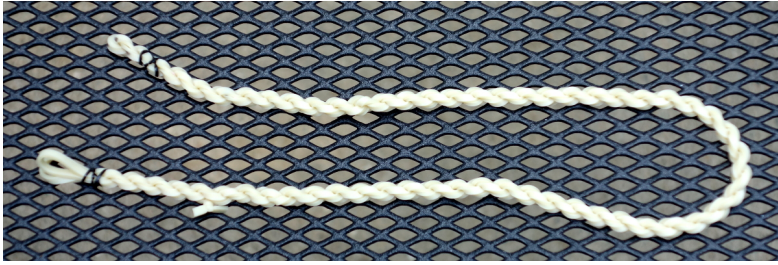


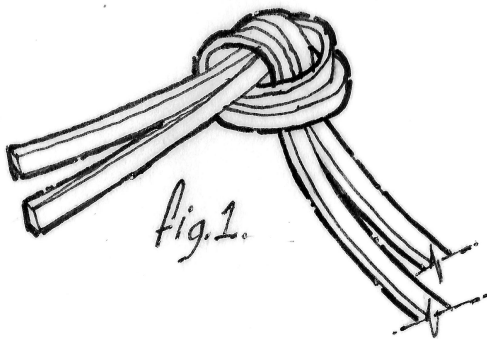
Braiding Rubber Motors for Model Aircraft — Clockwise/Clockwise Method

Article by Jeff Nisley — Method by Don DeLoach



The following is a summary of a lesson Don DeLoach gave to members of the Heart of America Free flight Association (HAFFA) featuring his way of braiding rubber motors during the 2017 Marion Spring National Contest in Marion, KS June 4, 2017.

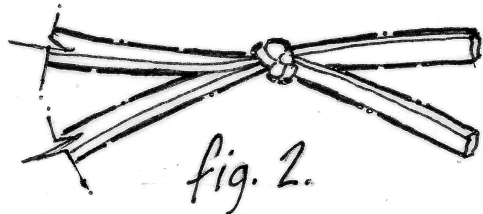
First some thoughts about braided rubber motors in general. By braiding a rubber motor you can generally get away with using a longer motor (more winds = longer distance and time in the air). The traditional rule of thumb is the length of the motor can be 1-1/2 times the distance from the propeller hook to the rear motor peg or tube. Don claims that with his method he uses 2 or even 2-1/2 times the distance with good results.



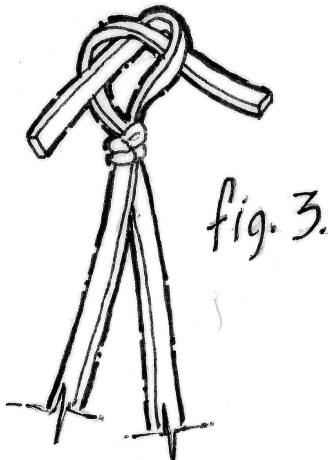
Let's begin by making a 2 loop motor twice as long as the hook to peg distance. Let's say our hook to peg distance is 10". Each of the 2 loops will use 40" of rubber to make the 20" long loops equaling 80". Add to this an extra 2" that will later be cut off. Our total now is 82" of rubber needed.

Begin the braiding process by tying the ends of the strips in a simple overhand knot as shown in Fig. 1. It is essential that the rubber has

had no prior lube applied to it. Using some spit, tighten the knot as tight as you can get it, just short of breaking as shown in Fig. 2. The spit will evaporate. Finish the knot by by using a simple "T" knot (Fig. 3.) and again using spit, tighten it to near breaking. Don

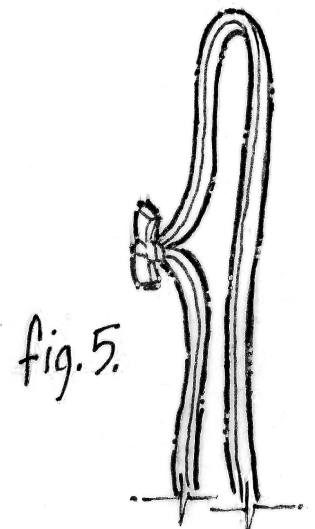
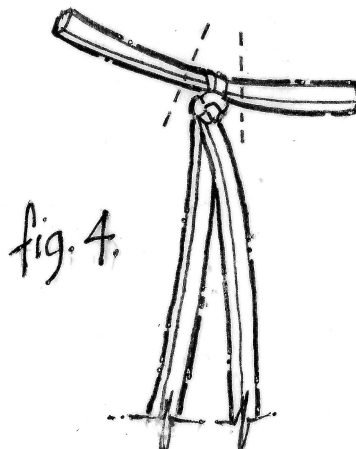


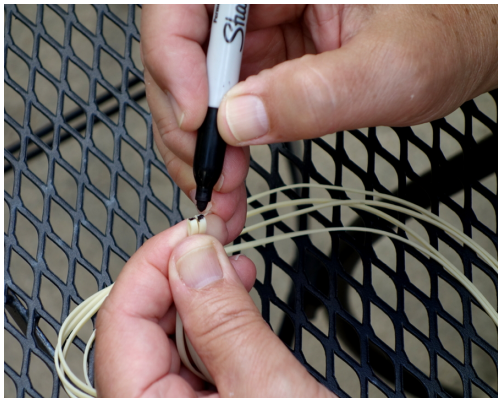
explained that the tightness was essential and that because the two knots oppose each other, the knot should not come apart. Cut off the excess rubber as shown in Fig. 4.



Next is a tip we've never considered before. When Don braids his motors he rotates the knot a couple of inches from the end so as not to be near the

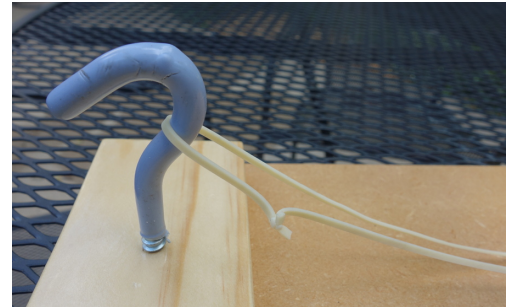
stress point of the rear motor peg (Fig. 5).





Continuing on, grab the top of the loop as shown in Fig 5. and fold the loop exactly in half and mark the center point of with a Magic Marker "Sharpie" on each of the two strands as shown at left. Unfold the loop and place the knot end on a winding peg and the other on the hook of your winder, keeping the two center marks on the rubber strands lined up with each

other. Now put some winds on the loop going Clockwise. This is important as will be explained later. 60 to 75 winds are sufficient or 4 to 5 turns on a 15:1 winder.



The next step is to release the loop from your winder and place this end on the winding peg, keeping everything taught. Finding the center marks of the twisted strand, place this part of the strand in the hook of your winder. As a result of this, you will now find that you have two side by side strands of twisted rubber approx 20" long, as shown below.

Note: Having in the past braided rubber motors counter-clockwise, we were surprised to hear that the next directive from Don was to again turn the winder in the Clockwise direction to complete the braiding process. As before, 20 to 25 winds does the trick. Magically the two twisted strands seem to braid themselves into the final form.



To finish the braided motor, each end must have a small



rubber band wound around the ends of the rubber strands to keep everything from undoing itself say $\frac{1}{2}$ " to $\frac{3}{4}$ " as shown at left. Don't make these very tight, just enough to keep the ends from unraveling. To conclude this impromptu lesson by which Don was graciously willing to do despite his busy day at the Marion Contest, he explained that as a result of his newest way of winding rubber motors, he has noticed that this method has a tendency for the motor to unwind a little bit more evenly

and more predictably in the fuselage. From his experience, he added also that his motors, if they do bunch up, bunch up more in the middle of the fuselage, thus having less impact on the CG as the motor unwinds.

Kudos to Don and his willingness to share his knowledge and experience, and we wish him the best of luck in the competitions at our upcoming [HAFFA Annual Fall Marion Outdoor Contest](#).