

# RCW Gets UP (and off) on TWO WHEELS

by Dirty Dan

I suppose it had to happen sooner or later, but I was not quite prepared for a radio controlled motorcycle. It all started with an innocent phone call from buddy Dave Shadel at Kraft Systems.

*Dirty, how ya doin'?*

*Uh, not too bad. You sound kinda weird this morning, California living finally get to you?*

*No, no, I'm OK, but I've got a surprise for you that was shipped out today. And you'll never guess what it is . . .*

*You're sending me your secretary and I suppose she will come by truck because she is over the UPS 100 pound limit.*

*Now you're the one that sounds weird, I'm sending you a radio controlled motorcycle!*

*Does Phil know that you use the company phone for this kind of stuff? I mean, I'm not quite so gullible as to believe that . . .*

*Wait, this is for real.*

*And it has a side car, right?*

*No.*

*Training wheels?*

*No. This sucker runs on its own two wheels, has brakes, banks for turns and all the regular motorcycle stuff. You're gonna love it.*

*No offense, but I'll believe it when I see it. You say it's already been shipped?*

*Went out this morning.*

*Good, that will give me just enough time.*

*Enough time for what?*

*To build ramps for the ramp-to-ramp jumps . . .*

When the time came for the UPS guy to dump off the package containing the Kraft Eleck-Rider, we didn't have the ramps finished, because I still was not sure that a motorcycle could be radio controlled. But we tore open the package and inside was a fully assembled motorcycle. Dave had even installed the radio system for us and it was ready to go.

Even though impatient to run it, we set it up for a few pictures, snapped them off and went outside. And it worked! Not the easiest thing to master immediately, but it would take off under its own power, bank into a turn and sometimes even complete the turn without falling down.

## BUT HOW DOES IT WORK?

Easy stuff first. Speed control is by the usual resistor/servo combination with the servo placed in the forward part of the frame. The resistor is to the back of the frame and immediately below is the electric motor, which is about 2/3 the size of an 05 nicad battery pack. I know it doesn't look big enough for 8 cells, but these are a smaller version of the sub-C cells we use in cars, having less amp/hour capacity.

The electric motor drives through a compound set of gears that in turn drive a miniature chain. Yes, a chain just like on full size motorcycles with metal links, rollers, etc. Except for the pinion gear which is metal, the gears and sprockets are molded from nylon.

Still at the rear, the swing arm pivots just in back of the front sprocket. On each side there are springs made to look like shock absorbers and they suspend the bike, in addition to giving a little on jumps. However, their main function is to help the bike look like a real motor-

molded to look like the slicks used in road racing. In cross section the shape is peaked, so that maximum contact area is achieved with the bike laid over in a turn.

Now the tricky part, how does the thing steer? First of all, rid yourself of preconceived notions concerning motorcycles. The forks do not turn to get a change of direction. As you may be aware, a bike ridden at any kind of forward speed and on a good traction surface like asphalt does not need steering input through the handlebars, as in actually steering the bike around a turn with the forks. Rather, you transfer weight to get the bike to bank over the desired amount and it just kind of goes around on its own. There is a very slight amount of steering lock involved, but we don't want to get real technical here.

So, if you can transfer weight, say to the left of the bike, it will lean that direction and turn as a result. To get this on the model, the forks are pivoted at the steering head such that the whole fork/steering head/wheel assembly will pivot left and right, as viewed from the top of the bike. Not turn, but pivot. Ok so far?



New Eleck-Rider motorcycle, available from Kraft Systems. Available as a kit or in ready-to-run form as shown. Kit price is \$79.95 which is very reasonable.



Right side view of bike, notice roller chain and sprung rear end. Model comes off looking quite realistic.

cycle, as there are no provisions made for a damper . . . they just go boing once in awhile, the bike would probably work just as well with solid struts in place of the springs. Up front, the forks are also sprung and the main advantage seems to be that they will give a bit when you drive straight into the old immovable object we are all so familiar with.

The wheels are cast pieces and are easily strong enough for the job, in addition to simulating wire wheels. Wrapped around them are solid rubber tires,

Now, when you command left turn, the assembly pivots so that the front wheel goes over to the right. If viewed at ground level, from the rear, the front tire is now out of alignment with the rear, being offset to the right. Naturally enough, this places more of the weight to the left and so the bike leans in this direction.

Hope you understood that it is amazingly simple in operation and very effective on the model. Without confusing the issue, it has to be mentioned that the

front forks can pivot in the normal way, but with the trailing front axle the front wheel just naturally runs straight up and down. There is no direct control of this, it just takes care of itself while absorbing bumps and things. For example, the bike can be started on its way with the front wheel pointing off to the left, but just as soon as forward speed is attained it casters to straight ahead.

The steering servo is back under the rider's body and drives through a molded nylon piece that not only transfers forward/aft motion of the pushrod into left/right movement, but acts as a servo saver. The receiver is located in the little guy's body and the switch bolts to the tail fairing.

That about covers the mechanicals, the rest of the stuff like tank, fairing, megaphone exhaust pipe, simulated disc brakes and so on are just there to make the bike look like a typical road racer. And sure enough, it does look like a real motorcycle.

## FALLING OVER

Driving the bike is a real test in eye/hand coordination. Actually, it is only slightly more difficult to learn to drive than an R/C car but there is a catch. With a car you can make a mistake and not have it fall on its side. Or park it and think about what you did wrong. With the bike you either do it right or it tips over and of course there is no relaxing while running it, it demands constant attention.

But it does get around pretty well. You have to learn to use a bit of brake before turning, as the faster it goes the more resistant to banking it gets and there is a definite limit to cornering angle. Drop it over too far it grounds the frame and you walk over to pick it up . . . again.

Although running the bike is really great fun and a terrific way to gather a crowd, what I find humorous is the suggestion that radio controlled motorcycle racing will take off, opening up a whole new class of competition. The bikes are just too easily upset to allow any kind of close dicing; touching another bike would probably see both of them go down, consecutive turns on a road course are truly difficult as you must drive the bike about two turns ahead of itself to be lined up properly for each one. Both myself and Bob Welch have tried to drive the bike around our 1/8 track and although both of us eventually managed to complete a lap or two without falling, it was no easy thing.

As far as motorcross racing in the dirt, you can forget it. There is just no way to drive the bike on anything other than asphalt. In fact, it has to be pretty smooth asphalt, clear of small pebbles and such as when the bike is really cranked down hard and making time it doesn't take much to pitch it off balance.

Further development of radio controlled motorcycles may make racing as we know it with the R/C cars possible, but the Kraft Eleck Rider is not the vehicle for it.

What the bike is good for is just going out and playing around. It is a constant challenge that never seems to get old. I loaned the bike to Welch while I was gone to the Nationals and when I got back he still wasn't ready to give it back, finally ordering a couple for himself.

And, yes, we have been jumping the bike off ramps. Watch out Evel, your daring-do acts are in serious jeopardy.

RCW