

SKILLED TRADES DIVISION BRIEF

The Challenge

Long before a vessel enters the water, thousands of components must be lifted safely, transported, and installed. This ranges from structural modules and machinery to piping systems and equipment. These operations require careful planning, technical skills, and teamwork. One mistake can delay construction, damage equipment, or create serious safety risks.

This is where rigging plays a critical role. Riggers are skilled trades professionals responsible for planning and executing the safe movement of heavy loads throughout the shipbuilding and repair process. Before a lift ever begins, they evaluate the load, determine how it should be lifted, identify potential hazards, select the appropriate rigging configuration, and coordinate every movement with the rest of the lift team. Every successful lift is the result of thoughtful planning, precise execution, and a commitment to safety.

Your challenge is to step into the role of a rigger by developing and executing a professional lift operation capable of safely moving and installing a vessel component.

About This Brief

This Division Brief introduces this year's challenge and provides the information teams need to begin exploring, planning, and preparing for the challenge. It outlines the challenge purpose, overall objectives, and high-level expectations for the division.

A detailed Division Guide will be released separately and will serve, along with this brief, as the primary reference throughout the challenge season. The guide will include team expectations, checkpoints, documentation requirements, technical requirements, procedures, judging information, and other details needed to prepare for competition day.

Real World Connection

Hampton Roads is home to one of the world's largest shipbuilding and ship repair industries. Every day, skilled trades professionals work together to build, repair, modernize, and maintain vessels supporting national defense, commercial shipping, offshore energy, and scientific research.

Riggers play a vital role throughout this process, working alongside pipefitters, shipfitters, welders, electricians, and many other skilled trades professionals. Together, these teams safely move and install structural modules, machinery, piping systems, and equipment that become part of every completed vessel. No vessel is built by one trade alone. Success depends on skilled professionals working together with precision, communication, and a shared commitment to safety.

Your Challenge

Using the provided standardized rigging kit, your team will develop and execute a lift operation capable of safely moving a standardized vessel component from its starting location to its final installation location.

Teams will receive the possible lift scenarios that may be assigned during the competition day in the Skilled Trades Division Guide. Using these scenarios, teams will develop, test, and refine a lift plan capable of adapting to the assigned task.



During the demonstrated performance, teams will execute one assigned lift operation while demonstrating safe work practices, maintaining control of the load, transporting the component efficiently, and accurately positioning it within the installation area.

Success will depend not only on completing the lift, but on your team's ability to develop an effective lift plan, communicate throughout the operation, adapt when needed, and execute the installation with precision.

Things to Consider

Lift Planning: Every successful lift begins with a plan. Before any movement occurs, evaluate the load, determine how it will be lifted and installed, establish the sequence of operations, and consider how your team will safely complete each step.

Rigging Configuration & Load Control: The way a load is rigged directly influences how it behaves during the lift. Consider attachment points, lifting methods, center of gravity, and how your rigging configuration will help maintain control and stability throughout the operation.

Precision & Installation: Moving the load is only part of the task. Skilled trades professionals must accurately position and install components while maintaining control and minimizing unnecessary movement throughout the operation.

Safety & Communication: Safety is everyone's responsibility. Identify potential hazards before beginning the lift, clearly define team member responsibilities, and maintain effective communication throughout the entire operation.

Testing, Evaluation & Refinement: Professional lift teams continually evaluate and improve their work. Test your lift plan, identify opportunities for improvement, and refine your approach to increase efficiency, accuracy, and safety before competition day.

Teams are encouraged to research maritime rigging operations, shipyard construction practices, heavy lifting procedures, and industrial material handling techniques. While real-world methods may serve as inspiration, teams are encouraged to think creatively and develop innovative solutions that maximize performance within the challenge constraints.

The Digital Ship Challenge organizers would like to stress that the majority of work on all phases of the project is to be designed and constructed by the students.

Judging Overview

Teams will be evaluated on multiple aspects of the planning process and final lift operation.

Evaluation will include:

- Digital Notebook
- Team Checkpoints
- Team Poster and Presentation
- Demonstrated Performance



Challenge Requirements

Teams will develop and execute a lift operation using the provided standardized rigging kit while meeting all published challenge requirements.

Each team must:

- Develop a documented lift and safety plan
- Safely lift and transport the assigned vessel component
- Maintain control and stability throughout the operation
- Accurately position the component within the designated installation area
- Demonstrate safe work practices throughout the challenge
- Comply with all challenge rules and safety requirements

Additional technical specifications, competition procedures, and detailed requirements are provided in the Skilled Trades Division Guide.

Intent to Participate

Schools planning to participate in the 2027 Digital Ship Challenge should submit an intent to participate by September 11, 2026. This form is not your official team registration. Teachers will simply indicate the divisions they plan to enter and the anticipated number of teams. Team names and student information will be collected at a later date.

Complete the intent to participate form here: <https://forms.office.com/r/RHVKYCEREB>

