

# RC Airship Races!

Sponsored by [Steampunk Chronicle](#) in conjunction with the [Alternative History Track](#) for [DragonCon 2013](#)



## Registration, Race Rules and Design Tips

Many thanks go out to Caelyn Nagle and the Steampunk Empire Symposium for establishing these RC Dirigible Racing rules, allowing the Steampunk Chronicle and DragonCon to use them and being a great pioneer to these events.

### Registration

Due to the wide variety of transmitter frequency and control systems\*(See below), if you plan to participate in the RC Airship Races of the Dragon Con Alternative History track you will need to Pre-Register. [Click Here to register.](#) This allows us to try to make sure you are not competing in a heat where you may have a frequency conflict. As dirigibles register for the races, a list of those will be available online showing the frequency(ies) they will be using, so you can plan your RC Dirigible purchase accordingly.

### Dirigible Design Competition:

There will be a contest for the best design/modification of a stock RC Blimp, or an RC Blimp built from scratch for those that are more adventurous and technically capable. We want to see you make these very modern looking RC toys look as Steampunk or Victorian as you can! The design competition takes into account engineering, architecture and artistic design. Due to the static nature of the design competition, you don't have to worry about transmitter frequency for this part of the competition, as you will not need to fly with other airships to meet the design competition requirements. The rules for this part of the competition are simple:

1. Your Dirigible must meet all the same dimensional requirements as those used in the races.(see below)
2. Your Dirigible must be capable of lighter than air flight, and must be able to navigate. (or at least try to navigate)
3. Your Dirigible does NOT have to take part in the races to be entered in the design competition; it just must be CAPABLE of Remote Controlled flight.
4. Safety first! If you design any kind of weapons into your dirigible, they must not be capable of causing injury to a person, either due to inadvertently or intentionally being in the line of fire, or by being dropped on accidentally due to a malfunction. No weapons may be used in the RACES! If used as a design element, demonstrate in the design competition for the judges only\*\*.
5. Your Dirigible must have a name.
6. Style and Victory Conditions: The design competition takes into account engineering, architecture and artistic design. The design competition will be judged by an objective panel

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to be chosen from attendees of the event that have no ties to the competitors.

## **Dirigible RACES:**

The Dirigible Races will be taking place in large available room in the hotel/convention center. You can expect a ceiling height of 14 feet or less. Chandeliers may hang lower than that so there are obstacles in the potential flight path. Air-conditioning vents (both out and in) may be present. This means the race could consist of a navigation course and/or a simple race around the periphery. Due to the height and size of the ballrooms, we have made a restriction of the physical dimensions of your dirigibles, but this size is well within reasonable RC airship design on this scale.

1. **Size:** Dirigibles should be no longer than 72 inches from nose to tail (following direction of travel). They should be no wider than 72 inches. They should be no taller than 72 inches from gondola to the top of the balloon(s). Please remember these are limits and not a target to shoot for. An airship that's a 6 foot cube or sphere isn't going to fly well in a room with 14 foot ceilings. Experience has shown that small, fleet and maneuverable designs work best. This is a race so think schooner not titanic.
2. **Type:** All Dirigibles should be of helium filled/lighter than air type. No hot air dirigibles, flammable gas dirigibles (no Hydrogen) or heavier than air vehicles (helicopters or airplanes) allowed. This is to keep the field competitive speed and maneuverability wise, but also for spectator and facility safety.
3. **Propulsion:** Your primary propulsion must be through electric motors and propellers (or ducted fans). Other inventive, non-volatile propulsion is allowed/encouraged. Keep it safe. If you aren't sure, ask.
4. **Weapons:** Due to the possible expensive nature of remote control dirigibles, and the amount of work that may go into designing and building one of these airships, there will be no "combat" competition at this event. However, if you wish to design some kind of working "weapons" into your dirigible for exhibition purposes (such as for the design competition), these must be disabled or removed for the races.
5. **Name:** As with the design competition, your vessel must have a name.
6. **Victory Conditions:** Races will be in heats around a "course" (oval, figure eight, through a hoop, etc.). For each race heat, the dirigible whose nose passes the finish line first will win that heat and advance to the next round. Due to possibility of transmitter frequency conflict, timed runs may be used.

In Summary, we hope to see several groups enter an RC Airship into the Airship Races and/or Design competition. Please abide by the rules listed above and if you have any questions please feel free to ask. And just remember to keep property damage liability and personal safety in mind when designing or modifying your RC Blimp.

## **Blimp Purchase Building Info:**

### **Buying:**

There have been and may still be available some pre-made/ready to fly blimp kits. They may be purchasable from Amazon, or other online toy distributors. Brands include Dragonfly Innovations, but there may be one or two other brands to choose from for ready to fly indoor RC Blimps. It may take some Google expertise to find them. Pre-made/ready to fly kits seems to be available in only 27Mhz .

### **Building an RC Dirigible/Blimp/Airship:**

Your other choices are to either build your own from "scratch" using hobby grade RC electronics, or to use some

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other flying toy as a donor RC systems and “power plant” and build it into a custom helium lift vessel. Both approaches have been successful and create excellent competitive airships. There are flying toys that have multiple propellers for control that with a little engineering can be made to provide steering and elevation control to a balloon based airship. **Understand that ONLY airships with helium based buoyancy mechanism are allowed in the races** (for spectator safety, and for obvious stylistic reasons). No helicopters or airplanes “falling with style” into the tops of people’s heads.

**Purchasing Helium:** At the time these rules were last edited, Helium is in short supply; at least helium for purchase at party stores is in short supply. Make sure you look for and purchase your helium tank well before the event. You must supply your own helium.

**PLEASE**, if you find ANY other source for ready to fly RC Dirigibles/Blimps that meet the size specifications below, please share this knowledge with the community to help with dirigible racing.

## **\*Transmitter frequency and control systems**

There are several kinds of RC transmitter/receiver setups available from the toy and hobby market. Depending on the manufacturer or source you could have a 27Mhz, a 49Mhz, 72 MHz, an IR (Infra-Red), a Bluetooth or Wi-Fi transmitter/receiver. If you use hobby grade RC electronics, it could be a 2.4 GHz, 27 MHz or 94 Mhz multi-channel (spread spectrum) system. Multi-channel/spread spectrum system some times referred to as Bind and Fly are recommended as they do not conflict with other systems. Having the same frequency (and/or channel) of another participant may mean not be able to race against them. Transmitter frequency (and/or channel) is required to register. We aim to reduce the frequency conflict by encouraging as much transmitter frequency diversity as possible. This allows us to have an exciting multiple airship race. Thank you for your help and understanding in this matter.

\*\*If two airships decide that they want to “joust”, utilizing their approved weapons systems, they may do so as an exhibition event, but this combat will not be included in the competition points.