

# RcM



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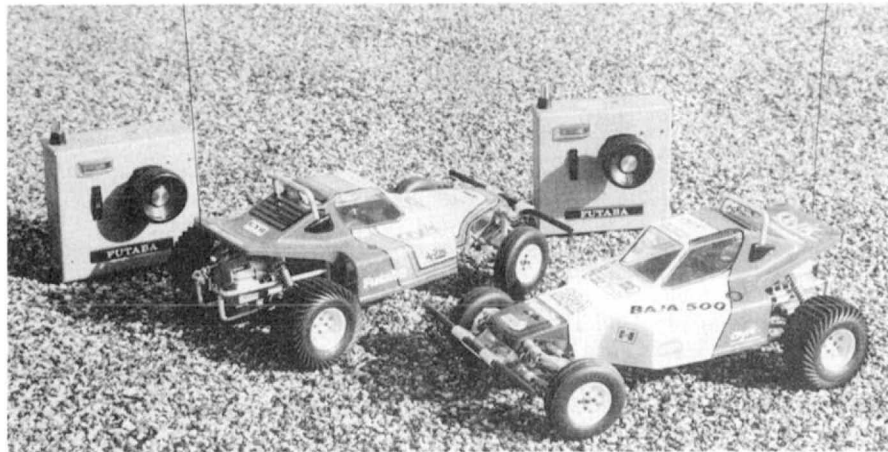
# radio control MODELER

THE WORLDS LEADING PUBLICATION FOR THE RADIO CONTROL ENTHUSIAST



# OFF-ROAD RACING

Bill and Linda Pihl



*A winning combination, the AYK car with Futaba radio. Extremely popular on the tracks in Southern California.*

In this column we will tell you about oval racing, another aspect of off-road racing. If you are the type of person who likes to go fast, and we mean really fast, oval is for you. The cars need no special modifications, you will find that the standard car will handle very well without any suspension tuning.

Oval racing is not limited to 1/10 Scale cars. Since the track is very smooth, 1/12 Scale cars (and the new to the United States) 1/8 Scale gas off-road cars can use the same oval track. The tracks that we have been using for oval racing are a scale 1/2 mile which means you have 100' plus straightaways. We have found average lap time for an open class car to be 11 to 12 seconds. It's hard to believe that these are not full size cars when you see them kicked-out in a turn and throwing up a 2' rooster tail of dirt. Well charged batteries will

have no trouble running the 15 lap heats because there is hardly any strain on the motor. The cars are so fast that any slight bump of another car will put you into a spin making it necessary for you to drive the straightest line to avoid the other cars. A mistake will take you from first and put you in last within a matter of a half second.

We have been running a 1/8 Scale gas off-road car, the Blue Bird car with a K & B 3.5cc motor. The Blue Bird is similar to Kyosho and Thunder Tiger, with horsepower you won't believe in the dirt. We found the standard oval tracks are a little too small for them. What is really needed for these cars is a 1/8 mile track so you can use all of the horsepower. On a 200' straightaway these cars are running over 70 miles per hour. With an efficient muffler or pipe, the noise level is surprisingly low. In a future

article we will have pictures and more information on 1/8 Scale gas off-road cars.

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Chargers are one of the most important tools for 1/10 Scale off-road racing. We have been using a Leisure 109 charger for the last year and a half. Our old reliable 109 just keeps on pumping out the amps. The Leisure 109 is a digital readout charger that tells you exactly what is being put into your batteries, not only in volts but also in amps, with a variable current adjustment. You not only can charge your car batteries but you can charge receiver and transmitter batteries with an adaptor. Speaking of adaptors, Leisure has charger adaptors for Tamiyas, Kyosho Buggy, Airtronics transmitter, Futaba transmitter, Associated, Jerobee, Bolink, A.Y.K. and Latrax cars and boats.

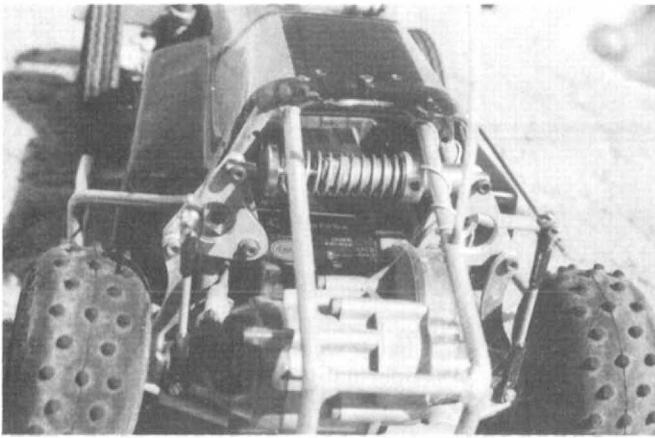
The Leisure 109 digital meter is designed to read both current and voltage to better than 1% accuracy. The variable rate charger allows selection of a constant current charge rate up to 4 amps. This feature permits charging any size nicad pack from 250 mA to 1.2 Ah. A built-in equalizer circuit tops off the battery overnight for best performance. This information is included in the Leisure instructions and believe us, it is true. How true? We use the charger to charge the camera packs on our J.V.C. video camera. The other chargers that Leisure makes are the 105, 107 AC



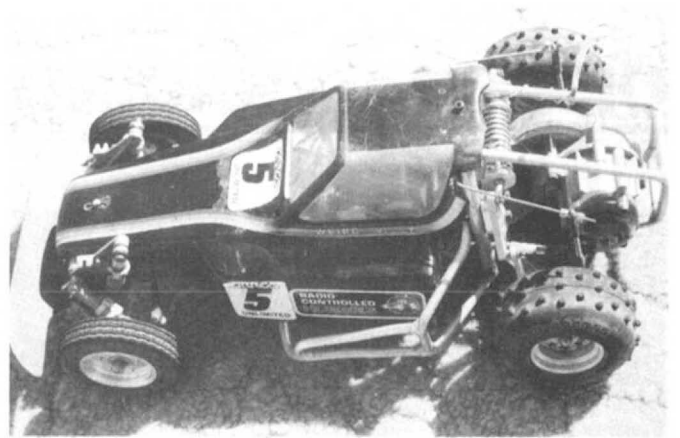
*A bit of close action in the oval racing.*



*You can protect your radio with side bars from Fun Racing Products.*



**Fun Racing Product's rear cage with mono-shock to smooth out those rough spots in the track.**



**Side bars and rear cage not only look good but offer a lot of protection.**

and DC and the 110, which is the 110 volt battery eliminator. If you haven't already bought a charger, we suggest that you consider the Leisure charger.

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We have received some letters asking some interesting questions which we would like to pass along:

M.D. Miller from Emporia, Kansas, would like to know how to put lights on his Ford F-150 truck. Any of you who have bought F-150 trucks know that they do not have provisions for headlights. Our suggestion is to use a hot knife or a Dremel tool small enough to cut out the existing plastic where the headlight assembly should be. Take a piece of Lexan or other clear plastic material, cut to size and use the new Plasti Zap CA + + instant glue for plastic models to install the clear plastic lens. Using an outside case of a ballpoint pen, cut two 1/2" long pieces and Zap to the back side of the headlight assembly. Next, go to a local electronics store and pick up two 1/2 volt grain of wheat bulbs, a small switch assembly and a battery holder for a single AA cell battery. Slip the grain of wheat bulbs into tubes that you have glued on the back side of the grill, squeeze in a little silicone cement, let dry, wire through the

switch to the battery holder and you have working headlights for your truck.

To put lights in a Sand Scorcher, just install a grain of wheat bulb inside the headlight assembly. On the Rough-Rider, use the existing light assembly, make a clear lens, install the grain of wheat assembly, wire and battery.

An easier approach is to have your hobby dealer get one of the lighting systems for cars from RAM, Inc. These are assembled and ready to install. RAM even has functional turn lights.

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*Hi:*

*My name is Al Vazquez and I own a Tamiya 4-wheel drive Toyota.*

*I would appreciate it if you could send me information on some of the new items for the 4 x 4. The things that I am interested in are: (1) the new brass gear; (2) how to obtain more speed; (3) the fast charge unit.*

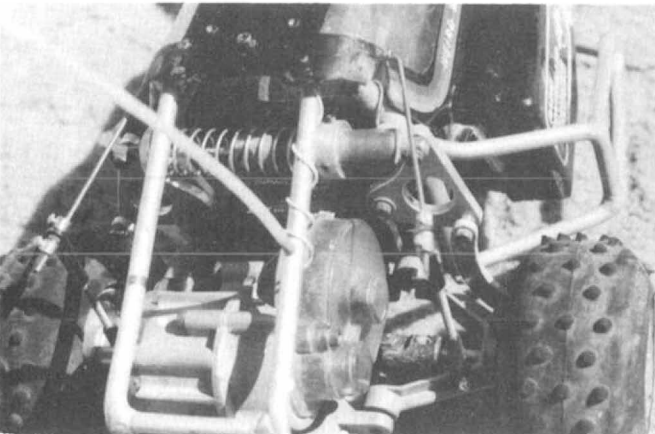
*Thank you,  
Al Vazquez*

The brass gear will be available in any hobby shop carrying R.C.H. products. Brass gear is installed in place of the nylon gear in the transmission. This will allow you to use any of the high performance

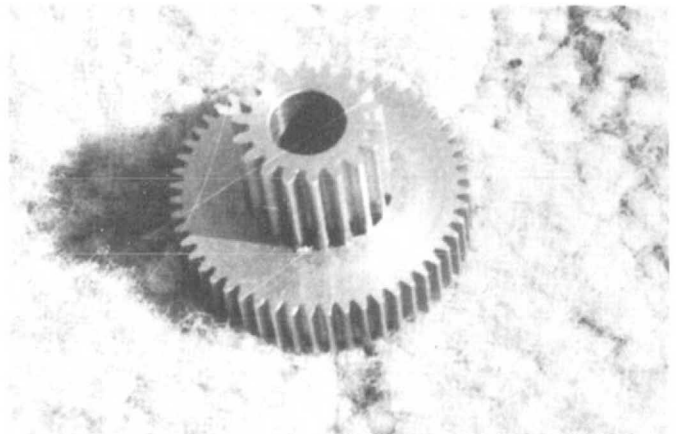
motors (Reedy, Check Point, Leisure or Astro Flight). This also answers your second question about more speed. Don't try to use the high performance motors without the brass gear. The last question, about the fast charge unit — if you have the large 4000 milli-amp Tamiya battery pack, it cannot be fast charged; they can only be slow charged. We would suggest using the sub-C, six cell packs as used in the standard off-road cars, so you can fast charge the batteries. The 4000 milli-amp batteries will give you 30 minutes of running time but the pack has to be slow charged. The sub-C battery pack can be fast charged for 15 minutes and will run for about 12 to 13 minutes. After cooling this pack can be recharged and run again. If you want to run the 4 x 4 more than one time, we would suggest using the sub-C batteries.

We have put in some more pictures of the Fun Racing Products rear cage assembly, with the mono-shock set up and side bars. There have been a lot of questions on the use of the cages. They not only help in stiffening the chassis but makes it easier to change gears and motor on the Tamiya car.

Here is something else that we have  
**to page 118**



**The Fun Racing Product's side bars and rear cage allow easy access to motor and gear box for quick change.**



**RCH Products has a brass drive gear for the Tamiya 4 x 4.**

## BIG IS BEAUTIFUL

from page 108/71

Flutter is usually a result of high speed flight and a poor control installation. A control surface which has room to move (the "slop" or lost motion between the actual control surface and the servo driving it) can begin to vibrate in the air with the forces of air moving over the surface of the control area. If there is any slop or give in the linkage, this vibration will amplify itself as it continues until it either results in an uncontrollable model or until it self destructs. Needless to say, this sort of shaking is death on radios and especially servos. The forces available when flutter starts are much higher than the equipment is designed to contend with and the almost inevitable result is damage of one kind or another, often total.

One of the best and surest ways to prevent such problems is to make certain that your control linkages are as free as you can make them and that there is practically no slop anywhere in the system that is going to be moving control surfaces. To risk the time and effort (not to mention the dollars) investing in a model to the uncertain results of less than adequate control installations is foolish and a risk none of us can afford to take for safety reasons, if for no other. The time spent making absolutely sure our radio installations are as near perfect as is possible is time well spent. It just might save you a good deal of time rebuilding!

Now that spring is approaching, and the start of a new flying season is at hand, and you have your new project ready for the air, drop me a line with a sharp black and white picture enclosed. Any unusual projects are more than welcome. See you next month! □

## SCALE VIEWS

from page 53/51

Scale. It took only a short time for contestants to decide that many 15 pound models needed more than a .60 engine to fly safely. The engine limit was increased to 1.25 in the 1976 rule book remaining constant to date.

Starting with the 1980 rule book, the Giant Scale event was created to accommodate the growing number of models weighing more than 15 pounds and with engines displacing more than 1.25 cu. in. This event is drawing more contestants as it increases in popularity and, in some areas, Giant Scale has become the dominant

contest event. The majority of models competing in the Giant event are in the 15 to 20 pound class although many use engines in excess of 1.25 cu. in. displacement. If we increase the Sport Scale weight limit to 20 pounds, the number of models flying in this event would be expanded at the expense of Giant Scale competition. We would produce an overlap in the Giant and Sportscale events because all the 15 to 20 pound models now flying with ignition engines would still have to fly in Giant Scale because these engines exceed the 1.25 limit.

Another problem is that there is already a disparity between the FAI Stand-Off Scale weight limit of 13 pounds (6KG) and the AMA Sportscale limit of 15 pounds for single engine models. This factor may well have inhibited the U.S. development of a competitive FAI team as many modelers prefer to build to the limits allowed for AMA competition. It has taken years to get the current FAI weights within a couple of pounds of the U.S. rules. This country is still working to narrow this gap. A sudden further gross increase in the AMA Sportscale weight limit would probably scuttle these efforts.

At this point, I do not have a crystal ball telling me how the Sportscale and Giant Scale events will develop as time goes by. I do suspect that if we combine these events now with the type change proposed, that it will reduce the number of options available to contestants for competition. If we are going to see more modelers get into scale, we need to give them a choice of more, not fewer events.

### Correction:

When you write a caption about an F-82 during the year 82 the number just keeps coming out of the typewriter. Reference to the F-82 in the November issue should have been to the 1981 NATS. Hal Parenti's F8F Bearcat was the Sportscale winner in 1982 and you will probably read this in 1983.

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Here's the fourth installment in Pettit Paint Company's continuing saga of Hobbyoxy Color Mixing Formulas For The Scale Model Builder.

This time they have three colors to offer, which will begin a series of Royal Air Force colors. The formulas presented this month are for aircraft in action during the early stages of World War II, 1940 to 1941, which includes the battle of Britain. Most Hurricanes and early models of the Spitfire were finished in these colors. The upper surfaces were painted Dark Earth and Dark Green and the lower surfaces were painted Sky Type 'S.'

Here are the formulas:

**Dark Earth** — 4 parts H65 Bright Red, 2 parts H49 Cub Yellow, 1 part H81 Black and 1 part H70 Gray.

**Dark Green** — 6 parts H66 Dark Red, 2 parts H33 Stinson Green, 1 part H49 Cub Yellow, 1 part H81 Black and 1 part H10 White.

**Sky Type 'S'** — 5 parts H10 White, 1 part H26 Lt. blue and 1 part H70 Gray.

The reference source used to develop these RAF colors is "British Aviation Colours of World War Two" published in 1976 by Arms and Armour Press, 2-6 Hampstead High Street, London NW3 1PR.

The book was very generously loaned to us by Claude McCullough, who was instrumental in getting this color matching project started in the first place. We do not know if the book is still in print in England.

Next month we'll have formulas for German aircraft camouflage of this same early period in the war, for builders of Messerschmitt Bf 109 E models who want to refight the Battle of Britain.

Following that, we'll return to RAF colors for the later stages of the war and then Luftwaffe colors of the same period. □

## OFF-ROAD RACING

from page 48/47

discovered. The stock class car can be improved in handling by removing the stock spring assembly on the front end and replacing them with the coil-over springs on the shocks. Also, removing the torsion bar assembly in the rear and adding the coil-over springs will make the car handle much better in the turns and over the jumps. The coil-over kits can be purchased through your local hobby shop. Coil-over spring kits are manufactured by R.C.H. Products, C.R.P., and M.I.P.

As we are writing about oval racing in this column, we would like to mention an enjoyable side light.

We are using a Honda Odyssey (the 3-wheel vehicle) to pull a drag gadget in preparing the track surface. When the dragging chore has been completed we disconnect the drag, and run a few hot laps around the track on the Odyssey. Getting up to 40 mph and skidding through the turns is a lot of fun. In our next column we will discuss the new M.R.P. sprint cars, it really looks good.

Keep the cards and letters coming, may all of your heats and mains be driven perfectly, and don't go over the high side. Until next time, we will see you at the track. □