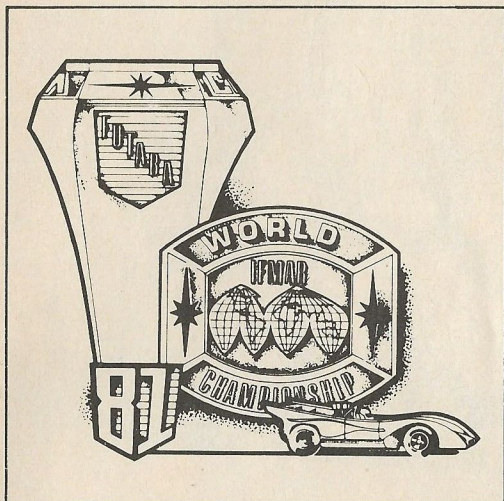


Contest emblem



THE WORLD CHAMPIONSHIPS

Report & Photos by
Roberta & Roy Moody

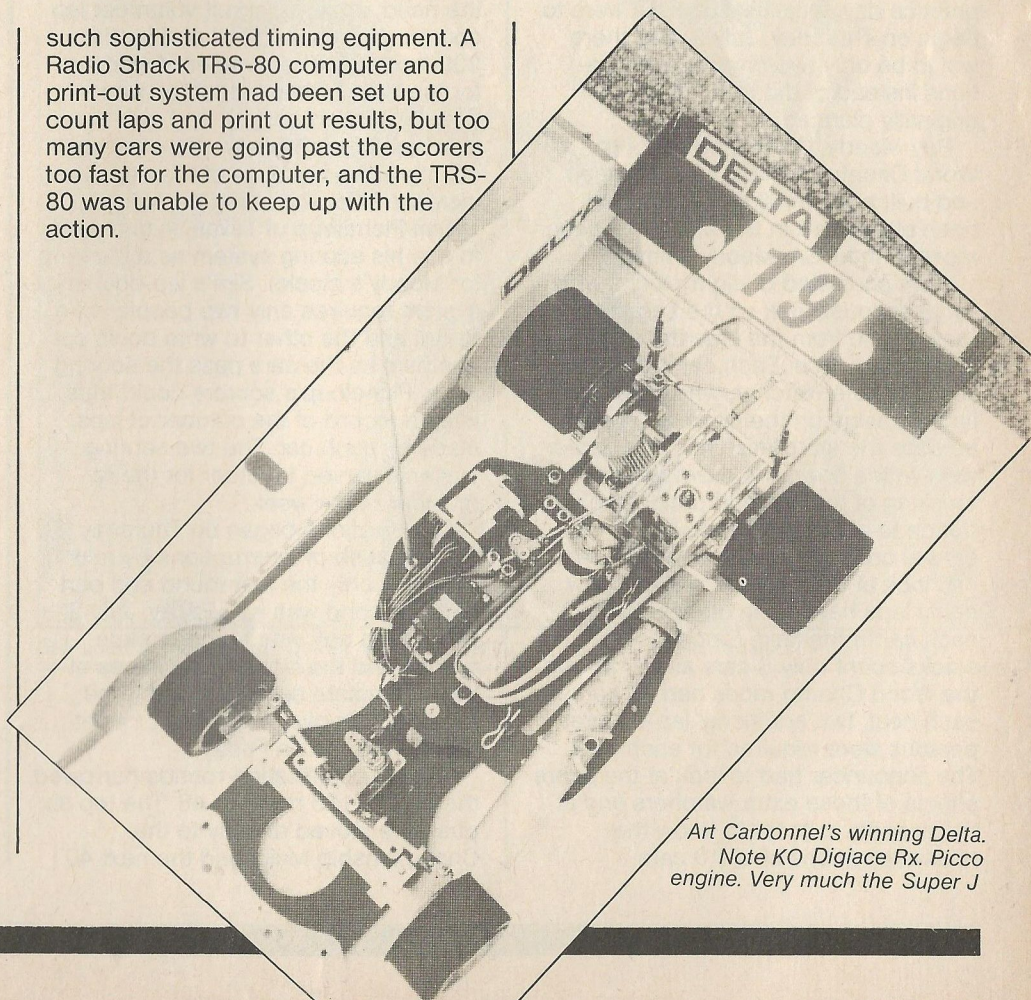
**Sponsored by Futaba
Hosted by Indy 500 R/C Car Club
Race Director Joe Werner**

SUMMER RAIN in Indianapolis often interrupted practices and qualification heats and even caused a temporary recess in the Main for the third running of the World R/C Car Championship races. Joe Werner, ROAR Vice President, and the Indy 500 Club were hosts and Futaba the sponsor for the biggest event in 1/8 scale R/C car racing.

A new asphalt surface had been put down on a portion of the parking area of Castleton Square shopping centre on the northeast perimeter of Indianapolis, Indiana. The new paving was 224 feet x 106 feet, and about 720 feet of track twisted through curves, hairpins and a relatively short back straight to provide more of a test of driving skill than of horsepower. European R/C car drivers are more accustomed to larger R/C car tracks, such as the one used in Geneva for the 1979 World Championship races.

The host clubs in Switzerland had used Longines timing equipment combined with a printing device, but the Indy 500 club could not gather enough funds to pay for the use of

such sophisticated timing equipment. A Radio Shack TRS-80 computer and print-out system had been set up to count laps and print out results, but too many cars were going past the scorers too fast for the computer, and the TRS-80 was unable to keep up with the action.



*Art Carbonnel's winning Delta.
Note KO Digiace Rx. Picco
engine. Very much the Super J*



Finalists & their mechanics. (l to r) Kondo, Burch, Carbonell, Ishihara, Bartolomasi, Culver, White, Tadiello, Lecat, Bervoets. Some mechanics also 'names': Bill Campbell for Art, Bob Errington for Gary Culver, Paul Pagdin for Steve White . . . and Ronnie Ton without a car to hold on front right but one

Because of the problem with the computer, qualification races were called off at about noon on July 1, and that day, Wednesday, became another practice day. Qualification runs were to begin on Thursday, July 2, and there would be only two days of qualifications instead of the three days originally planned.

Roy Moody, Chief Steward of the World Championships, had designed and built a set of clocks which had been often used in the Midwest Series races in the USA. Moody's timing system consisted of eight clocks which simultaneously tick off the seconds as they elapse from the time the flag goes up for each race. Each car in the race is assigned a watcher, who notes the time showing on the clock as the car crosses the start/finish line; the scorer then writes down the exact time of the crossing of the line and punches a button to activate a lap counter on a central console. The race announcer can look at this console and tell how many laps have been completed by each car in the field. Since Moody's clocks count only 8 cars at a time, and the World Champ races had 10 cars in each heat, two additional lap-counter persons were required for each heat. The announcer had to look at the score sheets of these extra watchers and at the console in order to know the relative positions of all 10 cars.

The computer system, if it had worked properly, would have required only two people to make it work, and Moody's system required 11 people, so the need arose to recruit volunteer lap counters for each 'quali' and for the 200-lap Main. The number of workers for the World Championships was already in short supply, and now the shortage of available workers became even greater, because of the necessary increase in lap-counting personnel.

Sim Picheloup of Texas volunteered to use his scoring system as a back-up for Moody's clocks. Sim's lap-counting system requires only two people—one to call and the other to write down car numbers as the cars pass the scoring table. Picheloup's scorers could thus keep a record of the number of laps made by each car. The two scoring systems served together for the remainder of the week.

Qualifications began on Thursday, but, because of interruptions by rain showers, only the first round and part of the second was run. Friday, July 2, was a long day with four complete rounds and the last six heat races of the incomplete second round to be run. In a little over 12 hours, 51 heat races were run on Friday.

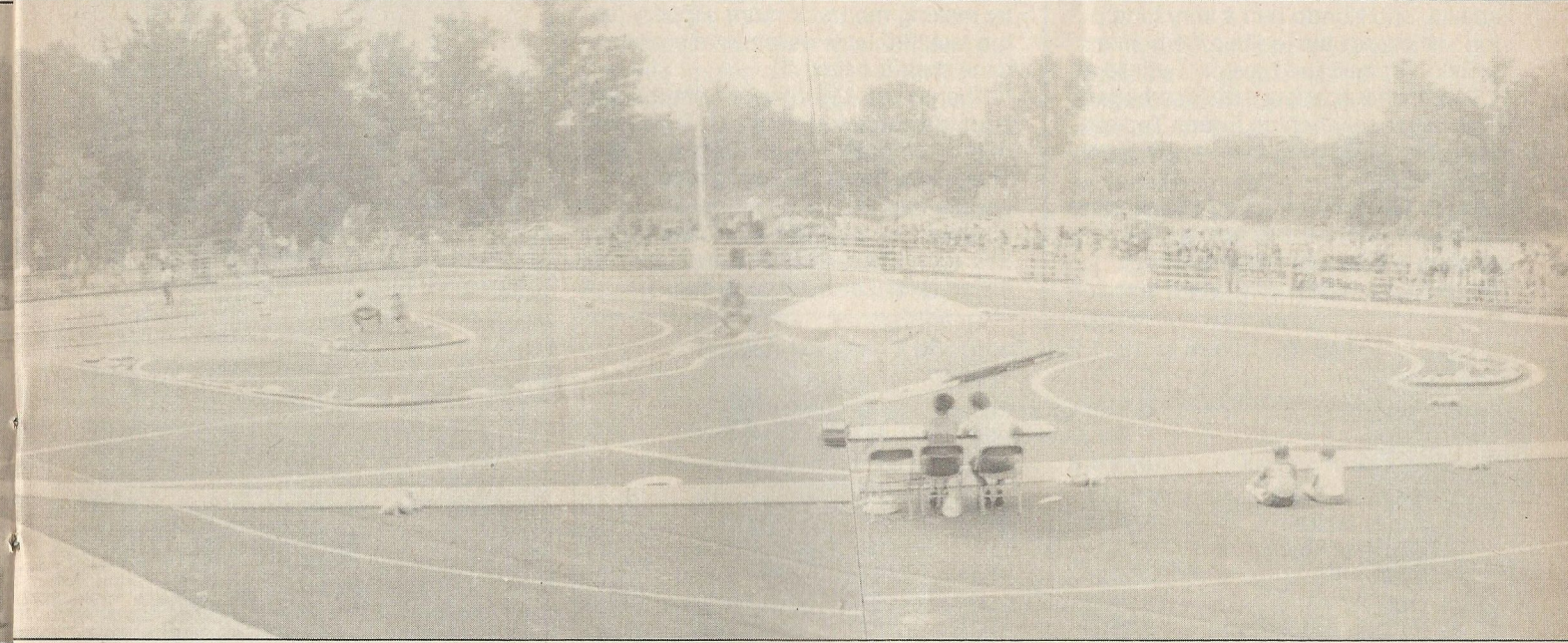
The six qualification rounds narrowed the field of 135 down to 46. The top six qualifiers moved directly to the Championship Main, and the next 40

drivers had to race on July 4th through four more qualification rounds to select the four drivers who could advance to the Main.

Qualification times were so closely grouped that Gary Culver of England and Ermes Tadiello of Italy tied for 6th place with 37 laps in 612 seconds. But only one of them could advance to Sunday's Main, and the tie was broken by using the second-best time of each driver. Gary Culver and his P.B. car advanced directly to the Main, and Tadiello and his S.G. car had to go through four more rounds of qualifying on Saturday to get into the Main. During his third quali heat on July 4, Ermes Tadiello made 37 laps in 607 seconds and got into the Championship Main.

Top qualifier, Katsunori Kondo, had made the trip to Indianapolis while on his honeymoon. Kondo came out as FTD of the first round and made his Kyosho car go faster each time he ran a heat, so that he held onto the top spot. His best time on July 3 was 37 laps in 604 seconds, and though Steve White of England equalled that score on Kondo's day off, the Japanese driver retained the title, because he was the first to go that fast.

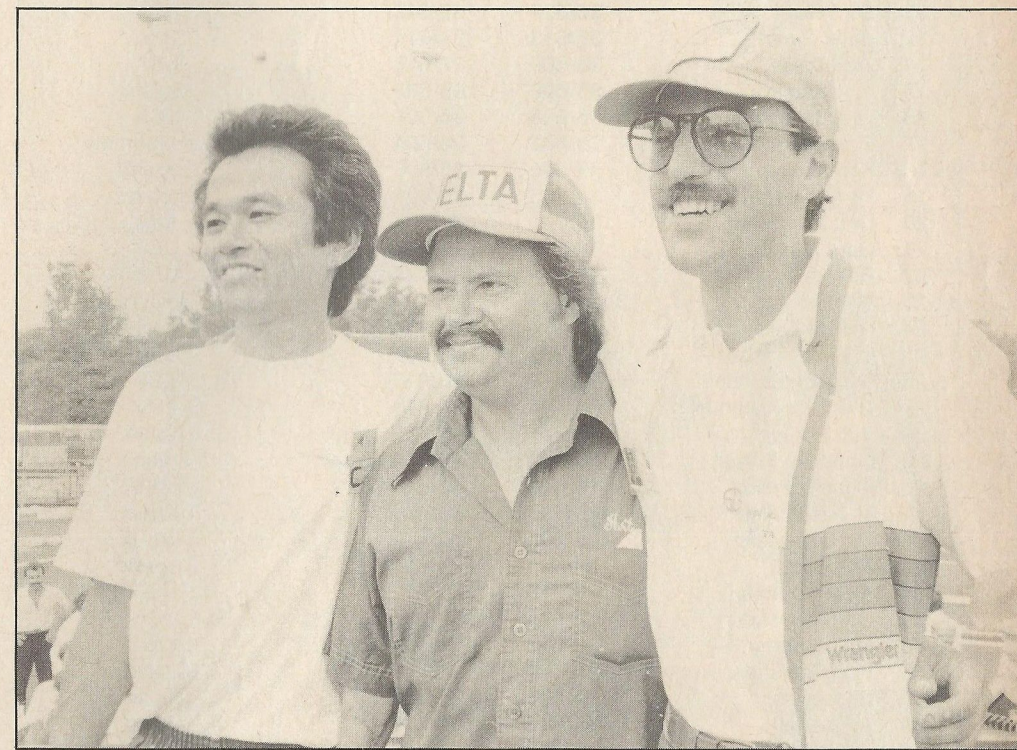
Roberto Bartolomasi of Italy ensured himself a place in Sunday's Main and a day off on Saturday by making 37 laps in 609 seconds with his S.G. car.



A fit up of the circuit, note the encircling 'boards'

The two Americans who advanced to the Main personified two entirely different stories of R/C car drivers. Ralph Burch, Jr., a 13-year-old lad from Texas, had been driving 1/8 scale cars for only 8 months and has made a good showing in the ROAR Winter-nationals while driving an Associated car assembled by his father. Arturo Carbonell from Lorimor, Iowa, probably had more driving experience than any other driver in the Main and is several times ROAR National Champion. Art is an engineer and probably the only professional R/C car driver in the world since he came to work for Delta Manufacturing.

Arturo Carbonell had been leading the Championship Main when it was halted by rain after only 12 or 13 minutes. If the rain continued so that fewer than 101 laps of the Main were run, the World Championship would go to the driver with the highest cumulative score of his best three qualifications, and that driver was young Ralph Burch, Jr. The youngest US driver—actually the youngest contestant in the entire event—would win if the rain continued, and the most experienced US driver would have a chance to continue his lead if the rain stopped and the track dried. For two or three hours on July 5, everything hinged on the changeable Indianapolis weather.



Still good friends! Kondo on left (No.3) winner Art in the middle and Tadiello (No.2 on right)

The rain *did* stop, and the race re-started about 2.45. The 10 drivers in the Main were flagged off at approximately one-second intervals in the order in which they has been running before the rain—Carbonell going first, and Bervoets taking off last.

Arturo was the first to get 50 laps, Steve White was next, and Lecat and Tadiello were third and fourth. At 60 laps, Art had a 22 second lead over Steve White. David Lecat was on the same lap with Steve White at about 75 or 80 laps, and the French and the English driver shifted positions back and forth during pit stops. A few laps later, Tadiello caught up with them. Lecat, Kondo and Tadiello were all on the 100th lap at the same time, while White was at 101 and Art Carbonell was at 103 laps.

White's car began to have trouble with its steering, and Kondo and Tadiello battled for second place at about the same time Carbonell's car body came loose in front and Art drove into the pits, where his pit crew wired it down to keep it in place.

Arturo Carbonell still led at 118 laps, and Kondo and Tadiello were in second and third place when Lecat's car developed some trouble, and Kondo and Tadiello had some trouble getting round him. Tadiello had a slight lead over Kondo, but Carbonell had a two-lap lead on both of them at 125 laps. Slower drivers were making way for Arturo as he passed them.

Meanwhile, Ralph Burch, Jr. was plagued with radio problems. Once he had changed transmitters before the 'rain recess', but later his crew decided that the trouble was not in the transmitter, but in the receiver—probably the servo. Whatever the cause of poor radio reception, Ralph pulled out of the race at 95 laps in order not to be a hazard to the other nine drivers. He is to be congratulated for this gentlemanly act. At his age, he has lots of time to try again for another World Championship race.

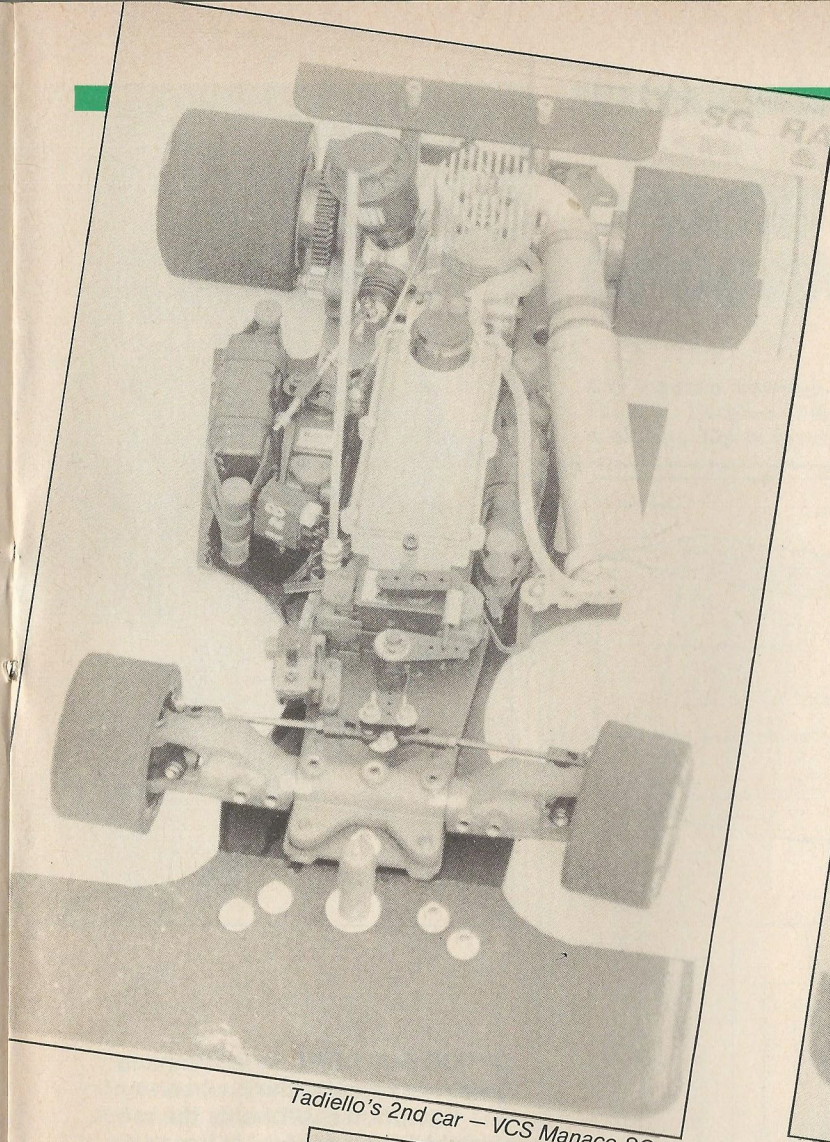
At about lap 143, Kondo moved up into second place just in front of Tadiello. When Arturo Carbonell was at 150 laps, Kondo and Tadiello were at 147. Lecat was at 146, Ishihara was at 142, and both British drivers were at 140 laps. By the time Arturo had 160 laps, Kondo and Tadiello were one lap behind him. At 165 laps, Tadiello was 6 or 7 seconds in front of Kondo. At 170 laps, Carbonell began to overtake



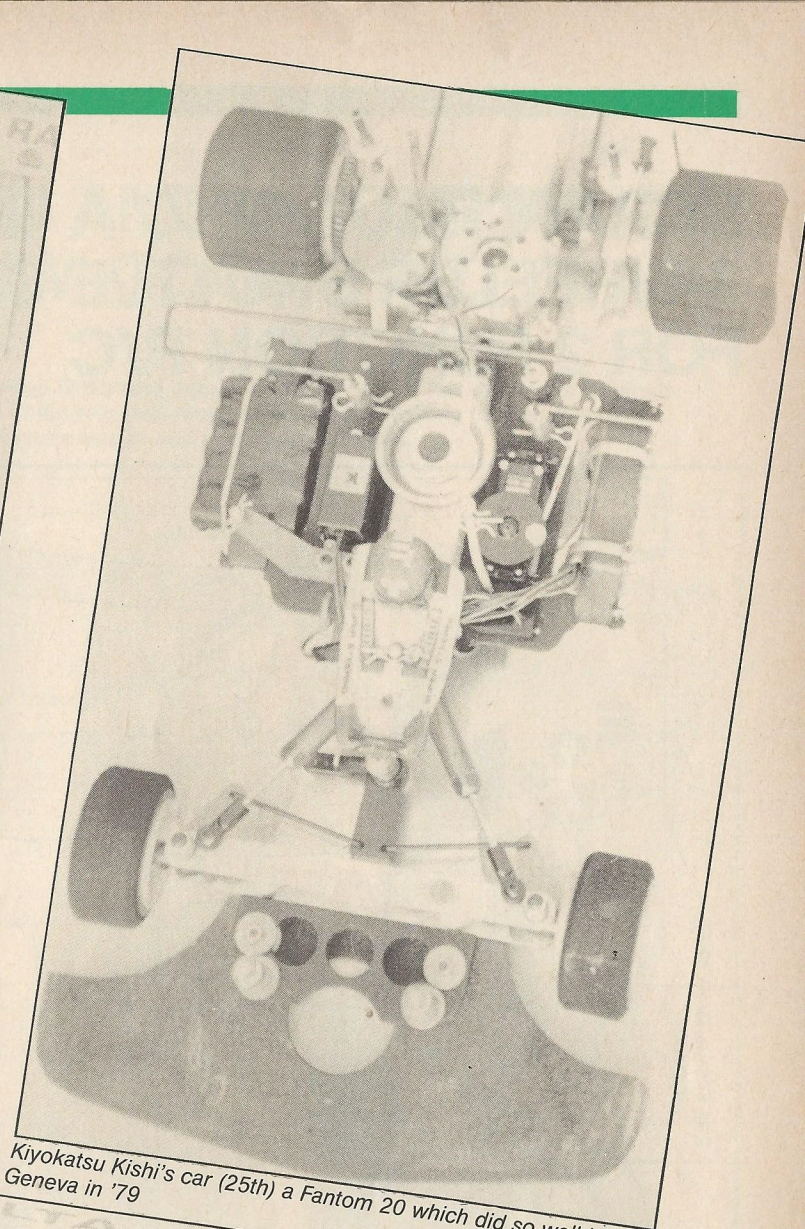
Timers at work; Roy Moody standing on right. Air conditioned office below where Roberta spent a lot of time double checking. Results went on board on left



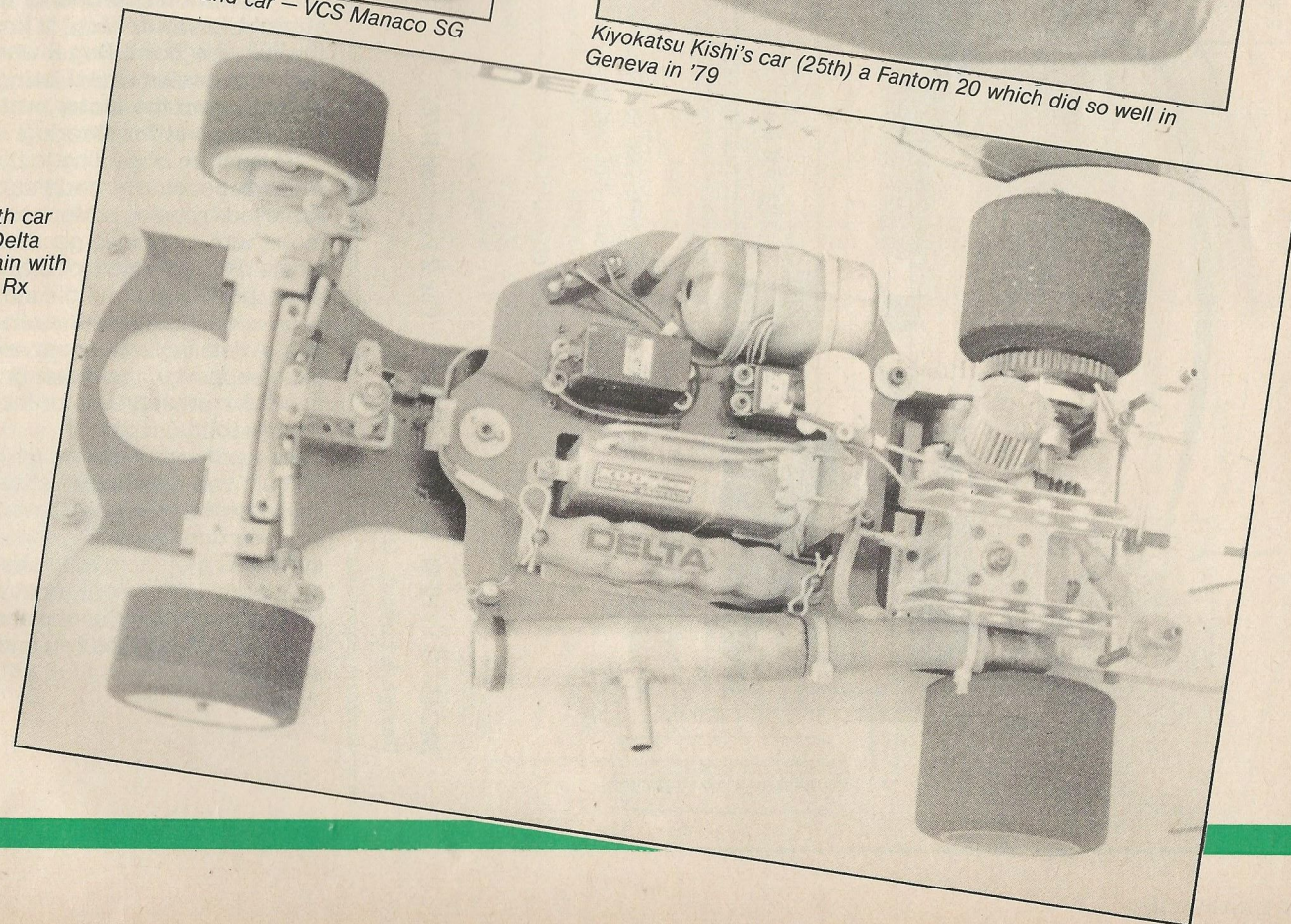
Drivers pits tent; very valuable in the showers!



Tadiello's 2nd car — VCS Manaco SG



Kiyokatsu Kishi's car (25th) a Phantom 20 which did so well in Geneva in '79



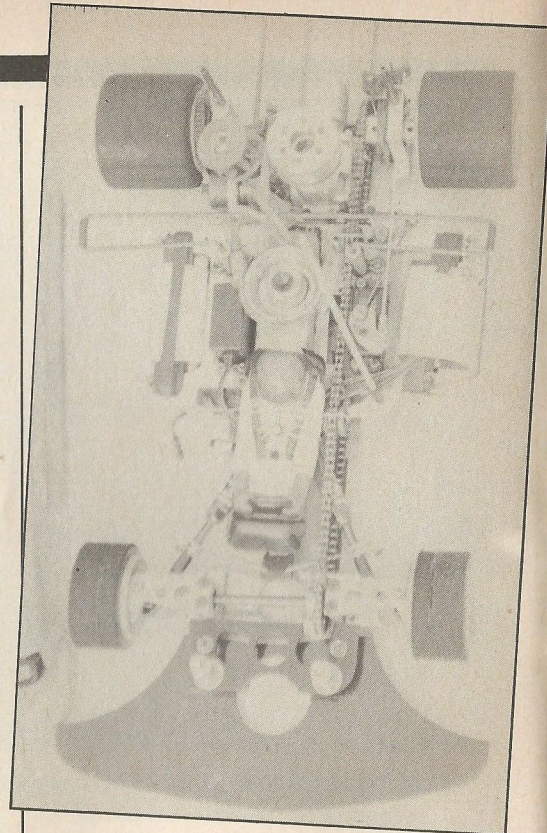
Ishihara's 4th car — another Delta Super J again with KO Digiace Rx

Tadiello, and Kondo had a very long pit stop, which put him quite a bit behind Tadiello. Art had two laps on Tadiello at 178 laps, and at about 180 laps began to follow closely behind Ermes Tadiello, letting the Italian lead the way through turns and traffic.

Arturo Carbonell finished 200 laps in 3,525 seconds—an average of 17.625 seconds per lap, counting pit stops. The rain slowed the race down some

by making the track more slippery, so the last 160 laps were run at a slower pace than the first 40.

There were 132 drivers from 20 countries around the world. Thirty-five of the competitors were from the USA. The fellowship and sharing among people from so many different countries was an important feature of this event. This reporter saw some Italian mechanics come to the



Four wheel drive chain driven car by Yuji Taki of Japan. Still experimental he did well to come 44th

Japanese work table and through an interpreter, offer to help one of the Japanese drivers adjust the camber of his front wheels. In a later heat race, the Japanese car could be seen taking the corners better. This is an example of one of the many acts of communication which took place among the contestants. Addresses and promises to write were exchanged among some of the people there, and a young racer from Sweden was observed exchanging team tee-shirts with one of the American volunteer workers.

For the first few days of practices, the whole pit area seemed to be talking about the 4-wheel-drive car entered by Taki of Japan. During early practices, and prior to technical inspection, the car was kept covered at all times, and when it was on the track, it seemed to be performing very well. Lots of photos were taken of Taki's car when the lid came off for the tank capacity check, since this was the first exposure of the workings of this novel car. Basically, it is a solid rear axle car, which has a chain drive from the rear axle to the front axle along the left side of the car. The front wheels were each driven by an over-running clutch, allowing faster rotating wheels to get ahead of the chain drive, if the turning radius demanded it.

The car handled extremely well, especially on high-speed turns, but seemed to be lacking in acceleration and top speed, probably due to the need to drive a 27-inch length of chain, not found in conventional cars. All in all, a well-built machine from Mr. Taki and Kyosho.

People at the race were waiting to see how the newly-developed independent suspension cars of AMPS, PB, Serpent, and Preston would fare against the traditional plate chassis cars from the US, Japan, and Italy. Early on in the week, it was decided that no minimum weight limit would be imposed on the cars. This could give the lightweight cars an advantage over the American heavyweights.

Fast qualifier, Kondo of Japan, with his Kyosho, showed what can be done with great driving skill and a simple car. The car had no differential, but did have shock absorbers on the front to improve handling of this basic car. It was OS Max 21 powered, with a simple straight-out-the-back exhaust system that was very effective. Some of the Japanese cars were able to make the 10-minute-plus qualifying round without a pit stop. The Kyosho cars use a hardened-steel rear axle gear, about 1/8 inch wide, with many holes drilled in it for lightness.

Dave and Debbie Preston of England were reported driving prototype Associated independent suspension cars. Most of the suspension components were aluminium, rather than plastic—as used on the P.B. Alpha cars. I don't believe any of the suspended cars were real lightweights, with most claiming to be around 5 1/2 to 5 3/4 pounds. Even with their considerable extra complexity, the P.B. cars were very reliable and apparently easy to drive as compared to flat-plate conventional chassis cars.

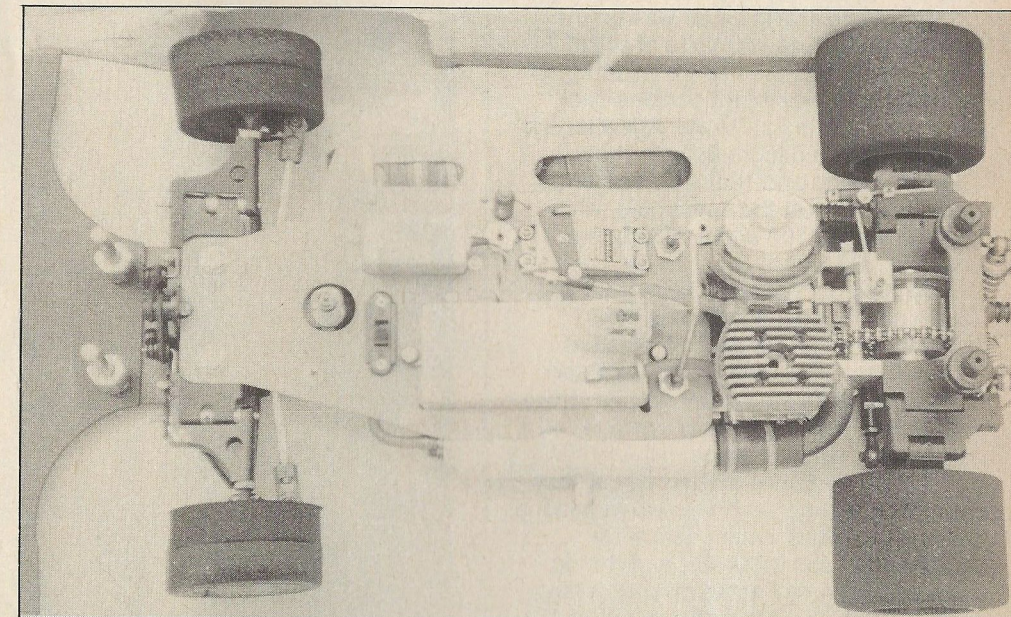
All independent suspension cars seem to be going toward the same layout—a sidewinder motor gear—driving a countershaft and a centreline roller-chain from the countershaft to the rear axle. In some instances, the brake was on the countershaft, and others carried double discs on the rear axle.

There was a lot of variety in the motors used, which included K & B, OPS, OS, Picco, Enya, and Super Tigre. All were capable of fast laps when driven neatly. Kondo used an OS Max 21 in a Kyosho and qualified for the Main, as did Art Carbonell with a Picco-

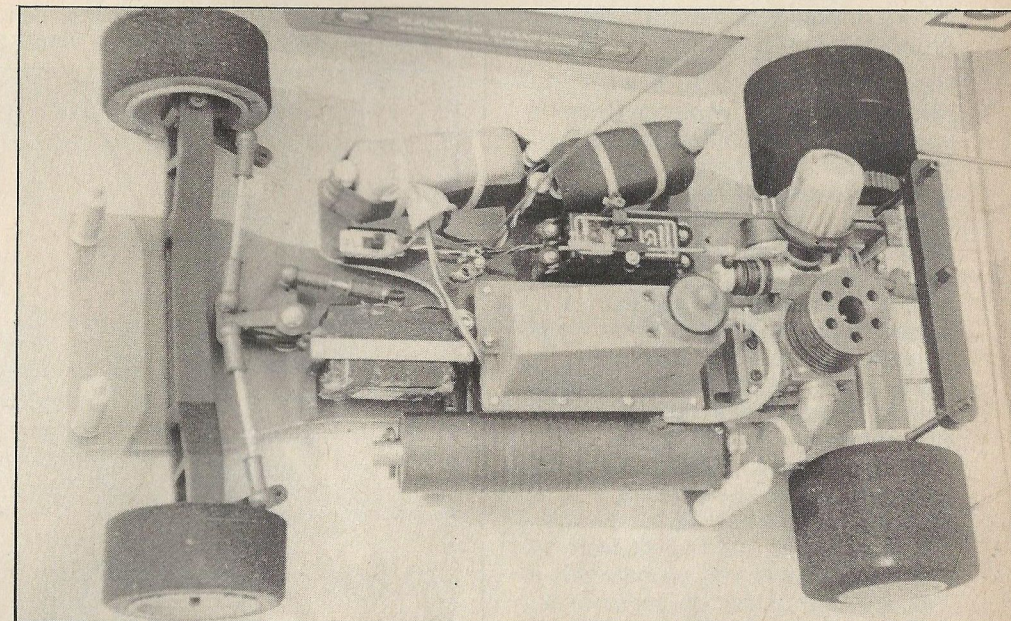
powered Delta. There was no clear-cut favourite engine among the World Champ drivers, but it appeared that there might have been more Piccos than any other make.

The Main Event produced an interesting mix of equipment. There were two Deltas driven by Carbonell and Ishihara, one Associated driven by Ralph Burch, one Kyosho driven by Kondo, three PB's piloted by White,

Culver, and Lecat, two SG cars of Tadiello and Bortolomasi, and a Serpent car run by Bervoets. There were seven flat-plate conventional chassis and three independent suspension chassis. The flat plate cars finished 1, 2, 3, and 4, and it appears they will be with us for some time, although the handwriting is on the wall, pointing the way towards independent suspension R/C cars.



Phil Booth's prototype Associated suspension car designed by him in conjunction with Dave Preston and Gene Husting (33rd)



Super Pro Serpent driven by a Swiss entrant

Top 46 Drivers in 1981 R/C Car World Championships

Order of Finish	Driver Name	Qualification Races (laps/seconds)		Laps in Main	Country Representing
		July 2 & 3	July 4		
1.	Arturo Carbonell	37/607		200	USA
2.	Ermes Tadiello	37/612	37/607	198	Italy
3.	Katsunori Kondo	37/604		196	Japan
4.	Naoki Ishihara	37/607		194	Japan
5.	Gary Culver	37/612		191	England
6.	Roberto Bartolomasi	37/609		187	Italy
7.	Steve White	36/611	37/604	186	England
8.	David Lecat	35/601	37/611	178	France
9.	Pieter Bervoets	35/609	37/611	169	Holland
10.	Ralph Burch	37/606		95	USA
11.	Shoichi Mochizuki	36/608	37/611		Japan
12.	Bill Jianas	36/602	37/613		USA
13.	Hank Smith	36/613	37/614		USA
14.	Rick Davis	36/609	37/616		USA
15.	Phil Greeno	35/600	36/603		England
16.	Jack Mueller	36/608	36/604		USA
17.	Franz Groschi	35/603	36/604		West Germany
18.	Keith Plested	35/600	36/605		England
19.	Paul Pagdin	36/615	36/605		England
20.	Orazi Vittoriano	36/611	36/606		Italy
21.	Gary Kyes	36/611	36/606		USA
22.	RePete Fusco	36/614	36/608		USA
23.	Ron Ton	36/606	36/609		Holland
24.	Robert Errington	36/601	36/609		England
25.	Kiyokatsu Kishi	36/600	36/609		Japan
26.	Franco Sabattini	36/614	36/610		Italy
27.	Grandioso Marami	36/625	36/611		Italy
28.	Yuji Takagi	36/605	36/613		Japan
29.	Christian Roget	35/610	36/614		France
30.	Chuck Phelps	36/608	36/615		USA
31.	N. Mizushima	36/616	35/601		Japan
32.	H. Kobagashi	35/603	35/601		Japan
33.	Phil Booth	36/616	35/603		England
34.	Gene Husting	35/616	35/605		USA
35.	Curtis Husting	36/614	35/606		USA
36.	Mike Kimrey	35/603	35/606		USA
37.	Finn Gjershe	35/606	35/607		Denmark
38.	S. Katsura	35/607	35/610		Japan
39.	A. Suzuki	35/602	35/610		Japan
40.	Dana Smeltzer	36/602	34/602		USA
41.	Paul Verger	35/606	34/611		USA
42.	Rich Lee	36/611	34/615		USA
43.	Felix Galavis	36/609	34/617		Venezuela
44.	Yuji Taki	35/609	33/602		Japan
45.	Ron Smith	35/608	33/615		USA
46.	Peter Gerbet	36/609	33/618		Switzerland

Best 6 times into Final direct. Next 40 drivers have a second chance to qualify for remaining 4 places.