

# THE ART OF WINNING: EGGLOFT DURATION

by Matt Steele and George Gassaway

The eggloft duration event has turned out to be a popular NAR event. From its humble origins as a special event at *Grandson of MAR* to being flown at NARAM, the event combines the thrill of egglofting with the fun of duration. Yet, there are quite a few disqualifications in this event... most of them quite unnecessary.

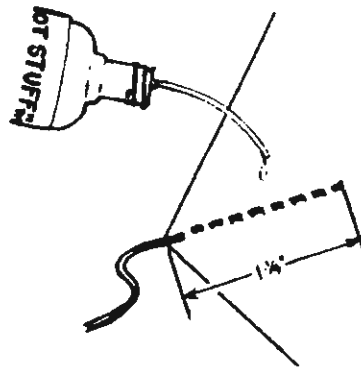
Parachutes cause most of the problems in these events. For smaller classes such as B and C Eggloft Duration, plastic parachutes are good if they are reinforced. For very large plastic chutes, certain types of plastic drop cloth work well. Beware, as certain types of plastic tend to stick together and will not deploy reliably. Mylar can be used as well but stay away from the very thin 1/4 mil stuff. It rips and tears much too easily.

Use a good number of shroud lines. A minimum number would be about eight with twelve being better. Run the shroud lines across the top of the canopy to reinforce it using either the "normal" method (all lines cross at the center of the canopy) or the "tic-tac-toe" method (the various shrouds cross in a grid pattern). Strips of adhesive mylar are probably best for shroud tabs as they are much more flexible and adhere much better than normal adhesive tabs.

For high power models, in the D, E and F classes, the pre-assembled types of parachutes made by FSI and Competition Chutes (Tony Williams will testify as to the durability of FSI chutes. He still has one that's been hanging on a power line for over five years!) These parachutes may seem rather expensive but they may be well worth their cost, depending on your point of view.

Fortunately, there is an alternative method to make heavy duty chutes for the high power eggloft duration events. This is the "low sew" chute, which requires a minimum of

seamstress' skills. To make one, cut a flat canopy from a piece of polyester lining (available at most fabric shops) using a sharp knife or razor blade. A large needle is then used to "weave" the shroud lines about 1 1/4" into the corners of the canopy. Seal those shroud/canopy interfaces with a few drops of cyanoacrylate. Use the super glue sparingly, as it tends to stiffen the fabric, making it hard to fold and pack.



There are several ways to decide what sort of egg capsule and booster design to use. Generally, a CMR egg capsule will protect an egg better than any other type of competitive capsule. An Easter Egg type capsule, on the other hand, will perform well and still protect the egg adequately. For the rocket body, there are two basic approaches: the standard type and the conical shroud type (as used in the "Two Minute Egg" design).

For those of you not in the know, here's how to build an Easter Egg capsule. First of all, get the rigid plastic type eggs... the pliable rubber-like ones are too small. Remove the plastic flash from inside of two egg top sections (the larger portions of the egg capsules).

You will only use these top portions. Sand the insides smooth. Cement an appropriately sized base (nose block, tubing adapter or stage coupler) to one of the halves. That's all there is to it! The capsule halves can be taped together like CMR capsules for flight.

Some modelers like to add an extension to the Easter Egg capsule by placing a section of tubing such as old Estes PST-65 or CMR RB-180 (or even "home-rolled tubing") which has been trimmed to fit, between the halves of the capsule. This allows more room for padding to cushion the eggs.

For the rocket body the conventional body (a simple body tube) offers less drag... at least according to some theories. On the other hand, a shroud model offers more space to pack the parachute and is less prone to eject the engine. With a normal body model, be sure that the length and diameter are sufficient to allow the parachute to eject reliably. Don't expect a 36" parachute to work well in a BT-20 model. Models using tubes seem to work best with a BT-50 size tube for B and C power and RB-120 for D power.

Quite a few kits can be adapted for eggloft duration by simply replacing the nose cone with an egg capsule. For a low power event, models like the Estes Alpha are good candidates for conversion.

Don't overlook the weak link in the egglofting chain... the shock cord. Be sure that you have the shock cord securely connected to the egg capsule. Use 1/8" elastic (not rubber) for low power events and 1/4" elastic for higher power. Protect the shock cord from ejection gasses as much as possible and don't use super glue on it.

Padding should be used to protect the egg. "Cups" cut from styrofoam egg cartons is a good material. Use a sharp blade to cut the cup from the carton. Be sure the cup fits the capsule, too. Use one on both the top and the bottom of the egg. Sometimes you will need to use extra cups to take up the slack inside the capsule.

A final consideration is strategy. Factors to be considered are the weather and the quantity and quality of your competitors. It doesn't do you any good to DQ twice at a Section meet by using a super chute that doesn't open when a smaller one would have earned you a place. Consider a 24" as a qualifying chute for lower power classes then use a larger one after you get a qualified flight. For higher power events you might want to try a 36" chute. While these might not be the absolute largest that you can pack in your model, they are more reliable and can net you a qualified flight when everyone else is DQ'ing.

Armed with these tips and a good solid model, egg duration can be fun and profitable. ▲

