

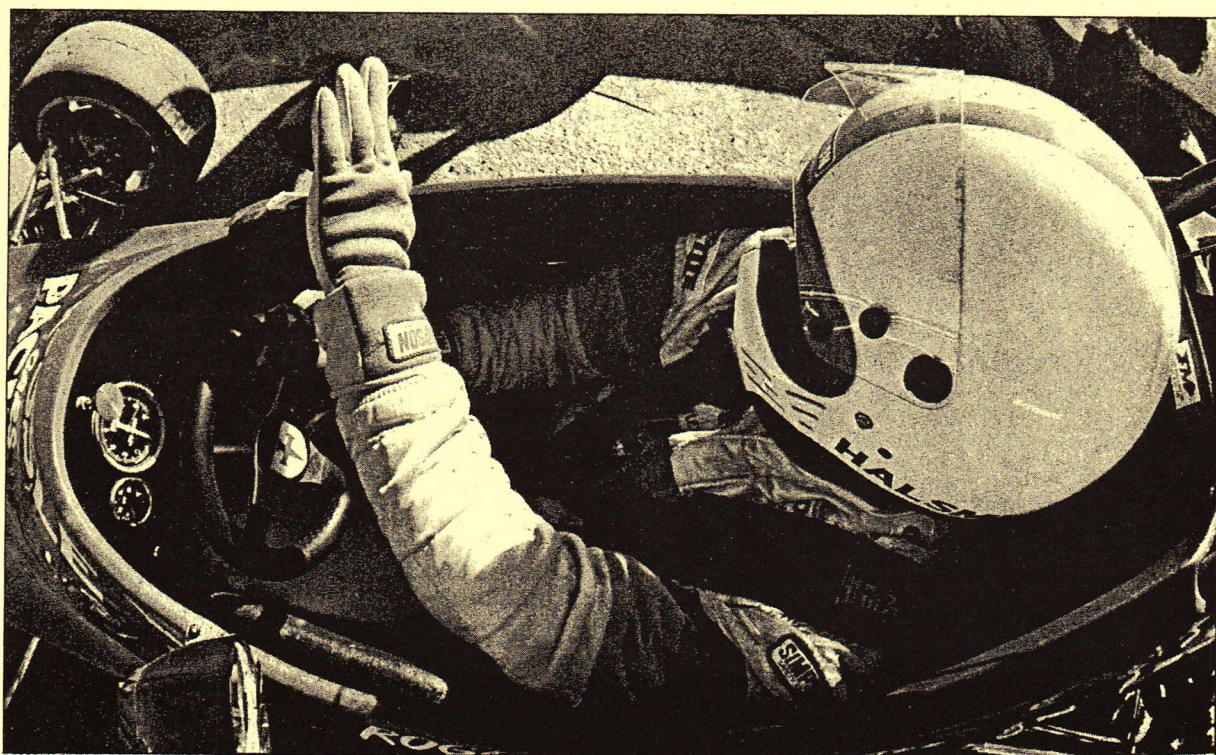
RACECAR's Formula Ford Test THE RIVERSIDE

by Pete Lyons

Driver debriefing was one of the cores of our test procedure. What follows is a digest of what Elliott Forbes-Robinson, the Can-Am driver, and Mini-Indy campaigner (also our Technical Editor) J. Peter Halsmer had to say from the cockpits of each of the six Fords. Their comments, arranged in alphabetical order, concentrate on "seat-of-the-pants" impressions; harder data taken from stopwatch and radar gun appear on pages 28 through 32.



Jim Chambers photo

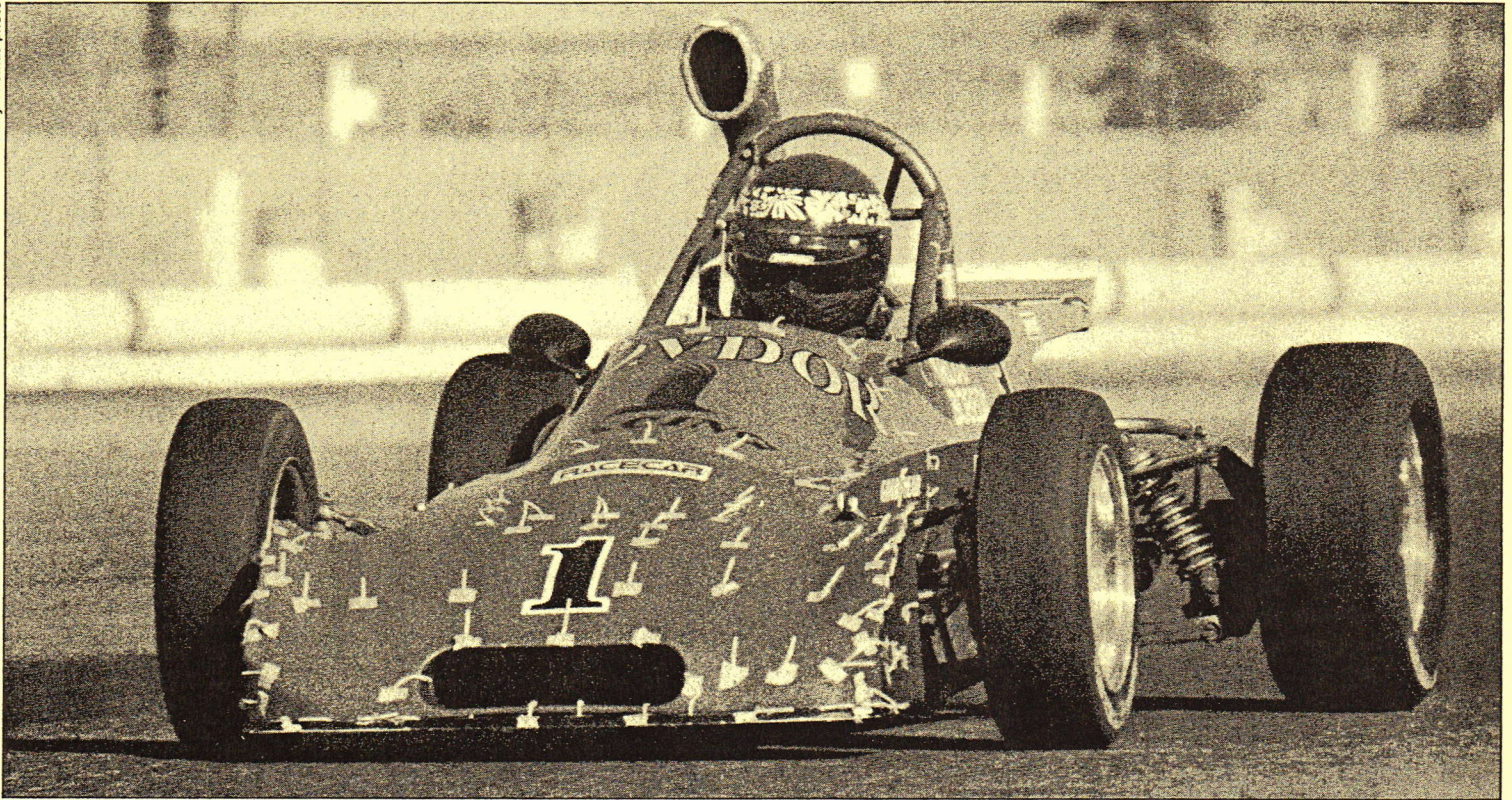


Bill Jenaro photo

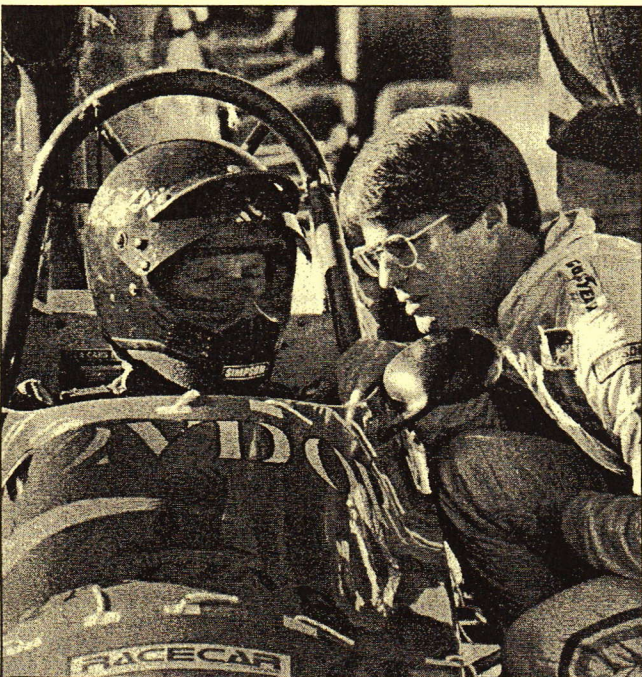
"Technically speaking, this car is a..." Catching impressions cockpit-fresh was a big part of our evaluation. After tuning the cars to the conditions, both drivers hammered out five hard, timed laps on the Riverside long course. Cameras, stopwatches and a radar gun helped gather data—and so did yarn tufts.

TAPES

Henry Thomas photo



Jim Chambers photo



ADF

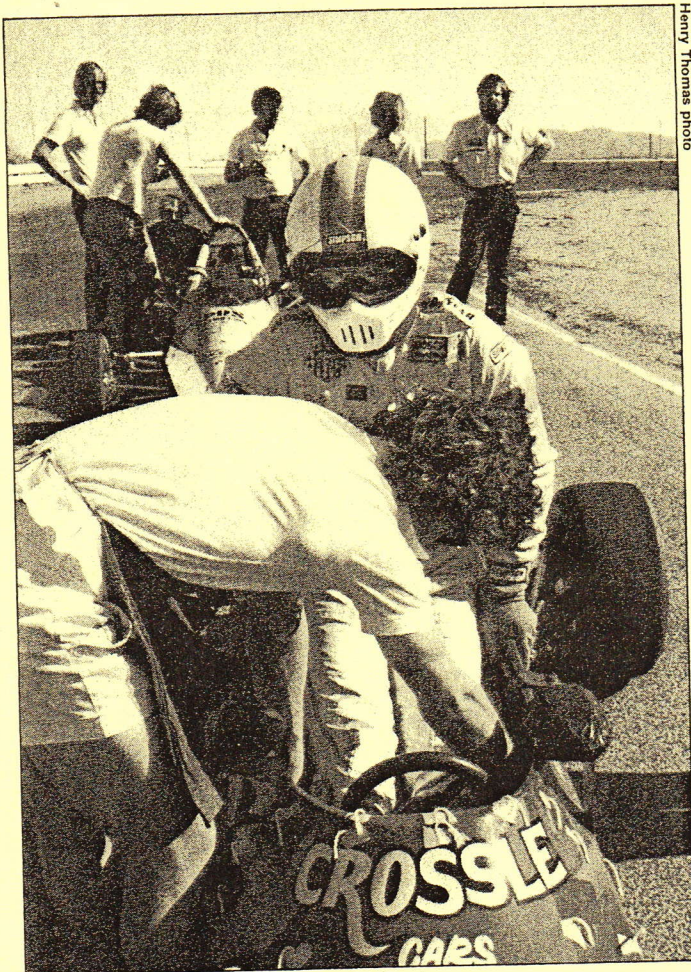
EFR: If we're going to start off on creature comforts, it's diabolical! You can see out, that's fine, and the seating position is actually quite comfortable. But that's where it stops.

One, I like a dead pedal. There's none in this car. It's got a left-foot braking item, which I personally never use, but to brace yourself all you can do is brace your heel against the side and I don't much care for that. Also, the brake takes a lot of pressure. The gearshift lever I found very uncomfortable, in fact I'm sure it cost me time because I'm just not sure I'm going to hit the gear so I don't go in as deep as I might. Then there's a whole lot of buffeting in the cockpit, it just throws your head all over the place on the straight. The mirrors not being installed on this car could be affecting that, because I know it does on my Can-Am car.

As far as high speed stability goes, I would say this car is by far superior to the others. It scrubs off quite a bit of speed through Nine, but it feels very comfortable all the way through. In the low speed corners it is also very stable. I find it very hard to find a fault in the handling of the car. If anything, it spins an inside tire a little more easily than some of the others in the slow corners. Turn-in's great.

JPH: It really stands out in lacking creature comforts. It's hard as hell to get out of—the battery's in the way, down under your legs. I noticed my head banged on the roll bar braces a couple of times. The instruments are tough to see. The shifter is terrible. I didn't get one full lap when I didn't have trouble with the shifter somewhere. Going into Seven you have to downshift and it's hard to know what's happening on the brakes when you have to pay so much attention to the damn shifter.

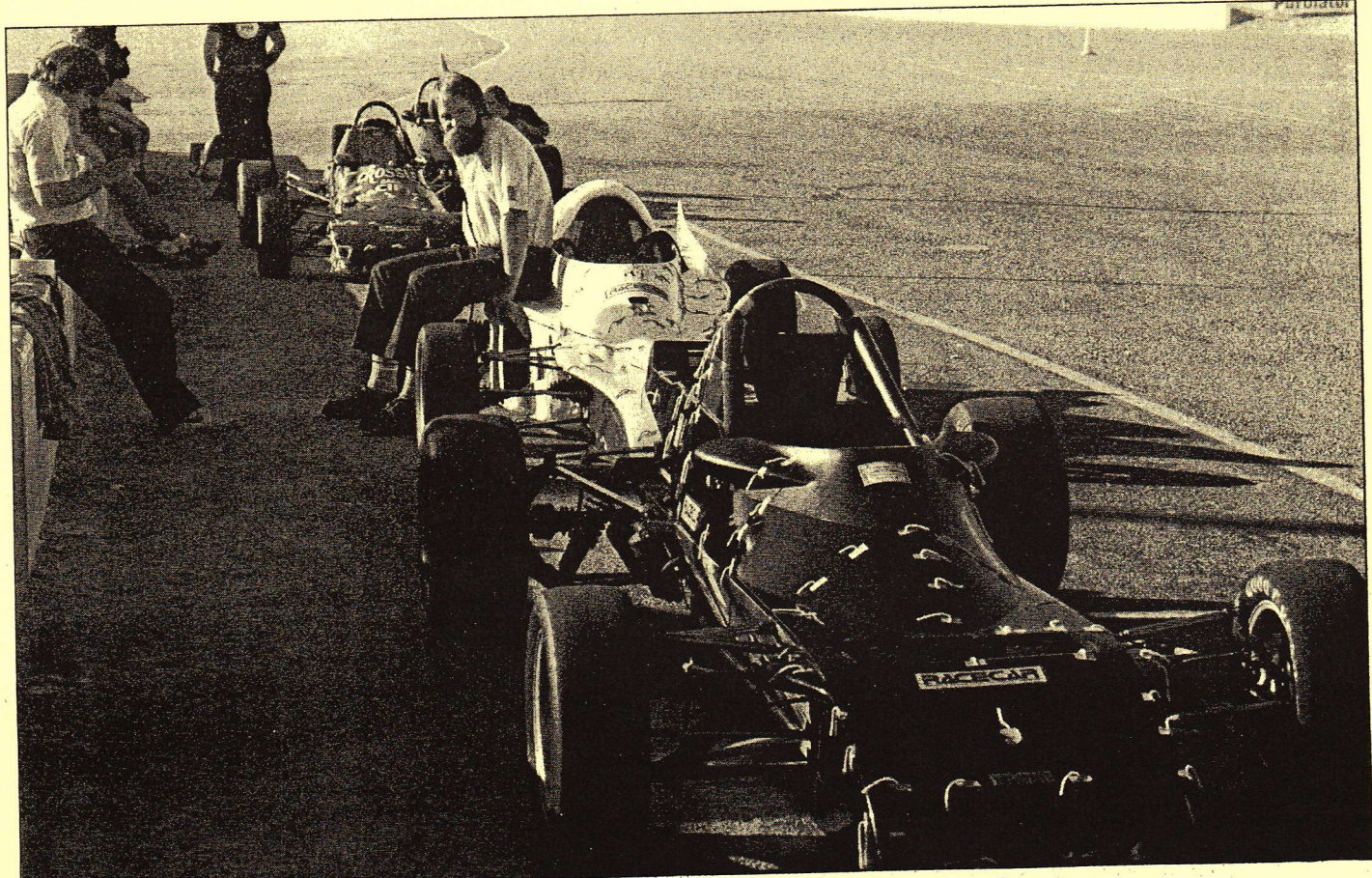
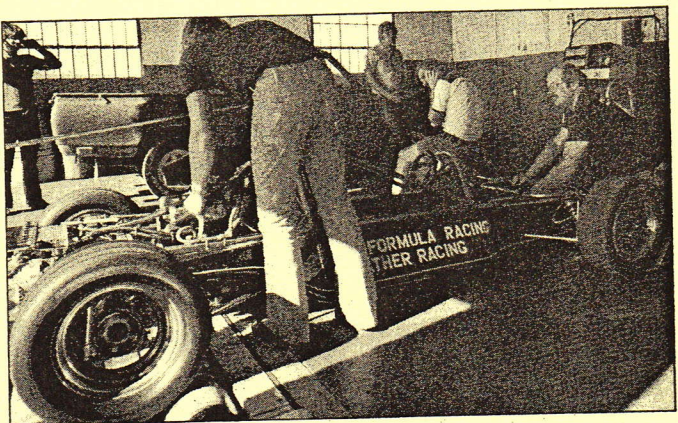
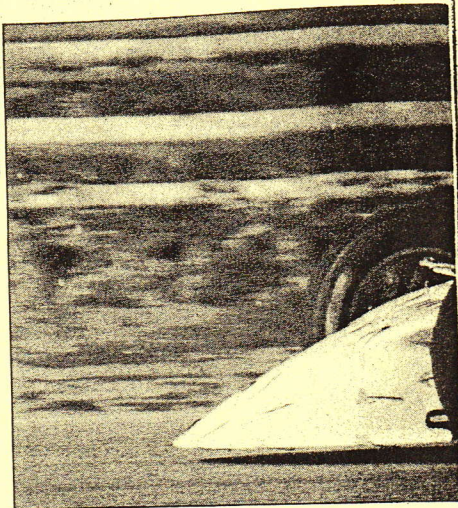
But as far as handling, the performance characteristics of the car, it feels the most stable of any of 'em in the high speed stuff and in the Esses it feels

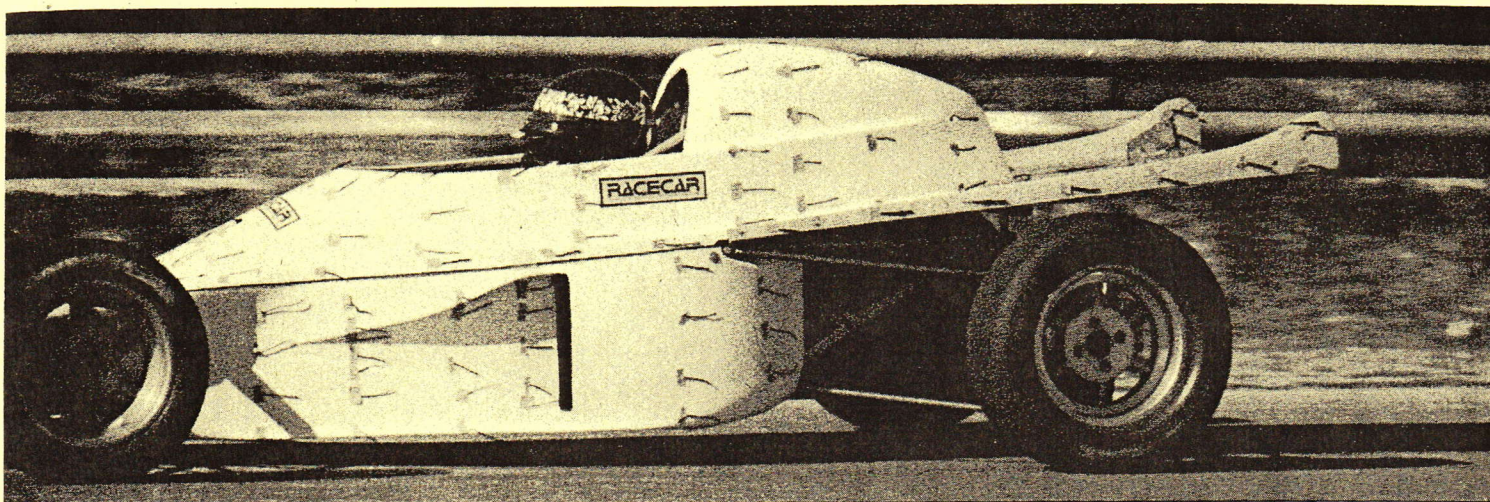


Henry Thomas photo

Hard science is such hard work! Track testing provides everybody but the drivers a lot of waiting, very little excitement and a grinding need for strict impartiality. First we obtained real-world rear-wheel horsepower on an Insta Tune chassis dyno, then spent two long days at the track. It was always interesting in a dry, technical way, but moments of aesthetic pleasure did occur: the airflow of the ADF, made visible by tufting, was lovely. (Note how the NACA duct sucks in tufts from the side and the overflow of pressure from the rear tray forces the tufts on the side rail down.)

Jim Chambers photos





more "set-in" than any of the others. It feels like it's carrying more downforce. In the slow speed stuff it was just a little too understeery, but that's something you can adjust out.

It nice to have the left-foot brake, for slowing the car going into Nine just to settle it. Several cars let you do that, but this one has a special extra pedal and that's useful when you want to knock off a couple hundred revs and not get off the gas to do it.

Turn-in seemed good. The steering is a little heavier, I'd say this is a medium steering-effort car. The transition from going straight to going around the corner seemed nice and solid and maybe with the good, solid feel of the car and being able to use the left-foot brake, maybe I was able to turn in just a little bit higher in Nine than the line I was using with the other cars and feel more comfortable with it.

It's a more expensive car and it's got some complicated features on it, like the inboard brakes and the inboard suspension at the front. If you ask me, is that justified, well, does it go quicker? If it does go quicker, how much do you want to pay for the extra time? As far as driving it, a beginner would have to spend time on fixing things like the cockpit buffeting and the shifter action, but it is actually a very easy and straightforward car to drive.

Crossle

EFR: The seating position is quite comfortable. There's no turbulence in the car, but the wind does hit you in the face. I think if I sat lower I'd not have that; also, if I were sitting lower I wouldn't be hitting that forward roll bar tube with my arm. But this car is the most comfortable everything as far as creature comforts. The shift is real positive, I like it very much. The pedal situation is very comfortable with a nice dead pedal, which I like. I do feel a little bit of heat in this car from the radiator being up by your feet, which I didn't feel in the other cars.

It had a little understeer in the low speed stuff, but I found that by getting in there a little faster the car would go to an oversteer coming off. It's very stable in the high speed stuff, more so than some of the other cars.

If I had to choose a car to drive, it would be this one—forgetting how fast we're going or anything; I mean as far as comfort, the way the car drives, handles, doesn't do anything stupid. I'd say anybody could start in this car. Last time we drove a Crossle, up at Willow Springs (see RACECAR for May, 1979—Ed.), I got the feeling it was a twitchy car, but I'm not getting that feeling today with this one. I think it's a very controllable car everywhere.

It doesn't spin a wheel anywhere. That's probably due to the understeer they've got in it at the moment. And in Nine it never felt twitchy in the slightest, but it seemed to scrub off quite a lot of speed through there. That slight understeer may be why. If you loosened it up, it might be a little bit harder to drive, but maybe a little bit faster.

That's one of those things. You change the car and you come in and say it feels worse, but the mechanic says you went faster so you leave it!

JPH: First impressions are that, unfortunately, it's just a little understeery still. That's just a matter of the setup, we didn't get it all dialed out this morning. A couple of times when I wanted to get the back out a little in the slow stuff I couldn't.

In fast stuff it feels nice and solid. The car feels as if it's got the right amount of roll to it. It seems to turn in well, there's no transition that you notice. Turn the car in the Esses and it just does the same thing from the time you start the turn until it's loaded.

The steering's a little heavy, maybe it'd be nice to have a little less effort, although you can't fault that as a performance item. Seating position, comfort, pedals, all good. Oh, let's point out to people that one significant

advantage in a car they might want to buy is the ability to adjust the steering wheel up and down to get a better view of the instruments. Especially the top of the tach, a lot of them give me a little trouble in this area.

No major buffeting problems. I did notice you use the roll bar brace to control your upper body movements, your shoulders sit against them. In a long race it'd be wise to put padding on them.

It feels like it'd be an easy car for a beginner to get out there and drive, although physically it takes a little more effort than some because of the steering effort and the brake pedal pressure. At Willow, you remember, we said maybe the Crossle we had up there was kind of a nervous car and might take more of an expert to get something out of it. This isn't that kind of car at all, there's no nervousness to it.

Lola

EFR: I really like the Lola. Maybe that's because I've driven a lot of Lolas, but I'm comfortable in this car. The shifter is in a nice spot, easy to get to. The steering wheel is nice. One thing: the tach really ought to be turned upside down, because now I can see everything except from 3000 to 6500. . .

The mirrors are really good. There is no turbulence to speak of, even though you can see the rear part of the cockpit is open compared to some of the others.

Now, the way the car is set up right now it'd be very hard to drive for a newer person. It's very twitchy. It's loose in the fast stuff and when you brake into the decreasing radius out there, Eight, it wants to swap ends on you. I think the car needs stiffer springs on the front, because when you bounce on it the car seems real stiff at the back and soft at the front, which would tend to induce oversteer everywhere, which is what it's doing.

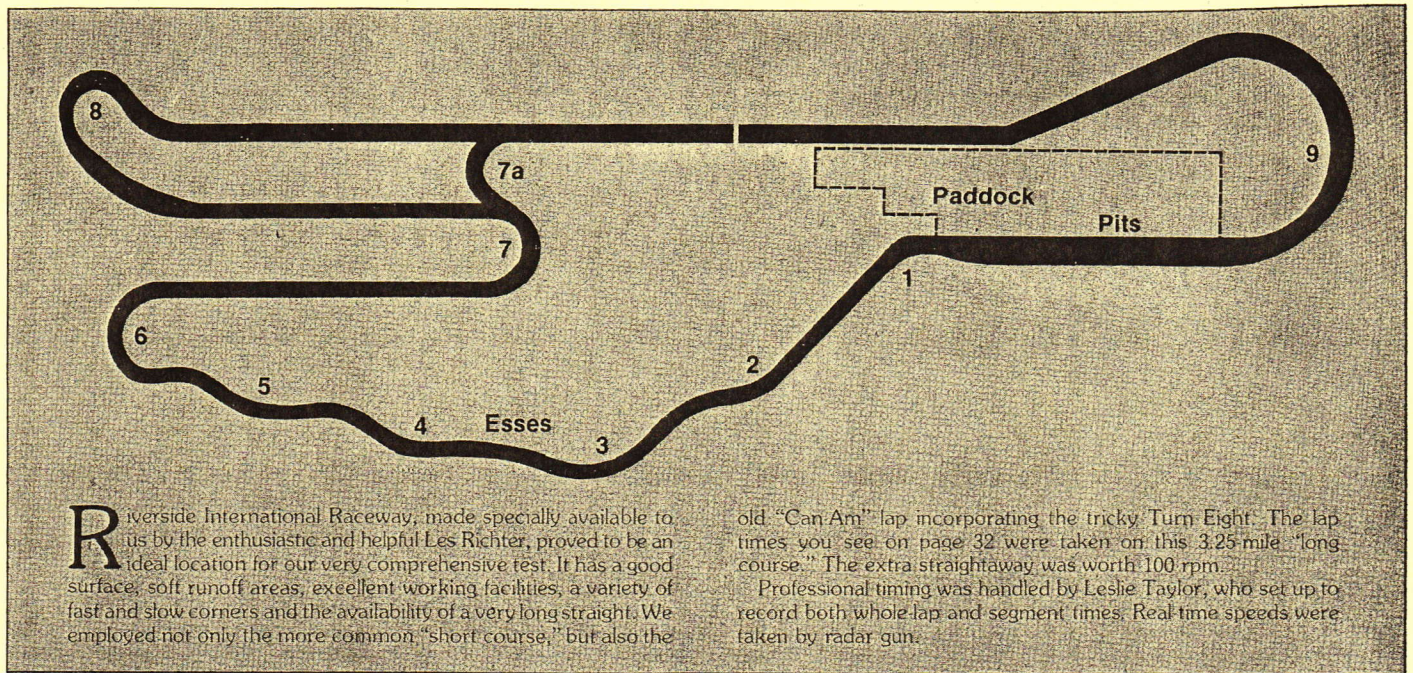
The slightest movement of the steering wheel will change direction. It's controllable, but it's very sensitive. You turn the wheel and it moves the car around more than you think it's going to, so a beginning person might have trouble, especially in high speed corners where they'd be overrevving the car, moving back and forth a lot. The brakes are the same way. They're very good, but just the slightest pressure on them will bring the car down very, very fast. Again, that's something that can be changed, by changing master cylinders and so on, but as it's set up it's really sensitive for a beginning driver.

You know, if you were qualifying the car this is the way you'd have it set up. An oversteering car loses less speed due to scrubbing in high speed corners, they come off the corners well, carrying a lot of speed. When we ran the Grand National car we used to set it up looser for qualifying, so it would run freer and wouldn't bog down the motor. But it's not a real comfortable way to have to drive it during a race.

JPH: The first impression is that everything is just nice when you get in the car. The shifter is nice, the seat is nice, everything gives you the feeling you're part of it. You go right out and try to run fast with it.

So far, this car is adjusted really nicely right now. I could get on the power earlier in Six and Seven than any of the other cars, although in Eight there was kind of an understeer problem, a little problem to get it turned around. But that's typical of all cars, you tend to try to go in there too fast. But this car is the first one where I've been able to crest the hill in Seven and start down and, as soon as I realize I've slowed myself down enough about halfway down the hill, I can pretty much get right back on the gas. No waiting in the middle there at all.

The brakes have given me the most confidence of any so far. I tend to like a lighter pedal feel and I was going deeper into Six than with the other cars, but it still felt really nice, never locked a wheel up.



Riverside International Raceway, made specially available to us by the enthusiastic and helpful Les Richter, proved to be an ideal location for our very comprehensive test. It has a good surface, soft runoff areas, excellent working facilities, a variety of fast and slow corners and the availability of a very long straight. We employed not only the more common "short course," but also the

old "Can-Am" lap incorporating the tricky Turn Eight. The lap times you see on page 32 were taken on this 3.25-mile "long course." The extra straightaway was worth 100 rpm. Professional timing was handled by Leslie Taylor, who set up to record both whole-lap and segment times. Real time speeds were taken by radar gun.

Thanks Goodyear!

Bill Jermann photo

We want to express our particular appreciation to the Goodyear Tire and Rubber Company for its generous assistance in ensuring the equality of the tires fitted to our six Formula Fords. Akron took such a constructive interest that our large stack of rubber was airfreighted in from the Midwest.

Our test schedule allowed time for teams that normally race on other brands to adjust their chassis to the Goodyears. We did allow a choice between the two available widths of front tire; only Tiga ran the seven-inch-across wider one, opting for cornering power.

As JPH noted in his PRS debriefing, tires can "go off" as they wear. One of the FF team managers added, "Some tracks, like Phoenix, are so abrasive you chase tire wear all day. You keep adjusting the car, but the tires are changing so fast you can't keep up." He predicts an appearance of F1-style driver-adjustable bars.

Goodyear says tire life can be approximately doubled by use of a break-in procedure: warm new tires up with a few laps, let them cool down in the pits (possibly using water) and then use them normally.

In high speed handling, I think it's a little too oversteery. Going through Two the last time I loaded it about the amount I thought was right and it was a little too much. It kind of came around and scrubbed a little speed off, which you really don't want to have. What it needs is some aerodynamic reduction of the high speed oversteer, to enable you to keep the low speed oversteer. We've got a little tab on the back of the deck, but it's not enough. That whole deck is pretty small.

I'd say it's an excellent car for a beginner to just jump right in and it seems to be extremely quick, too. For somebody my size, you wouldn't have to change anything.

PRS

EFR: The seating position is very comfortable, except that the seat doesn't seem to have as much lower leg support. I brace myself a lot with my knees and I'd have to do something with this car about that. Pedals are fine, but the shifter has some slop to it, although it's in a nice place. The instruments I have trouble seeing because the lower two gauges are getting hidden behind the steering wheel spokes, which are very fat in this car. I do like having a transparent windscreen. You don't really look through it, but sometimes, believe it or not, it does help to be able to see the wheels—not for placing the car on the track or anything like that, but lots of times if you have a problem you can look out there and spot it, or look at the shape of the tires. The wind protection is good, there's no turbulence.

The car seems to handle really well, you can kind of drive it where you want. The steering effort is extremely light. Not too light, it's not overly sensitive, but it doesn't take any effort to turn it. The brakes seem to stop the car plenty good, although they feel different in that when you first go for the pedal it doesn't seem to be stopping and you have to give more pressure. Which isn't necessarily bad, because if you get into a situation where the track is slippery this might be better. I could go really deep into Eight with this car.

Now here's something interesting. This was the first car I drove today and also the last and the handling has changed. Before it had a kind of light understeer, but now it's definitely got an oversteer. That's both low and high speed. They haven't changed anything. Maybe the tires have gone off or something.

JPH: The seat position is laid down a little more than I like. I guess maybe the bodywork and the roll bar are kept lower and that's the reason they lay you down. I'd rather be sitting up a little straighter, but it is comfortable, it has good seat support and all that. The visibility is good, the mirrors, there's no buffeting. It is hard to see the oil temperature gauge at the lower left because of the steering wheel. It's got fat spokes and it's also smaller in diameter.

The steering feel is a little heavier than it needs to be and I think a slightly bigger-diameter wheel would help the steering feel and give you just a little bit more accuracy. Just my opinion.

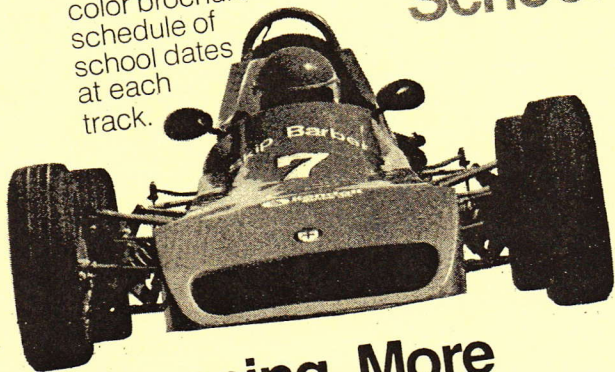
It seemed to be an excellent car for a beginner to get into. It feels nice and stable in the high speed stuff and it seems to be real nice in the slow speed stuff. It brakes really well, maybe not quite as well as the Lola but definitely on a par with the next group of 'em. By braking well I mean that you can

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move your braking point up the corner like you want to, without locking a brake up or doing any unnecessary movements.

It turns in well and it doesn't have a noticeable transition, although it's got the amount of roll that would lead you to anticipate a transition problem, maybe. Either the bump steer is correct or the relative amount of damping front and rear is right; anyway, it seems to indicate those two things are correct the way the car is set up right now.

Tiga

EFR: The car feels terrific. In the slow corners it really works, although in the high speed I think it's a little loose. But in the slow ones I felt I could enter faster in this car than any of the others. You just turn and go for it.

The shift lever is just perfect, gives you all the confidence you want—you know where it is, it's a short throw, it's very solid. Pedals are in a nice position with a nice dead pedal. There's room inside. The seat they've got in there is horrible! They've got a pad or a lump in the seat back made for somebody else and my back is killing me! (This is after less than 10 minutes of driving—Ed.)

I can't find a whole lot of fault, it's a very easy car to drive. The turn-in is terrific, the car does exactly what you want, so I would say the slow corners are where this car stood out more than anything else for me. I would say that in faster corners at the moment, like Nine, I would prefer the ADF or the Crossle, but I think at a place like Sears Point this thing would just fly.

Oh, you do feel a lot of the bumps in the road in this car. In the Esses on those cracks in the road the car bounces. It feels like the shocks are very stiff. You feel it through the steering wheel and your bum, especially when you're braking at the same time you hit them.

JPH: Feels pretty good. First impression, it's a very nimble, quick little car in the slow speed stuff, but it's very solid-feeling, it's not oversteery, at high speed. A really good balance between slow and high speed handling.

Seating position, controls, shifter, all that stuff is really well placed. No buffeting, no heat, good visibility. The mirrors they've got on it are particularly good. Ah, the small tach they've got is possibly not so accurate for testing, to see your rpms.

Maybe it's a little soft right now in the amount of roll that it's allowed. When I first drove it I thought this car seems to want to wait just a little bit, maybe three or four feet going into Two for example, before you turn it in because when you make the initial steering movement it turns right away. Until it gets loaded it seems to turn quicker. When I drove it again, though, this question about the transition seemed to have gone away. They didn't really change anything that would cause that.

The steering has a nice, light feel. That's one of the first things you notice about this car. I really like it. It feels more solid in the fast stuff than the Lola did. You can get the power on about as early as any of 'em in the slow stuff. I got it a little sideways my second to last lap, I imagine that will show on the times, but it was my fault, it wasn't the car's.

I think this would be an excellent car for a beginner to jump into.

Van Diemen

EFR: This is the best shifter, I think, of all the cars here. It's real positive, there's no slop in the linkage, it's in a place where you can reach it. The seating position is fine as far as reaching the pedals. There's a lot of buffeting in the cockpit, coming down the straight it moves your head back and forth. I couldn't get the mirrors adjusted just where I wanted them, one was looking too far out to the side. I have a sore spot on my knee now where I'd have to put a padding on the frame tube there.

For some reason, this car seems to have a bit taller gear than the others. They say it doesn't, it's got the same gears and the same ring-and-pinion, but all I can tell you is I was taking Six and Seven one gear lower than the others, first instead of second. I was getting a little bit of inside wheelspin in Six, but maybe that's because of being one gear lower.

Car turns in real well. Transition from understeer to oversteer I didn't notice because we're not getting much of that. It just kind of goes into the corner and stays in that attitude all the way around, very nice. Getting into the corners a little bit hot, it seems to get out a little at the back end, but you can catch it without even getting off the throttle.

JPH: It's very nice at slow speed, as nice as any of 'em. It seems to go into Eight a little better than the rest of 'em, without the understeer a lot of 'em have.

I did modify my cornering line in Seven for this car. It's interesting, because when I take my normal line, kind of a large radius down to about the middle of the turn where I'd apex and stand on the gas, with this car it seemed to be quicker to kind of straighten out the braking over the crest of the hill and stay tighter to the inside of the track. If I was out where the other cars were, the back wanted to swing out pretty good. I don't know what would cause that, unless the car is set up a little asymmetrical, carrying a little more weight on the right rear than the left rear. Remind me to go back and check the corner weights on the data sheet.

The brakes are heavier on this car and so is the steering. This gives it more of a heavy feel overall. There's a lot of roll stiffness, so it doesn't have a major transition area.