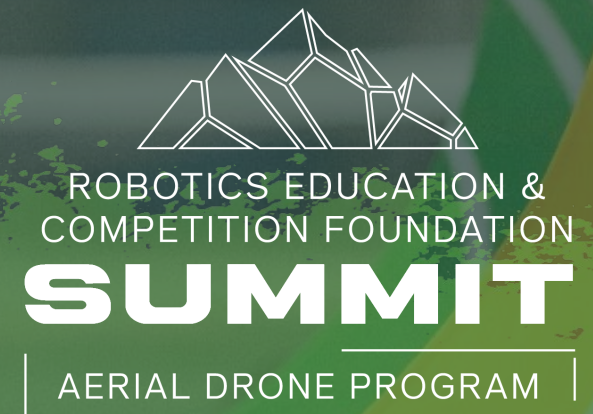


# BEHIND THE CURTAIN: The Judging Process Explained

Presented by:

**Shelli Brasher**  
Regional Support Manager





# Disclaimer

## Training Use Only

- These slides and the associated presentation are for training and reference purposes only.

## Must Follow all Official Rules

- Teams and Officials must understand and follow all rules as posted in:
  - Competition Manual
  - Guide to Judging
  - Official Q&A

If there is ***any discrepancy*** between this training document or presentation and the official materials, the ***Competition Manual, Guide to Judging, and Official Q&A*** are the only sources for official rulings.



# 4 Missions 1 Competition

Recommended for students, grades 5 - 12; teams will showcase their piloting, programming, and communication skills in local and national events.



## Teamwork Mission

Drones are piloted by students. Two teams fly together on the same competition field to maximize their score in a 90-second match.



## Autonomous Flight Skills Mission

Drone is programmed by students to operate entirely autonomously. Each team competes alone to score as many points as possible in a 60-second match.



## Piloting Skills Mission

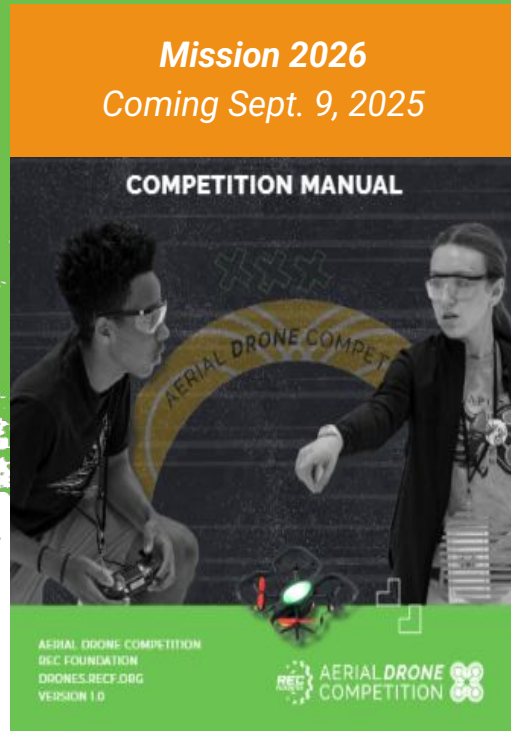
Drone is piloted by students to fly through an obstacle course. Each team competes alone to score as many points as possible in a 60-second match.



## Communications Mission

Teams interview with Judges about their drone, programming, and Competition Logbook documentation.





## Communications Mission Overview, Awards, Rules, and QR Codes for resources will be included in the Competition Manual

Additional Resources for the Communications Mission are found in the REC Library: Judging Resources



Award Descriptions



Team Interview  
Rubric



Competition  
Logbook Rubric




Guide to Judging



# The Ethos of Judging

## CORE PRINCIPLES FOR JUDGES

- **Confidentiality**  
Discussions & notes are kept confidential
  - **Impartiality**  
Judges disclose any conflicts of interest and avoid impropriety
  - **Consistency**  
Teams evaluated under similar conditions using the same materials
  - **Qualitative Judgement**  
Judges use their judgment to evaluate teams
  - **Inclusion**  
ALL teams must be given an opportunity to be interviewed
  - **Balance**  
No team can earn more than one JUDGED award
  - **Integrity**  
Awards should go to the teams that earn them
  - **Youth Protection**  
Safety of students is top priority
  - **Student-Centered Teams**  
Judging recognizes student-centered teams
  - **Team Ethics and Conduct**  
Teams must abide by the Code of Conduct
- 

# The Importance of Judging

## WHY OFFER JUDGED AWARDS AT EVENTS?

- Judging is an integral part of REC Foundation programs
- The Judging Process gives students an opportunity to:
  - practice written and verbal communication skills through the Team Interview and Competition Logbook
  - demonstrate values of the REC Foundation [Code of Conduct](#) and [Student-Centered](#) policies
- Judging recognizes and celebrates what teams have learned and the hard work they have put into the competition as an educational activity
- Judged awards can qualify teams to higher levels of competition



# Judging Roles

## Judge Advisor

Description: Train and assist volunteer Judges as they evaluate student teams through interviews, review Competition Logbooks, observe on-the-field performance, and present awards as needed. Facilitate the Deliberation process for judged awards, and serve as a Judge as needed.

Activity Level: Moderate (mix of sitting and walking).

Experience Level: Advanced. Previous Judge experience is strongly recommended. Certification required. Must be at least 20 years old

## Judge

Description: Evaluate student teams through interviews, Competition Logbooks, and on-field performance. Present awards as needed.

Activity Level: Moderate (mix of sitting and walking).

Experience Level: Intermediate. Some judging experience is helpful, but not necessary. Must be at least 18 years old and not part of a team. Younger volunteers ages 16-17 may be Judges if paired with another Judge who is 18 or over.



### Skills

- Attention to detail
- Impartiality
- Communicate effectively

# The Judged Awards

**TWO TYPES OF QUALIFYING AWARDS: PERFORMANCE AWARDS AND JUDGED AWARDS**

## **Performance Awards**

- Teamwork Champions
- Skills Champion

## **Judged Awards**

- All-Around Champion
- Communications Mission Championship
- Coding Award
- Airmanship Award
- Judges Award



**Award  
Descriptions**

**Teams can earn multiple  
PERFORMANCE awards, but only  
ONE JUDGED award**



# REC Library



The following slides have information taken from the Judging Section of the REC Library.

All tips can be found at [Guide to Judging](#)

**Bookmark this page**



JUDGES GUIDE

# Judging Tools

Printouts  
for Events

## For the Judge Advisor

- [Judge Volunteer Check-in Sheet](#)
- [Award Descriptions - Hang in Judges' Deliberation Area](#)
- [Volunteer Field Note To Judges](#)
- [Judges' Note to Missed Team](#)
- [Final Award Nominee Ranking Sheet](#)

These resources can all be found at the  
[REC Foundation Library](#)

# Judging Tools

Printouts  
for Events

## For Judges

Each Judge should get a packet with the following

- Judges Single Page Reference Sheet
- Competition Logbook Rubric - 1 for each team
- Team Interview Rubric - 1 for each team
- Team Interview Tips and Sample Questions
- Team Interview Notes
- Initial Award Candidate Ranking Sheet

These resources can all be found at the  
[REC Foundation Library](#)





# AERIAL **DRONE** COMPETITION



## JUDGING SINGLE-PAGE REFERENCE SHEET

### All-Around Champion

The All-Around Champion is a team that exhibits overall excellence in both the Judged Award and Performance Award categories.

### Communications Mission Champion

The Communications Mission Champion is a team that demonstrates an organized, systematic, and professional verbal communication, as demonstrated through their team interview and competition logbook.

### Judges Award

The Judges Award recognizes a team that the judges felt were deserving of special recognition.

### Coding Award

The Coding Award recognizes the team with the most effective and consistent use of coding techniques during the Autonomous Flight Mission. This award is earned by a team that demonstrates a solid understanding of multiple iterations to find programming solutions.

### Airmanship Award

The Airmanship Award recognizes a team that consistently exhibits good judgment and demonstrates well-understood objectives and is dedicated to understanding and maintaining drone safety rules and regulations.

### Interview Checklist

- ☐ Record team number on Interview Notes.
- ☐ Keep track of time. Spend equal time with every team.
- ☐ Take notes on each team.
- ☐ After the interview, briefly discuss interview with your Judge Team and make additional notes.
- ☐ Be mindful of your environment. Do not leave notes unattended or discuss teams when others could hear.
- ☐ Wish each team success and thank them for the interview.

### Interview Tips

- ☐ Ask teams if they have an upcoming match happening soon before you start your interview – if yes, interview them later.
- ☐ Ask if all team members are present before starting the interview.
- ☐ Take picture of team with their team number (Optional).
- ☐ Mark pit sign or team list to show completed interview.
- ☐ If you have trouble finding a team, check the match schedule and find them as they leave a match.



**FOR FULL AWARD DESCRIPTIONS,  
PLEASE REFER TO THE  
GUIDE TO JUDGING**



# **You be the judge!**

## **Competition Logbooks**

# Logbook Judging Process

## STEP 1 – Sorting the Competition Logbooks

- Judge Assignment:
  - The same judges for team interviews should evaluate Logbooks.
- Categorization:
  - Quick scan to categorize Logbooks as Developing or Fully Developed.
- Logbook Descriptions:
  - Developing: Little detail; rubric not completed; retained until judging ends.
  - Fully Developed: Contains detailed drawings, tests, and solutions; eligible for awards; minimum score of two in four criteria.

## STEP 2 – Completing the Competition Logbook Rubric

- Evaluation Tool:
  - Rubric used for initial quantitative evaluations; final determinations based on qualitative deliberation.
- Ranking:
  - Fully Developed Logbooks scored and initially ranked; top Logbooks are re-ranked qualitatively.
- Judge Review Process:
  - Focus on Rubric criteria to determine scores; avoid full page-by-page reviews.
- Scoring Recommendations:
  - At least two judges should score each Fully Developed Logbook.
  - Discuss initial scores for calibration; additional judges may enhance consistency.
- Further Evaluations:
  - Additional evaluations and interviews may be needed for final rankings during deliberation.



# Review and Share:

## Physical Logbooks (scanned)

- Binder: [60365A](#)
- Binder: [60365F](#)

## Digital Logbooks

- Google Slides: [1968D](#)
- Google Slides: [1968A](#)
  - (may have started with a robotics template)
- [4400K](#)
- [4400R](#)



### Tips shared by Coach of Teams 4400K and R Samantha from Hawaii

- Teams peer review each other's Logbooks to ensure content and writing are clear, concise, and consistent.
- Each team member does a self-assessment of their Logbook using the official Competition Logbook Rubric.

# COMPETITION LOGBOOK RUBRIC | MISSION 2025

TEAM # \_\_\_\_\_

GRADE LEVEL ☐ MS | ☐ HS

JUDGE NAME: \_\_\_\_\_

**DIRECTIONS:** Determine the point value that best characterizes the content of the Competition Logbook for that criterion. Write that value in the column to the right. This rubric is to be used for all Competition Logbooks regardless of format (physical or digital). \*Judges may award fractional points, such as a 3.5, 4.5, etc.

Criteria	Expert: 4-5 points*	Proficient: 2-3 points*	Emerging: 0-1 points*	Points
<b>Written Communication Skills</b> (All-Around, Communications, Airmanship)	Includes clear, complete and organized records of evidence of Mission Objectives. Examples of this may include: <ul style="list-style-type: none"> <li>Dated entries with the names of contributing students.</li> <li>An overall system of organization: numbered pages and a table of contents with entries organized for future reference.</li> <li>Uses flight terms throughout the competition logbook.</li> <li>Provides clear evidence of the iterative process.</li> </ul>	Is included but lacks some detail or is missing information.	Not included or lacks many details.	
<b>Teamwork and Leadership</b> (All-Around, Communications, Airmanship)	Includes clear, complete and organized records of team roles and project and time management techniques.	Is included but lacks some detail or is missing information.	Not included or lacks many details.	
<b>Safety Plan &amp; Training Records</b> (All Around, Communications, Airmanship)	Is clearly identified, including documentation of the team's knowledge of dronemaintenance, safety, and training courses and local drone regulations. Examples of this may include: <ul style="list-style-type: none"> <li>Pre and Post Flight Checklists</li> <li>Flight Log</li> <li>Completion of FAA Trust (US Teams Only)</li> <li>Completion of Robolink's Getting Started Course</li> </ul>	Is included but lacks some detail or is missing information.	Not included or lacks many details.	
<b>Drone Data and Analysis</b> (All-Around, Communications, Airmanship)	Is clearly identified, including documentation of the team's data about their drone and controller performance, based on testing and analysis. Examples of this may include: <ul style="list-style-type: none"> <li>Battery Life</li> <li>Flight Time Performance</li> <li>Additional Drone/Controller Data</li> </ul>	Is included but has limited analysis and documentation.	Not included or lacks many details.	



<b>Teamwork Mission:</b> <b>Analysis and Strategies</b> (All-Around, Communications)	Is clearly identified, including documentation of the team's knowledge and understanding of the Teamwork Mission. Examples of this may include: <ul style="list-style-type: none"> <li>• Analysis of Teamwork Mission Rules &amp; Scoring</li> <li>• Analysis of Practice and Competition Results</li> <li>• Documentation of Brainstorming, Testing, and Sharing Results of strategies developed</li> <li>• Documentation of Multiple Iterations as the team progresses</li> </ul>	Is included but has limited analysis and documentation.	Not included or lacks many details.	
<b>Autonomous Flight Mission:</b> <b>Programming Documentation and Strategies</b> (All-Around, Communications, Coding)	Is clearly identified, including documentation of the team's knowledge and understanding of the Autonomous Flight Mission. Examples of this may include: <ul style="list-style-type: none"> <li>• Analysis of Mission Rules &amp; Scoring</li> <li>• Analysis of Practice and Competition Results</li> <li>• Documentation of Programming Code and version history, including annotations.</li> <li>• Documentation of Brainstorming, Testing and Sharing Results of programs developed</li> <li>• Documentation of Multiple Iterations as the team progresses</li> </ul>	Is included, but lacks some details, missing information and/or does not show multiple iterations of programming code.	Not included or lacks many details.	
<b>Piloting Skills Mission:</b> <b>Flight Analysis and Strategies</b> (All-Around, Communications)	Is clearly identified, including documentation of the team's knowledge and understanding of the Piloting Skills Mission. Examples of this may include: <ul style="list-style-type: none"> <li>• Analysis of Piloting Skills Mission Rules &amp; Scoring</li> <li>• Analysis of Practice and Competition Results</li> <li>• Documentation of Brainstorming, Testing and Sharing Results of strategies developed</li> <li>• Documentation of Multiple Iterations as the team progresses</li> </ul>	Is included but has limited analysis and documentation.	Not included or lacks many details.	
<b>Drone and Aviation Career and Industry Practices</b> (All-Around, Communications, Airmanship)	Is clearly identified, including specific examples, discovery, and documentation of the team's knowledge and understanding of drone and aviation career opportunities. Resources used are referenced. Examples of this may include: <ul style="list-style-type: none"> <li>• Researching how drones are used in multiple professions</li> <li>• Interviewing a professional in the drone industry and documenting the interaction</li> <li>• Researching and reporting on current trends in aviation and drone technology</li> </ul>	Includes limited or general examples and discovery of drone and aviation careers and/or does not reference resources used.	Not included or lacks many details.	
		<b>TOTAL POINTS</b>		

**Notes by Judges | Tip: List 1-3 things that make this Competition Logbook standout.**





# **You be the judge!**

## **Team Interviews**

# Interview Judging Process

## Step 1 – Conducting the Team Interview

- Pair Judges by expertise relevant to specific awards (e.g., programming for the Coding Award).
- Roughly 10 minutes per team; schedule created by Judge Advisor.
- Ask open-ended questions using the sample questions
- Focus on student interaction, not audio/visual aids.
- Judges should take notes during interviews; the Team Interview Notes form can be used.
- Consider taking a photo of each team with their number visible.
- Leave a note if unable to locate a team after several attempts.

## Step 2 – Complete Team Interview Rubric

- **Post-Interview Evaluation and Confidential Discussions:**
  - Judges complete the Team Interview Rubric and Initial Award Candidate Ranking Sheet.
  - Discuss and fill out forms privately to ensure confidentiality.
- **Conduct Evaluation:**
  - Identify student-centered teams demonstrating positive conduct.



## TEAM INTERVIEW TIPS AND SAMPLE QUESTIONS

### BEST PRACTICES

- Ask if the team has a few minutes for the interview. If the team has an upcoming match that may interfere with the interview, tell them you will come back at a better time.
- Try to include all team members in the interview.
- It is preferable to have the team interviews in the pit area.
- If you are having trouble finding a team, wait for them at the field for their next match.
- It is acceptable to take a picture of each team. This will help you identify teams later during deliberations.
- Ask a quick "icebreaker" question such as "That's a really great team logo – who designed it?" "How is your team doing so far today?"
- Being a Judge gives you a unique opportunity to impact students through positive reinforcement. Just a few words of encouragement can make their day.
- Try not to ask yes or no questions. Encourage teams to elaborate on their answers.
- Be prepared to rephrase your questions. Be mindful of differences in communication styles.
- Be mindful of each student's individual learning needs and challenges, including students who do not speak the language that you are using as their first language. Ensure that the interview process is inclusive, supportive, and respectful of these differences.
- Be aware of different age levels. Approach students in an age-appropriate way, especially when talking to younger students.
- Be attentive to students. Do not engage in side conversations/phone use during interviews.

### SAMPLE INTERVIEW QUESTIONS:

Is this a good time for an Interview? Are all your team members here?

#### Teamwork and Leadership

- Tell us about the roles of your team members.
- How are your tasks divided among your team members?

#### Project Management

- How does your team manage time and resources?
- Tell me about your practice sessions.

#### Drone Safety and Awareness

- How do you approach Drone Safety and Awareness on your team?
- What have you learned about drone safety and how have you applied what you learned?

#### Teamwork Mission Strategies

- Tell us about your Teamwork Mission Strategy or what is your most effective teamwork strategy?
- What was the most difficult challenge your team has overcome?

#### Autonomous Flight Mission Strategies

- What did you find most challenging about programming?
- How has your code changed to address these challenges?
- What sensors/data are used in your programming process?

#### Piloting Skills Mission Strategies

- Who is your pilot for the piloting skills mission?
- What have you learned about drone piloting while performing this mission?

#### Drone and Aviation Career Connections

- Have you explored Drone or Aviation Careers or how drones are used in the community?
- If so, tell us about them.



AERIAL **DRONE**  
COMPETITION





## TEAM INTERVIEW RUBRIC

TEAM # \_\_\_\_\_ GRADE LEVEL ☐ MS | ☐ HS JUDGE NAME: \_\_\_\_\_

**DIRECTIONS:** Determine the point value that best characterizes the content of the Team Interview for that criterion.  
Write that value in the column to the right. \*Judges may award fractional points, such as a 3.5, 4.5, etc.

Criteria	Expert: 4-5 points*	Proficient: 2-3 points*	Emerging: 0-1 points*	Points
<b>Verbal Communication Skills</b> (All Awards)	Students communicate effectively and interact respectfully, courteously, and positively in their interview. Most or all team members contribute to the interview.	Students communicate clearly but some students do not contribute to the interview.	Few team members contribute to the interview and/or students interrupt each other or the judges.	
<b>Teamwork and Leadership</b> (All Awards)	Students clearly explain roles of team members.	Explanations were limited or vague.	Explanation not communicated.	
<b>Project Management</b> (All Awards)	Students clearly explain how they manage their time, develop their skills, and resources. It is evident to judges that the students have autonomy and follow the student centered ethos of the program.	Explanations were limited or vague.	Explanation not communicated.	
<b>Drone Safety and Awareness</b> (All-Around, Communications, Airmanship)	Students can fully explain the importance of drone safety and how safety is managed on their team. Team is aware of local drone laws and have taken appropriate training. Team uses aviation and drone terminology when talking with judges.	Explanations were limited or vague.	Explanation not communicated.	
<b>Teamwork Mission Strategies</b> (All-Around, Communications, Airmanship)	Students clearly demonstrate the team's knowledge and understanding of the Teamwork Mission. Students explain how the team developed and tested their Teamwork strategies for this Mission.	Explanations were limited or vague.	Explanation not communicated.	



<b>Teamwork Mission Strategies</b> (All-Around, Communications, Airmanship)	Students clearly demonstrate the team's knowledge and understanding of the Teamwork Mission. Students explain how the team developed and tested their Teamwork strategies for this Mission.	Explanations were limited or vague.	Explanation not communicated.	
<b>Autonomous Flight Mission Strategies</b> (All-Around, Coding)	Students clearly demonstrate the team's knowledge and understanding of the Autonomous Flight Mission. Students demonstrate an understanding of programming concepts and can explain how they developed their drone's programming evolution.	Explanations were limited or vague.	Explanation not communicated.	
<b>Piloting Skills Mission Strategies</b> (All-Around, Communications, Airmanship)	Students clearly demonstrate the team's knowledge and understanding of the Piloting Skills Mission. Students explain how the team developed their Piloting strategies for this mission.	Explanations were limited or vague.	Explanation not communicated.	
<b>Drone and Aviation Career Connections</b> (All-Around, Communications, Airmanship)	Students have explored multiple drone or aviation careers, real-world applications, and are able to discuss in detail what they've learned.	Students have explored one drone or aviation career and/or did not share details about the careers.	Students have not explored beyond scope of the competition.	
<b>Special Attributes and Overall Impressions</b> (Judges)	Does the team have any special attributes, accomplishments, or exemplary effort in overcoming challenges at this event or during the season? Please describe. 			<b>Total Points</b>
Write 1-3 three things that made this team standout to you or something that impressed you about the team. 				

All Judging materials are strictly confidential. They are not shared beyond the Judges/Judge Advisor and are destroyed at the end of the event.



**DIRECTIONS:** Use this sheet to take notes during each team interview. As a Judge group, ask open ended questions to teams that give insight into each of the criteria below.

TEAM # \_\_\_\_\_

JUDGE NAME: \_\_\_\_\_

Criteria	Criteria Explanation	Judge's Notes
<b>Verbal Communication Skills</b> (All Awards)	How well did the students communicate? Did all members participate?	
<b>Teamwork and Leadership</b> (All Awards)	Did students share how they determine roles of team members?	
<b>Project Management</b> (All Awards)	Did students clearly explain how they manage their time, talent and resources? Was it evident that the students have autonomy and follow the student centered ethos of the program?	
<b>Drone Safety and Awareness</b> (All-Around, Communications, Airmanship)	Did Students explain the importance of drone safety and how safety is managed on their team? Are they aware of local laws? Do they use aviation and drone terminology?	
<b>Teamwork Mission Strategies</b> (All-Around, Communications, Airmanship)	Did students explain how the team developed and tested their strategies for this Mission?	
<b>Autonomous Flight Mission Strategies</b> (All-Around, Coding)	Did students explain how the team developed and tested their strategies for this Mission?	



# **You be the judge!**

## **Award Deliberations**



## INITIAL AWARD CANDIDATE RANKING SHEET

JUDGE NAME / JUDGE GROUP: \_\_\_\_\_

Check the boxes below for which awards you think a team would be a strong candidate. All Judge groups will cross-reference their lists to create a final award nomination list. Use multiple check marks to help sort recommendations.

[illegible]





## FINAL AWARD NOMINEE RANKING SHEET

This form is a tool for the Judge Advisor to record the ranked candidates for each award. A team can appear in multiple award categories. All-Around Champion candidates are developed by taking into account Competition Logbook scores, the Team Interview scores, and on-field performance rankings. It is important that there be multiple ranked candidates for each award. The selection of the All-Around Champion winner may cause other award winners to change, as teams can only earn one judged award at an event.

All-Around Champion

Communications Award	Judges Award	Coding Award	Airmanship Award
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
4.	4.	4.	4.

# Award Deliberations Judging Process

## Step 1 – Award Nominations from Each Judge Group

- **Nomination Process:**
  - Judges return to the Judges' Room to share nominations with other judges and the Judge Advisor. Judge groups decide on one or two candidate teams for each award using Initial Award.
  - Judges are not required to nominate a team for every award.
- **Visual Organization:**
  - Use printed Award Description sheets to help organize candidate teams during deliberations.
- **Shortlist Creation:**
  - The result is a shortlist of nominations for each award.
  - The Judge Advisor may ask groups to withdraw weaker candidates based on arguments for and against nominations.

# Award Deliberations Judging Process

## Step 2 – Cross-Checking Award Nominees

- **Timing:** Logbooks and Interviews should be completed by the end of the Teamwork Qualification Matches.
- **Information Gathering:**
  - Judge Advisor collects field notes
  - Judges share their observations throughout the day
  - Conducting follow-up interviews, if needed
  - Consider Code of Conduct Violations:
- **Confidentiality:**
  - Teams should not be informed about which awards they are contending for.

## Step 3 – Final Ranking and Nominations

- **Final Deliberation:** Conducted shortly after the start of Elimination Matches.
- **Data Collection:**
  - Use quantitative data from reports (e.g., Rubrics, Team List, Qualification Rankings) for deliberations.
  - Use qualitative data to make final decisions (Is this the team that should win this award?)
  - A team may only win **ONE** Judged Award.
- **Special Cases:**
  - If a suitable team for an award cannot be identified, the Judge Advisor must contact the RSM and complete the REC Foundation Regional Support Request.

# Award Deliberations Judging Process

## Step 4 – Entering Award Winners into Tournament Manager

- **Informing Partners:**
  - After nominations are chosen, the Judge Advisor informs the Event Partner and Tournament Manager operator.
- **Data Entry:**
  - TM operator enters winning team numbers into Tournament Manager under the “Awards” tab.
  - Print the Award Summary Sheet for verification.

## Step 5 – Collection and Treatment of Judging Materials

- **Pre-Ceremony Securing:**
  - Judge Advisor should secure the Judges’ Room by collecting all notes, rubrics, and ranking sheets.
  - Erase any whiteboard notes.
- **Confidentiality Compliance:**
  - Judges must not retain copies of notes that reference individual teams, including rubrics and ranking sheets.
  - Delete any pictures of teams or robots.
- **Post-Event Destruction:**
  - Judge Advisor should destroy all judging materials off-site; these items should not be given to the Event Partner for destruction.



# Contact

## We are here for you

If you need any further information about our drone program, one of our staff members will be able to assist you. You can contact us via email or phone, and our team will be happy to help. Additionally, you can visit our website for more details.

### Address

1519 Interstate 30 West  
Greenville, Texas 75402

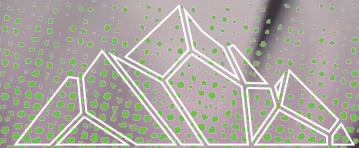
### Phone & Email

903 401 8010  
drones@recf.org

### Website

[drones.recf.org](https://drones.recf.org)

### Resources



ROBOTICS EDUCATION &  
COMPETITION FOUNDATION

# SUMMIT

AERIAL DRONE PROGRAM