

# *A Baker's Dozen: Simple Successful Models for Entry Level Competitors*

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## **What's Wrong With Contest Flying, or "A List of Urban Legends"**

- "You need the best designs to win, and they're complicated to build and fly."
- "You have use sophisticated tower and piston launchers."
- "You have to use the most expensive composite motors."
- "You need dozens and dozens of models to fly contests."

## **Reality Check From the Field: Common Failure Modes for Contest Rockets**

- spit engines (the sudden sound of POP!)
- didn't go up straight (non vertical boost)
- separated into multiple parts (shock cords break)
- recovery device didn't deploy ("wad recovery")

## **Avoiding These Failure Modes - The Concepts**

### Strive for consistent flights first and foremost.

Set yourself a goal to qualify at least one flight in every event to start. Then qualify in both flights in every event. Only after achieving this should you advance to advanced designs or materials.

### Analyze your disqualified flight reasons and rates.

Separate "DQ' s for the right reason" i.e no return, and "DQ' s for the wrong reason", i.e. separation; minimize the latter and you' ll be more consistent. In NIRA' s competition heyday of the 1980' s we tracked every member' s DQ rate for nearly 7 years.

## **Choices, Choices: Which Events To Plan For?**

Nearly every contest flown has parachute (PD) and streamer (SD) duration events. Your initial fleet will certainly require models for these events. MANY Estes kits fit the bill here, and are likely to be in your model box already.

After PD and SD, many contests branch out into gliders. You' re likely to need both boost gliders (BG), which are allowed to drop their engines (and the extra weight thereof) and rocket gliders (RG) (which must keep the engine, and thus generally have a moving part of some sort to make them shift from rocket to glider). Plans abound for both events, but you' ll want to keep things as simple as possible to begin with.

Eggloft splits into altitude (ELA) and duration (ELD) classes. You' ll need commercial egg capsules to get started, though conversions of plastic Easter eggs work. In both events, you' ll need to make sure your recovery system is well built and solid.

Helicopter duration (HD) events have become extremely popular. Apogee makes great kits for these events.

Finally, your duration models in the PD, SD, and EL events can be used to fly altitude events as well. Don' t fret usig your models for double duty.

## **"Ante Up": An Entry Level Contest Rocket Fleet**

### Suggested PD/SD Models

Astron Alpha - Large volume for recovery device (swallows a 24" quarter-mil contest chute with ease.) but easily track-able and recoverable.

Astron Mark - Smaller diameter for more performance, but less space, 3" or so, for recovery devices. Must tape in engine.

#### Suggested Boost Gliders

Astron Falcon - only 10 parts in total, no worries about pop pod deployment, but requires special mount with streamer to make for legal engine recovery.

"Flanigan Flyer" - my personal favorite all around BG design. If beefed up, can take C motors, built light, it'll fly on an A. Generous stability margins and easy to trim.

#### Suggested Rocket Gliders

Nymph - Sci-fi writer Geoff Landis' 20+ year old design still a winner. Generous wing area, good boost, easy to repair.

Seattle Special - "Jedi" George Riebeshel's rugged bird boosts on rails.

#### Suggested Eggloft Models

Two Minute Egg - an ancient George Gassaway design using an Easter Egg for a capsule.

Prangroc - an old NOVAAR design using the Easter Egg and three 1.5" trapezoid fins.

### **Taking The Next Steps: So You Want To Go "Uptown"?**

#### Steal stuff

Take half an hour at every contest and either just watch other flyers, or wander around the prepping areas and ask questions. Competition flyers have an undeserved reputation as secretive, nasty folks. If you politely ask a question at an opportune moment, nearly all competitors will be happy to talk about the contest, their models and their ideas. If you find something you like, nothing is more flattering to a contest flyer than to see somebody else using his concept, so steal it.

#### If you want lots of points, fly all the time.

Fly all the events. Sounds simple, but many people don't do this. You don't have to win the event, but if you don't fly it, you're sure to get behind because you're conceding flight points right off the bat to your competition. Over the course of a contest year, you can concede 10% of your yearly total this way.

#### Get a notebook, or keep an electronic journal.

If you don't write it down, you'll forget why a model worked well, or why it failed. You should record your model, motor, recovery device (if applicable), weather conditions and performance. Brief descriptions will help the post flight analysis; ex. "Didn't boost straight but glided well" tells you a lot more than "performed poorly". A Palm Pilot notepad is perfect for recording this stuff in the field and loading it back into your PC later.

#### Develop a prepping routine.

If you ever get a chance to go to NARAM, watch Trip Barber prepare a model. He does things the same way every time, over and over. If you can't mentally keep that routine, write a short checklist of prep steps, and tape them to your model or range box.

#### Practice, practice, practice.

If your PD models work OK, but you stink at SD, use time at a local club launch to practice. Build a couple different SD models with different streamers, and fly each of them a couple of times BEFORE the contest.

#### Take one giant leap a year.

Do that either in a specific event or work on a technique, e.g., piston launching. Review your notebooks and contest results at the start of a flying season, do some research within your club or ask on the net for advice, set up a practice schedule, and practice this key event every sport launch or test flying session you attend.