ORCA Radio Control Electric Soaring Rules

Version 1.12

Contents

Introduction

This event is an ongoing ***club fun fly***. This document contains all the rules for the events and season.

The starting point for the rules is the *AMA Radio Control Soaring* rules for *Flat Land Thermal Soaring*, especially *463 ALES*. However, note that the rules have been modified by ORCA.

The Season

The Season consists of 11 events, held monthly, from January to November. Dates and times are announced via the club calendar and club group email. Fewer events may be held depending on the weather.

Scores (see Events) are computed for each event, and the season winners are:

- The pilot with the most total points
- The pilot with the highest average points per event flown by that pilot

Events and Scoring

A pilots' meeting is held at the start of the event, providing a review of the event and answering any questions.

In an event, each pilot conducts three flights. Event score is the total points from the three flights.

A flight will typically have 4 pilots. The CD may adjust this based on number of pilots in attendance.

Pilots for each first flight are chosen randomly by the CD. For the second and subsequent flights, the pilots will be grouped by scores from the first flight (lowest scores fly together, then highest scores fly together).

Each flight has a maximum time aloft (T) of 8 minutes (may be adjusted by the CD).

At the start signal, planes are hand launched. The timer starts the time at the start signal.

Motors are turned off either when a time (e.g., 20 seconds after start signal) is reached, **or** when shut off by an ALS. The ALS stops the motor when either a maximum altitude or time limit is reached (whichever occurs first). (See Planes section for more).

An official flight begins when the plane leaves the pilot's or assistant's hand. A pilot who does not get an official flight receives a restart in a future flight ("do over").

One point is awarded per second aloft up to the maximum time T (i.e. 8 minutes times 60 seconds equals maximum 480 points). Flight times will be rounded down to the nearest second (a flight time of 6 minutes and 13.99 seconds will be recorded as 6:13).

Time ends when the plane lands, or when it touches any ground-based object (e.g., a tree or blackberry bush) or when the motor is re-engaged.

If the maximum time (T) is reached, no further points are awarded. After 30 additional seconds (T+30 seconds) one point is deducted from the score for each second until the plane lands.

Landing bonus points:

- Landing bonus points awarded are added to the flight score.
- An additional **100 points** will be awarded to the flight score if the nose of the plane comes to rest inside the landing area designated during the pilots' meeting.
- No landing points are awarded if the plane comes to rest in an inverted position. If the model touches any person during the landing maneuver, no landing points are awarded. No landing bonus will be awarded if the motor is re-engaged during flight.

Safety

To comply with the intent of the AMA "Safety Line", and due to the nature of soaring, a "Safety Box" will be established. The Safety Box is a volume of air that the plane may not enter.

If entered, the pilot will be given a warning and must immediately exit the box.

If the pilot continues flying in the box, a zero will be given for the flight.

The Safety Box includes the pilot stations as well as the pit tables and parking area.

A collision or other significant disturbance to another launching plane due to a pilot redirecting the flight path from the direction of launch will result in zero points for that flight.

The Planes

Any electric powered sailplane meeting the definition of Class A, B, or C Sailplane and that is electric powered is permitted to fly in this event.

In the future, ORCA may choose to track scores by class of plane.

Any flying aid, such as thermal sensing devices or flight stabilization systems, may be used.

The number of control functions is unlimited (e.g., elevator, rudder, spoilers, ailerons).

Altitude Limiter

The ALS used is the CAM by soaringcircuits.com. It is installed in the glider. The chip must be positioned in such a way that it can sense atmospheric pressure (to determine altitude).

When the battery is connected to the plane, the CAM will do 2 beeps to indicate that the altitude is set to 150m. (The default out of the box is 3 beeps for 200m. It must be programmed for the lower altitude prior to the event).

At the signal to launch, the motor must be started within two seconds. This is so that the 30 second ALS cutoff will not extend significantly beyond the 30 second mark kept by the event timer.

Definitions

ALES: Altitude Limited Electric Soaring

ALS: Altitude Limiter Switch, device that can stop the electric motor when a specific altitude or time limit is reached

CD: Contest Director. The benevolent dictator who organizes and manages the event.

Event: One day with multiple flights for each pilot

Nose: the extreme forward end of the aircraft

Pilot: Participants who comply with all AMA and ORCA regulations.

Pilot meeting: Occurs at the start of every event. A summary of the day's event is provided. Any special announcements are made. Q&A.

Timer: Records official times for flights for all pilots. Periodically (e.g., once a minute) announces the elapsed time to the pilots.

Sailplane classes by wingspan:

- A: A wingspan of 1.5 meters or less
- B: A wingspan of 2 meters or less, but greater than 1.5 meters (Note: The Radian is a Class B)
- C: Unlimited wingspan