so much fiddling it would take too long to explain. Let's put it this way: I machine them for the most precise fit I can get, and I pay particular attention to perfect alignment, magnet fitting and strength. Before I used the new Mura buss bars, I never had a hand-made bussbar come unsoldered. Selection of the best material available is very important.

Q. What kind of oil do you use?

A. Castrol Racing, automotive oil.

Q. What about the axle bearings?

A. The same.

Q. How much wear do you allow in bearings?

A. None.

Q. Would you tell us the secret of brushes and springs?

A. No big thing. The spring must not hang up on anything. Tension is important. The brush must be free in the brush holder, but not too free. It must barely move in and out, freely but with no play.

Q. Would you compare Blue Dot, Mura II and Associated magnets? How do they differ?

Could you tell about trimming magnets? How would you define the difference between too powerful and proper magnets?
A. I now use the Mura magnets exclusively, because they're much better magnets. They're extremely fragile, but also extremely strong and well oriented. The Mura mags give more speed, run cooler and lose less magnetism than any others I've used.

About trimming, I now machine grind them to the correct size after making the inside radius by hand.

A too-powerful magnet will get the commutator to turn black. Bad news!

Q. What about the holes in the can? What's the best can and what would be ideal?

A. The holes in the Mura can are about ideal. I run them slightly bigger when I run smaller winds. The ideal can would be a completely closed one, but it's impossible with slot cars, as the motor does work on an extremely wide RPM range. Slot car motors are actually some kind of miracle! I have been experimenting with smaller motor cans, as have some of my team members.

Q. Could you say something about timing, and at the same time define terms such as "top end," "bottom end," etc.

A. I give more timing for smaller winds, to get more punch and brakes; big winds (#24 and up) require less timing. #25 is a medium range.

Top and bottom end refers to the characteristics of a motor - the kind of power curve you get out of a particular race motor.

Q. Whom do you consider the best driver and chassis builder in the U.S.A.?

A. Very difficult question! In the past, Mike was the best driver, as far as I was concerned, with Howie Ursaner and Jerry Brady for runners up. Right now, Dave Willets, Monty Montague, Mitch Keil, Lee Gilbert (before his retirement), Jan Limpach (particularly this year), Rick Boltizar, John Myers, and Earl Campbell are probably the best in their area. They are consistently fast. But

to say who is the best? I like to live!

A race between them, on a King track (neutral, held somewhere in the middle of the Sahara desert) would be very interesting, if all of them would show up and prepare properly for it.

As far as chassis builders go, I would say that Lee Gilbert was probably the best. Right now, however, Jan Limpach, Tony P., John Myers, Carbonell and Beaver, and Philippe seem again to be the best in their area.

I would say that the best drivers are on the East Coast and the best cars on the West Coast.

MAR: Thank you for your time, Bill Steube, certainly the "Wizard of the West" when it comes to slot car motors.

tech tips

MAR invites all manufacturers of slot racing equipment to contribute to this section of our publication. It affords you an excellent opportunity to reach old customers (or potential new ones) with the latest news and tips concerning your products.

SPEED/SPORT

If you are still cutting up your fingers with an X-Acto knife, trying to get those pin tabs out of your motor, you need a set of SPEED/SPORT 0-80 screws. These are a small threaded brass screws that are easy to use whenever you need to take your motor apart. To begin with, you need #SS-5, which includes 4 screws and a tap and drill, just \$1.98 a set. After that, you only need the screws, #SS-4, at 4 for 39¢.

One of the most important factors in obtaining maximum motor performance is getting the correct air gap (the distance between the armature and the magnets). For instance, a 24 single would require about 15 thousands, while a Group 20 would take 25 thou. Air gap also influences torque and braking power. To get the right air gap, you must put a shim between the magnets and can, and it should be steel shim stock, consisting of one each 2 thou., 3 thou., 4 thou., for 49¢, part number SS-2.

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The advent of the Iso chassis gave us the opportunity to not only extend our 1/24 line, but develop a new type of body which would realize the full potential of this new chassis trend.

Our most recent tooling program, now completed, gives us a total of 28 H.O., three 1/8, two 1/12, 18 1/24, and our 1/32 scale line (which includes Parma's Womp-Womp, which I think is starting a new trend.

After much discussion we have laid down our 1973 tooling program and we will keep you up to date as the various projects come off the line.

Our existing 1/24 bodies work very well on Iso-type chassis, but as mentioned earlier, we felt a slightly different type of body would help realize the full potential of this new chassis

(Continued on page 5)

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MORE: TECH TIPS

(Continued from page 4)

trend. During the last couple of months our development drivers have been working with some new shapes, and with the help of a couple of aerodynamicists (who, incidentally, are involved with one of the better race car manufacturers in the U.S.A.) have finalized a basic shape which, amazingly enough, still resembles the real thing.

We spent a lot of time, last summer, testing a Lola

prototype (which you will never see) and we realized then that not only chassis were going through an evolutionary process, but bodies also. Our own Philippe de Lespinay and Chris Burlew spent a great deal of time last year testing true "aircraft profile designed wings," and discovered that at the speeds and size we are working with, they really didn't work. In fact, the cars were a lot more consistent and smoother without them.

Our new shape went from

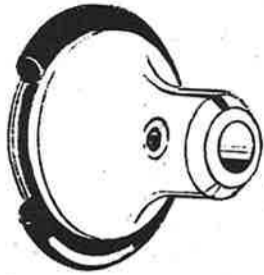
the basic wedge, which tends to exert the main force right on the rear of the rear spoiler, to a more subtle shape which exerts equal pressure over the entire body, and utilizes the air which is extracted from under the body shell, giving you a much better balanced car overall.

These new bodies are now available through our dealers and distributors, and also some of the top racers will be tuning their chassis to take advantage of these new M.A.C. winners.

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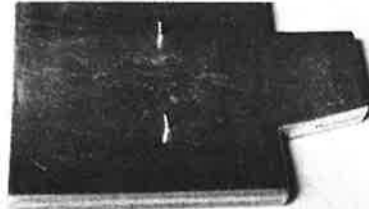
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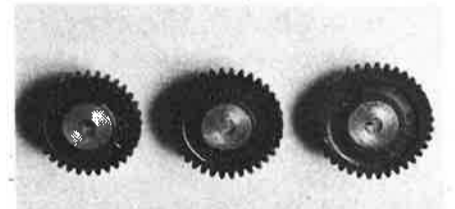
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MOTOR TOPICS

by charley scott

Each year it seems that motors are getting better, as few are blowing, as they did for a while. While the pro racer has no problems, the average racer has a higher-than-called-for blowing rate.

Why? Most of the problems come from a lack of tools, time and knowledge. Most of today's custom arms will not usually blow. If ALL the racers in your race (or heat) blow, it is probably the track; otherwise it is probably YOUR fault.

I'm not saying that all the custom arms don't have shorts, but few do, and they can be detected by the winder, if you send it back.

The following represents some of the common questions I've had put to me by racers from around the world, and some answers that you should pay attention to.

WHAT IS THE BEST CAN FOR THE AVERAGE RACER TO BUY?

Right now, in my opinion the Green can is far and away the best can on the market for the everyday racer. It has the slot for the axle, screw holes, and proper field for all types of racing, without making any changes. Some cans require shaving the backs and extra holes; the Green doesn't. When you don't have a drill or lathe, that makes a difference!

WHAT IS THE BEST ENDBELL, AND DO PARMA HEAT SINKS REALLY HELP?

The Mura is the best, as it has the best brush support, and those solid state buss bars really help when it comes to putting a motor together quickly. Yes, those large heat sinks really do make a difference. If you keep them from touching, they can make a big difference on a hot track. For Group 20 racing they are not needed, just the Mura aluminum plates.

HOW ABOUT MAGNETS?

Magnets are a thing of preference. If you buy only one pair of magnets at a time, I would have to say the newest Mura II is better. When you go to set up the can, they fit without any time spent grinding down the magnets, top and bottom. Quite a few magnets have been broken or chipped trying to cut them down.

DO I HAVE TO HAVE A MOTOR BUILDING "SLUG" LIKE THE PRO MOTOR BUILDERS?

Not if you are using the Mura II magnets. They already have a good air gap for most racing. If you are going into the motor business, you must have several size slugs to use. If you plan on using Blue Dots, a slug is a great help if you don't want to risk the arm rubbing the magnets. I've had BD from .516" to .529" air gap in C cans. Most arms are .510 and if you had a set BD's at .516 that gives you only 3 thou on each side - IF the magnets are centered. Without the slug, you won't know until the arm starts rubbing the magnets. Three thou isn't much clearance - all you have to do is run the arm too long, and when the bearings wear you might rub. One good crack on the wall and the magnets might move in a little. If you get a slug, choose about a .520 or .522 gap. That will give you enough clearance to get by in most cases.

WOULD A BALL BEARING CAN HELP MY GROUP 20 MOTOR GO FASTER? HOW ABOUT UNLIMITEDS?

Yes, a ball bearing in at least one end is a help to Group 20 motors. It will help your 20 turn better and will stop the shaft from wearing down. Group 20s can run for years this way, with retruing about every six weeks of racing. If you are run-

ing 25 singles, or smaller, it is okay. There is no bearing made that will stand the rpm of a good 24 or 23 that you can buy cheap enough (if you are lucky enough to know where to get one). If you want ball bearings in your motor, the best bet is to buy a complete ball bearing motor from one of the BB specialists like Boyington or Pooch. They have gone to great lengths to get the best bearings and set them up right. Some bearings require the shaft be turned down, and unless you have your own lathe and slug, forget it.

WHAT IS THE MOST IMPORTANT THING TO HAVE FOR MY MOTORS, IF I BUY THEM?

A magnetizer is probably the best thing that you can have. If you don't have one, check your local track or mail them to one of the people who rezap them.

HOW OFTEN SHOULD I REZAP MY MAGS?

Every time you pull a motor apart you lose strength. Every time you run on hot power you lose, too. For an unlimited motor, you should do it before every race, unless you run the same motor every week. Then you can go about three weeks. Group 20s need to be rezapped about every six weeks. You can tell the difference in the way your motor runs, and the amount of heat the thing puts out. When you don't zap the mags, the motor runs hotter, and you don't want to risk blowing when you can prevent it.

MY MOTOR RAN PERFECT WHEN I PRACTICED, BUT WHEN I QUALIFIED, IT SLOWED. WHY?

One of the most common reasons for motors blowing in qualifying is poor braid contact. Some racers don't keep the braid right, and others get bogged in the glue,

lifting the car and making the braid arc. When those braids arc, the motor draws more amps than it should and runs ultra hot. You can cough the perfect motor in about two minutes. Why do you think pros are so fussy about the braid and the glue, in qualifying? When you are trying to sell motors or frames, it doesn't look good to blow up!

WHEN I PULLED APART ONE OF MY MOTORS, IT RAN GOOD. AFTER REBALANCING, I PUT IT BACK TOGETHER AND NOW IT WON'T RUN AS WELL. WHAT HAPPENED?

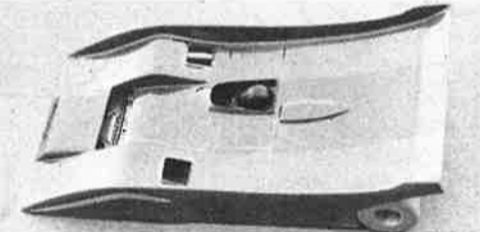
Many people have problems setting up their motors again, because of improper spacing. When you pull that motor apart, check the spacing of the arm and put back the spacers exactly the same. If you lost the spacers, try to set the arm up so that it doesn't hit either of the bearings, but floats in between them (space without brushes or springs) with about 7 thou slop overall. If you are running ball bearings, use as little slop as possible, and make sure the bearings turn free.

Another small problem that can cause BIG problems is the endbell not getting back on perfectly straight. Make sure that the arm turns free when you put it back together. If it doesn't, pull it apart and put one of the Mura drill blanks in and put the motor back together again and find out which bearing is out of line. Check your plastic to see that it hasn't melted the endbell bearing out of line. If so, put in new plastic. Sometimes you come across a can or endbell bearing that is tight. Then you should take your DB and put it into the fully assembled motor and hook it to a drill. Hold the can and lap the bearings in until the can spins

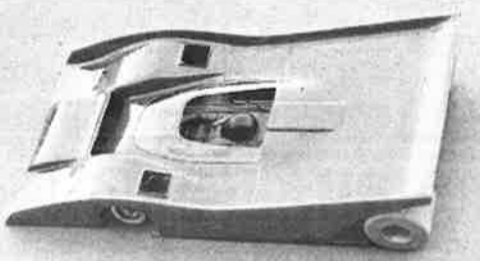
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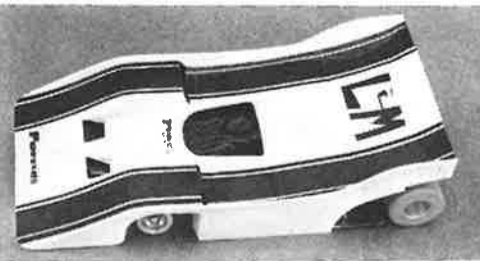
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MORE: MOTOR TOPICS
(Continued from page 6)

on the shaft easily. This is a lot easier than letting your armature do the breaking in. It's safer, too!

WHAT IS ONE OF THE MOST COMMON MISTAKES PULLED BY PEOPLE TRYING TO SET UP MOTORS?

There isn't just ONE! Trying to build motors at the track an hour before the race is way up there, though. Take your time and do it right (at home), or at the track the week before the race. Your motor won't die overnight.

Next is the big hangup of who has the fastest motor down the chutes. Many pros have gone to gear ratios of 8-46, and up, for better all-around performance (instead of 9-46 and that extra three feet down the chutes). Remember, just going fast down the chutes doesn't win races - staying on, and out of trouble does!

For one of the others, I'll quote Joel Montague from "The Grundy Gazette": Probably the most significant factor for horsepower is getting good contact with the track braid. This is critical in glue, and at times not an easy thing to do."

Another one might surprise you: Far too many kids change brands of armatures about as often as some change tires. This can be extremely costly. If you buy a brand X motor, you should put another brand X arm in the can after the first arm wears out the comm. You will have a lot less to worry about if you keep the same brand arm. If you are smart, and ask a lot of people what brand they use, you usually come out okay.

That is just a few of the many questions that people ask about motors. If you have a question about racing, send it to me and I will answer it here in MAR, if they represent the views or problems of the average racer. Don't just talk, write! Charley Scott, 2727 Duke St., #1407, Alexandria, Va. 22314.

power, C&C has that with plenty to spare. The cars run down the chute so fast it's hard to believe motors can twist that high without ripping themselves apart.

The current track record is a 3.76, held by Connecticut pro, Tom Conlon. Tom was the geek who shocked everyone by cutting all the big name pro drivers during qualifying at the Cobra-Mura race at Buzzarama back in May of 1969.

Tom did his 3.76 the last time we ran up there in Feb., cutting the 3.78 turned by Ernie Provetti the month before.

Although we don't turn ungodly qualifying laps at C&C, we do turn lots of laps in the race. In the last three races the winner hasn't turned under 497 laps, with the record of 499 turned by myself two months ago.

So try to make a race at C&C if you really want to do some sano racing. The free donuts and coffee alone are almost worth the trip.

I heard about the results of the Chicago NCC meeting from Monty Montague and all I can say is if everything comes off like they planned, slot racing can't help but prosper. I especially like the films which can be shown at local theatres. This sort of thing should have been done all along, to promote slot racing.

I know when people ask me what I do for a living and I tell them slot car racing, they either say, "You still play with toys," or they simply don't know what slot cars are. People don't realize what a serious hobby this is.

Good news for all you south Jersey racers: Carl Ford, Champion distributor, and Fred Boshers have gotten together and bought Grand Prix Raceway in Woodbury, N.J.. Carl used to own the shop, but sold it three years ago. When the present owner got too busy to run it, Carl bought it back. He and Fred are planning a whole new racing program, which includes monthly pro races, which have been lacking down there in the last year. Woodbury's track is an epoxy surfaced Engleman 165 with a modified donut. The donut now looks like a finger, and makes the track easy to drive.

Are you tired of being run into the ground by Team Camen? Then try the new Camen Limited Production armatures and motors. This stuff is as good if not better than the stuff the purple gang uses. The prices are a bit higher than normal (but the extra care and quality justifies it). The motors have a ball bearing in them and all the little tricks that only Monty knows. The arms are hand picked and all the shafts are straightened.

How do these motors run, you ask? Well, they won the last seven East Coast races and three of these were won by people other than Team Camen. These new parts should now be available at your local raceway.

One last note to the French Blunder. Practice laps don't count. If you can do 3.40's on a King track, do them during a race when there's some pressure. Any one can cut super fast laps when you have all the time you want to glue the track and run as many laps as you want. Write! Tony Przybylowicz, 8 Crescent Lane, Irvington, N.J. 07111.



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slot racing east

tony p.

Pro racing really seems to be on an upsurge here on the East Coast. Up until now, we have been running mostly at C&C in Connecticut. Now Elmsford is running pro races, along with Tom Thumb in Reading, Pa., and as a result we have run five big races in the first two months of the year.

All the races have had a good turn-out, and all the shops are scheduling more races in the future, so it looks like we've got a lot of racing to do in 1973.

C&C, up in Coventry, is turning out to be the place to race on the East Coast. Every time we run there, the track record is lowered. C&C's King has a standard surface, which requires a bit more skill to glue than the epoxy type. The track is not the smoothest, due to the terrible weather in Connecticut, and the raceway is on the second floor of an old factory, so the floor is always settling, which changes the track joints a bit. But when it comes to

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THE ISO: Where now?

by philippe de lespinay

California has seen, in the last few months, a total change in the techniques of slot car racing. Iso-type chassis have flourished, while the Lee Gilbert-type two-rail frame has almost disappeared. Many people, who were only moderately quick, suddenly started to run very strong, and started winning races.

The Iso chassis has put almost everyone at the same level. It is a lot easier to set up than a conventional chassis, and people with less technical background succeed more easily.

WHAT HAPPENED, WHY, AND WHAT'S GOING TO HAPPEN NEXT

The Iso chassis resolved most of the contact problems of the car. Before, only a small number of people were capable of setting up a two rail car to achieve the most important handling point - good electrical contact. The introduction of a stiffer arm spring by Lee Gilbert in 1971, then of the double super tension spring (by yours truly in 1972) resolved many of the original problems. Everybody remembers the advantages this type of frame had in races. Generally they had a 25-lap advantage in a 40 minute main.

As the other guys started to use these frames, this "unfair advantage" disappeared, but still, the way one set up the car made a tremendous difference.

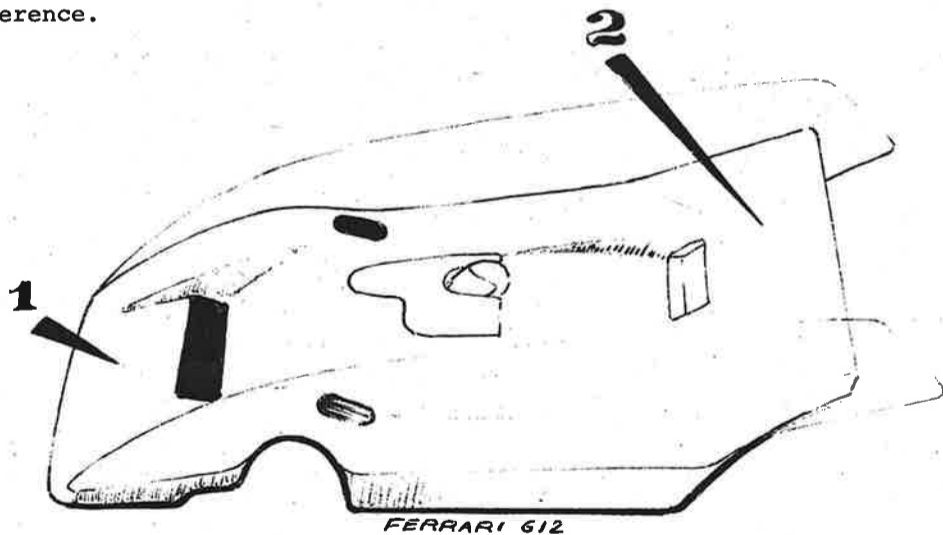


FIG. 1

The body used was a constant wedge type, with very important air devices added, mainly to the sides of the car (Figure 1). In area 1, you were getting a mild pressure only, designed to stop the nose from lifting. The main pressure was on area 2, where the air pressure was directed by the side dams to create a scoop effect. This gave all the bite to a car which otherwise would have been slimey. The technique used to drive the car was: glue quite heavy and punch it through the corner. The controller you used had a

6/10 or 8/10 resistor, and you were not using the bands, only the full-open position or absolute zero was used. The strain was considerable on the motor; not only was glue slowing the car down in the corner, but the extra air devices were also creating similar problems. As the situation got worse (more glue and air devices) the reliability of motors and parts decreased, and by the end of '72 it was like driving a Formula One car through mud. The tracks, overglued, became pits. If you happened to wear glasses, you were in deep trouble.

However, looking at the results, conventional cars did set both East and West Coast King track records. The old Keil's number-of-laps record eventually was beaten by one lap. This means one thing to me: 1972 progress was achieved by gluing techniques, rather than real chassis development.

When the "Iso craze" started, I was very reluctant to use one, because the guys who were going a lot quicker still were not as quick as some well-prepared, well-built, conventional two-railers. I tried to prove this by setting a new track record at Speed & Sport with a wild 3.78, while the quickest Iso was averaging a mere 4.00 seconds. Using the same car, I won the 5th Western Regional at Monaco, on their Black track. Earl was second again (we were 27 laps ahead of third place).

Just about everyone, by that time, had started building Isos, so after visitor Steve Bogut turned a 3.85 for

top qualifier at the last Western Regional race at Speed & Sport with a Limpach Iso (which was visibly quicker through the donut and visibly much more efficient everywhere else on the track), I decided to build a couple and try them.

BODIES & AIR DEVICES USED ON THE ISO-TYPE CHASSIS ARE DIFFERENT

In Figure 2 you can see what I mean: no more giant side dams - a different type body with super front end pressure and a small pressure area

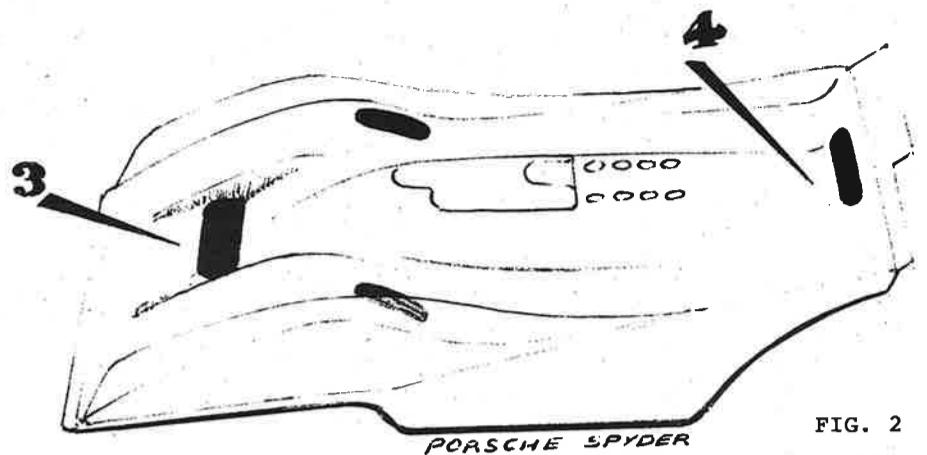


FIG. 2

at the back. In Area 3, the air hits a very important front area, similar to the '72 Porsche CanAm full size car. Then the body actually drops down, creating a low pressure area over the middle of the car and on to the rear of the body, which as you can see does not have a large down-pressure area; the rear is used as a balancing device on the Iso chassis. This imparts much greater stability to the car, particularly exiting the turns. In Area 4 you notice the spoiler in two parts, more important on the donut side. Before, the conventional cars required lead in large amounts all over the chassis (particularly on the donut side). I remember people running as much as three stacks of lead in this area. Now the chassis needs very little lead, and in most cases, car weight has been reduced from five to 4-1/4 ounces.

Why? Because the new trend in chassis gives much better contact. Before, most of the cars were slimy for one reason: the power contact was interrupted every 1/100 of a second by the front wheels bouncing, and the drop arm flexing down and sideways. The rear tires had a very difficult task, and the roll angle of the car was very important.

You NEEDED tremendous down-pressure on the back, to keep it from sliming.

Now the Iso chassis (of any type) has eliminated the ten-year old concept of the arm dropping. Every slot car but the Cox Cucaracha had an arm independent of the rear end carrier. The Cucaracha really was not any better for that, but the Cox people had the right idea (they didn't realize at the time though, that the front wheel arrangement had to be in spring relationship to the body lift-up). Dynamic's aluminum rigid frame, which had independent front suspension, was originally one of the quickest frames until the pro brass frame because prominent. They had the right idea, though.

ISO FRAMES ARE STILL IN THE INFANCY STAGE

We have to find a way to develop the real potential; which initially they have shown. The existing bodies, with their constant wedge (and which still work very

well) will, I feel, be progressively replaced by the old faithful M.A.C./Lancer Porsche, the Kirby Nissan, and other similar front pressure bodies.

M.A.C. is developing a new series of race shells (Fig. 3) which are designed to run without added air devices. I have been working with M.A.C.'s Lloyd Asbury, designing and developing these. We also had the help of a couple of noted aerodynamicists who are involved with a notable race car manufacturer. They are a

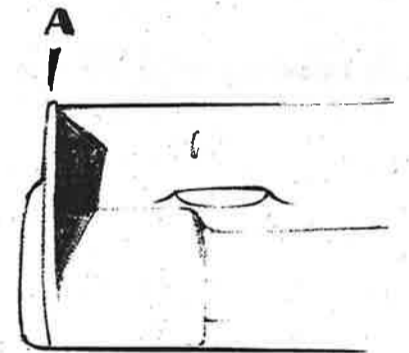


FIG. 3

little different, having a short nose and a longer, smoother deck (just like the trend in real cars). The purpose of the short nose is to eliminate any disturbance before the air reaches the body areas where the pressure is required. Air extractors are designed into the body (creates a negative pressure area under the body), and built-in low side dams, which make the car extremely stable both in the corners and anywhere on the track, really. With this kind of body on the new Iso chassis, very little glue is needed, and your car will run smoothly, without sliming. The lack of huge air devices gives an increase in maximum speed and acceleration - around 10%.

This creates another problem though - how do you stop the car? The motor is the answer: more gap between the magnets and armatures is the number one solution; then, close gear ratios, such as 5.5 or even 6:1 (old trend is 4.5 to 5:1). This will give more punch and top end, and also super brakes. Pooch does this to their motors, and at this time they have the advantage. They have perfected this technique so well that I consider their motors

THE ISO

the most progressive in years (besides the outasite job done by Bill Steube, a true artist of electric motors).

THE ISO DRIVING TECHNIQUE

We drive the cars through the turns using a higher ohmage controller - 1 to 1-1/4. We actually don't punch the car through the turns anymore, on the light glue, but the car goes about 10 to 15% quicker through them.

This gives great rigidity to the center section, which in turn allows the chassis to corner smooth and flat. There is no roll angle on the guide, and the torque reaction of the motor doesn't affect the stability of the car.

car (Fig. 7). Note the front wheels are together with the plumber rails. When the front wheel hits a bump, the front of the body has a tendency to push up; consequently the air pressure tends to keep it in the slot.

al Iso, needed to use it badly.

Mitch Keil, who won the recent race at Woodbury, also used a similar set-up. Fred Da Flash, who set a new official King record, used a similar air device set-up, as

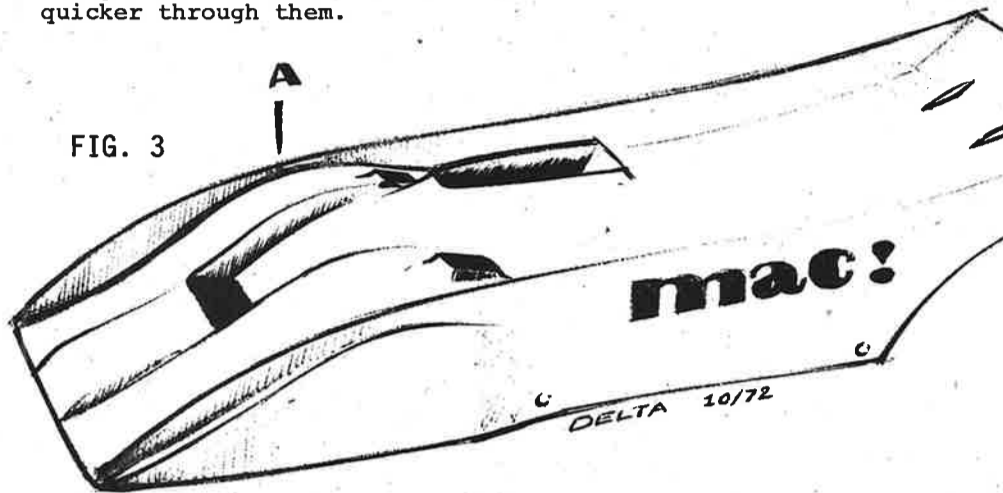


FIG. 3

This creates another problem: staying in the slot. So let's try to transfer as much weight as we can to the front of the car, as low as we can (not the body). This is where my Iso frame, called "Diamond," is different. The true Iso set-up does not exist in my chassis, the weight of the axle has been eliminated; the back tubing is split into two parts (Fig. 4), the right part

DOES THE "DIAMOND" SET-UP LOOK DIFFICULT TO BUILD?

Try the trailing Iso (Fig. 6). Note the wheels are trailed, not leading. This eliminates a possible launching problem. Another approach is Steve Bogut's "suspension"

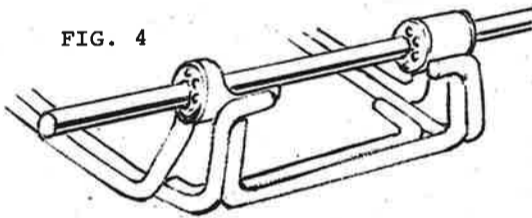


FIG. 4

receiving a third ball bearing, installed to eliminate added stress on the others. Rigidity is accomplished by adding braces to the bottom of the rear end, flush with the main rails.

The motor is also an integral part of the frame, being soldered on the bearing side, as well as on the back, by means of an additional brace (and also on the front of it).

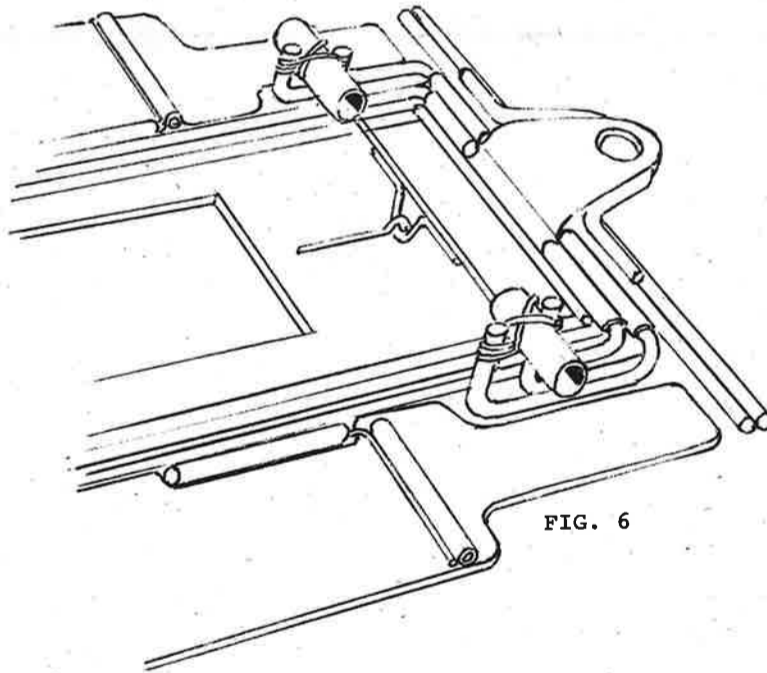


FIG. 6

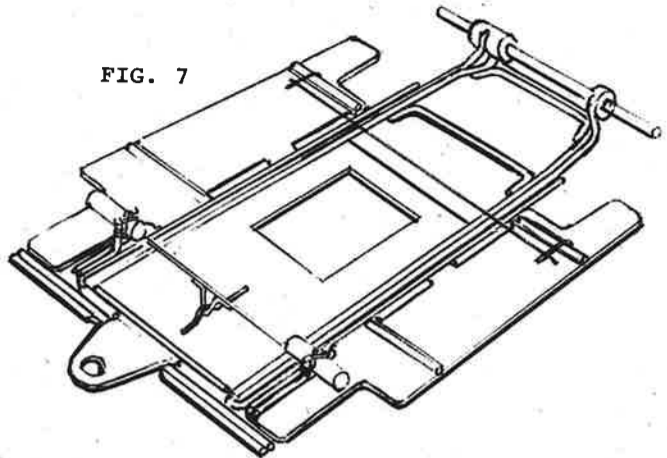


FIG. 7

Bob Bernhard used a "Diamond" to win the first USRA race, and I took second with another. We were both using the new type of body trend, using old type shells with new ideas on the air devices. Both of us were bogged in qualifying (Bob more than myself), but had super bite during the race. Neither of us used any glue, and Campbell, who was running a convention-

did Tony P. when he set a new world record at C&C, turning 499 laps.

The Iso-type chassis is an "easier" slot car to build and drive. It will be with us for a long, long time.

My recent article concerning the West Coast isos, created quite a stir. Some people seem annoyed because my articles always seem to be in the newspaper. I suggest they quit complaining and write, send to the editor, and if good enough, I am sure he will use it (yup - Ed.). The material I write is not written to show you guys how great I am (all facts considered, I reserve that for my girl friends), but to show you what can be, has been, and will be done in slot racing.

Last (but I think the most important) is to attempt to increase the interest in slot car racing, which is a competitive, exciting, interesting hobby.

Improved communications is my aim; I try to achieve this by taking time to write these articles FOR YOU to read, so stop complaining and let's have some constructive criticism or articles.

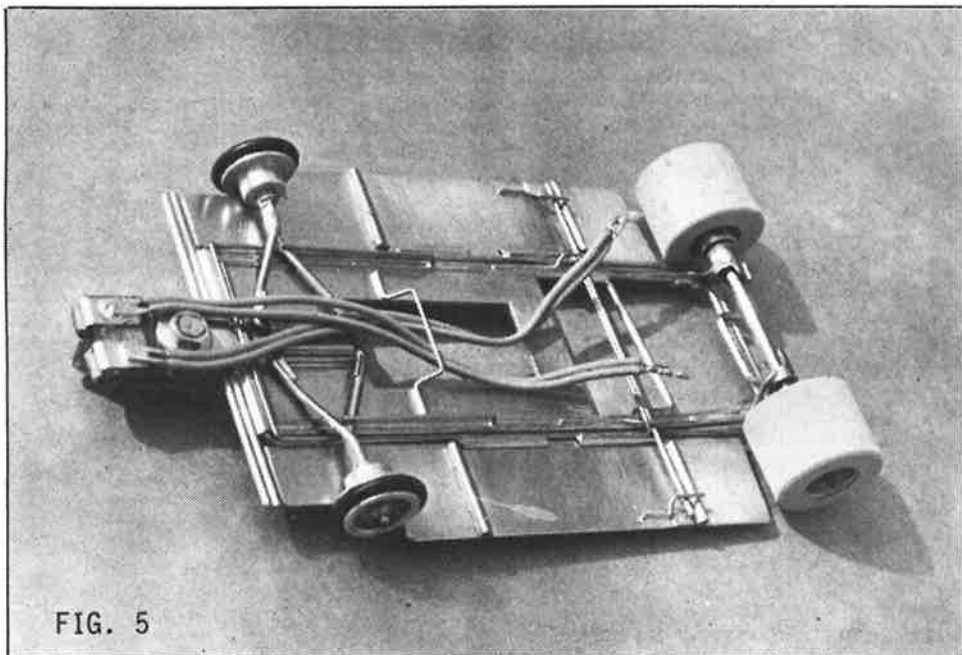


FIG. 5

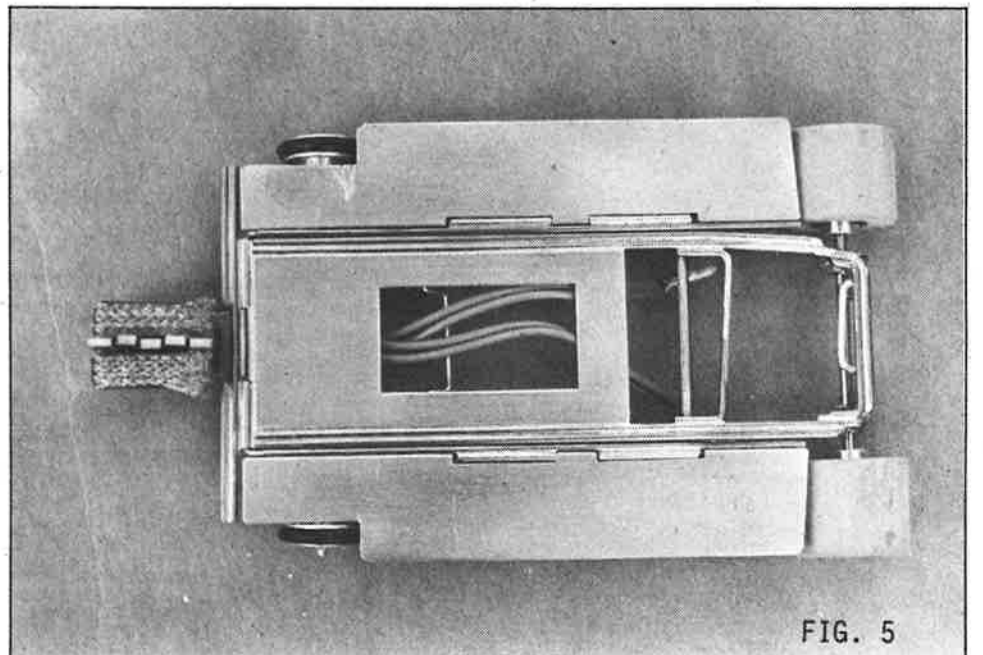


FIG. 5

BODY MOUNTING

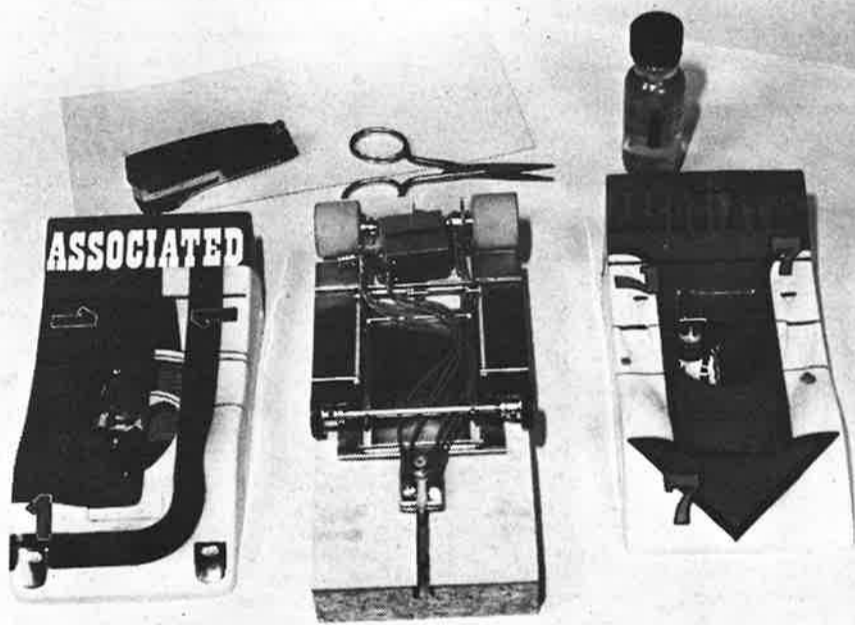
Here's how to mount your body to pro (spell it "w-i-n-n-i-n-g") standards, as shown by the Porsche SS coupe (on the right), Ferrari SS and a prototype model of the new Lola SS.

The importance of mounting your new slot car body correctly cannot be overemphasized, so we asked Bob Bernhard, the 1972 Western States Champion, to show you how he mounts his bodies.

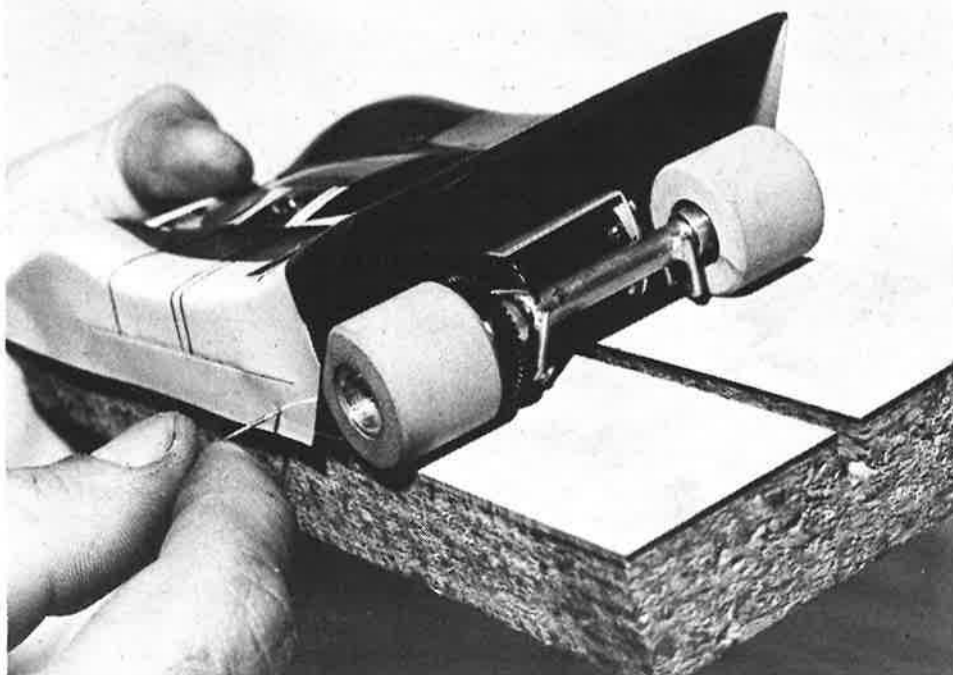
Bob got a Big "0" Iso chassis, a Steube motor, Associated tires, flag, etc., for this article. (Incidentally, the same night after we shot these pictures, Bob took this car with an Associated Porsche SS body and broke the track record, and won the race at Monaco Raceways in Buena Park, California in preparation for an upcoming race.



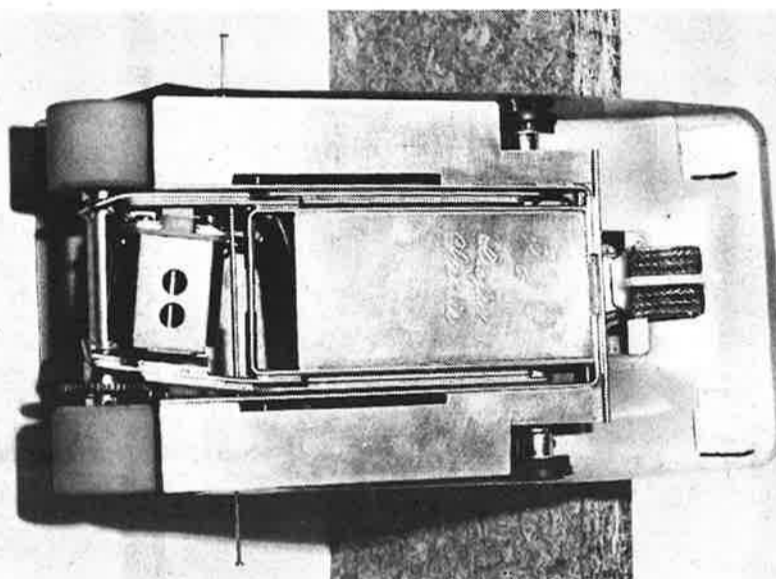
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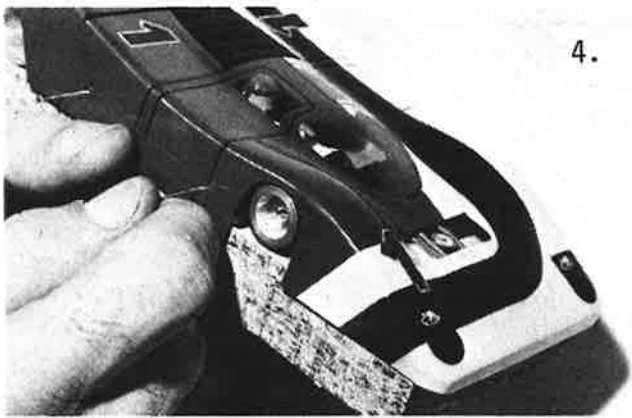
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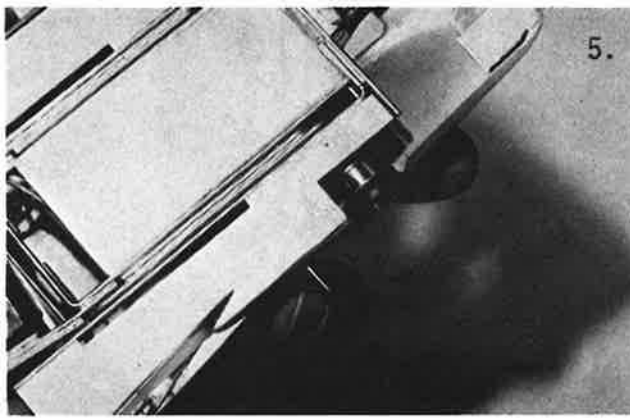
1) Besides your new body and chassis, you will need two test blocks, a standard one and one which has been narrowed to three inches. You'll also need some .010" Lexan sheet and Lexan glue, scissors, stapler, tape and straight pins.

2) Put the chassis on the narrowed three-inch test block with the pickup right on the end of the block. Set the body on the chassis so the untrimmed sides and the nose hang down over the test block. Position the nose, forward to back, so it will have enough (but not too much) guide clearance. Then hold the nose down on the guide, as shown, and set the back end height. Most bodies have a horizontal guide line on their sides to help you with this. Bob likes to mount the rear end a little higher for added traction in the back. Put one body pin in the back.

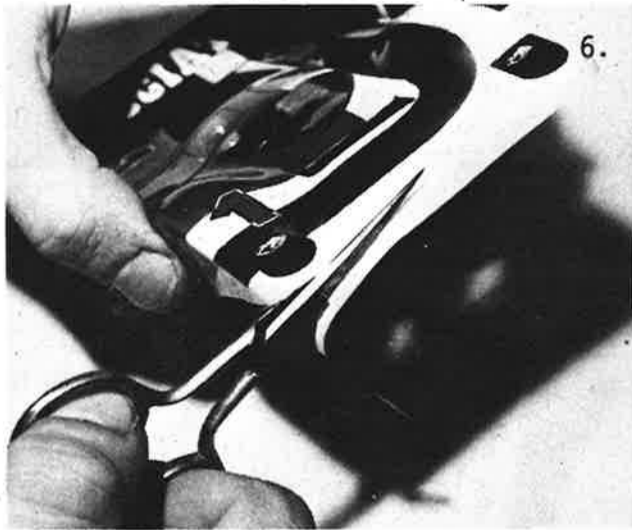
3) Turn the chassis and body upside down and "square up" the chassis and body. You've all seen a car go down a straight looking like it was in a drift, because its body wasn't mounted square on the chassis. After you square it up, take a ball point pen and mark the second rear pin tube location, up and down, on the body - but don't pin it. Turn the car back over and put it on the test block, as in Step #2. Even up the height of the rear end and put the second pin in, using the pen mark as your fore and aft location.



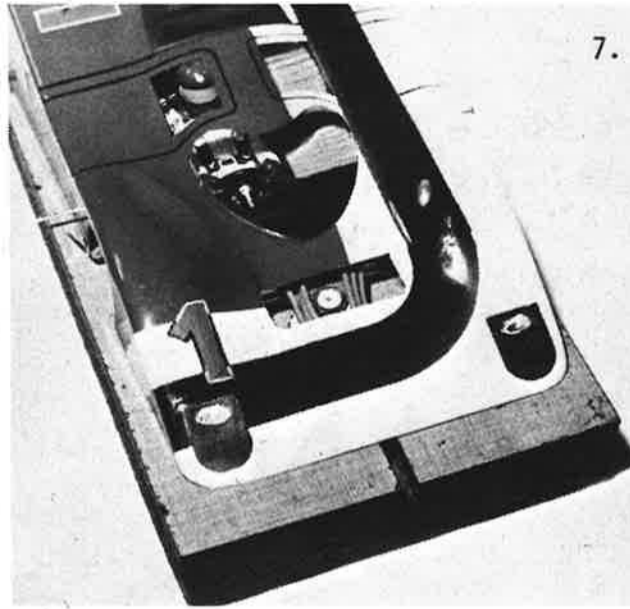
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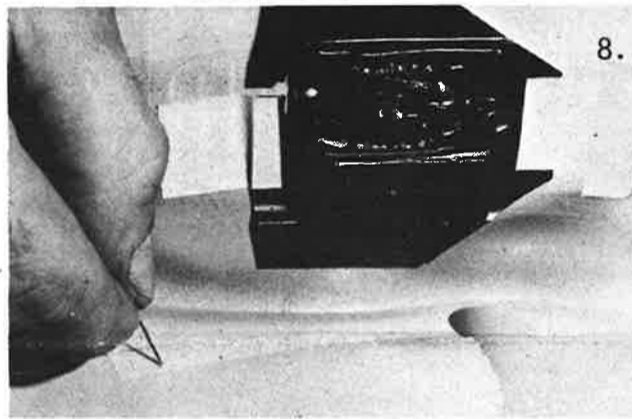
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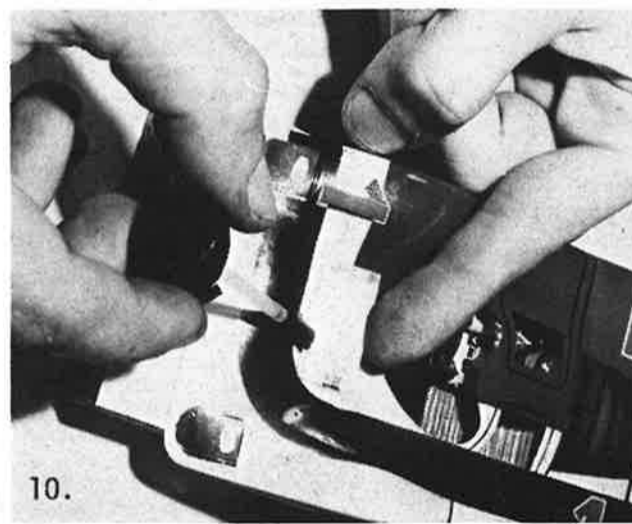
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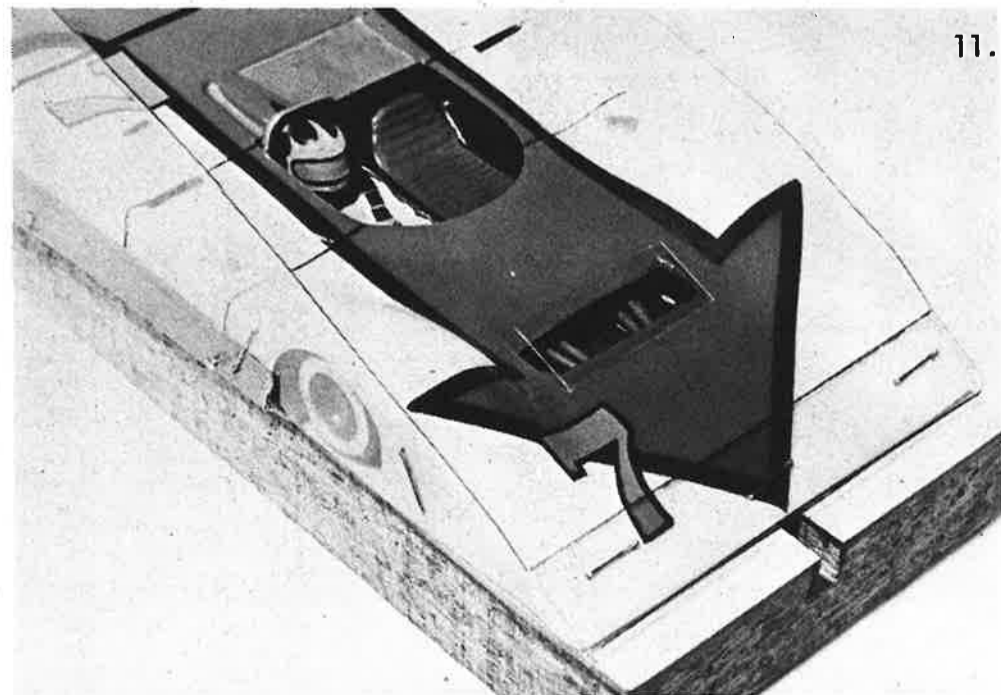


9.



10.

ON TO THE TRACK: You can greatly change your car's handling by manipulating the air control devices on the body. If your car is fishtailing or sliming out, you can add a spoiler to the rear end of the body. If you need more front end bite, simply raise the pickup spoiler from 30° to 45° or more. It will make quite a change in the car's handling. Another point on tracks that allow glue: you can generally use a lot more nose pressure. On tracks that do NOT allow glue, you can use a lot more pressure on the rear end.



11.

4) After both rear pins are in, let the front of the body set on the guide and put both of the front pins in. Trim out your wheel cutouts. X-Acto offers a curved blade for their handles that is perfect for this job. It only costs a few cents and it could save you a ruined body.

5) Turn the body over and hold the sides next to the bat pans. Trim the edges even with the pans.

6) With the car on the test block, check to see how far the nose hangs down over the end of the block. Then trim almost that much off (but not too much). Trim it carefully, a little at a time.

7) Place the car on the wide test block and continue trimming the nose until it just barely touches the track. It should be close to the track, without pushing down on the track. Also, trim the body sides, forward of the front wheels, to 1/32" clearance.

8) Remove the body from the chassis. Using some type of cloth reinforced tape (Bob uses 200mph duct tape), tape it on the outside of the body, about 1/4" up from the bottom. Be sure to poke the pin holes through the tape, as shown in the picture. Trim the excess tape off so that about 3/8" hangs down below the body. Poke the pins back through the body again, this time from the outside - to the inside. Notice that the driver is simply held in with tape.

9) Bob is cutting out a vent opening one-inch x 3/8" deep, right over the pivot point of the jet guide. This works very well on the Porsche SS and Ferrari SS, and a lot of other bodies that have a built-in vent step at this location. It is not recommended on the Lola SS or similar type bodies that already have a designed-in nose down-force.

10) Cut out a piece of .010" Lexan, one-inch x 1/2", and Lexan glue it to the opening you made in Step #9. Just glue the leading edge, and hold the trailing edge at a 30° angle while the glue sets. This spoiler will give added nose pressure to compensate for the added rear end pressure that Bob is using when he raised the rear end up in Step #2.

11) Cut two pieces of .010" Lexan, one-inch x six-inches. Lexan glue or staple these to each side of the body, starting about 1/4" behind the body and going to one-inch behind the nose. You'll only need 1/8" to 1/4" contact area along the side of the body. Trim the side dams, starting 1/2" above the rear of the car, on an angle, down to the nose of the car. Bob does not use a nose diaphragm on his cars and most racers don't, but since some do, Bob has shown an easy method of mounting one in this picture of the Ferrari.

Looking for Lancer H.O. bodies? We have them! Also, M.A.C. and Kirby. Have you tried a plastic chassis Group 12 R-T-R? Just \$12.95, and they really run (and sell almost as fast!).

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MAR Nats to move to new site for '73

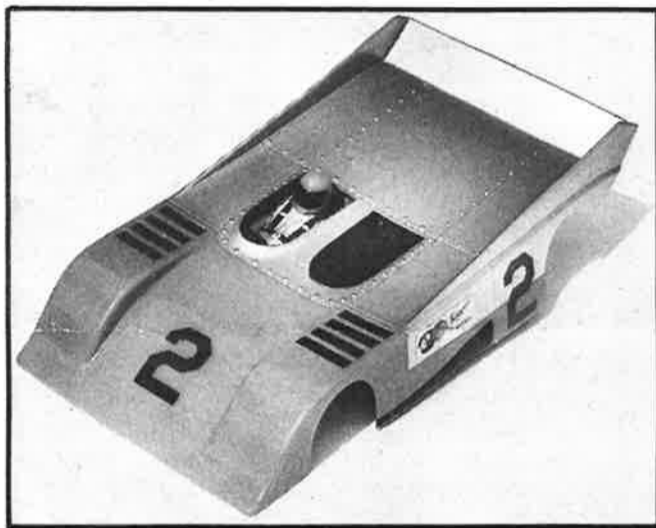
The 1973 MAR Nationals will be held at The Slot Shop, 442 Cleveland St., Elyria, Ohio 44035, instead of Parma International Raceway, as in the past. This year's race will be held on Sept. 1 & 2 on a Blue King track. Winner of the pro race will be guaranteed \$150.00. Merchandise will go to the B group, trophies to the C group. Entry fee will be \$6.00 for either B or C, \$10 for pros.

Tire diameter minimums will be 5/8" fronts and 3/4" rears, with 1/16" clearance minimum.

Write or call (216) 365-5230 for flyer with more details.

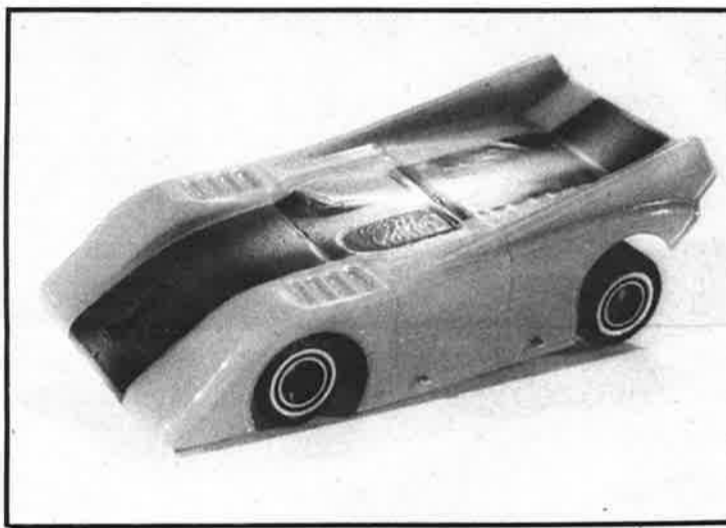
SELECT A WINNER!

Models shown here are the new Japanese Sigma GC 73



R/C (1/8 scale) - Part No. B81 - \$15.95
(Lexan, clear)

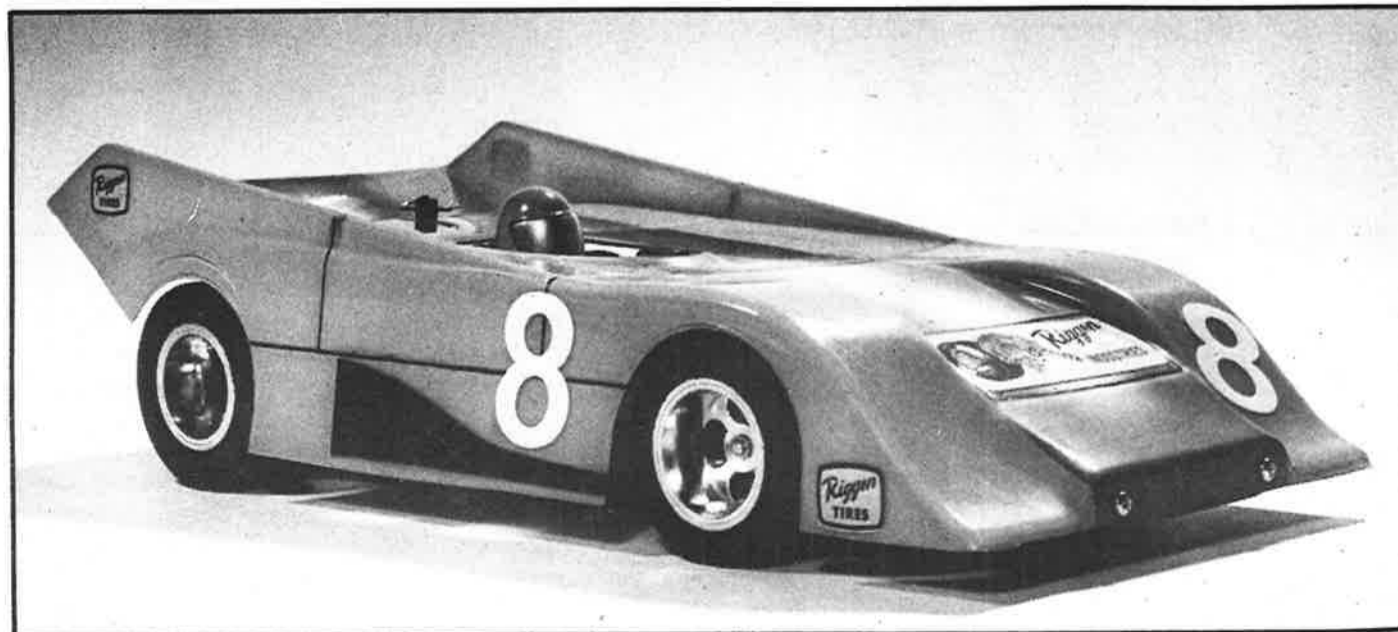
R/C (1/8 scale) - Part No. PB81 - \$18.95
(Lexan, painted)



H.O. - Part No. 124 - \$4.95

1/32 - Part No. 302 - \$5.95

1/24 - Part No. 807 - \$12.95



R/C (1/12 scale) - Part No. RC-7 - \$128.75, complete with radio

These models come ready-to-run from H.O. scale to 1/12 scale (1/8 scale comes in bodies only)

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**the
h.o.
scene**

bob haze

MANUFACTURERS' QUOTES

Jim Kirby, Aurora: "There are NO Aurora can-powered cars in the works, and NO plans for any. Production of the Super II, and all related performance parts, is being moved to the California facilities."

Maurice Winn, Twinn-K: "A prototype can-powered H.O. was recently finished, and evaluation on this car will soon begin. If the car measures up to our expectations, it may be available by early 1974."

Bob Kircher, Tyco: "There is definitely NO market for that \$8.00 sidewinder at this time, and until further notice, Pat Dennis (of Tyco R&D) is going to sit on it."

Richard Megugorac, Riggen: "H.O. is just so damn hard, parts being tough to produce. I'd really like to change the present H.O. car, but my staff in California lacks racers who know what you fellows need. We could use constructive ideas, blueprints, anything that would help us understand what you need. Get some of your "jets" to help us, and we'll see what we can do."

Tom Coyne, TCP: "We're at work on a bunch of new parts, one of which is a new front wheel set, and we are in the fabrication stage on a prototype car."

Ken MacDowell, Parma: "If someone with drafting skills would help us out with drawings of a part he thought we should produce, we would work WITH him. Were the part saleable, in our eyes, and practical for production, the designer of the part would get credit, in some form, for his work."

Barry Crowe, M.A.C. (who wasn't at the show): "There is NO car at this time, only a rumor. The MAC factory team was dropped as a project, when some well-known local racers stated their opposition to factory H.O. teams."