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**Federal Wage System  
Job Grading Standards**



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**FEDERAL WAGE SYSTEM  
JOB GRADING  
STANDARD  
FOR  
SHIPWRIGHT,  
5220**



**Workforce Compensation  
and Performance Service**



# SHIPWRIGHT, 5220

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## WORK COVERED

This standard is used to grade nonsupervisory work involved in the drydocking of marine craft and in the maintenance of marine drydocking equipment.

## WORK NOT COVERED

This standard does not cover the following:

- Work involving the construction, repair, and checking of interior of wooden stream crossing equipment such as M-1 and M-2 assault boats, turn screw, and self-powered boats. (See [Boat Building and Repairing Series, 4717](#));
- Work involving the construction and repair of wooden boxes, crates, and containers. (See [Job Grading Standard for Wood Working 4604](#));
- Work involving hand and machine carpentry necessary to cut, shape, and assemble prepared parts of high grade articles such as office equipment, fixtures, and furniture. (See [Job Grading Standard for Wood Crafting, 4605](#));
- Work involving the maintenance, fabrication, repair, and installation of wood parts, structures, and equipment aboard marine craft and equipment. (See [Carpentry, 4607](#));
- Work involving the construction, alteration, and repair of wooden or wood substitute items and structures such as buildings and fittings. (See [Job Grading Standard for Carpentry, 4607](#)).

## TITLES

Jobs covered by this standard at grade 10 and above are to be titled *Shipwright*.

Jobs covered by this standard below grade 10 are to be titled *Shipwright Worker*.

In this standard, they may be graded above or below this grade based on the application of sound job grading methods.

## HELPER AND INTERMEDIATE JOBS

Helper and intermediate shipwright jobs are covered by the [Job Grading Standard for Trades Helper](#) and [Intermediate](#) Jobs. Grade 10 in this standard is to be used as the "journey level" in applying the Intermediate Job Grading Standard.

## NOTE TO USERS

When shipwrights engage in other work not covered by this standard, the job should be examined thoroughly from the standpoint of the mixed job policy to determine which is grade-controlling. Criteria are not provided in this standard for grading jobs in which work not involving drydocking operations is the highest level performed and grade-controlling or is performed on a full time basis. When work is performed under these circumstances, reference should be made to the appropriate occupational series. The grade level can be determined by extrapolation of criteria in the appropriate job grading standard and the application of sound job grading practices.

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*General:* The work at this grade involves aligning ships over blocks during graving operations; building and positioning blocks, cradles, shoring and other support structures for ships in dry-docks and marine railways; and building staging around and aboard ships.

*Skill and Knowledge:* Grade 10 shipwrights must know how to establish reference points on ships and on graving docks which they in turn use to make judgments critical to the alignment of ship over blocks, assuring an even distribution of ship's weight. They are required to be skillful in the use of the transit to sight reference points and keep Riggers and other rope handlers informed of ship's alignment as it settles over the blocks. This includes determining the ship's degree of list.

At this grade level, shipwrights should be able to establish circularity readings on the pressure hull of submarines. Similarly, they establish center lines, water and base lines, frame lines, degree lines, and other reference points aboard ship which can be used by various trades in locating, positioning, and installing hull parts, machinery, and fittings. To accomplish these and other assignments, a working knowledge of trade equipment including theodolites, surveyor's levels, gunner's quadrant, laser beam equipment, and alidades is required.

They must have the ability to read and interpret blueprints, sketches, and job orders; they have sufficient knowledge of trade mathematics to be able to set up and lay out work. From information provided in blueprints, sketches, and docking worksheets, grade 10 Shipwrights must be able to build, repair, and position keel blocks, bilge blocks, cradles, and other support structures. The ship or other marine craft will rest upon these support structures when the water is pumped from the graving dock. They also erect, maintain, and remove shoring and staging together with related liferails, platforms, and accesses. They should have the ability to set up and operate woodworking shop machinery such as circular saws, jigsaws, planers, joiners, and portable power tools; and to use a wide variety of hand tools. Good eye and hand coordination is required for climbing staging and working from scaffolds.

*Responsibility:* Grade 10 shipwrights receive work assignments from the supervisor in the form of oral or written instructions and job orders. They independently plan, lay out, and complete assignments, choosing the most appropriate procedures from a variety of possible work methods. However, during drydocking operations, they work as part of a team with one of them using the transit and directing the activities of the others. The supervisor provides advice on unusual problems and checks overall work for quality, accuracy, and compliance with plans, specifications, and trade standards.

*Physical Effort:* Grade 10 shipwrights engage in work which requires prolonged bending, kneeling, and working in awkward position. They are continuously on their feet walking, standing, climbing, and crouching. They frequently lift and carry items weighing up to 23 kilograms (50 pounds).

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*Working Conditions:* Grade 10 shipwrights often work outside in all types of weather. They also work aboard ship in various compartments, tanks, and occasionally inside a protected shop area. Frequently, they are exposed to unpleasant conditions such as dust, dirt, fumes, excessive noise, vibration, and heat; and are vulnerable to cuts, bruises, burns, and broken bones. They may be exposed to radiation and possible contamination while working on nuclear ships. They may be required to work from personnel boxes, scaffolds, ladders, and catwalks, occasionally from heights in excess of 100 feet, and are exposed to serious injury from slipping and falling. To minimize the dangers from these conditions, various protective devices are provided. These include hard hats, safety shoes and glasses, ear plugs, respirators, and protective clothing.