

## Interesting Discussion on Rubber Motors

*The following is a portion of a discussion from the October 2003 Edition of the "Flightplug" the newsletter of the Southern California Ignition Flyers, Mike Myers, Editor*

(After a discussion of braiding involving Gene Wallock, Bob Goldie, Tom McCoy and Mik Mikkelson)....most of the guys lube their motors in the unbraided state. I lube mine after braiding. While Goldie braids his motors at the field, the rest prefer to braid at home. The lubed motor is then put in a Ziplock plastic baggie with as much air as possible squeezed out, and stored in a dark place until time to take it to the field. Gene Wallock likes to use a two-pound cookie tin or a two-pound coffee can—he can store about 20 motors in the metal can. Goldie and I use tobacco cans—the small round cans that pipe tobacco comes in. Each can will hold one or two motors in their lubed and Ziplock baggy state. We get the cans from a pipe smoking fellow modeler. McCoy stores his Ziplock bagged rubber motors in a flannel shoe bag—the kind that lets you pack your shoes in your suitcase when you travel. His has a drawstring on the top, and he can easily store 20 rubber motors in one such shoe bag. Mikkelson tops us all. He has an old refrigerator in his storage shed where he keeps his made up motors and rubber stash. Ultraviolet light is the enemy of rubber, so a dark place in a cabinet is the place to keep rubber motors.

What do you do with your rubber motors after they've been used in a model for a practice session or a contest? Wallock brings his home, unbraids them and washes them with a bar of Ivory soap using tepid water. Unbraiding the motor gives him a chance to inspect it for tears and splits, and to measure the motor to see how much it has stretched. A motor will stretch about 15% of its length after it's broken in. He does not take the rubber bands off the ends of the motor when he washes and inspects it. He then lubes the motor again, rebraids it, and puts it back in storage. Mik Mikkelson prefers to store his motors unbraided between contests. He feels that leaving it in the braid puts some internal strain on the motor. He apparently doesn't wash the motors after a contest unless they've gotten dirty. Goldie will leave his motors in the braided state between contests. When he goes to a contest, he'll take three unbraided, but lubed, motors for each model. He'll braid one and put it in the model; he may well use only one motor for the contest, and tends to use a motor until it wears out winding until the motor gets "tight" by feel. He does use a torque meter, and notes the torque he achieves with each wind—but focuses more on the "tight feel" as a measure of how much he can wind. He admits that he breaks a lot of motors. Along with McCoy, I store my lubed motors in their braided state after contest use.

Rubber lubes are an interesting topic in their own right. Mikkelson uses the classic formula of a mixture of tincture of green soap and glycerin. He throws in a dab of KY Jelly from time to time. This mixture has to be cooked, and the smell is a bit of a problem, so several modelers either buy this homebrew stuff from someone else (Goldie said he buys lube from SCIF Andy Faykun from time to time) or buy commercial rubber lube. Both McCoy and Goldie mentioned Siglube as being good. McCoy said that the late George Perryman came up with a formula for rubber lube that he sold to Sig. Sig now sells that Perryman "lube juice" as Siglube. Peck Polymers also sells a rubber lube. Al Brush down at Star Link in Sun City has a rather

colorfully named line of rubber lubes. They include Snake Snot, Slug Slime, Monkey Mucus, Gorilla Grease and Octopus Ooze. They're sold in 2 ounce or 8 ounce pump dispenser bottles. Brush thinks that the Monkey Mucus and Gorilla Grease are the best for use in open bay OT rubber models because they tend to splash less. Bob White has developed his own glycerin based rubber lube, without the green soap. He calls it Super Slide. You can buy it from AI Brush. AI Heinrich at Aerodyne offered Sylglide, which can also be found in an auto parts store. It comes in a tube and is a silicon grease with the consistency of Brylcreem. You rub it into the motor. There are also folks who urge the use of Son of a Gun by Armorall. Again, that's a silicon-based product that can be sprayed on to the motor.

Spray bottles have their uses around rubber motors. Gene Wallock keeps a spray bottle of rubber lube that he uses at the field to "freshen up" a motor if it looks dry while he's winding it. I use Sylglide. After handling the motors, I have a silicon grease film on my hands that soap and water won't wash off. I keep a small spray bottle of rubbing alcohol in my rubber flying field box. The alcohol seems to act as a solvent for the silicon grease and gets it off my hands right away.

Silicon products do have some advantages—and also some strong disadvantages. McCoy used Son of a Gun for a while. He concluded that it had two disadvantages. One, when the silicon product got on the uprights and longerons of the model, as it inevitably will as motors wind and unwind, the structure became unrepairable. If a stick broke, no glue in the world would hold the repair. (Ed Note: Grabski says he has never had that problem) The second disadvantage was that some, but not all, silicon lubricants have solvents that will attack the rubber over time. McCoy picked that knowledge up from Richard Obarski, designer of the Foo-2-U model, and a noted free flight guy. Obarski is a chemical engineer who spent his working career in the rubber industry near Akron. AI Brush's Octopus Ooze must have such solvents, because his catalog describes the product as a thin sprayable lubricant for motors that will only be used once or twice. That's not an issue for an FAI F1-B flyer who will wind the dickens out of a rubber motor and throw it away after one flight, but it's probably not the lube of choice for an OT guy who's going to use a motor over several flights, and maybe a couple of contests.