



2023 US Space Modeling Team Bulletin #3 – June 2022 Team Selection

Changes from Bulletin #2 are in bold.

The 23rd Federation Aeronautique Internationale (FAI) World Championships for Space Models will be held July 1-8, 2023 in Austin, Texas. This will be the first such championships hosted by the US since 1992. We expect teams from at least 20 other nations will participate.

The National Association of Rocketry (NAR) is responsible for organizing the U.S. Senior and Junior Teams that will compete in the 2023 World Championships. This bulletin outlines the procedures that will be used to competitively select the Junior and Senior teams.

The NAR FAI Activities Committee for this contest cycle is John Langford, Trip Barber, Chris Flanigan, Mike Nowak, and Matt Steele. This group will serve as the contest jury and oversee the selection process.

Basic Ground Rules

- A competitive flyoff for US Team selection will be held July 16-18, 2022 in conjunction with the 2022 North Coast Cup FAI contest and the NAR Annual Meet (NARAM-63) in Springfield, Missouri. The flying site is in South Greenfield, MO.
- The team selection flyoff will be flown under the 2022 edition of the FAI Sporting Code. The FAI code may be found at <https://www.nar.org/wp-content/uploads/2022/01/FAI-Sporting-Code-Space-Models-2022-Edition.pdf> In cases where FAI and NAR rules conflict, the NAR Model Rocket Safety Code shall have highest precedence, followed by the FAI Sporting Code, except as modified herein or in subsequent bulletins.
 - There are new provisions in the 2022 Code at paragraphs 4.6.5 and 7.1 that competitors should read. In particular the change at 7.1 means that models in S3 and S6 may not eject and drop a recovery protection device (foam plug), this must be retained with the model in some manner. This does not appear to apply to the use of standard tissue recovery wadding, **so for the flyoffs, wadding will be permitted to separate from the model.**
 - Extensive details, advice, and designs for the FAI events can be found on the NAR website at <http://www.nar.org/contest-flying/fai-spacemodeling/>
- Contest director for the flyoffs is Matt Steele (MattMSteele@gmail.com).

- Anyone participating in the flyoffs must also register as either a contestant or a sport flyer at NARAM-63 and must be a current member of the NAR both when they do their pre-flyoff qualification flights and when flying in person at the flyoffs.
 - Competitors who will have reached the age of 19 by December 31, 2023 will compete for the Senior Team. Those younger will compete for the Junior Team.
- Flyoffs for the S2P, S3A, S4A, S6A, S8E/P, and S9A events will be conducted in conjunction with the flying of these same events in the North Coast Cup, an FAI sanctioned World Cup and Open International contest. Flyoff participants have the option to also compete in that contest, if they have a current FAI license.
 - Participation in the flyoffs for S5, S7, and S8 **is open to all NAR members in good standing who register for the Flyoffs/North Coast Cup.**
- Competitors who wish to participate in the flyoffs for S2P, S3A, S4A, S6A, and S9A must first earn eligibility for participation by demonstrating their proficiency in flying through conducting and reporting the results of flights in these events prior to the flyoffs using the following procedures:
 - Flight results must be recorded and reported using the special FAI flyoff flight card, which is posted on the NAR website at <https://www.nar.org/wp-content/uploads/2021/11/FAI-Flight-Card-1.pdf>
 - Competitors may conduct and report flights as often as they wish in attempts to better their posted score.
 - An NAR adult member other than the flier must observe/time the flight and sign the flight card.
 - Flights will be conducted in accordance with FAI rules, except that for S3A, S4A, S6A, and S9A all flights will be flown with 1/2A motors. Seniors, who must fly three flights for each event, may use three models to do this.
 - For S2P, any altimeter approved for NAR competition may be used.
 - The procedures for conducting and reporting these flights will be identical to the NAR NRC process, and a separate national “scoreboard” for posting flight results for these events has been established at <https://www.nar.org/wsmc-scoreboard/> . Those who have difficulty getting flight results reported in NAR Contest Board channels via Contest Manager software or who fly at a non-NRC launch may simply scan their flight cards and send them to Steve Kristal at stevekristal@hotmail.com for entry on the scoreboard.
 - **Once you declare your first official flight (before motor ignition), it counts (as well as the two subsequent consecutive flights) as an official flight attempt. You may not enter the best three flights (say out of the six you made). You can make one official attempt per day.**
 - **The window for qualification flights has been extended to July 4, 2022. Results must be reported no later than July 7, 2022.**
 - For Senior division the top 10 competitors in each event, based on final scores posted to the FAI scoreboard, will be invited to enter the final in-person team selection flyoff for that event. **In addition, the top three**

females will be invited to the team selection flyoff even if not all are in the overall top ten, as FAI rules now permit a 4th flier on an event team if one of the team members is female. Note: If you don't qualify for an event on the FAI scoreboard, you will not be allowed to fly that event at the North Coast Cup. We simply do not have the time in the rounds nor the timing crew to accommodate more flyers.

- **If you do not qualify for the flyoffs in any event and do not fly in the NCC open events, you will be refunded your flyoffs fees. For example, if Vern Estes registers for the combo, NARAM Contest + Flyoffs, he pays \$100. If he doesn't get to fly in the flyoffs, he would get a \$20 refund, since NARAM contest (C/D) is \$80.**
- For Junior division, all competitors who have flown and reported a qualified flight in one of these five events using an FAI rules-compliant model and the reporting procedures described above by **July 7** may attend and compete in that event at the flyoffs.
- **Remember, the online registration deadline for NARAM-63/North Coast Cup/Flyoffs is July 1, 2022. Don't wait until the end to register if at all possible. If you don't attend, your money will be refunded.**
- **The Oasis hotel room block cut off is June 14. If you don't reserve by then, you are unlikely to get a room within a reasonable drive.**

- The US team for each event in each age division will be named as follows: All qualifiers in each event will be ranked based on flyoff performance. Team slots will be offered to qualifiers in order of rank, until a three-member team has been named (or four members if one of the members is female) or until all flyers with a score equal to 50% or better of the top score have been offered a slot. Further assignments will be at the discretion of the NAR FAI Activities Committee. Flyers with scores below 50% of the top score are not guaranteed an assignment.
- Pending availability of qualified applicants, no person will be named to the team for more than two events. Those who are ranked in the top **four** of more than two events based on flyoff scores must pick which two events they will compete in once the final flyoff standings are announced.
- Registration for the flyoffs and lodging will be handled through the NARAM-63 website (www.nar.org/NARAM-63). Participants should use the NARAM-63 hotel room block. These rooms will be available at a special rate of \$109/night. There will be a \$20 fee for participation in the flyoffs to cover the cost of the rocket motors provided to participants.
 - The NARAM-63 hotel is in downtown Springfield, MO. The flying site for NARAM-63 and the flyoffs is about 40 miles west of the hotel, at 945 State Highway 39, South Greenfield, MO
- As a condition of application to become part of the US Team, all applicants agree to be responsible for the following costs and obligations if selected:
 - Maintaining membership in the NAR through July 2023.
 - Holding an FAI license issued through the National Aeronautic Association and holding a membership in the Academy of Model Aeronautics, both by no later than February 2023, and both of which must be valid through July 2023.
 - Placing a non-refundable deposit of within 30 days of selection and the balance of the non-refundable team fees, as shown below:

Category	Deposit (August 2022)	Balance (February 2023)	Total (w/o travel)
Seniors	\$300	\$TBD	\$TBD
Juniors	\$300	-0-	\$300
Supporters	-0-	\$TBD	\$TBD

These fees will cover contest entry fees and room and board at the contest, once these have been established. The costs for entry fees and room and board for Junior team members that are above \$300 will be covered by a subsidy provided by the NAR. Team uniforms are funded by grants from the NAR and Estes Industries for competitors and managers, and will be available for purchase by supporters. Travel to and from the contest site is not included and is the responsibility of the team member.

- Regularly practice by building and flying models for their event(s) in the interim between selection and the championship. Team members may be asked to provide their team manager regular assessments of their progress.
- Attending either a US World Cup or a separate US Team practice session (if one is held) after team selection and prior to the World Championships.

Events

Events for the flyoffs are those currently announced for the World Championships. Those marked with an asterisk will also be part of the North Coast Cup. All events in the 2.5 N-sec power class will be flown with **1/2A motors**:

1. S2P – (Precision Fragile Payload) - Senior and Junior
2. S3A* (Parachute Duration Models - 0 to 2.5 NS) - Senior and Junior
3. S4A* (Boost Glider Duration Models 0 to 2.5 NS) - Senior and Junior
4. S5B (Scale Altitude Model 2.51-5.0 NS) – Junior
5. S5C (Scale Altitude Model 5.01 to 10.0 NS) - Senior
6. S6A* (Streamer Duration Models - 0 to 2.5 NS) - Senior and Junior
7. S7 (Scale) - Senior and Junior
8. S8D (Rocket Glider Duration - 10.01 to 20.00 NS) - Junior
9. S8E/P* (Rocket Glider Duration and Precision Landing Models) - Senior
10. S9A* (Gyrocopter Duration Models - 0 to 2.5 NS) - Senior and Junior

Motors

Only the following motors will be allowed for the US Team Flyoffs:

S2P: Estes D12; Aerotech Single Use E20, E30, F20W, F23FJ, F27R, F42T, F67W (supplied by competitor)

S3A: Estes 1/2A3-2T, Estes 1/2A3-4T (supplied by meet organizer)

S4A: Estes 1/2A3-2T, Estes 1/2A3-4T (supplied by meet organizer)

S5B: Estes **B6-2**, B6-4, B6-6 (**supplied by meet organizer**)

S5C: Estes B6-0, B6-4, B6-6, C6-3, C6-5, C6-7 (**supplied by meet organizer**)

S6A: Estes 1/2A3-2T, Estes 1/2A3-4T (supplied by meet organizer)

S7: Any Estes or Aerotech NAR contest certified motor with 80 or less n-sec total impulse and 30 grams or less propellant weight (supplied by competitor)

S8D: Aerotech Reloadable D2.3-P (reload kits supplied by meet organizer)

S8E/P: Aerotech Reloadable E6-RC (reload kits supplied by meet organizer)

S9A: Estes 1/2A3-2T, Estes 1/2A3-4T (supplied by meet organizer)

Special Provisions

- All models shall be inspected for conformance with FAI rules prior to the start of the round. Check-in on the evening before flight is strongly preferred.
- A third model may be used in the third round in S3A, S4A, S6A and S9A. Any flight using the third model will not be an official flight in the North Coast Cup World Cup competition that is going on concurrently with the flyoffs but will count towards team selection.
- Altitude events (S2/P, and S5) must use an Adrel MaxAlt or Adrel BMP altimeter at the flyoffs. You may provide your own, or there will be altimeters available for free rental with a deposit refundable on return.
- For Scale (S7), models will be judged for craftsmanship, but a boilerplate may be flown. S5 Scale Altitude must fly the model that is judged – no substitutions.
- Consistent with FAI rules, piston launchers may not be used in S2P or S5, and “floating head” piston launchers where the following FAI rule requirements are not met may not be used in any event.
 - During the launch of the model, the moving section of the gas-dynamic device must not detach from the end of the fixed section of the gas-dynamic device. No part of the launch device may lose contact with the ground.
- Depending on the availability of timers, we may elect to fly duration events with one timer per model.

Junior Team Selection for Craftsmanship Events

The craftsmanship events in a World Championships, where the models are judged and measured for scale quality before flight, are very challenging for Juniors. The team selection process will use special provisions for Junior Team selection in order to make getting on the team more accessible. Those who make the team will subsequently receive extensive mentoring from experienced Senior competitors to prepare them to compete.

Senior Team competitors will fly under standard FAI rule requirements.

Juniors with questions or issues with either of these events may contact Steve Kristal at stevekristal@hotmail.com

Scale Altitude (S5B)

- All Junior competitors will build an Estes Black Brant III kit (Estes kit #1293) as per the Estes instructions.
- Models will be judged and awarded points for their build quality (craftsmanship).
- After judging, models will be flown and altitude determined with an Adrel altimeter. Competitors may fly their model up to three times if desired.
- Total score will be a combination of the build quality and the altitude score from the best of the model's flights (if more than one flight is made).
- Coloration of the model should be what is on the Estes kit facecard and instructions. Markings not shown (like on the backside) are up to the modeler.
- No scale measurements will be done.
- No package of data describing the model or substantiating its dimensions is required.
- Competitors may substitute a streamer for the parachute if desired and may also substitute any components inside the model to lighten weight if desired.
- Models are to be built with launch lug and will be flown off launch rods.

Scale (S7)

The goal in the Junior Team selection flyoff process is to make entering this event as simple and straightforward as possible. Competitors may build any scale flying rocket model. Commercially available kits are fine to use. No data pack will be required, nor will the models be measured for accuracy of scale; each entry will be given maximum dimensional scale points. No "originality" points will be awarded. Judging emphasis will be on craftsmanship and on flight, not dimensional precision.

All other elements of the standard FAI judging protocols will be used, including flight points. Models with clustered motors or multiple stages will earn more points as per the standard FAI rules.

For More Information

Please contact John Langford at jslangford@me.com or Trip Barber at ahbarber@alum.mit.edu for questions on team selection; and Matt Steele at MattMSteele@gmail.com for questions on flyoff management or the North Coast Cup.

North Coast Cup/US Team Flyoffs 2022 Schedule

Date	Event	Start Time	End Time
Friday, July 15	Contestant's Meeting/Model Check In	20:00	21:30
	S5/S7 Model Turn In	21:00	21:30
Saturday, July 16	Model Check In	7:30	12:00
	S3A Round 1	8:00	9:30
	S3A Round 2	9:30	11:00
	S3A Round 3	11:00	12:00
	Lunch Break	12:00	12:30
	S6A Round 1	12:30	13:30
	S6A Round 2	13:30	14:30
	S6A Round 3	14:30	15:30
	S9A Round 1	15:30	16:30
	S9A Round 2	16:30	17:30
	S9A Round 3	17:30	18:30
	S5 Model Pickup	21:00	21:30
Sunday, July 17	Model Check In	7:30	12:00
	S3A/S6A/S9A Flyoffs (if necessary)	8:00	8:30
	S4A Round 1	8:30	9:30
	S4A Round 2	9:30	10:30
	S4A Round 3	10:30	11:30
	Lunch Break	11:30	12:00
	S4A Flyoffs (if needed)	11:30	12:00
	S2P Round 1	12:00	13:00
	S2P Round 2	13:00	14:00
	S2P Round 3	14:00	15:00
	US Team Selection S5B/S5C/S8D	15:00	16:00

	Round 1		
	S5B/S5C/S8D Round 2	16:00	17:00
	S5B/S5C/S8D Round 3	17:00	18:00
	S3A/S4A/S6A/S9A Awards (on Field)	18:00	18:15
	S7 Model Pickup	21:00	21:30
Monday, July 18	Model Check in	7:30	11:00
	S8E/P Contestants Meeting	7:45	8:00
	S8E/P (S8E Launch Area)	8:00	12:00
	S8D Flyoffs (if necessary)	8:00	8:30
	US Team Selection S7 Round 1 (NARAM Sport Range)	8:00	10:00
	S7 Round 2 (NARAM Sport Range)	10:00	12:00
	S5B/S5C/S7/S8D/S8E/P Awards (on Field)	12:00	12:30