

2006 UE Flight Competition Rules

23 Mar 06

Contest Scoring

The contest objective is to make a flight with the largest Mission Score, defined as:

$$\text{Mission Score} = t + k V_{\max}$$

- V_{\max} = maximum velocity during the flight, measured over a speed run
- t = flight duration
- k = 100 s / (m/s)

Flight Rules

1. The aircraft must take off and land from the ground.
2. Timing of flight starts at liftoff, and ends at final touchdown.
3. The speed run must be performed no sooner than 3 minutes into the flight.
4. For scoring, t will be multiplied by the nominal/actual battery capacity ratio.
5. Momentary contact of landing gear with the ground does not end the flight.

Aircraft Rules

1. Must use the provided Speed-280 motor, directly driving a propeller.
2. Must use the provided 6-cell 350 mAh NiCd batteries, $E_{\text{batt}} = 8500 \text{ J}$ nominal capacity.
3. Must use the provided 2 servos.
4. The wing must be constructed entirely from one of the foams available in the Gelb lab. No other structural wing material is allowed.
5. Local reinforcements or decorations are permitted as long as they don't substantially increase the foam wing's bending properties. Examples: guard tape along leading edge, wing-center hard points, breakage patches, flashing neon **Aero Astro** insignia, etc.
6. The landing gear must prevent ground-propeller contact during a moderate landing impact.

Piloting Skill Bonus

1. One member from each team is expected to learn RC flying sufficiently well to perform all or most of the contest flight.
2. At the student pilot's option, the flight can be performed with a "Buddy Box", by which a flight instructor can take over control at any time to avoid a mishap.
3. The flight instructor will assign a Flying Proficiency Score using the following scale:
 0. Competition flight not completed (less than one full lap around the gym)
 5. Student had almost no control — I took over almost the whole flight
 10. Student had passable control — I took over for brief periods
 15. Student had very good control — I took over for a few corrections
 20. Student had complete control — I never had to touch the sticks
 20. No flight instructor participated in the flight
4. The Flying Proficiency Score is a bonus added to the term grade points of each of the team members. Joe B does not receive this bonus.