BRAIDING COMPETITION MOTORS

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A perusal of the literature will indicate that there are many ways to braid rubber motors. Back in the 70's an oldtimer showed me how he did it. The method works well and I have used it through the years with minor revisions. It produces a loose braid which I believe is far more effective than the tight braiding used by most modelers today.

First, let me give you some info on the motors in my Helio Stallion, Arado E-530 (Jumbo twin), Chambermaid and Reggiane RE 2005 Bifusliero (Giant twin). Similar 20 gram motors were used in all these models which took first place in their respective classes at Geneseo. These ships had long noses which permitted long prop hook to rear peg distances ranging from 16" to 19.5". Other than rubber strip, the only materials required are several small ortho rubber bands and a neoprene "0" ring, 9/16" OD and 1/8" thick. These rings cost about 25 cents each and can be found in large hardware stores among the drawers of small nuts, bolts, washers, etc. I have used them for over ten years with up to 6 strands of 1/8" rubber and have never had one break. In fact, I wound a short 6 strand motor until it broke and the "0" ring was still in tact.

The 20 gram motor I use will safely take at least 2100 turns. I have never timed the motor run but, after one of my flights in the Greve Qualifier in 2006, my son said to me, "Gee dad, the motor ran for almost 90 seconds." Fortunately, the model had a DT which went off at 2:40. The model got very high and took quite awhile to come down. This motor is not recommended for models such as radials with short hook/peg distances. It should, however, work in any model with a long nose that weighs between 45 and 55 grams.

Here is how I make up and braid the motor. Cut a length of 1/8" rubber that weighs 20 grams. Don't worry about the length. Form the rubber into three loops and, before tying the knot, position the "0" ring in a manner that all three loops pass through it. Tie the two ends together.

I use a simple overhand knot and then tie another overhand knot in the opposite direction. Pull on the strip so the knots bind against each other. After the loops have been arranged so they are the same length, position the "0" ring at the end of the three loops opposite the end in which the knot is tied. Lock the "0" ring in place with one or two of the small ortho bands. The motor is now ready to braid.

Fasten the "0" ring to a secure steel hook or rod. I use a big nail held in a bench vise if I'm doing this at home, but a sturdy winding stooge will work just as well in the field. Place the opposite end of the three loop assembly on your winder and walk back, stretching the rubber to about three times its length. Fashion some kind of hook at this point, remove one loop and place it on this holder (if available, an assistant can also be used to hold the loop). With the other two loops still on your winder, walk to the side so that the single loop fastened to the hook (or hand held by a your assistant) is about 3 feet from the two loops on the winder. Wind about 130 turns into the two loops on the winder in the same direction as if you were ' winding a motor in a model. Take the section of the motor that has been wound off the winder and hold it with one hand while you use the other hand to place the Single loop that's off to one side on to the winder. This may sound tricky but it can be done working alone. Obviously, working with an assistant makes the process much easier. Now put the wound two loop section on the hook (or let your assistant hang on to it) and wind 130 turns into the single loop in the same direction as before. When you are finished, put all three loops on your winder and walk in slowly. The two bunches will try to entwine themselves as you are doing this. Help them along by turning your winder slowly in the opposite direction as you walk in. When you have walked in to the point that the stretch is out of the motor, it will start to appear like a piece of braided rope. If it does not, walk out a little and work the motor with your fingers until the twists are uniform. Finally, place a few more ortho bands at the end of the motor near the knot, leaving a big enough loop to accommodate the rear peg.

That's all there is to the process. At this point you will notice that the motor looks neat but is not much shorter than before braiding. However, once it is wound and unwinds in a model, it will bunch up and become much shorter. To prevent such a motor from climbing the prop hook, a reverse "S" hook should be used. Construction of these hooks has been discussed ad infinitum in magazine and newsletter articles. One other thing that I forgot to mention is the fact that the motor described above works very well with the 10D/11P carved wooden prop I use. A Peck prop could be used but, because of low pitch, the motor run will be shorter. Also, since the Peck style prop has more drag when freewheeling. the glide might be decreased a little as well. A Gizmo/Peck prop which is advertised to have a higher pitch might work OK but I have never actually used one.

After reading this article, you might think that braiding is a complex project. Not so. What is difficult is to spell it all out in a fashion that can be readily understood by those who have never braided a rubber motor. Don't be afraid to give it a try; you'll get the hang of it in no time at all.