SKILLED TRADES DIVISION GUIDE

2027 Digital Ship Challenge

Version 1.0 | September 2026

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Guide Information
Version 1.0

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.
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.

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1.4 Communication & DSC Change Log

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

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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.

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

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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
- 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

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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
Rigging Research & Fundamentals	Research responses, calculations, diagrams, illustrations, and supporting evidence completed through the Research & Rigging Fundamentals document. This section should demonstrate your team's developing understanding of the maritime rigging trade and the fundamental principles needed to begin planning and practicing the challenge
Rigging Plan	Your team's conceptual and developing rigging plans, including rigging configurations, equipment arrangements, movement sequences, team responsibilities, communication procedures, safety considerations, and reasoning behind key decisions
Safety Planning	Identified hazards, planned controls, safe work practices, stop-work procedures, personnel positioning, and other safety considerations for the team's rigging operation
Practice & Evaluation	Photos, videos, observations, calculations, practice results, challenges encountered, and evaluation of the team's rigging approach
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	Final rigging approach, team responsibilities, communication plan, and evidence of preparation for Competition Day
Appendix	References (APA format), photos, videos, additional calculations, diagrams, and other supporting materials

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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. 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.

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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

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 work 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 progression from initial understanding and research through final preparation
- Highlight the process used throughout the division challenge
- Present information in a logical and visually organized manner
- Include graphics, photographs, diagrams, calculations, and 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.

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5.2 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.

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, rigging approach, key decisions, supporting evidence, practice and refinement, and preparation for Competition Day. Following each presentation, judges will have an opportunity to ask questions. 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 decisions and the reasoning behind them
- Use relevant research, calculations, observations, practice results, or other evidence to support the team's work
- Communicate how the team evaluated and refined its approach throughout the challenge season
- 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 are expected to actively participate in the presentation
- Professional attire is encouraged

Each team will be assigned a presentation time and location for the 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.

6. 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.

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.

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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, rotation, transfer between lifting locations as applicable, and lowering.
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	All teams will use a standardized cargo box provided by the Digital Ship Challenge organizers. The cargo will include multiple designated attachment points that teams may use when developing their rigging configuration. Teams may determine which available attachment points to use based on their planned approach. The cargo may not be modified.
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.

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Required Movement Sequence	The cargo must complete the following sequence during the rigging operation: (1) lift vertically while maintaining a horizontal orientation, (2) travel horizontally, (3) rotate 90°, (4) travel vertically to clear the installed boundary obstacle, (5) once cleared of the installed boundary obstacle rotate 90° to return to a horizontal orientation, and (6) travel horizontally to the designated installation zone to be lowered 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 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.

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The Standardized Rigging Kit will include:

Equipment	Quantity
Polyester Rope	100 ft.
Pulleys	6
Silicone Cable Ties	10
M5 Safety Chain Quick Links	6
M6 Spring Snap Hooks Carabiner	6
Cargo Box	1
Shackles	6
Eye Bolts with Nuts	6

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 demonstrate their rigging operation using the official challenge structure, standardized cargo, and equipment included in the Standardized Rigging Kit. Teams will be expected to complete the required movement sequence while demonstrating safe work practices, load control, effective communication, and teamwork.

Detailed demonstrated performance procedures will be finalized following challenge prototype testing and will be included in a future revision of this guide.

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

7. 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

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- ☐ The Digital Notebook is complete and submitted by the published deadline
- ☐ The Professional Poster 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 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 will affect scoring. **Teams are encouraged to complete this checklist several days before the competition to allow time to address any outstanding items.**

8. 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

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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, load control, final installation, safe work practices, communication, teamwork, and other performance criteria established in this guide
Professionalism	Teamwork, preparedness, organization, and respectful interaction with judges and event staff

Detailed judging rubric for each competition component will be released at a later date and added to the Appendix of this guide. The release of the rubrics, along with 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

9. Appendix A – Official Challenge Diagram

The Official Challenge Diagram will be released following the completion of Checkpoint 2 and added to this appendix. The diagram will provide the dimensions and configuration of the challenge environment, including the designated starting position, final installation zone, travel path, obstructions/openings, and available rigging points.

Teams should use the Official Challenge Diagram, together with the requirements outlined in Section 6, when developing and refining their rigging approach.

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