SKILLED TRADES DIVISION GUIDE

2027 Digital Ship Challenge

Version 1.2 | November 2026

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Guide Information
Version 1.2

This guide is subject to revision throughout the challenge season.

Any changes to this guide will be communicated through the official DSC Change Log found on the VDMC website (https://digitalmaritime.org/digital-ship-challenge/). Teams are responsible for reviewing the DSC Change Log and incorporating applicable updates.

Contact Information
If there are any questions regarding any aspect of the Digital Ship Challenge, please contact Jennifer Renne.
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Welcome to the 2027 Digital Ship Challenge

The Digital Ship Challenge provides students with authentic challenges that reflect the work, processes, collaboration, and problem-solving used by professionals in the maritime industry. Throughout the challenge season, your team will take on the role of industry professionals, applying technical knowledge, collaboration, creativity, and problem-solving to complete a real-world maritime challenge.

The Digital Ship Challenge follows the development of a professional project over time. Teams are expected to research, plan, develop, evaluate, document, and refine their work throughout the challenge season while completing a series of project checkpoints leading up to the final competition. Checkpoints are scored and contribute to the team's overall competition score, recognizing consistent progress and engagement throughout the challenge season.

This Division Guide serves as your primary reference throughout the season. We encourage your team to review this guide regularly, stay informed with the DSC Change Log, and document your process throughout the challenge.

We look forward to seeing the innovative solutions your team develops and wish you the best throughout the 2027 Digital Ship Challenge.

About This Guide

Throughout this guide you'll find information to help your team successfully complete the challenge, including:

- Competition overview and important dates
- Checkpoints
- Documentation Expectations
- Technical Requirements
- Competition Procedures
- Judging Information
- Additional Resources

Before You Continue

The Division Brief introduced your team's mission, professional role, and the real-world context behind this year's challenge.

This Division Guide builds on that foundation by providing the information you'll use to successfully complete the challenge.

We recommend keeping both documents available as you work through the challenge.

In the Skilled Trades Division, your team will take on the role of a maritime rigging team. Maritime riggers are skilled trades professionals who safely lift, move, position, and secure equipment and materials in shipyards and aboard vessels. Throughout the challenge season, your team will learn and apply fundamental rigging principles as you plan, prepare for, and execute a simulated shipboard equipment-movement operation.

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1. Challenge Season Overview

1.1 Challenge Timeline

Milestone	Date	Description
Final Team Registration	September 30, 2026	This includes the team's name, all student names, and email addresses (for Google Drive sharing purposes only)
Checkpoints	Ongoing through the challenge season	See Section 2 for more details
Withdrawal Date	November 30, 2026	This is the final date for teams to withdraw from the Digital Ship Challenge without impacting competition planning. Schools unable to continue should notify the Challenge Coordinators by this date.
Mid-Year Review	December 17, 2026, and December 18, 2026	The Mid-Year Review will be broken into 2 dates based on divisions. More information will be available in October.
Final Professional Poster Submission	March 1, 2027, by 5:00pm	Submitted on Google Drive using template provided within your team's folder to be printed by the DSC organizers
Competition Day Schedule	March 1, 2027	Will be emailed out to teachers/advisors and placed in the team's Google Drive Folders
Final Digital Notebook Submission	March 12, 2027, by 5:00pm	Submitted on Google Drive in the Final Digital Notebook folder within your team's folder.
Final Rigging Plan Submission	March 16, 2027 by 5:00pm	Submitted in the team's designated Google Drive folder
Competition Day	March 18, 2027	The event will be held at Nauticus in downtown Norfolk. It will be open to the public.

Team Changes & Withdrawals
Teams are expected to maintain their registered team membership throughout the challenge season. The Digital Ship Challenge recognizes that circumstances may arise that require changes to team participation.

Team Member Changes: Any changes to registered team members must be communicated to the Digital Ship Challenge organizers by the team's teacher/advisor. Students may not independently switch teams or divisions. Requests to add, remove, replace, or transfer team members will be reviewed based on the timing of the request and applicable team requirements.

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Division Changes: Teams wishing to change divisions must contact the Digital Ship Challenge organizers for approval. Division changes may be limited after challenge materials, mentors, standardized components, or other division-specific resources have been assigned.
Team Withdrawal: If a team is no longer able to participate in the Digital Ship Challenge, the teacher/advisor must notify the Digital Ship Challenge organizers by the published withdrawal deadline. Timely notification allows competition planning, mentor assignments, materials, schedules, and event logistics to be adjusted accordingly.

Changes requested after published deadlines may not be accommodated.

1.2 Team Expectations
Participation in the Digital Ship Challenge is intended to reflect the collaborative nature of today's maritime industry. Teams are expected to work together throughout the challenge season while demonstrating professionalism, effective communication, and steady progress toward completing the challenge.

Team Composition

- Teams must consist of 2-4 students
- Individual schools will determine how teams are selected
- Each team must have a teacher or advisor who serves as the primary point of contact throughout the challenge season
- Students may participate in one Digital Ship Challenge team during the challenge season
- Students may compete in only one division

School Participation

- Schools may register multiple teams
- Schools may participate in multiple divisions
- There is currently no limit to the number of teams a school may register within a division

Team Commitment
The Digital Ship Challenge is designed as a season-long experience that mirrors the development of professional maritime projects. Teams are expected to remain actively engaged throughout the challenge season and complete all required Checkpoints and other required challenge deadlines.

Throughout the challenge season, teams are expected to:

- Participate actively throughout the challenge
- Complete all required Checkpoints as stated
- Maintain accurate division documentation
- Monitor the DSC Change Log and incorporate applicable updates
- Demonstrate professionalism in all communications and presentations
- Follow all competition rules and safety requirements

Student Work & Outside Assistance
Teams may seek guidance, feedback, instruction, and technical advice from teachers, advisors, mentors, industry professionals, and other resources throughout the challenge season. However, all competition deliverables and evaluated work must be completed by registered student team members. Outside assistance should support student learning and decision-making, not complete the work on behalf of the team.

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Artificial Intelligence (AI)
Artificial intelligence (AI) tools may be used to support learning, brainstorming, proofreading, or formatting when permitted by the team's teacher or advisor. However, AI may not be used to generate the team's design, documentation, software, presentation, or other competition deliverables. All submitted work must accurately reflect the team's own thinking, decision-making, and original work.

Safety
Safety is a shared responsibility throughout the Digital Ship Challenge. Teams are expected to follow appropriate safety practices during development, construction, testing, transportation, and Competition Day. Tools, materials, equipment, and technology should be used with appropriate supervision and in accordance with school policies, manufacturer guidance, and all published challenge requirements.

1.3 Industry Mentors

Throughout the Digital Ship Challenge, teams will have the opportunity to work with an industry mentor. Mentors are maritime professionals who can provide guidance, feedback, and an industry perspective as your team works through the challenge.

Your mentor is a resource for your team, not a member of the team completing the challenge for you. The purpose of mentorship is to help you think through problems, ask questions, consider different approaches, and learn more about how similar challenges are approached in the maritime industry.

Your Mentor May:

- Ask questions that help your team think through ideas and decisions
- Provide feedback on designs, plans, testing, and challenge progress
- Share relevant professional experiences, industry practices, and career pathways
- Suggest topics, tools, processes, or resources for your team to research
- Help your team identify potential problems or considerations you may have overlooked

Your Mentor Should Not:

- Design or build your team's solution
- Complete calculations, drawings, code, documentation, or other deliverables for the team
- Make project decisions for your team
- Complete work that will be submitted or evaluated as part of the competition

Remember: Your mentor may not have expertise specific to every aspect of your challenge, and that is okay. Mentors bring valuable professional experience, problem-solving skills, and knowledge of the maritime industry. Your team is responsible for asking questions, seeking feedback, and making the most of the mentorship experience.

Make the most of your mentor meetings. Come prepared with an update on your team's progress, questions you would like to discuss, and specific areas where you would like feedback. Your mentor meetings are most valuable when your team is prepared to lead the conversation.

1.4 Communication & DSC Change Log

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Official Communication
All official announcements will be communicated through the Digital Ship Challenge website or emailed to the team's teacher or advisor.

Teachers and advisors are responsible for sharing important updates with their teams and ensuring students remain informed throughout the challenge season.

Questions regarding the challenge should be directed to the Digital Ship Challenge organizer using the contact information provided on page two of this guide or on the Digital Ship Challenge website.

DSC Change Log
The Division Guide may be updated throughout the challenge season to clarify requirements, correct errors, or communicate important changes. This will be done through the DSC Change Log.

Teams are responsible for reviewing the DSC Change Log and ensuring that they are using the most current version of the Division Guide throughout the season. We recommend checking for updates prior to each Checkpoint and before Competition Day.
When updates are made:

- The DSC Change Log will be updated describing the change
- The revised Division Guide will be posted on the Digital Ship Challenge website

2. Checkpoints

The Digital Ship Challenge is designed as a season-long experience that encourages teams to make consistent progress throughout the challenge season. Rather than completing the challenge just before Competition Day, teams will complete a series of checkpoints that document their work, decision-making, and demonstrate progress toward the final competition.

Each checkpoint focuses on a different stage of the project and contributes to the team's overall competition score. While the specific checkpoint requirements vary by division, all teams are expected to submit their work by the published deadlines.

Partial points are not awarded for checkpoints. If a submission does not meet the required checkpoint criteria or is not submitted by the published deadline, the team will not receive points for that checkpoint.

Before beginning hands-on work with the standardized rigging kit, Skilled Trades Division teams will complete the Research & Rigging Fundamentals document. This research is designed to build foundational knowledge of the maritime rigging trade, and the principles teams will apply throughout the Skilled Trades Division challenge.

Teams will document their research, responses, calculations, diagrams, and conceptual rigging plan directly within their Digital Notebook. The Research & Rigging Fundamentals document should be used as a guide for completing this work and does not need to be submitted as a separate document.

Following the completion of the Research & Rigging Fundamentals document, teams will begin applying their knowledge through hands-on planning, practice, evaluation, and refinement using the standardized rigging kit.

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2.1 Submission Process

All checkpoint requirements should be documented within the team's Digital Notebook. Teams will maintain one continuous Digital Notebook throughout the challenge season and update it to reflect the work required for each checkpoint. The Digital Notebook must be accessible through the team's designated Google Drive folder by each published checkpoint deadline. See Section 4: Digital Notebook for additional requirements and guidance.

Each submission should accurately reflect the team's progress at that stage of the challenge season. Organizers may review documentation, revision history, and supporting materials as part of the evaluation process to verify continued progress throughout the season.

2.2 Evaluation

Checkpoints are evaluated to measure each team's progress throughout the season rather than the completeness of their final solution.

Evaluators will review each submission using the criteria outlined for that checkpoint and determine whether the team has demonstrated appropriate progress for that stage of the project. Teams may also receive feedback if evaluators identify major concerns.

Following each checkpoint evaluation, updated team scores will be shared in the team's Google Drive so teams can monitor their progress.

2.3 Checkpoint Timeline

Checkpoint Date and Time	What needs to be submitted	Points
Review Challenge and Overview of Digital Notebook **October 7, 2026 11:59pm**	Initial section of the digital notebook including: • Title Page with team name and school • Table of contents page • Challenge Interpretation and problem summary • Preliminary team roles and schedule	10
Rigging Fundamentals and Initial Planning **November 4, 2026 11:59pm**	Notebook Updates • Completed responses & supporting evidence for all required research areas of the Research & Rigging Fundamentals document • Required calculations, diagrams, illustrations • Final conceptual rigging plan • Sources used throughout the research	10
Mid-Year Review **December 17/18, 2026 Time TBD**	In-person attendance at the mid-year workshop. Bring to the event: • Planning rigging approach • Talking points/questions for division Q & A and Maritime Connect (see section 2.4 for more detailed information)	25
Rigging Plan and Initial Practice **January 13, 2027 11:59pm**	Notebook Updates • Documented rigging configuration/sequence • Team responsibilities • Communication	20

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	• Hazards/control • Initial hands-on practice	
Practice, Evaluation, Refinement **February 3, 2027 11:59pm**	Notebook Updates • Evidence of practicing the required movement sequence • Observations/results • Problems encountered/changes made Include photos or video clips of prototype rigging practice	20
Competition Readiness **February 24, 2027 11:59pm**	Notebook Updates • Refined rigging approach • Successful practice of complete sequence Ensure all constraints are met	10
Professional Poster Submission **March 1, 2027 5:00pm**	Online submission of the Professional Poster for printing	10

Presentation Preparation
 	
March 10, 2027 11:59pm
	Presentation outline submitted
	• Prepare for your oral presentation (7-10 minutes)
	  • Must include information from notebook, rigging approach, practice and refinement, and final competition approach
	  • Practice answering judging questions
		10

Digital Notebook Submission **March 12, 2027 5:00 pm**	All Divisions: Online submission of Digital Notebook	10
Final Rigging Plan Submission **March 16, 2027 5:00pm**	Submission of the Final Rigging Plan	10
Digital Ship Challenge **March 18, 2027 Time TBD**	In person event at Nauticus	N/A

2.4 Mid-Year Review

The Mid-Year Review provides teams with an opportunity to ask questions, clarify challenge requirements, and connect directly with maritime industry professionals midway through the challenge season. The event is designed

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to help teams strengthen their understanding of the challenge and gain industry perspective as they continue their work.

During the Mid-Year Review, teams will participate in two activities:

Division Question & Answer Session
Teams will participate in a division-specific question and answer session focused on the challenge, technical requirements, and other division-related topics. Teams should review their progress and challenge materials prior to the event and arrive prepared with questions they would like addressed.

Maritime Connect
Teams will interact with industry partners connected to their division to learn more about the maritime industry careers, organizations, and the real-world work related to their challenge. Students should come prepared with questions for industry partners and be ready to engage in professional conversations.

Teams are expected to arrive prepared with questions for both the Division Question & Answer Session and Maritime Connect. Additional event schedules and participation details will be provided prior to the Mid-Year Review.

3. Professional Approach

Skilled trades professionals use structured work processes to complete tasks safely, efficiently, and to a high standard of quality. While specific procedures vary by trade and job, professionals begin by understanding the work to be completed, planning their approach, preparing the work area and equipment, performing the task, inspecting and evaluating their work, and communicating throughout the process.

Throughout the Skilled Trades Division, your team will use the Professional Work Process to guide the planning, practice, evaluation, and refinement of your rigging operation.

3.1 Professional Work Process

Skilled trades professionals follow a structured work process to complete projects safely, efficiently, and to a high standard of quality. Whether constructing a vessel, installing equipment, fabricating components, or performing repairs, successful professionals begin by understanding the job, planning their work, preparing the work area, completing the task, inspecting the finished work, and communicating with others throughout the project.

While every trade and organization may follow slightly different procedures, the fundamental principles remain the same. Throughout the Skilled Trades Division, your team is encouraged to use this Professional Work Process to guide decisions, document progress, and continuously improve your work throughout the challenge season.

3.2 Applying the Professional Work Process

Throughout the Digital Ship Challenge, your team will encounter many of the same decisions faced by skilled trades professionals. From understanding project requirements and planning the work to completing tasks safely, evaluating quality, and refining your approach, the Professional Work Process provides a framework for approaching each stage of the challenge. While every team will develop its own solution, the examples below illustrate how the Professional Work Process can be applied throughout the Skilled Trades Division.

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Professional Work Process	Application to the Skilled Trades Division
Understand the Job	Review the Division Brief and Division Guide to understand the challenge, required movement sequence, challenge environment, standardized equipment, safety expectations, and other requirements and constraints
Plan the Work	Develop a plan for completing the rigging operation. Determine the rigging configuration, sequence of movements, team responsibilities, communication procedures, and how the cargo will remain controlled throughout the operation.
Prepare	Review the planned rigging configuration, inspect equipment as appropriate, organize the work area, confirm team responsibilities, and ensure the team is prepared before beginning the operation.
Perform	Carry out the planned rigging configuration using the standardized equipment while demonstrating appropriate equipment use, load control, communication, teamwork, and safe work practices.
Inspect & Improve	Evaluate the team's performance during practice, identify problems or opportunities for improvement, and make adjustments to the rigging configuration, sequence, communication, or team approach.
Communicate	Document the team's planning, practice, observations, decisions, and improvements in the Digital Notebook. Be prepared to explain the team's rigging approach and the reasoning behind key decisions.

Successful skilled trades professionals rarely complete a project perfectly on the first attempt. They rely on careful planning, teamwork, quality workmanship, inspection, and continuous improvement to deliver successful results. Throughout the Digital Ship Challenge, don't be afraid to evaluate your work, learn from challenges, and refine your approach as you develop your solution.

4. Digital Notebook

Throughout the challenge season, your team will maintain a Digital Notebook using Google Slides that documents the development of your work from your initial understanding of the challenge through your final preparation for Competition Day.

Your Digital Notebook should demonstrate how your team researched, planned, practiced, evaluated, and improved its approach throughout the challenge season, not simply what you completed. It should provide judges with a clear understanding of your team's process, the decisions your team made, and how your rigging approach developed throughout the challenge season.

A strong Digital Notebook is:

- Accurate: represents your team's work and decision-making throughout the season
- Organized: uses clear section headings, logical organization, and consistent formatting

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- Complete: includes the information needed to understand your team's planning, rigging approach, practice, evaluation, and progress throughout the challenge season
- Evidence-Based: supports decisions with research, calculations, observations, practice results, and other relevant evidence
- Professional: communicates ideas clearly using appropriate sketches, drawings, photographs, videos, tables, and diagrams

Your Digital Notebook is a living document and should be updated throughout the challenge season. Teams will use one continuous Google Slides presentation for their Digital Notebook throughout the challenge season. Checkpoint requirements should be completed and documented within the Digital Notebook, which will serve as the primary evidence reviewed during each Checkpoint and will also support final judging. See Section 2: Checkpoints for specific Checkpoint requirements, deadlines, and evaluation procedures.

4.1 Recommended Digital Notebook Organization

Your Digital Notebook should tell a story from your initial understanding of the challenge through your final preparation for Competition Day. A clear and organized Digital Notebook makes it easier to communicate your team's research, planning, rigging approach, practice, evaluation, and improvements. While teams have flexibility in how they organize their Digital Notebook, the following structure is recommended to help ensure all major aspects of the project are documented in a logical and professional manner.

Section	Purpose
Title Page	Digital Ship Challenge 2027, Division Name, Team Name, School, Teacher/Advisor, Team Members
Table of Contents	Organized navigation for the notebook
Challenge Interpretation	Your team's understanding of the challenge, requirements, constraints, and goals
Project Planning	Team roles, project schedule, milestones, meeting notes, planning documents
Research & Rigging Fundamentals	Completed responses, calculations, diagrams, illustrations, and supporting evidence from the Research & Rigging Fundamentals document, including the initial conceptual rigging plan. This section should demonstrate your team's understanding of fundamental rigging principles and how they apply to the challenge.
Rigging Plan	Your team's developing rigging plans, including configurations, equipment arrangements, movement sequences, team responsibilities, communication procedures, safety considerations, and reasoning behind key decisions Document how your approach develops and changes after receiving the standardized rigging kit.
Safety Planning	Identified hazards, planned controls, safe work practices, stop-work procedures, personnel positioning, and other safety considerations for the team's rigging operation. Teams must identify the personal protective equipment (PPE) that would be appropriate for their planning rigging operation in a professional maritime

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	or shipyard environment. For each item, teams must explain its purpose and the hazards it helps protect against.
Practice & Evaluation	Photos, videos, observations, calculations, and practice results documenting your team's rigging activities. Include challenges encountered, evaluation of the team's rigging approach, and analysis of what worked, what did not work, and why.
Improvements & Refinement	Changes made to the rigging configuration, sequence, team roles, communication, or other aspects of the approach and the reasoning behind those changes
Competition Readiness	Documentation of your team's final planned rigging approach, equipment configuration, movement sequence, team responsibilities, communication procedures, and safety considerations in preparation for Competition Day.
Appendix	References (APA format), photos, videos, additional calculations, diagrams, and other supporting materials

The Digital Notebook will be evaluated on the completeness, accuracy, and quality of your team's research, planning, documentation, practice, evaluation, and improvements throughout the challenge season. Judges will look for evidence of how your team applied rigging fundamentals, made technical decisions, addressed safety considerations, and refined its approach based on practice and feedback. The recommended notebook organization is intended as a guide; teams may organize their work differently as long as all required content is included.

4.2 Supporting Evidence

Your Digital Notebook should include supporting evidence that helps communicate your team's work. Examples include but are not limited to:

- Research notes and sources
- Rigging sketches and diagrams
- Equipment information
- Center-of-gravity calculations
- Sling angle/tension calculations
- Mechanical-advantage calculations
- Lift plans
- Hazard identification and safety planning
- Communication procedures
- Photographs and videos of practice
- Practice observations and results
- Comparisons of different rigging configurations or approaches
- Notes documenting problems and adjustments
- Project schedules

Supporting evidence should demonstrate how your team used information to understand the challenge, plan its rigging operation, practice and evaluate its approach, and make improvements throughout the challenge season.

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Teams are not expected to include every type of evidence listed above; evidence should be included when it helps demonstrate your team's understanding, planning, decisions, practice, or progress.

4.3 Submission Requirements
The Digital Notebook serves as the official record of your team's work throughout the challenge season. Teams are responsible for maintaining their Digital Notebook, ensuring it is accessible throughout the season and submitting it by the published deadline. All work completed through the Research & Rigging Fundamentals document should be documented within the team's Digital Notebook and does not need to be submitted as a separate document.

- The Digital Notebook must be created using Google Slides.
- Each team will be provided with a dedicated Google Drive folder for maintaining their Digital Notebook and any supporting files throughout the challenge season.
- The Digital Notebook should be maintained as one continuous document throughout the challenge season rather than creating a new Digital Notebook for each checkpoint.
- Teams are encouraged to update their Digital Notebook regularly as work is completed rather than waiting until checkpoint deadlines or final notebook submission.
- The Digital Notebook must remain accessible in the Google Drive folder to the Digital Ship Challenge organizers throughout the challenge season.
- Teams are responsible for ensuring that all linked files, videos, and supporting documents have the appropriate sharing permissions prior to submission.
- The final Digital Notebook must be submitted by the deadline listed in the challenge timeline.
- Any external resources used to support the challenge, including research, reference materials, images, or other published content, must be properly cited.

The Digital Notebook is expected to reflect continuous work throughout the challenge season. Digital Ship Challenge organizers may review document revision history and other available version history tools as part of the checkpoint evaluation process to verify ongoing project development.

The Digital Ship Challenge is a student-centered competition. All work submitted throughout the challenge season must be completed by the student team. Teachers, mentors, parents, and other supporters may coach, encourage, and provide guidance throughout the challenge season, but the ideas, decisions, documentation, and final deliverables must be created by the student team.

Student teams are expected to:
- Develop and document their own ideas and solutions
- Conduct their own research, testing, and analysis
- Create their own project documentation, presentations, and competition materials
- Accurately represent the work completed by the team throughout the challenge season

4.5 Final Rigging Plan
Each team must submit its Final Rigging Plan by March 16, 2027 at 5:00pm. The Final Rigging Plan should represent the rigging approach the team intends to use during its Demonstrated Performance on Competition Day. The required rigging plan format is provided in Appendix B.

4.6 Digital Notebook Scoring
The Digital Notebook is worth 125 points and will be evaluated using the Digital Notebook Scoring Rubric.

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The rubric includes nine criteria, each with a designated maximum point value. A judge will evaluate the quality, completeness, and clarity of your documentation using five performance levels: Exemplary, Proficient, Developing, Beginning, and Not Evident.

Point values vary by criterion. Teams should review the scoring rubric throughout the challenge to ensure their notebook clearly documents their research, rigging plan, key decisions, preparation and testing, safety considerations, execution, evaluation, and improvements.

The completed scoring rubric is provided in Appendix C.1.

5. Professional Poster and Team Presentation

Communicating information clearly and professionally is an essential skill across the maritime industry. Maritime professionals regularly present their work to clients, project managers, leadership teams, stakeholders, and colleagues to explain their approach, share findings and results, and support decisions and recommendations.

As part of the Digital Ship Challenge, each team will develop a professional-style poster and deliver a professional presentation summarizing their work throughout the challenge season. Together, these components should communicate the team's approach to the challenge, key decisions, supporting evidence, findings, and progress throughout the challenge season.

5.1 Professional Poster

Each team will create a professional poster that visually communicates the development of their vessel design throughout the challenge season. The poster should summarize the team's work in a clear, organized, and engaging format while highlighting the most important aspects of the project. The poster will serve as the primary visual aid during the team presentation and will be displayed throughout the Competition Day.

A successful poster should:

- Clearly communicate your team's design journey from initial understanding and concept development through the final vessel
- Highlight the process used throughout the division challenge.
- Present information in a logical and visually organized manner
- Include relevant graphics, photographs, technical drawings, research findings, calculations, and/or testing data that support your work.
- Be readable from several feet away using concise text and effective visuals.
- Demonstrate professionalism through consistent formatting and visual design.

To promote consistency while allowing for creativity, an official professional poster template will be provided in each team's Google Drive folder. The template will include recommended content sections, formatting guidance, technical specifications, and design best practices to support the development of a professional-quality poster. Each team must submit a digital copy of their professional poster by the published deadline that follows the submission requirements. Posters will be professionally printed by the Digital Ship Challenge organizers and displayed throughout Competition Day. Posters should be carefully reviewed prior to submission, as revisions will not be accepted after the submission deadline.

5.2 Professional Poster Requirements & Printing Policy

All Professional Posters must meet the following technical specifications:

- Size: 36 inches wide by 24 inches tall (landscape orientation)

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- File Format: PDF
- Margins: Important text and graphics must remain at least 0.5 inches from the poster edges.
- Content: All required content identified in the Professional Poster Scoring Rubric must be included
- Readability: Text, images and graphics must be clear and readable when printed at full size.

Teams are encouraged to customize the layout, colors, graphics, and overall visual design while maintaining readability and a professional appearance.

Content & Printing Policy
All posters must be school-appropriate, professional, and suitable for public display. Posters containing any of the following will not be printed:

- Inappropriate or offensive images, graphics, language, or gestures.
- Profanity, sexually explicit content, discriminatory language, or hateful imagery.
- References to drugs, alcohol, tobacco, or other inappropriate material unrelated to the challenge.
- Content that mocks, targets, or disrespects individuals, schools, organizations, or groups.
- Images, logos, or other materials used without appropriate permission, authorization, or other lawful basis.
- Personal or sensitive information about students or other individuals.

All content must be relevant to the team's project and accurately represent its work. Sources and externally created materials should be appropriately credited. AI-generated content and images must be used responsibly, appropriately credited, and must not misrepresent the team's work or accomplishments.

Review & Submission
Each team's teacher must review the completed poster before submission to ensure it meets all technical specifications, content expectations, and printing requirements.

The final poster must be submitted as PDF file to the designated Google Drive folder by the published deadline. The submitted PDF must contain only the completed poster, not the template instructions.

The Digital Ship Challenge organizers reserve the right to reject posters that do not meet the established requirements. Posters that are not submitted by the published deadline or do not meet the requirements for printing will not be displayed and may receive a score of zero for the Professional Poster component.

5.3 Professional Poster Scoring
The professional poster is worth 80 points and will be evaluated using the Professional Poster Scoring Rubric.

Judges will evaluate how effectively the poster communicates the team's rigging plan, key decisions, planning and preparation process, testing and evaluation, improvements, and final rigging solution. Emphasis will be placed on the clarity, organization, and quality of the information presented rather than the amount of content included.

The completed scoring rubric is provided in Appendix C.2.

5.4 Team Presentation
Communication is an essential skill across the maritime industry. Maritime professionals regularly present their work to clients, stakeholders, leadership teams, and colleagues to explain their approach, communicate findings and results, and support decisions and recommendations.

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As part of the Digital Ship Challenge, each team will deliver a 7–10-minute professional presentation summarizing their work throughout the challenge season. Using their professional poster as the primary visual aid, teams should communicate their understanding of the challenge, design approach, key design decisions, supporting evidence, and results. Following each presentation, judges will have five minutes to ask questions about the team's work. This question-and-answer period is separate from the 7-10 minute presentation and does not count toward the presentation time. Every team member should be prepared to participate in the team presentation.

Successful presentations should:

- Clearly explain the team's understanding of the challenge
- Describe the professional process or approach used throughout the challenge.
- Explain the team's rigging approach and highlight key technical decisions and the reasoning behind them
- Use relevant research, calculations, practice results, observations, or other evidence to support design decisions.
- Analyze the team's performance during the demonstrated performance, including successes, challenges, and how the results informed potential improvements or refinements.
- Communicate the development and final outcome of the team's rigging approach, including equipment configuration, movement sequence, load control, and safety considerations.
- Reflect on the contributions of all team members.

Presentation Requirements:

- Presentation length must be 7-10 minutes.
- The professional poster will serve as the primary visual aid.
- All team members must participate meaningfully in the presentation.
- Professional attire is encouraged.
- Teams will complete their rigging operation before their scheduled presentation and should be prepared to discuss their rigging plan, execution, performance, safety considerations, and findings with the judges.

Each team will be assigned a presentation time and location for Competition Day. The official presentation schedule will be distributed to teachers and advisors by the published deadline. Teams are responsible for arriving at their assigned presentation location on time and prepared to present.

Presentation Timing & Penalties
Presentations must be between 7 and 10 minutes. The five-minute judges' question-and-answer period is separate and does not count toward the presentation time.

Presentations that fall outside the required time window will receive a point deduction from their Team Presentation score according to the following schedule:

6. Presentation Duration	Point Deduction
7-10 minutes	No deduction
For every minute over or under the 7–10-minute requirement, 5 points will be deducted.	

Presentations will begin promptly at their scheduled time. Late arrivals will not be guaranteed additional presentation time. Presentations will be stopped at 12 minutes to maintain the competition schedule. Timing deductions will be applied after the presentation rubric has been scored, with a minimum final Team Presentation score of zero.

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The complete scoring rubric is provided in Appendix C.3.

7. Division Challenge Requirements

The Skilled Trades Division challenges teams to plan and execute a rigging operation that simulates moving a piece of shipboard equipment through a constrained environment and into its final installation location. The following requirements define the equipment, challenge environment, required movements, safety expectations, and procedures teams must follow throughout the challenge. Teams are responsible for understanding these requirements and using them to plan, practice, evaluate, and refine their rigging approach throughout the challenge season.

Research & Rigging Fundamentals

Before receiving the standardized rigging kit, teams must complete the Research & Rigging Fundamentals document. This activity introduces students to the maritime rigging trade and the fundamental principles needed to plan and perform a safe and effective rigging operation.

Teams will research rigging equipment, working load limits, center of gravity, sling angles, mechanical advantage, load control, safety, and communication. Using this foundational knowledge, teams will also develop an initial conceptual rigging plan based on the challenge requirements.

All research responses, calculations, diagrams, and the initial conceptual rigging plan must be documented in the team's Digital Notebook. This work will be evaluated as part of the final Digital Notebook rubric.

The initial conceptual rigging plan is not expected to represent the team's final competition approach. Teams will develop and refine their plans after receiving the standardized rigging kit and beginning hands-on practice.

6.1 Functional Requirements

The rigging operation developed for the Skilled Trades Division must satisfy the following functional requirements. These requirements define the intended capabilities and outcomes of the rigging operation and should be considered throughout the planning, practice, testing, and refinement process. Teams have flexibility in how these requirements are achieved unless otherwise specified.

Requirement	Description
Purpose	Plan and execute a rigging operation that safely moves the standardized cargo from its designated starting position through the challenge environment and into the final installation zone.
Lift Planning	Develop and document a lift plan that identifies the rigging configuration, sequence of operations, team responsibilities, communication procedures, and planned approach for completing the rigging operation.
Safety Planning	Develop and document a safety plan that identifies potential hazards, appropriate controls, safe work practices, personnel positioning, and stop-work procedures for the rigging operation.
Load Control	Maintain positive control of the cargo throughout the rigging operation, including during lifting, travel,

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	rotation, transfer between lifting locations as applicable, and lowering. Sudden or uncontrolled drops of the cargo are considered a safety violation and will result in a scoring deduction.
Final Installation	Position the cargo within the designated installation zone in the correct orientation and level.
Professional Work Practices	Demonstrate appropriate equipment use, safe work practices, effective communication, teamwork, and professionalism throughout the rigging operation.

6.2 Technical Specifications

The following technical specifications define the standardized equipment, physical requirements, challenge environment, and operational parameters for the Skilled Trades Division. All teams must comply with these specifications unless otherwise noted. Teams should use these specifications when planning, practicing, and evaluating their rigging operation throughout the challenge season.

Specification	Requirement
Standardized Cargo	Teams must use the provided cargo box as the load for the rigging operation. The cargo box will contain a standardized load of 2 lbs. during the Demonstrated Performance. Teams will know the required load weight in advance; however, the actual weight will be placed in the cargo box on Competition Day. Teams are responsible for developing a method to stabilize the weight within the cargo box during the rigging operation. The stabilization method must allow the standardized weight to be placed into and removed from the cargo box by Competition Day officials. The cargo box lid must remain removeable and may not be permanently attached or glued shut.
Cargo Stability	The Digital Ship Challenge provided level must be securely mounted to the bottom of the cargo box and remain clearly visible to judges throughout the rigging operation. The level will be used by judges to evaluate cargo stability during designated portions of the Demonstrated Performance.
Challenge Environment	The dimensions and configuration of the challenge environment, including the starting position, installation zone, travel path, obstructions/openings, and available rigging points, are shown on the official challenge diagram in the Appendix A.
Starting Position	The cargo must begin in the designated starting position shown on the official challenge diagram.
Installation Zone	The cargo must be lowered and positioned within the designated installation zone shown on the official challenge diagram.
Obstacle Clearance	Teams must maneuver the suspended cargo box vertically through the designated obstacle opening

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	while maintaining control of the load. The cargo box and all rigging hardware must pass completely through the opening without contacting any part of the obstacle structure. Rigging rope is permitted to contact the obstacle during this movement. Teams must maintain the required load-control lines and demonstrate controlled movement throughout the obstacle-clearance operation.
Cargo Control	A minimum of two lines must remain attached to the cargo box at all times during the Demonstrated Performance to assist the team in maintaining positive control of the cargo.
Required Movement Sequence	The cargo must complete the following sequence during the rigging operation: 1. Lift vertically while maintaining a horizontal orientation until the bottom of the cargo box reaches a height of 22 inches. 2. Stop movement and allow the cargo to settle. Judges will evaluate whether the cargo is level. 3. Horizontal travel and rotate the cargo 90° to a vertical orientation. 4. Move the cargo vertically through the installed boundary obstacle without contacting the obstacle. 5. Once clear of the obstacle, rotate the cargo 90° to return to a horizontal orientation. 6. Stop movement and allow the cargo to settle. Judges will evaluate whether the cargo is level. 7. Move the cargo horizontally toward the designated installation zone while maintaining the cargo as close to level as possible. 8. Lower and position the cargo within the designated installation zone while maintaining a horizontal orientation.
Final Installation	At the completion of the rigging operation, the cargo must be fully positioned within the designated installation zone, returned to the required horizontal orientation, and level.
Available Rigging Points	Rigging points available to teams will be identified on the official challenge diagram. Teams may determine which available rigging points to use and are not required to use all available locations.
Standardized Rigging Kit	Teams will use the standardized rigging kit identified in Section 6.3.
Additional Equipment/Materials	Teams may not add or substitute rigging equipment, materials, or components beyond those provided in the standardized rigging kit. All equipment used to

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	complete the rigging operation must be provided by the Digital Ship Challenge organizers.
Equipment Modification	Equipment included in the standardized rigging kit may not be permanently modified, cut, drilled, altered, or damaged. Teams may configure, connect, route, and arrange the provided equipment as needed to complete their planned rigging operation, provided all equipment is used as intended and remains within its specified operating limits.
Equipment Inspection	The team's rigging system and equipment will be inspected on Competition Day prior to demonstrated performance. The specific inspection process and procedures will be provided in a future update to this guide.

6.3 Standardized Rigging Kit

Each team will receive a standardized rigging kit for use throughout the challenge season and on Competition Day. All teams will receive the same equipment and quantities.

Teams are responsible for learning how to properly use the equipment included in the kit and determining how to configure it to complete the required rigging operation. Teams are not required to use every piece of equipment provided. The kit includes a variety of equipment options, and teams are responsible for selecting the equipment appropriate for their planned rigging operation.

The Standardized Rigging Kit will include:

Equipment	Quantity
Polyester Rope	100 ft.
Pulleys	6
Zip Ties	35
M5 Safety Chain Quick Links	6
M6 Spring Snap Hooks Carabiner	6
Cargo Box	1
Shackles	8
Eye Bolts with Nuts	8
Level	1
Mesh Bag (Storage)	1

Materials for constructing a replica of the challenge structure are not included in the Standardized Rigging Kit. Teams may construct their own practice structure using the official challenge diagram and specifications.

All non-consumable equipment provided as part of the Standardized Rigging Kit must be returned on Competition Day after the team has completed its Demonstrated Performance and Professional Poster & Team Presentation.

6.4 Demonstrated Performance Procedures

On Competition Day, teams will use their planned rigging configuration and the standardized rigging kit provided to complete a simulated shipboard equipment movement within the designated challenge structure.

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The challenge structure includes side and overhead rigging locations, a designated starting position, an obstacle that must be navigated without contact, and a final installation zone.

Teams must demonstrate controlled lifting, horizontal movement, load rotation, obstacle clearance, and accurate final placement while maintaining load stability and following appropriate safety and communication procedures.

The rigging operation will follow the required movement sequence outlined in Section 6.2. Teams must complete the operation using only permitted equipment and within the established challenge boundaries.

Judges will evaluate the team's demonstrated performance based on completion of the requirement movements, load control, accuracy, safety, and teamwork. Specific scoring criteria are provided in Appendix C.4.

Required Rigging Movement Sequence
Teams must complete the following sequence using their planned rigging configuration and the standardized rigging kit provided. Throughout the operation, teams must maintain control of the suspended cargo and follow appropriate safety and communication procedures.

1. Initial Vertical Lift: Lift the cargo box vertically from its designated starting position while maintaining a horizontal orientation until the top of the cargo box reaches the required height of 22 inches (bottom of the cargo box)
2. First Level Check: Stop all movement and allow the cargo box to settle. Judges will verify that the cargo box is level using the provided level.
3. Horizontal Movement & Rotation: Move the suspended cargo horizontally toward the obstacle and rotate it 90 degrees from a horizontal to a vertical orientation.
4. Obstacle Clearance: Maneuver the cargo box vertically through the designated obstacle opening. The cargo box and all rigging hardware must pass through without contacting the obstacle. Only rigging rope is permitted to contact the obstacle.
5. Return to Horizontal: After clearing the obstacle, rotate the cargo box 90 degrees from a vertical back to a horizontal orientation.
6. Second Level Check: Stop all movement and allow the cargo box to settle. Judges will verify that the cargo box is level using the provided level.
7. Final Horizontal Movement: Move the suspended cargo horizontally toward the designated installation zone while maintaining a level and controlled orientation.
8. Final Installation: Lower the cargo box into the designated installation zone. The cargo box must be positioned entirely within the zone in a horizontal and level orientation.

Throughout the operation, at least two load-control lines must remain attached to the cargo box. Teams must demonstrate controlled movement, effective communication, and adherence to all established safety requirements.

Rigging Attachment Points
Teams may attach and configure their rigging equipment using any of the existing designated attachment points on the challenge structure. Teams may use multiple attachment points and move or reconfigure their rigging equipment during the demonstrated performance as needed to complete the required movement sequence.

Teams may not create additional attachment points, modify the challenge structure, or attach rigging equipment to locations that are not designated for rigging.

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All adjustments must be performed safely while maintaining control of the cargo.

Demonstration Setup & Preparation
Teams will be assigned a designated time to complete their rigging demonstration on Competition Day. During this period, teams will install their planning rigging configuration using the standardized rigging kit and prepare the cargo box for the required movement sequence.

Teams must complete their setup and rigging demonstration within the allotted time. The final time limit and procedures for setup, inspection, and demonstration will be communicated before Competition Day.

Before beginning the demonstration, teams must ensure their rigging equipment is properly configured, the cargo is secured, and all required safety and communication procedures are established.

Safety & Communication Requirements
Safety, load control, and effective communication are essential throughout the rigging demonstration. Teams are expected to apply safe work practices during setup, operation, and completion of the challenge.

Equipment & Load Control
- Teams must use only the permitted rigging equipment and follow all equipment restrictions.
- At least two load-control lines must remain attached to the cargo box throughout the operation.
- Teams must maintain at least two effective tension points throughout the operation.
- Teams must maintain control of the suspended cargo during lifting, movement, rotation, and final placement.
- Teams must inspect their rigging configuration and equipment before beginning the demonstration.

Personnel Safety
- Team members must remain clear of suspended loads and avoid positioning themselves beneath the cargo.
- Team members must recognize and avoid pinch points, line-of-fire hazards, and other unsafe positions.
- Team members must not use their hands or bodies to stop or support an uncontrolled suspended load.

Communication
- Teams must establish clear roles and communication procedures before beginning the operation.
- One designated team member should direct cargo movement to avoid conflicting instructions.
- All team members must understand the commands used to start, stop, and control movement.
- Any team member may call for an immediate stop if an unsafe condition is identified.

Stop-Work Procedures
- Teams must stop the operation immediately if an unsafe condition develops, control of the cargo is lost, or a stop command is given.
- Teams must identify and address the condition before resuming work.
- Judges or competition officials may stop an operation if they observe an unsafe condition.

Cargo Box Requirements
- The cargo box must remain upright throughout the operation, including when transitioning horizontal and vertical orientations. (this means that the cargo box cannot roll over or invert unintentionally)
- The top of the cargo box must remain accessible and may not be permanently sealed or secured shut.

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Adjustments & Reconfiguration
Teams may make adjustments to their rigging configuration during the demonstrated performance as needed to complete the required movement sequence. All adjustments must be performed safely while maintaining control of the suspended cargo.

Teams will be evaluated on how closely their demonstrated rigging operation follows their submitted Final Rigging Plan. Adjustments or changes that deviate from the submitted plan will result in point deductions.

The cargo box must remain suspended throughout the operation. Teams may not lower or rest the cargo box on the platform or another supporting surface during adjustments or reconfiguration.

Attempts & Restarts
Each team will receive one scored demonstration attempt. Teams may pause, troubleshoot, and make adjustments during their allotted demonstration time but may not restart the operation from the beginning.

Additional Competition Day information, including event schedules, team check-in procedures, venue maps, and other logistical details, will be provided prior to Competition Day.

The completed scoring rubric is provided in Appendix C.4.

8. Competition Readiness
Competition Day is the culmination of the Digital Ship Challenge season. Throughout the day, teams will participate in scheduled activities, including the Professional Poster & Team Presentation and the division-specific Demonstrated Performance.

Each team will receive a Competition Day schedule identifying their assigned times and locations. All teams are strongly encouraged to remain through the conclusion of the event and attend the Awards Ceremony. The ceremony is an important part of the Digital Ship Challenge experience, providing an opportunity to celebrate team accomplishments and recognize award recipients across all divisions.

Before arriving on Competition Day, teams should review the following checklist to ensure they have completed all required submissions, verified compliance with the technical specifications, and are fully prepared to participate. Take time to confirm each item before arriving to help prevent unnecessary issues during the competition.

Project Deliverables
- ☐ All required checkpoints have been submitted
- ☐ The Digital Notebook is complete and submitted by the published deadline
- ☐ The Professional Poster has been submitted by the published deadline
- ☐ The Final Rigging Plan has been submitted by the published deadline
- ☐ The team presentation has been prepared and practiced

Rigging Operation Readiness
- ☐ The team's planned rigging operation complies with all technical specifications and challenge requirements
- ☐ The team has practiced the complete required movement sequence prior to Competition Day
- ☐ The team's lifting structure and any additional equipment are prepared for transport, setup, and use on Competition Day

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- ☐ The team has established and practiced team roles and communication procedures
- ☐ The team has reviewed its safety plan and understands identified hazards, controls, and stop-work procedures
- ☐ The team has inspected the equipment included in the Standardized Rigging Kit and confirmed that all required components are present and ready for use

Team Readiness

- ☐ All team members understand their presentation roles
- ☐ The team has reviewed the competition procedures
- ☐ The team has reviewed all published change log updates
- ☐ The team knows its assigned presentation and competition schedule

Equipment Return

- ☐ All non-consumable equipment from the Standardized Rigging Kit will be brought to Competition Day and returned after the team has completed its Demonstrated Performance and Professional Poster & Team Presentation.

Teams are responsible for arriving on Competition Day prepared to compete. Failure to meet published deadlines, submit required materials, or comply with the technical specifications and safety requirements may result in scoring deductions or other consequences as outlined in the Division Guide. **Teams are encouraged to complete this checklist several days before the competition to allow time to address any outstanding items.**

9. Judging

The Digital Ship Challenge evaluates more than the final demonstrated performance. Judges consider each team's planning, project development, technical execution, communication, and professionalism throughout the competition. Successful teams demonstrate thoughtful preparation, effective teamwork, quality workmanship, and the ability to explain the decisions made throughout their project.

Teams will be evaluated on the following

Checkpoints	Evaluates the team's progress throughout the challenge season and completion of required checkpoint submissions
Digital Notebook	Evaluates how effectively the team documents its research, planning, decision-making, practice, evaluation, refinement, and preparation throughout the challenge season
Professional Poster & Team Presentation	Evaluates the team's ability to professionally communicate its approach, key decisions, supporting evidence, practice and refinement, and overall challenge experience
Demonstrated Performance	Evaluates the team's execution of the division challenge, including completion of the required movement sequence, cargo stability and control, level checks, final installation, safe work practices,

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	communication, teamwork, and other performance criteria established in this guide
Professionalism	Teamwork, preparedness, organization, and respectful interaction with judges and event staff

Professionalism, teamwork, preparedness, and respectful interaction with judges, teams, and event staff are expected throughout the competition and will be evaluated within the applicable scoring rubrics.

Detailed judging rubric for each competition component is provided in Appendix C of this guide. Any subsequent revisions will be documented through the DSC Change Log.

Following the presentation and competition run, judges may ask questions to better understand the team's professional work process, rigging decisions, practice, and overall project development. Teams should be prepared to explain not only what they did, but why they made key decisions. Every team member should be prepared to participate in the discussion.

All judging decisions are final. Competition judges reserve the right to interpret competition rules and scoring procedures to ensure fair and consistent competition for all participants.

Successful teams typically:

- Demonstrate a clear and organized professional work process
- Use practice and evaluation results to refine their rigging approach
- Support rigging decisions with research, calculations, observations, and other evidence
- Demonstrate safe and controlled rigging practices
- Communicate confidently and professionally
- Work effectively as a team
- Balance safety, control, accuracy, and efficiency

10. Appendix A – Official Challenge Diagram

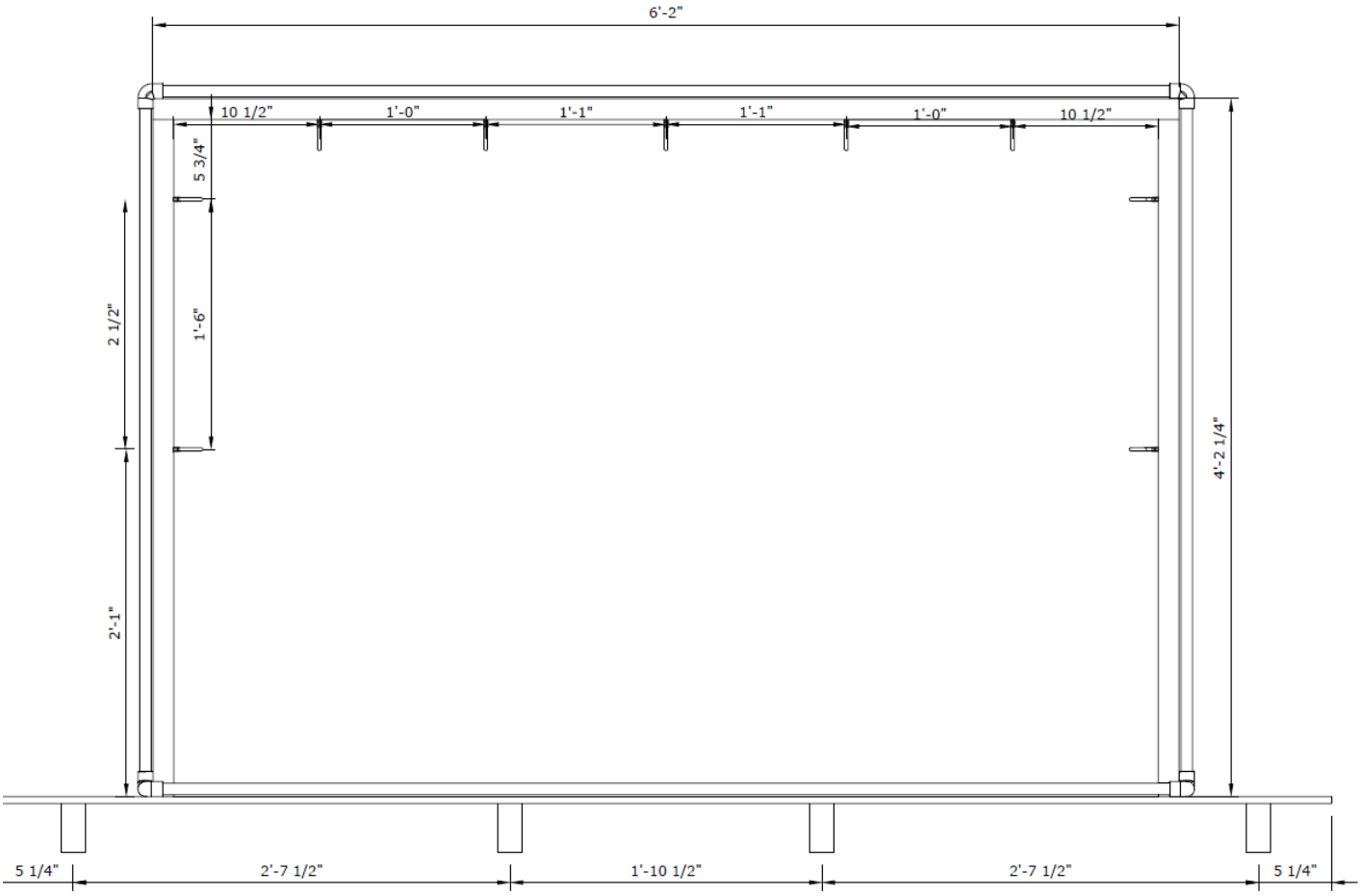
The diagrams illustrate the standardized rigging challenge structure that teams will use on Competition Day. Teams should use the dimensions, designated rigging locations, obstacle opening, and installation zone shown to develop and refine their rigging approach.

The cargo box and rigging hardware must pass through the obstacle opening without contact. Only rigging rope is permitted to contact the obstacle.

The instructions to build the cargo box are located in each team's Google Drive Folder.

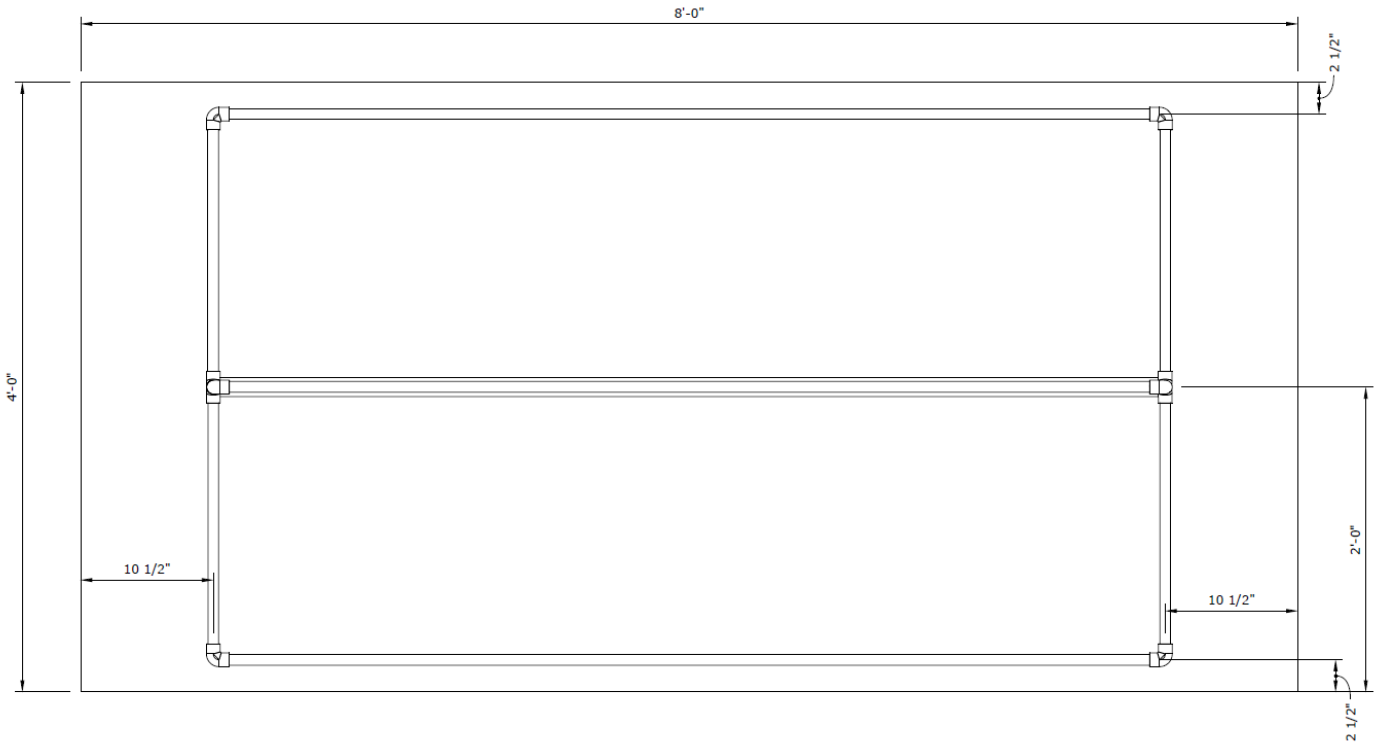
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Front View

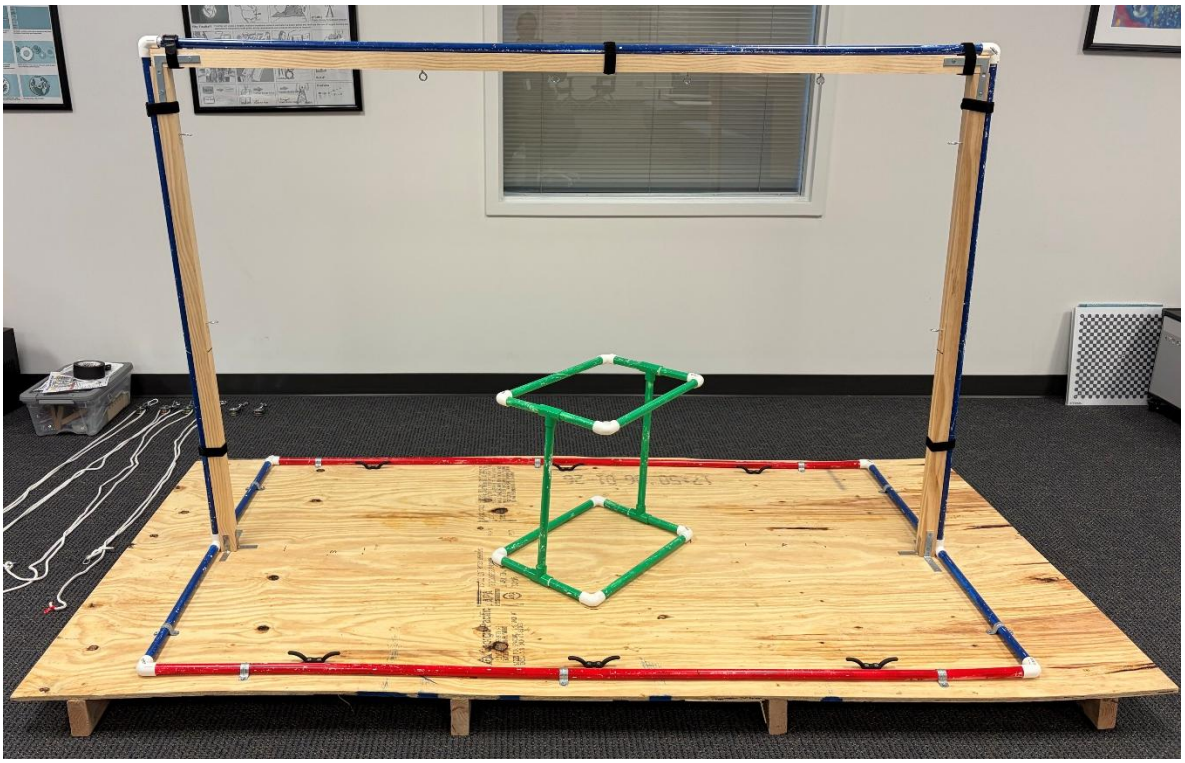


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Top View



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Materials list will be provided upon request.

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11. **Appendix B – Final Rigging Plan**

Each team must create and submit a separate Final Rigging Plan document using the sections and requirements outlined in this appendix. The Final Rigging Plan provides judges with an overview of your team's intended rigging configuration and operational approach for Competition Day. Your Final Rigging Plan must include all five sections outlined below and be submitted by March 16, 2027 at 5:00pm.

Team Information

School:
Team Name:

1. **Rigging Configuration**
   Provide a labeled drawing or diagram showing how your team plans to rig the cargo box. Identify the equipment used, planned method for stabilizing the standardized weight inside the cargo box, attachment points, lines, pulleys, shackles, and other components necessary to understand your configuration.

2. **Rigging Equipment**
   Include a table identifying the equipment your team plans to use during the Demonstrated Performance. For each item identify:
   - Equipment
   - Quantity Used
   - Purpose

3. **Planned Movement Sequence**
   Describe how your team plans to complete each stage of the required movement sequence. Address each of the following:
   - Initial Lift & First Level Check
   - Horizontal Movement
   - Rotation to Vertical
   - Movement Through Obstacle
   - Return to Horizontal & Level Check
   - Final Horizontal Movement
   - Lowering & Installation

4. **Team Roles**
   Identify each team member, their role, and what their primary responsibility during the Demonstrated Performance will be.

5. **Communication and Safety**
   Identify the primary commands/signals your team will use during the operation and describe the key safety practices your team will follow to maintain control of the cargo.

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12. Appendix C
C.1 Digital Notebook Scoring Rubric

Criteria	Exemplary	Proficient	Developing	Beginning	Not Evident
Title Page & Table of Contents (10 pts)	10 pts - Title page includes the challenge, school, team name, and all team members. Table of contents is complete, accurate, and makes every section easy to find.	8 pts - Title page includes nearly all required information. Table of contents is accurate with minor omissions.	6 pts - Title page or table of contents is incomplete, with several missing details or sections.	3 pts - Title page and table of contents contain minimal information and are difficult to use.	0 pts - Title page and table of contents are missing or do not provide usable information.
Challenge Understanding & Planning (10 pts)	10 pts - Shows a clear, detailed understanding of the challenge, goals, requirements, and constraints. Team roles, responsibilities, and planning are documented clearly and logically.	8 pts - Shows a solid understanding of the challenge, goals, requirements, and constraints. Team roles and planning are documented with minor gaps.	6 pts - Shows a partial understanding of the challenge. Some goals or constraints are unclear, and team roles or planning are only partly documented.	3 pts - Shows limited understanding of the challenge. Important goals, requirements, or constraints are missing or incorrect. Team roles and planning are unclear.	0 pts - Shows little evidence of understanding the challenge. Roles, responsibilities, and planning are missing or unrelated.
Research & Rigging Fundamentals (30 pts)	30 pts – Thoroughly complete the required research with accurate, detailed explanations, calculations, and diagrams that demonstrate a strong understanding of rigging fundamentals. The conceptual rigging plan thoughtfully applies research findings to the challenge, including equipment configuration, load movement, communication,	24 pts – Completes most required research with accurate explanations, calculations, and diagrams that demonstrate a sound understanding of rigging fundamentals. The conceptual rigging plan applies relevant research to the challenge, with minor gaps in detail or supporting reasoning.	18 pts – Completes some required research but demonstrates gaps in accuracy, detail, or understanding of rigging fundamentals. The conceptual rigging plan addresses basic challenge requirements but shows limited application of research or supporting reasoning.	10 pts – Provides limited or incomplete research with significant gaps in accuracy or understanding of rigging fundamentals. The conceptual rigging plan is minimally developed or does not meaningfully connect research to the challenge.	0 pts – Required research and conceptual rigging plan are absent or provide insufficient evidence to evaluate understanding and application of rigging fundamentals.

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Criteria	Exemplary	Proficient	Developing	Beginning	Not Evident
	and safety considerations.				
Rigging Configuration & Safety Planning (25 pts)	25 pts – Thoroughly documents a well-developed rigging configuration and safety plan, including equipment selection, rigging arrangements, movement sequence, relevant calculations, team responsibilities, communication procedures, and hazard controls. Planning demonstrates thoughtful technical decisions and a strong understanding of safe rigging practices.	18 pts – Clearly documents a functional rigging configuration and safety plan addressing the major technical and safety considerations. Planning demonstrates sound decisions, with minor gaps in detail or supporting explanations.	12 pts – Documents a basic rigging configuration and safety plan but provides limited detail or reasoning for equipment selection, movement procedures, or safety considerations.	6 pts – Provides minimal rigging and safety planning, with significant gaps in the proposed configuration, movement sequence, communication procedures, or hazard controls.	0 pts – Rigging configuration and safety planning are absent or insufficient to meaningfully evaluate the team's approach.
Practice Documentation (10 pts)	10 pts – Thoroughly documents multiple practice activities with clear photographs, diagrams, observations, and relevant details about rigging configurations, movement procedures, and team operations. Evidence clearly demonstrates how the team's approach developed through hands-on practice.	8 pts – Clearly documents practice activities with relevant photographs, diagrams, and observations. Evidence demonstrates the team's hands-on work, with minor gaps in detail or documentation.	6 pts – Provides some documentation of practice activities but evidence is limited, inconsistent, or lack sufficient detail to understand what was tested.	3 pts – Provides minimal documentation of practice activities, with few supporting visuals or meaningful observations.	0 pts – Practice documentation is absent or insufficient to evaluate.

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Criteria	Exemplary	Proficient	Developing	Beginning	Not Evident
Practice Evaluation & Analysis (15 pts)	15 pts - Thoroughly evaluates practice results using specific observations, measurements, or other evidence. Clearly analyzes rigging performance, load control, stability, movement accuracy, communication, and safety considerations. Identifies challenges and explains their potential causes using sound technical reasoning.	12 pts – Clearly evaluates practice results using relevant observations or evidence. Identifies strengths, challenges, and potential causes, with minor gaps in analysis or supporting detail.	9 pts – Provides a basic evaluation of practice results but relies primarily on general observations. Identifies some challenges with limited analysis of causes or supporting evidence.	5 pts – Provides minimal evaluation of practice activities. Observations are vague, with little explanation of performance, challenges, or potential causes.	0 pts – Practice evaluation and analysis are absent or insufficient to evaluate.
Improvements & Refinements (15 pts)	15 pts – Thoroughly documents meaningful improvements to the rigging configuration, movement sequence, load control, communication, or safety procedures. Clearly explains the reasoning behind changes and uses practice results or other evidence to demonstrate how refinements improved the team's approach.	12 pts – Clearly documents relevant improvements and explains how practice observations or feedback informed changes. Demonstrates thoughtful refinement, with minor gaps in supporting evidence or reasoning.	9 pts – Documents some improvements but provides limited explanation of why changes were made or how they addressed identified challenges.	5 pts – Provides minimal evidence of refinement. Changes are unclear, poorly documented, or not meaningfully connected to practice results.	

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C.2 Professional Poster Scoring Rubric

Criteria	Exemplary	Proficient	Developing	Beginning	Not Evident
Challenge Overview & Research (10 pts)	10 pts – Clearly and concisely explains the rigging challenge, objectives, and major requirements. Effectively highlights relevant research and rigging fundamentals that informed the team's approach, demonstrating a strong understanding of the challenge and its connection to maritime rigging.	8 pts – Accurately explains the challenge, objectives, and major requirements. Includes relevant research and rigging fundamentals, with minor gaps in detail or explanation.	6 pts – Provides a basic explanation of the challenge and some relevant research, but important requirements, technical concepts, or connections to the team's approach are unclear or incomplete.	3 pts – Provides limited or unclear information about the challenge and minimal relevant research or rigging fundamentals.	0 pts – Challenge overview and supporting research are absent or insufficient to evaluate.
Professional Work Processes & Rigging Development (20 pts)	20 pts – Clearly and thoroughly illustrates the team's use of the Professional Work Process to develop its rigging approach. Effectively communicates rigging configurations, equipment arrangements, movement planning, safety considerations, and key technical decisions using relevant visuals and supporting explanations.	16 pts – Clearly communicates the team's planning and rigging development process, including major technical decisions and safety considerations. Includes relevant visuals and explanations, with minor gaps in detail or clarity.	12 pts – Provides a basic overview of the team's rigging development process but includes limited explanation of technical decisions, safety considerations, or how the approach evolved.	6 pts – Provides minimal information about the team's planning and rigging development process. Technical decisions, safety considerations, or supporting visuals are largely missing or unclear.	0 pts – Rigging development and evidence of the Professional Work Process are absent or insufficient to evaluate.
Practice Evaluation & Improvements (15 pts)	15 pts – Clearly presents meaningful practice results and observations, identifies challenges encountered, and explains how	12 pts – Presents relevant practice results, challenges, and improvements. Explains how practice informed	9 pts – Provides some practice results and improvements but offers limited explanation of how observations or	5 pts – Provides minimal information about practice activities or improvements. Connections between practice	0 pts – Practice evaluation and improvements are absent or insufficient to evaluate.

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Criteria	Exemplary	Proficient	Developing	Beginning	Not Evident
	evaluation and feedback informed improvements to the team's rigging approach. Uses relevant evidence and visuals to demonstrate thoughtful analysis and refinement.	changes to the team's approach, with minor gaps in supporting evidence or reasoning.	feedback influenced changes. Supporting evidence or visuals are incomplete.	results, identified challenges, and changes are unclear or missing.	
Final Rigging Approach & Technical Information (10 pts)	10 pts – Clearly and accurately presents the team's final rigging approach, including equipment configuration, movement sequence, load control, and relevant technical information. Uses well-labeled diagrams, illustrations, or other visuals that effectively communicate how the rigging operation is intended to work.	8 pts – Clearly presents the team's final rigging approach and major technical details using relevant visuals. Minor omissions or unclear explanations do not significantly affect understanding.	6 pts – Presents a basic overview of the final rigging approach but lacks important technical details, clear explanations, or sufficient supporting visuals.	3 pts – Provides limited or unclear information about the final rigging approach. Major technical details or supporting visuals are missing.	0 pts – Final rigging approach and supporting technical information are absent or insufficient to evaluate.
Visual Organization & Professionalism (25 pts)	25 pts – Poster is exceptionally well organized, professional, and visually engaging. Information is easy to follow, text is concise and readable, and visuals are clear, relevant, and effectively labeled. The overall design communicates the team's work effectively.	18 pts – Poster is organized, professional, and readable with minor issues in layout, labeling, visual clarity, or presentation.	12 pts – Poster demonstrates some organization, but crowded sections, unclear visuals, inconsistent formatting, or readability issues affect communication.	6 pts – Poster is difficult to follow, with significant problems in organization, readability, visual quality, or professional presentation.	0 pts – Poster is missing or lacks sufficient organization and content to communicate the project.

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C.3 Team Presentation Scoring Rubric

Criteria	Exemplary	Proficient	Developing	Beginning	Not Evident
Challenge Understanding & Rigging Objectives (5 pts)	10 pts – Clearly and thoroughly explains the rigging challenge, objectives, requirement movement sequence, and major constraints. Demonstrates a strong understanding of how the challenge reflects real-world maritime rigging operations.	8 pts – Clearly explains the rigging challenge, objectives, and major requirements. Demonstrates a sound understanding of the challenge and its connection to maritime rigging, with minor gaps in detail.	6 pts – Provides a basic explanation of the challenge and objectives but overlooks important requirements, constraints, or connections to maritime rigging.	3 pts – Provides a limited or unclear explanation of the challenge, objectives, or major requirements.	0 pts – Challenge understanding and rigging objectives are absent or insufficient to evaluate.
Professional Work Processes & Rigging Decisions (20 pts)	20 pts – Clearly and thoroughly explains how the Professional Work Process guided the development of the team's rigging approach. Provides strong reasoning for equipment configurations, movement planning, load control, safety considerations, and other key technical decisions. Demonstrates thoughtful problem-solving and application of rigging fundamentals.	16 pts – Clearly explains the team's planning process and major rigging decisions, including relevant technical and safety considerations. Demonstrates sound reasoning, with minor gaps in explanation or supporting detail.	12 pts – Provides a basic explanation of the team's planning process and rigging decisions but offers limited technical reasoning or discussion of safety considerations.	6 pts – Provides minimal explanation of the team's planning process or technical decisions. Connections to rigging fundamentals and safety considerations are unclear or largely missing.	0 pts – Professional Work Process and rigging decisions are absent or insufficient to evaluate.
Rigging Demonstration Evaluation & Improvements (15 pts)	15 pts – Thoroughly evaluates practice results and Competition Day rigging performance using specific	12 pts – Clearly evaluates practice results and Competition Day performance, identifies successes and challenges,	9 pts – Provides a basic evaluation of practice or Competition Day performance but offers limited analysis of	5 pts – Provides minimal discussion of practice results or Competition Day performance. Evaluation is vague, with little	0 pts – Evaluation of practice and Competition Day performance is absent or insufficient to evaluate.

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Criteria	Exemplary	Proficient	Developing	Beginning	Not Evident
	observations or evidence. Clearly identifies successes, challenges, and potential causes, explains how practice informed improvements, and reflects thoughtfully on lessons learned or further refinements.	and explains relevant improvements or lessons learned, with minor gaps in supporting evidence or analysis.	challenge, improvements, or lessons learned.	connection to improvements or lessons learned.	
Final Rigging Approach & Technical Understanding (15 pts)	15 pts – Clearly and accurately explains the final rigging configuration, equipment arrangements, movement sequence, load control, communication procedures, and safety considerations. Demonstrates strong technical understanding of how the rigging system operates and why the selected approach was appropriate.	12 pts – Clearly explains the final rigging approach and major technical considerations. Demonstrates sound understanding of the system and its operation, with minor gaps in detail or explanation.	6 pts – Provides a basic explanation of the final rigging approach but demonstrates limited understanding of important technical details or how the system operates.	3 pts – Provides minimal or unclear explanation of the final rigging approach. Significant gaps in technical understanding are evident.	0 pts – Final rigging approach and technical understanding are absent or insufficient to evaluate.
Presentation Delivery, Poster Use & Team Participation (20 pts)	20 pts – Presentation is clear, organized, and professional. All team members participate meaningfully, communicate effectively, and use the Professional Poster to support and strengthen their explanations.	16 pts – Presentation is organized and professional. All team members participate, and their poster supports the presentation, with minor issues in delivery or effectiveness.	12 pts – Presentation communicates the main ideas, but uneven participation, limited poster use, or delivery issues reduce effectiveness.	6 pts – Presentation is difficult to follow, with significant issues in preparation, team participation, or effective use of the poster.	0 pts – Presentation is not delivered or meaningful communication and participation are not demonstrated.

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Criteria	Exemplary	Proficient	Developing	Beginning	Not Evident
Questions & Professional Responses (5 pts)	5 pts – Responds clearly and thoughtfully to judges' questions, demonstrating strong understanding and supporting answers with relevant reasoning or evidence.	4 pts – Responds accurately to most questions, with minor gaps in explanation or detail.	3 pts – Provides basic responses but demonstrates some uncertainty or limited supporting explanations.	2 pts – Provides minimal or unclear responses, demonstrating limited understanding of the team's work.	0 pts – Does not meaningfully respond to judges' questions.

Presentation Timing & Point Deductions

The team presentation must last 7-10 minutes, followed by a separate 5-minute judges' Q&A period.

Presentation Duration	Point Deduction
7-10 minutes	No deduction
For every minute over or under the 7–10-minute requirement, 5 points will be deducted.	

Presentations will be stopped at 12 minutes. A designated timekeeper will record the duration and apply the deduction once, after judges have completed their scoring.

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C.4 Demonstrated Performance Scoring Rubric
Rigging Performance

Points	Performance Criteria
5	Level Suspended Cargo Box: Load is level before travel; team confirms balance and controlled suspension
15	Lift to 22 inches and hold for 5 seconds: Achieves specified 22-inch displacement with smooth, controlled movement
10	Horizontal Movement: Load remains level and stable throughout horizontal travel; no excessive swing
10	Rotate cargo to vertical orientation: Controlled vertical-plane rotation; cargo box does not drop and remains stable
5	Controlled vertical lowering: Smooth, controlled lowering without sudden movement or loss of load control
15	Pass through obstacle: Entire cargo box clears obstacle without contact; control maintained throughout
10	Return cargo to horizontal orientation: Controlled horizontal-plane rotation; same no-drop/stability standards as above
10	Horizontal movement to installation zone: Stable, level horizontal transfer
10	Lower cargo into final position: Controlled final placement in designated position; no impact or instability

Safety, Load Control & Communication

Points	Performance Criteria
10	Two load control lines remain attached throughout the operation
10	Two effective tension points maintained throughout the operation
10	Safe personnel positioning and hazard awareness
15	Clear communication and coordinated movement
5	Safe equipment handling and reconfiguration
5	Stop-work procedures and response to unsafe conditions
5	Teamwork and assigned responsibilities

Rigging Plan Inspection & Adherence

Points	Performance Criteria
10	Initial rigging setup matches the submitted Final Rigging Plan
5	Attachment points, equipment placement, and load-control methods match the plan
15	Team follows its planned rigging approach, including documented reconfigurations

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