National Free Flight Society (NFFS) – MySO Postal Contest:
Scraps Livingroom Flyer

Build and fly a living-room plane based on the popular “Scraps” plan. The planes will have the max wing and stab span and chord defined, as well as fuselage length, per Scraps plan. The minimum plane weight will be 1g, with an optional class of 0.5g if interest warrants. The 0.5g is harder to reach and may be beyond those with limited build tools and materials at home. We expect most will build the 1g option. Plans will be provided. Any airfoil is allowed, and a “finger” or “whisker” is acceptable for ceiling strikes. The outline only is enforced. You may use any wood cross sections, any airfoil, any number of ribs.

Flying will consist of an unlimited number of flights, with the final score to be the best flight (longest duration). Flight data is self-timed, with a video recording of the entire flight submitted. Room height will be limited to no more than 12’, as we expect most flying to occur in the home or garage. The flights will be no-steer, but ceiling and wall touches are OK.

We will develop, over some period, key helpful videos. For example, prop making may be a new skill for many students, but is required to make target weight (the lightest commercial prop is almost a gram).

Build parameters:

- Drawings will be available.
  - Drawings can be viewed currently at https://www.facebook.com/groups/626401977506260/permalink/205558011257309
  - A build document is available at https://www.facebook.com/groups/626401977506260/permalink/2074886639324446
  - A cleaner drawing, and permanent links will be posted with this document upon release
- Minimum mass 1.0g (optional expert class at 0.5g if interest warrants it)
- Maximum flat wing span (before introducing dihedral) 214mm
- Maximum wing chord 55mm
- Maximum stab span 110mm
- Maximum stab chord 45mm
- Maximum length, front of prop hanger to tip of tail 220mm
- Tailboom may be a separate piece of balsa
- Paper rudder tab and wing tab not required
- Any wing dihedral (single, double, flat with tip plates), but all dihedral parts are included in the 214mm flat span (i.e., a flat wing with 20mm high tip plates would have a span of 175mm)
- Stabilizer does not have dihedral or tips
- Maximum 127mm (5”) prop
- Any prop hanger/bearing may be used (Harlan, pigtail, per plan, etc.)
- No hollow motor stick, no bracing, no Boron, no Carbon Fiber (except carbon may be used on prop spars)
- Any rubber mass can be used
- Student or team must build the entire model. Parents/mentors may demonstrate building techniques, but the entire competition model must be student-built.
Flight parameters:

- Fly indoor, ceiling height no more than 12’. Intended to be a living room, garage, office, etc.
- Record flight times as score in seconds, recorded to 0.1 second. Time starts at release, stops when plane touches the ground or becomes hung in an obstacle.
- Video flight record is required, uploaded to your choice of server, and a link submitted with your entry. Videos can be requested to stay private, or made public.
- Students may continue to register flights throughout the contest period, and are encouraged to post flights early in the season. The best score from each student/team will be used for the final placement.
- The flight season will continue through March 31, 2022.
- Teams of 1 or 2 students may participate.

Scoring and Logistics

Score entry is at: https://forms.gle/TfMrrSenETujD9ny7. You may enter as many times as you like. Some data will be published. You have the option of putting a team name rather than individual names to protect privacy. However, you are asked to submit actual names and email, which will not be published. You are asked to submit a video of the flight, and can opt to keep it private or publish the link for others to be inspired by your flight.

Plane qualification (measurements) is required once per plane, and may be requested by organizers for updates. This data will be reviewed by organizers but not published. The entry is at: https://forms.gle/tmGYYpUuJp4eb5f19

The results leaderboard will be maintained at: https://docs.google.com/spreadsheets/d/1OZjJC1B9o_MYOJ8SDXpLaEyjrWs6D3llhZfy_mCJ0/edit?usp=sharing

Updated information about this event will be maintained at https://freeflight.org/join-learn-fly/science-olympiad/science-olympiad-events/

Resources

- Support, help, etc. is available at https://freeflight.org/join-learn-fly/science-olympiad/
- Known kits:
  - 1.0g Scraptastic from Laser Cut Planes, https://lasercutplanes.com/product-category/plane_kits/. If not posted on the website, drop John a note at johnmcgrath2@comcast.net.
  - 0.5g Scraps Expert kit from J&H Aerospace, https://jhaerospace.com/product/scraps-indoor-living-room-flier/
- Scraps prop build video at https://youtu.be/HOCCgSHq8W8
- Introduction to Scraps video at https://youtu.be/JDbXkPM3pdk
- Email questions to Coach Chuck at ceandra@comcast.net