COMPETITION LOGBOOK FUNDAMENTALS: Make It Work for Your Team

Presented by:

Nadine Amaya
Regional Support Manager

ROBOTICS EDUCATION & COMPETITION FOUNDATION
SUMMIT
AERIAL DRONE PROGRAM

Disclaimer

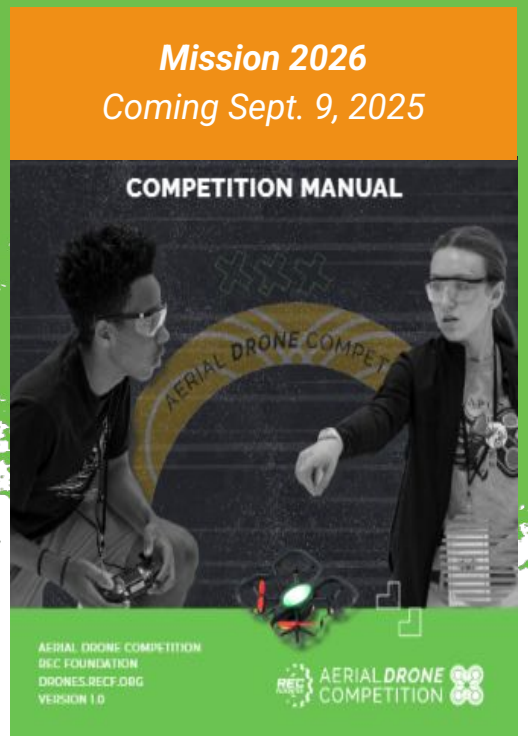
Training Use Only

- 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.



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

Mission 2026
Coming Sept. 9, 2025

Mission 2026 Competition Video

"To have a sport that's related to skills needed right now for jobs that are emerging is awesome."
-Coach Kovach

What is a Competition Logbook?

- Chronological account of design decisions
- Considered a tool and not an end in itself
- Account of what a team has discovered on their journey
- Documents the team's failures as well as their successes

TIP:

Advanced teams' Log Books will include enough detail that a reader could recreate the team's mission strategies or code following the documentation in the Logbook.

Teamwork Mission (Brainstorming Ideas)

What Is This Section About:

The chart below is a log of ideas that we come up with to counter our problems. The chart will show the date, idea, our hypothesis and lastly the results.

Date	Problem	Idea	Results	Is It Effective
12/6/23	Chambers	Blowing the balls from the top at an angle and sweep them towards the exit (strategy from Ewa Makai.)	It was effective and we got better at chambers and we were able to clear it faster.	Yes, and it will be added to our strategies.
12/19/23	Goals	Rolling the rollers before starting on the chambers allowing the balls to move in before we start.	Does not work because the roller would just roll back when we got to the second chamber and also because of the AC and fans.	No, strategy is ineffective because the rollers are moving back into its spot.
12/21/23	Goals	Trying roll the roller when we are at the last chamber before the balls start moving out of the chamber.	The roller would move back to where it was undoing our work.	No, the roller would move back closing the entrance to the goals.
1/7/24	Chamber speed	Using speed three and learning how to control the speed. This would allow us to clear quicker.	Speed 3 was easy to hard to control and we were at a high risk of hitting the objects on the field.	No, this strategy does the opposite and makes it harder.

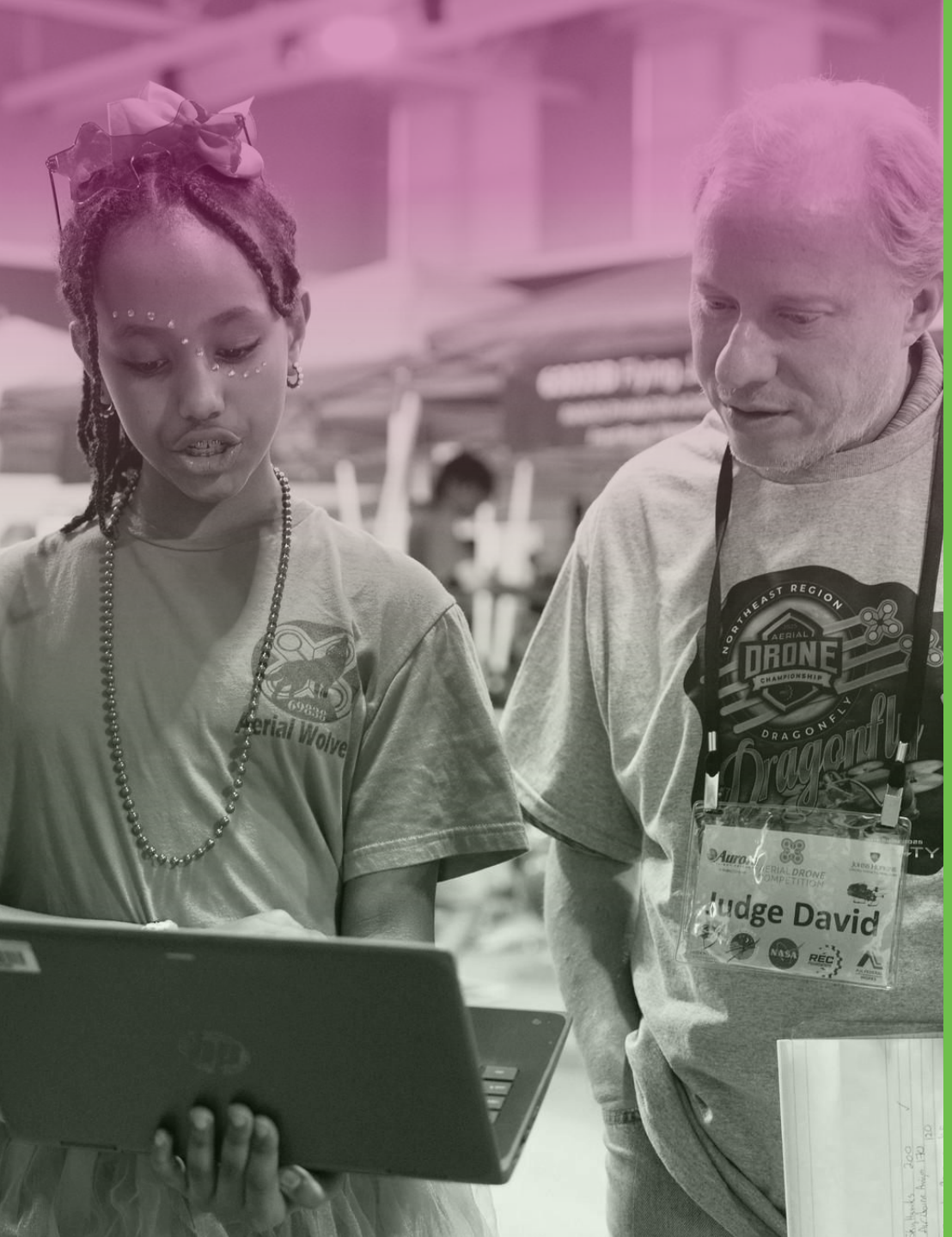
Written by: Shaun

Why should teams create a Competition Logbook?

- **Learning Tool: Practice written communication and documentation strategies**
- **Real-world connection: Professionals document ideas and progress**
- **Tournaments: Important consideration for several judged awards**
- **Helps students track progress, problems, and accomplishments.**

TIP:

One of the pathways to success in competition is the Communications Mission Award, which includes a team interview and evaluation of a team's application of the iterative process and how well that process is documented in the Competition Logbook.



How do teams create a Competition Logbook?

- Choose Format: Digital or Physical
  - Digital Suggestions
    - Google Slides
    - Microsoft PowerPoint
    - Google Docs
    - Other
- Review the Rubric and other Resources
- Develop an organizational system
- Write in the Logbook at every session

TIP:

Allow students to choose a format and system that works best for them!

YOUR TURN:

What platform does your team use?

Physical Logbooks

- Notebooks
- Binders
- Other

Digital Logbooks

- Google Slides
- Google Docs
- Microsoft PowerPoint
- Other

Competition Logbook Rubric

[Link To Rubric]

AERIAL DRONE COMPETITION

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
Written Communication Skills (All-Around, Communications, Airmanship)	Includes clear, complete and organized records of evidence of Mission Objectives. Examples of this may include: • Dated entries with the names of contributing students. • An overall system of organization: numbered pages and a table of contents with entries organized for future reference. • Uses flight terms throughout the competition logbook. • Provides clear evidence of the iterative process.	Is included but lacks some detail or is missing information.	Not included or lacks many details.	
Teamwork and Leadership (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.	
Safety Plan & Training Records (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: • Pre and Post Flight Checklists • Flight Log • Completion of FAA Trust (US Teams Only) • Completion of Robolink's Getting Started Course	Is included but lacks some detail or is missing information.	Not included or lacks many details.	
Drone Data and Analysis (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: • Battery Life • Flight Time Performance • Additional Drone/Controller Data	Is included but has limited analysis and documentation.	Not included or lacks many details.	
Teamwork Mission: Analysis and Strategies (All-Around, Communications)	Is clearly identified, including documentation of the team's knowledge and understanding of the Teamwork Mission. Examples of this may include: • Analysis of Teamwork Mission Rules & Scoring • Analysis of Practice and Competition Results • Documentation of Brainstorming, Testing, and Sharing Results of strategies developed • Documentation of Multiple Iterations as the team progresses	Is included but has limited analysis and documentation.	Not included or lacks many details.	
Autonomous Flight Mission: Programming Documentation and Strategies (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: • Analysis of Mission Rules & Scoring • Analysis of Practice and Competition Results • Documentation of Programming Code and version history, including annotations. • Documentation of Brainstorming, Testing and Sharing Results of programs developed • Documentation of Multiple Iterations as the team progresses	Is included, but lacks some details, missing information and/or does not show multiple iterations of programming code.	Not included or lacks many details.	
Piloting Skills Mission: Flight Analysis and Strategies (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: • Analysis of Piloting Skills Mission Rules & Scoring • Analysis of Practice and Competition Results • Documentation of Brainstorming, Testing and Sharing Results of strategies developed • Documentation of Multiple Iterations as the team progresses	Is included but has limited analysis and documentation.	Not included or lacks many details.	
Drone and Aviation Career and Industry Practices (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: • Researching how drones are used in multiple professions • Interviewing a professional in the drone industry and documenting the interaction • Researching and reporting on current trends in aviation and drone technology	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.	
		TOTAL POINTS		

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

AERIAL DRONE COMPETITION 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.

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		TOTAL POINTS		

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

YOUR TURN:

Brainstorm possible organizational formats a team could consider.

Criteria from the Logbook Rubric

- ★ Written Communication Skills
- ★ Teamwork and Leadership
- ★ Safety Plan & Training Records
- ★ Drone Data and Analysis
- ★ Teamwork Mission: Analysis and Strategies
- ★ Autonomous Flight Mission: Programming Documentation and Strategies
- ★ Piloting Skills Mission: Flight Analysis and Strategies
- ★ Drone and Aviation Career Industry Practices

Competition Logbook: Organization

The Logbook should always include the following:

- Team number on the cover/beginning of document.
- A table of contents with entries organized for future reference.
- Each page/entry is chronologically numbered and dated, showing the evolution of the team over the season, beginning with the first team meeting.
- Notebook has evidence that documentation was done in sequence.
- Each page/entry contains information noting the student author(s).
- All pages/entries intact; no pages/entries or parts of pages/entries removed or omitted; errors can be crossed out using a single line (so they can be seen) rather than erased or removed.
- Physical Logbooks that have inserts include those permanently affixed with tape or glue (may include CAD drawings, examples of code, etc.).

Review and Share:

Physical Logbooks (scanned)

- Binder: 60365A
- Binder: 60365F

Digital Logbooks

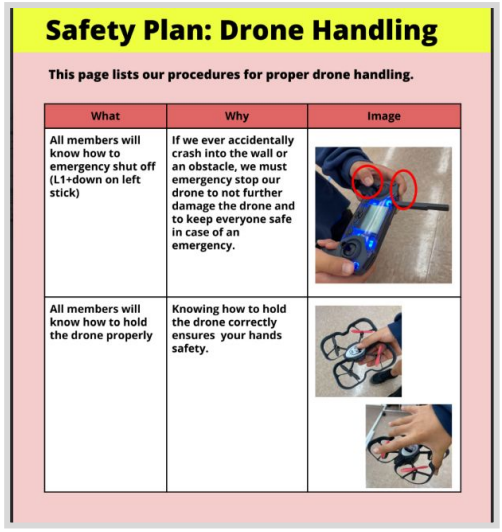
- Google Slides: 1968D
- Google Slides: 1968A
  - (may have started with a robotics template)
- 4400K
- 4400R

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.

Most Frequently Asked-About Logbook Sections

Safety Plan and Training Records



Safety Plan: Drone Handling

This page lists our procedures for proper drone handling.

What	Why	Image
All members will know how to emergency shut off (L1+down on left stick)	If we ever accidentally crash into the wall or an obstacle, we must emergency stop our drone to not further damage the drone and to keep everyone safe in case of an emergency.	
All members will know how to hold the drone properly	Knowing how to hold the drone correctly ensures your hands safety.	

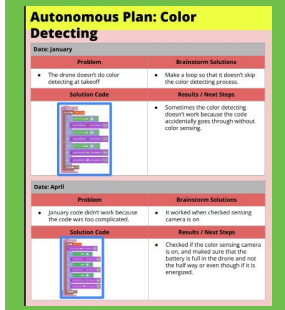
Drone Data and Analysis

Drone Data Analysis (Flight Review Eclipse)

What is this section about:

This is the drill log for the eclipse. In the flight log, you can find the time and score for Eclipse. This log is useful for visualizing and tracking improvements more effectively.

Autonomous Flight Mission: Programming Documentation and Strategies



Autonomous Plan: Color Detecting

Date: January

Problem	Brainstorm Solutions
• The drone doesn't do color detecting at takeoff	• Make a loop so that it doesn't skip the color detecting process.

Solution Code	Results / Next Steps
	• Sometimes the color detecting doesn't work because the code accidentally goes through without color sensing.

Date: April

Problem	Brainstorm Solutions
• January code didn't work because the code was too complicated.	• It worked when checked sensing camera is on

Solution Code	Results / Next Steps
	• Checked if the color sensing camera is on, and maked sure that the battery is full in the drone and not the half way or even though if it is energized.

Flight Path From Yellow Keyhole To Mat 2 (January 2024)

This code first uses the keyhole loop to loop around the yellow keyhole and then it goes forwards and turns 90 degrees counterclockwise to align with the green keyhole, then goes forwards to go to the last mat and then goes to the corresponding color mat.

Some problems	Possible Solutions	What worked?
1. It doesn't go to the end 2. It doesn't loop well 3. It sometimes go down randomly	• Try modify the code to be more faster • Calibrate the drone	• The loop works now • It went to the end 1 time • The path to the green keyhole is consistent

Drone and Aviation Career and Industry Practices

Careers Research

photography

Photographers and filmmakers use drones to take new shots from a different perspective

firefighter

Firefighter can use drones in emergency response situations, like inspections or locating an exit

Surveyor

Surveyors can use drones by using them for mapping property line and agricultural areas. They can also be used to build in dense urban areas like cities

Competition Logbook: Safety Plan and Training Records

Includes documentation of the team's knowledge of drone maintenance, safety and training courses, and local drone regulations.

Examples of this may include:

1. Pre and Post-Flight Checklists
2. Flight Log
3. Completion of FAA Recreational UAS Safety Test (US Teams Only)
4. Completion of Robolink's Getting Started Course

Competition Logbook: Drone Data and Analysis

Includes documentation of the team's data about their drone and controller performance, based on testing and analysis.

Examples of this may include:

1. Battery Life
2. Flight Time Performance
3. Additional Drone and Controller Data

Competition Logbook: Autonomous Flight Mission

Autonomous Flight Mission: Programming Documentation and Strategies

Includes documentation of the team's knowledge and understanding of the Autonomous Flight Mission.

Examples of this may include:

1. Analysis of Mission Rules & Scoring.
2. Analysis of Practice and Competition Results Documentation of Programming Code and version history, including annotations.
3. Descriptions of programming concepts, programming improvements, or significant programming modifications.
4. Documentation of Brainstorming, Testing, and Sharing Results of programs developed.
5. Documentation of Multiple Iterations as the season progresses.-

Competition Logbook: Drone and Aviation Career and Industry Practices

Clearly identifies, including specific examples, discovery, and documentation of the team's knowledge and understanding of drone and aviation career opportunities.

Examples of this may include:

1. Researching how drones are used in multiple professions
2. Interviewing a professional in the drone industry and documenting the interaction
3. Researching and reporting on current trends in aviation and drone technology

Quick Links

Team Interview Resources

- Team Interview Rubric
- Team Interview Tips and Sample Questions
- Guide to Judging: Team Interviews

Competition Logbook Resources

- Competition Logbook Rubric
- Getting Started with Competition Logbook
- Iterative Design Process in the Aerial Drone Competition
- Guide to Judging: Competition Logbooks

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

Resources

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