



# TORQ Analysis of Riggers to Welders, Cutters, and Welder Fitters

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Riggers	49-9096.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Welders, Cutters, and Welder Fitters	51-4121.06	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS							
Grand TORQ:					90		
Ability TORQ		Skills TORQ		Knowledge TORQ			
Level	88	Level	90	Level	91		
Gaps To Narrow if Possible				Upgrade These Skills		Knowledge to Add	
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt
Arm-Hand Steadiness	51	10	75	No Skills Upgrade Required!		No Knowledge Upgrades Required!	
Near Vision	50	9	65				
Finger Dexterity	42	3	56				
LEVEL and IMPT (IMPORTANCE) refer to the Target Welders, Cutters, and Welder Fitters. GAP refers to level difference between Riggers and Welders, Cutters, and Welder Fitters.							

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Riggers	Welders, Cutters, and Welder Fitters	Importance
Arm-Hand Steadiness	41 	51 	75
Near Vision	41 	50 	65
Manual Dexterity	46 	46 	62
Control Precision	44 	44 	62
Oral Expression	50 	50 	56
Problem Sensitivity	48 	39 	56
Finger Dexterity	39 	42 	56
Multilimb Coordination	48 	44 	56
Oral Comprehension	48 	46 	53
Visualization	53 	51 	50
Selective Attention	46 	44 	50
Skill Level Comparison - Abilities with importance scores over 69			
Description	Riggers	Welders, Cutters, and Welder Fitters	Importance

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Riggers	Welders, Cutters, and Welder Fitters	Importance
-------------	---------	--------------------------------------	------------

**Experience & Education Comparison**

Related Work Experience Comparison			Required Education Level Comparison		
Description	Riggers	Welders, Cutters, and Welder Fitters	Description	Riggers	Welders, Cutters, and Welder Fitters
10+ years	3%	1%	Doctoral	0%	0%
8-10 years	0%	1%	Professional Degree	0%	0%
6-8 years	7%	0%	Post-Masters Cert	0%	0%
4-6 years	10%	0%	Master's Degree	0%	0%
2-4 years	32%	17%	Post-Bachelor Cert	0%	0%
1-2 years	3%	23%	Bachelors	0%	0%
6-12 months	3%	28%	AA or Equiv	0%	0%
3-6 months	31%	6%	Some College	3%	8%
1-3 months	0%	1%	Post-Secondary Certificate	9%	26%
0-1 month	0%	6%	High School Diploma or GED	79%	26%
None	8%	11%	No HSD or GED	7%	38%

Riggers

Welders, Cutters, and Welder Fitters

Most Common Educational/Training Requirement:

Short-term on-the-job training

Long-term on-the-job training

Job Zone Comparison

3 - Job Zone Three: Medium Preparation Needed

Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

2 - Job Zone Two: Some Preparation Needed

Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

**Tasks**

Riggers	Welders, Cutters, and Welder Fitters
Core Tasks	Core Tasks
Generalized Work Activities: <ul style="list-style-type: none"> <li>• Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.</li> <li>• Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).</li> <li>• Performing General Physical Activities - Performing physical activities that require</li> </ul>	Generalized Work Activities: <ul style="list-style-type: none"> <li>• Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.</li> <li>• Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.</li> <li>• Getting Information - Observing, receiving,</li> </ul>



considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.

- Repairing and Maintaining Mechanical Equipment - Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

#### Specific Tasks

##### Occupation Specific Tasks:

- Align, level, and anchor machinery.
- Attach loads to rigging to provide support or prepare them for moving, using hand and power tools.
- Attach pulleys and blocks to fixed overhead structures such as beams, ceilings, and gin pole booms, using bolts and clamps.
- Clean and dress machine surfaces and component parts.
- Control movement of heavy equipment through narrow openings or confined spaces, using chainfalls, gin poles, gallows frames, and other equipment.
- Dismantle and store rigging equipment after use.
- Fabricate, set up, and repair rigging, supporting structures, hoists, and pulling gear, using hand and power tools.
- Install ground rigging for yarding lines, attaching chokers to logs and then to the lines.
- Manipulate rigging lines, hoists, and pulling gear to move or support materials such as heavy equipment, ships, or theatrical sets.
- Select gear such as cables, pulleys, and winches, according to load weights and sizes, facilities, and work schedules.
- Signal or verbally direct workers engaged in hoisting and moving loads, in order to ensure safety of workers and materials.
- Test rigging to ensure safety and reliability.
- Tilt, dip, and turn suspended loads to maneuver over, under, and/or around obstacles, using multi-point suspension techniques.

#### Detailed Tasks

##### Detailed Work Activities:

- adhere to safety procedures
- apply cleaning solvents
- clean equipment or machinery
- direct and coordinate activities of workers or staff
- dismantle or reassemble rigging

and otherwise obtaining information from all relevant sources.

- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.

#### Specific Tasks

##### Occupation Specific Tasks:

- Adjust electric current and timing cycles of resistance welding machines to heat metals to bonding temperature.
- Align and clamp workpieces together, using rules, squares, or hand tools, or position items in fixtures, jigs, or vises.
- Brush flux onto joints of workpieces or dip braze rods into flux, to prevent oxidation of metal.
- Clean equipment parts, such as tips of soldering irons, using chemical solutions or cleaning compounds.
- Clean joints of workpieces with wire brushes or by dipping them into cleaning solutions.
- Clean workpieces to remove dirt and excess acid, using chemical solutions, files, wire brushes, or grinders.
- Connect hoses from torches to regulator valves and cylinders of oxygen and specified gas fuels.
- Cut carbon electrodes to specified sizes and shapes, using cutoff saws.
- Dip workpieces into molten solder, or place solder strips between seams and heat seams with irons, to bond items together.
- Examine seams for defects, and rework defective joints or broken parts.
- Grind, cut, buff, or bend edges of workpieces to be joined to ensure snug fit, using power grinders and hand tools.
- Guide torches and rods along joints of workpieces to heat them to brazing temperature, melt braze alloys, and bond workpieces together.
- Heat soldering irons or workpieces to specified temperatures for soldering, using gas flames or electric current.
- Melt and apply solder along adjoining edges of workpieces to solder joints, using soldering irons, gas torches, or electric-ultrasonic equipment.
- Melt and apply solder to fill holes, indentations, and seams of fabricated metal products, using soldering equipment.
- Melt and separate brazed or soldered joints to remove and straighten damaged or misaligned components, using hand torches, irons or furnaces.



- fabricate, assemble, or disassemble manufactured products by hand
- move or fit heavy objects
- perform safety inspections in industrial, manufacturing or repair setting
- position, align, or level machines, equipment, or structures
- read work order, instructions, formulas, or processing charts
- repair specialized rigging
- set up specialized rigging
- signal directions or warnings to coworkers
- test mechanical products or equipment
- use hand or power tools
- use knowledge of metric system
- use pneumatic tools
- use precision measuring tools or equipment
- verify levelness or verticality, using level or plumb bob

- Place solder bars into containers, and turn knobs to specified positions to melt solder and regulate its temperature.
- Remove workpieces from fixtures, using tongs, and cool workpieces, using air or water.
- Remove workpieces from molten solder and hold parts together until color indicates that solder has set.
- Select torch tips, flux, and brazing alloys from data charts or work orders.
- Smooth soldered areas with alternate strokes of paddles and torches, leaving soldered sections slightly higher than surrounding areas for later filing.
- Sweat together workpieces coated with solder.
- Turn dials to set intensity and duration of ultrasonic impulses, according to work order specifications.
- Turn valves to start flow of gases, and light flames and adjust valves to obtain desired colors and sizes of flames.

#### Detailed Tasks

#### Detailed Work Activities:

- adjust welding equipment
- apply cleaning solvents
- apply flux to workpiece before soldering or brazing
- braze metal parts or components together
- clean or degrease weld, or parts to be welded or soldered
- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble manufactured products by hand
- file, sand, grind, or polish metal or plastic objects
- identify properties of metals for repair or fabrication activities
- load or unload material or workpiece into machinery
- monitor the quantity of assembly output
- move or fit heavy objects
- perform safety inspections in industrial, manufacturing or repair setting
- position, clamp or assemble workpiece prior to welding
- preheat metal before welding, brazing, or soldering
- read blueprints
- read production layouts
- read technical drawings
- read work order, instructions, formulas, or processing charts
- sharpen metal objects
- solder metal parts or components together
- understand technical operating, service or



repair manuals

- use acetylene welding/cutting torch
- use braze-welding equipment
- use hand or power tools
- use soldering equipment

---

Tools - Examples

---

- Wrenches
- Anvils
- Bandsaws
- Slitters
- Motorized cutting torches
- Calipers
- Desktop computers
- Underwater electrode holders
- Files
- Gas flow measurement instruments
- Forklifts
- Current converters
- Brazing equipment
- Goggles
- Grinding machinery
- Hand chipping hammers
- Clamps
- Temperature measurement instruments
- Electric overhead hoists
- Hydraulic presses
- Impact wrenches
- Hydraulic jacks
- Ladders
- Laser printers
- Laser welders
- Lathes
- Levels
- Light trucks



- Hydraulic truck lifts
- Metal inert gas MIG welders
- Metal markers
- Punches
- Computerized numerical control CNC programmable welding robot controllers
- Micrometers
- Milling machines
- Nibblers
- Personal computers
- Pipe cutters
- Plasma welders
- Air drills
- Air chisels
- Air scalers
- Buffers
- Power chippers
- Power drills
- Power grinders
- Cutoff saws
- Steamers
- Waterproof gloves
- Angle finders
- Pinchbars
- Comealongs
- Ratchets
- Self-contained breathing equipment
- Respirator hose masks
- Welding lenses
- Scaffolding
- Scribes
- Shears
- Socket sets

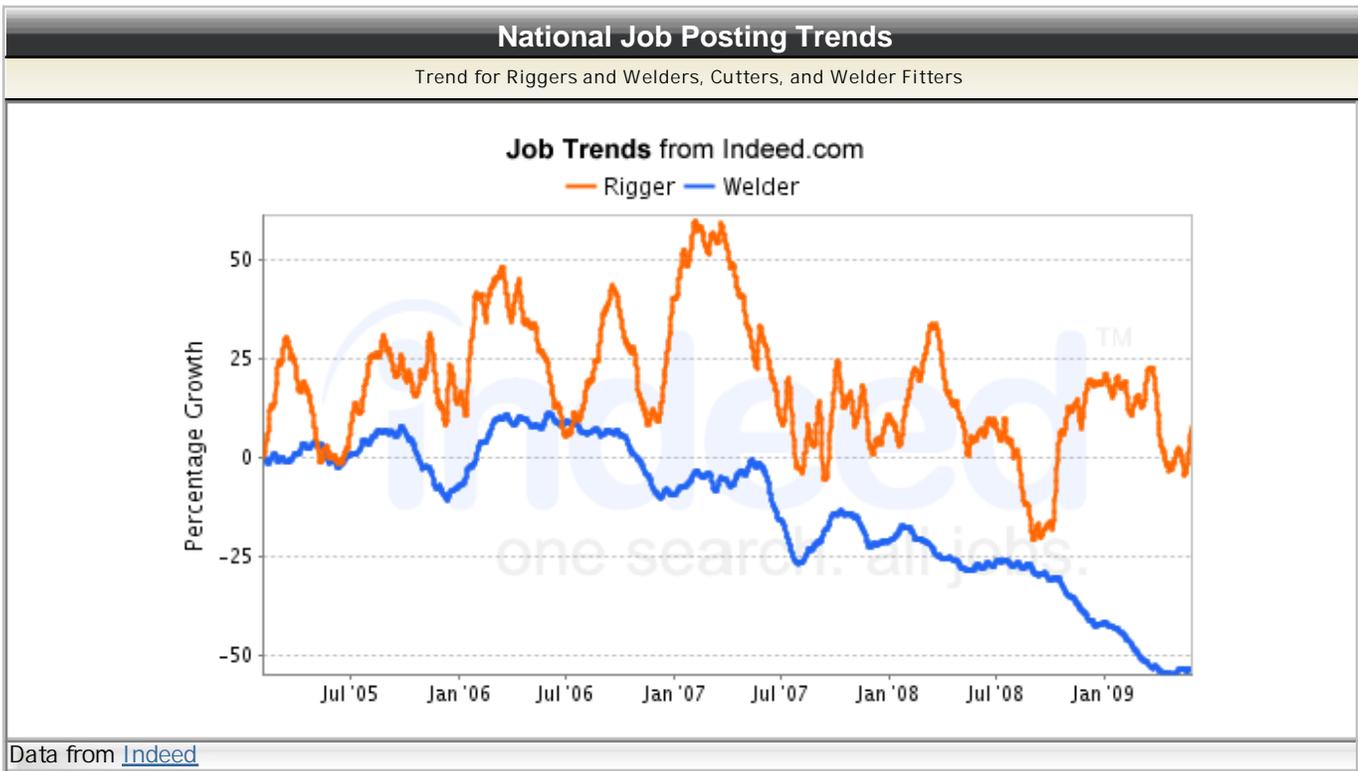
- Soldering irons
- Wire feed rate measurement instruments
- Squares
- Straightedges
- Metal benders
- Dies
- Fillet weld gauges
- Electric pipe threaders
- Hand pipe threaders
- Tungsten inert gas TIG welding equipment
- Two way radios
- Ultrasonic welding equipment
- Arc voltage measurement instruments
- Arc welders
- Underwater electrodes
- Direct current DC sources
- Face shields
- Welding tips
- Welding robots
- Rod ovens
- Electrode wires
- Dive suits
- Winches
- Power wire brushes
- Wire cutters
- Overhead cranes
- Brakes

### Labor Market Comparison

Maine Department of Labor.

Description	Riggers	Welders, Cutters, and Welder Fitters	Difference
Median Wage	\$ 39,140	\$ 38,030	\$( 1,110)
10th Percentile Wage	\$ 32,550	\$ 22,680	\$( 9,870)

25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 45,120	\$ 46,190	\$ 1,070
90th Percentile Wage	\$ 50,700	\$ 50,780	\$ 80
Mean Wage	\$ 40,090	\$ 38,260	\$( 1,830)
Total Employment - 2532	250	1,610	1,360
Employment Base - 2006	235	1,691	1,456
Projected Employment - 2541	206	1,816	1,610
Projected Job Growth - 2006-2541	-12.3 %	7.4 %	19.7 %
Projected Annual Openings - 2006-2541	2	49	47
Special			
Special Occupations:			



### Programs

Related Programs

Welder/Welding Technologist			
Welding Technology/Welder. A program that prepares individuals to apply technical knowledge and skills to join or cut metal surfaces. Includes instruction in arc welding, resistance welding, brazing and soldering, cutting, high-energy beam welding and cutting, solid state welding, ferrous and non-ferrous materials, oxidation-reduction reactions, welding metallurgy, welding processes and heat treating, structural design, safety, and applicable codes and standards.			
Institution	Address	City	URL
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>

Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Washington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>

### Maine Statewide Promotion Opportunities for Riggers

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-9096.00	Riggers	100	3	250	\$39,140.00	\$0.00	-12%	2	
51-4192.00	Lay-Out Workers, Metal and Plastic	87	2	180	\$43,870.00	\$4,730.00	-24%	3	
53-7021.00	Crane and Tower Operators	85	3	240	\$41,940.00	\$2,800.00	-2%	4	
49-9051.00	Electrical Power-Line Installers and Repairers	84	3	280	\$47,750.00	\$8,610.00	9%	12	
47-2011.00	Boilermakers	84	4	60	\$39,260.00	\$120.00	12%	3	
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	82	3	170	\$47,860.00	\$8,720.00	-9%	3	
49-9044.00	Millwrights	82	3	830	\$41,280.00	\$2,140.00	-12%	11	
47-2082.00	Tapers	81	2	70	\$39,910.00	\$770.00	5%	3	
53-6051.07	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation	80	3	60	\$42,890.00	\$3,750.00	5%	2	
51-4111.00	Tool and Die Makers	80	3	160	\$51,670.00	\$12,530.00	-11%	2	
47-2111.00	Electricians	79	3	2,910	\$43,650.00	\$4,510.00	1%	89	
47-1011.00	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	79	3	3,190	\$46,630.00	\$7,490.00	3%	77	
49-9041.00	Industrial Machinery Mechanics	78	3	990	\$39,370.00	\$230.00	7%	25	
49-9052.00	Telecommunications Line Installers and Repairers	78	3	720	\$56,120.00	\$16,980.00	0%	19	
45-1011.05	First-Line Supervisors/Managers of Logging Workers	78	4	240	\$41,590.00	\$2,450.00	4%	8	

Special Occupations:



### Top Industries for Welders, Cutters, and Welder Fitters

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Architectural and structural metals manufacturing	332300	11.33%	46,347	52,658	13.62%
Agriculture, construction, and mining machinery manufacturing	333100	6.36%	26,009	25,834	-0.67%
Self-employed workers, primary job	000601	5.26%	21,505	24,372	13.33%
Motor vehicle body and trailer manufacturing	336200	5.12%	20,924	21,779	4.09%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	4.38%	17,916	20,168	12.57%
Other general purpose machinery manufacturing	333900	3.83%	15,672	15,050	-3.97%
Boiler, tank, and shipping container manufacturing	332400	3.10%	12,686	12,161	-4.14%
Motor vehicle parts manufacturing	336300	3.03%	12,410	10,511	-15.31%
Machine shops	332710	3.03%	12,381	10,895	-12.00%
Other fabricated metal product manufacturing	332900	2.73%	11,163	10,522	-5.74%
Employment services	561300	2.58%	10,544	14,196	34.64%
Ship and boat building	336600	2.51%	10,285	12,246	19.07%
Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	333400	2.39%	9,762	9,553	-2.14%
Nonresidential building construction	236200	2.03%	8,323	9,921	19.20%
Industrial machinery manufacturing	333200	1.31%	5,341	4,655	-12.85%

### Top Industries for Riggers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Ship and boat building	336600	13.35%	1,643	1,656	0.74%
Employment services	561300	12.68%	1,562	1,779	13.91%
Federal government, excluding postal service	919999	11.51%	1,417	1,206	-14.92%
Support activities for mining	213100	6.80%	837	709	-15.34%
Other specialty trade contractors	238900	4.72%	581	578	-0.53%
Other building equipment contractors	238290	4.72%	581	567	-2.46%
Other motor vehicle dealers	441200	3.98%	490	591	20.61%
Commercial and industrial machinery and equipment rental and leasing	532400	3.26%	402	442	9.97%
Performing arts companies	711100	3.25%	401	367	-8.47%
Specialized freight trucking	484200	2.76%	340	345	1.37%
Nonresidential building construction	236200	2.06%	254	256	0.84%

Promoters of events, and agents and managers	7113-4	1.90%	234	287	22.58%
Other heavy and civil engineering construction	237900	1.72%	212	205	-3.33%
Logging	113310	1.58%	194	145	-25.60%
Architectural and structural metals manufacturing	332300	1.17%	145	139	-3.87%



# TORQ Analysis of Riggers to Team Assemblers

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Riggers	49-9096.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Team Assemblers	51-2092.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:									88		
Ability TORQ			Skills TORQ			Knowledge TORQ					
Level	86		Level	89		Level	88				
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Speech Recognition	41	6	50	No Skills Upgrade Required!				No Knowledge Upgrades Required!			
Written Expression	37	5	50								
Speech Clarity	41	4	50								
Oral Comprehension	51	3	62								
Finger Dexterity	42	3	56								
Near Vision	44	3	56								
LEVEL and IMPT (IMPORTANCE) refer to the Target Team Assemblers. GAP refers to level difference between Riggers and Team Assemblers.											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Riggers	Team Assemblers	Importance
Oral Comprehension	48	51	62
Manual Dexterity	46	41	62
Oral Expression	50	48	59
Information Ordering	46	42	56
Arm-Hand Steadiness	41	39	56
Finger Dexterity	39	42	56
Near Vision	41	44	56
Problem Sensitivity	48	41	53
Control Precision	44	44	53
Written Expression	32	37	50
Deductive Reasoning	41	41	50
Speech Recognition	35	41	50

Speech Clarity	37	41	50
Skill Level Comparison - Abilities with importance scores over 69			
Description	Riggers	Team Assemblers	Importance
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Riggers	Team Assemblers	Importance

Experience & Education Comparison					
Related Work Experience Comparison			Required Education Level Comparison		
Description	Riggers	Team Assemblers	Description	Riggers	Team Assemblers
10+ years	3%	0%	Doctoral	0%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
6-8 years	7%	0%	Post-Masters Cert	0%	0%
4-6 years	10%	0%	Master's Degree	0%	0%
2-4 years	32%	4%	Post-Bachelor Cert	0%	0%
1-2 years	3%	6%	Bachelors	0%	0%
6-12 months	3%	10%	AA or Equiv	0%	0%
3-6 months	31%	2%	Some College	3%	1%
1-3 months	0%	6%	Post-Secondary Certificate	9%	11%
0-1 month	0%	17%	High School Diploma or GED	79%	63%
None	8%	50%	No HSD or GED	7%	22%
Riggers			Team Assemblers		
Most Common Educational/Training Requirement:					
Short-term on-the-job training			Moderate-term on-the-job training		
Job Zone Comparison					
3 - Job Zone Three: Medium Preparation Needed			2 - Job Zone Two: Some Preparation Needed		
<p>Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.</p> <p>Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.</p> <p>Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.</p>			<p>Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.</p> <p>These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.</p> <p>Employees in these occupations need anywhere from a few months to one year of working with experienced employees.</p>		

Tasks	
Riggers	Team Assemblers
Core Tasks	Core Tasks
Generalized Work Activities:	Generalized Work Activities:
<ul style="list-style-type: none"> <li>Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.</li> <li>Controlling Machines and Processes - Using either control mechanisms or direct physical</li> </ul>	<ul style="list-style-type: none"> <li>Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.</li> <li>Controlling Machines and Processes - Using either control mechanisms or direct physical</li> </ul>



activity to operate machines or processes (not including computers or vehicles).

- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Repairing and Maintaining Mechanical Equipment - Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

#### Specific Tasks

##### Occupation Specific Tasks:

- Align, level, and anchor machinery.
- Attach loads to rigging to provide support or prepare them for moving, using hand and power tools.
- Attach pulleys and blocks to fixed overhead structures such as beams, ceilings, and gin pole booms, using bolts and clamps.
- Clean and dress machine surfaces and component parts.
- Control movement of heavy equipment through narrow openings or confined spaces, using chainfalls, gin poles, gallows frames, and other equipment.
- Dismantle and store rigging equipment after use.
- Fabricate, set up, and repair rigging, supporting structures, hoists, and pulling gear, using hand and power tools.
- Install ground rigging for yarding lines, attaching chokers to logs and then to the lines.
- Manipulate rigging lines, hoists, and pulling gear to move or support materials such as heavy equipment, ships, or theatrical sets.
- Select gear such as cables, pulleys, and winches, according to load weights and sizes, facilities, and work schedules.
- Signal or verbally direct workers engaged in hoisting and moving loads, in order to ensure safety of workers and materials.
- Test rigging to ensure safety and reliability.
- Tilt, dip, and turn suspended loads to maneuver over, under, and/or around obstacles, using multi-point suspension techniques.

#### Detailed Tasks

##### Detailed Work Activities:

- adhere to safety procedures
- apply cleaning solvents
- clean equipment or machinery

activity to operate machines or processes (not including computers or vehicles).

- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

#### Specific Tasks

##### Occupation Specific Tasks:

- Determine work assignments and procedures.
- Operate heavy equipment such as forklifts.
- Provide assistance in the production of wiring assemblies.
- Rotate through all the tasks required in a particular production process.
- Shovel and sweep work areas.

#### Detailed Tasks

##### Detailed Work Activities:

- confer with engineering, technical or manufacturing personnel
- direct and coordinate activities of workers or staff
- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble manufactured products by hand
- perform safety inspections in manufacturing or industrial setting
- read work order, instructions, formulas, or processing charts
- use computers to enter, access or retrieve data
- use hand or power tools
- work as a team member

#### Tools - Examples

- Adjustable wrenches
- Bearing installation tools
- Bench vises
- Welding torches
- Dial calipers
- Metal chisels
- Dividers



- direct and coordinate activities of workers or staff
- dismantle or reassemble rigging
- fabricate, assemble, or disassemble manufactured products by hand
- move or fit heavy objects
- perform safety inspections in industrial, manufacturing or repair setting
- position, align, or level machines, equipment, or structures
- read work order, instructions, formulas, or processing charts
- repair specialized rigging
- set up specialized rigging
- signal directions or warnings to coworkers
- test mechanical products or equipment
- use hand or power tools
- use knowledge of metric system
- use pneumatic tools
- use precision measuring tools or equipment
- verify levelness or verticality, using level or plumb bob

- Burring tools
- Desktop computers
- Protective ear muffs
- Protective ear plugs
- Engine repair stands
- Fiber reinforced polymer FRP rollers
- Feeler gauges
- Hand files
- Torque angle meters
- Forklifts
- Arc welding equipment
- Dial indicators
- Vacuum bags
- Grinding machines
- Material guiding jigs
- Claw hammers
- Hand clamps
- Heat guns
- Pin protrusion gauges
- Allen wrenches
- Power hoists
- Ring squeezers
- Hydraulic press frames
- Power wrenches
- Heating furnaces
- Threaded insert tools
- Hand jacks
- Heat lamps
- Ladders
- Lathes
- Transits
- Locking pliers

- End milling machines
- Plastic mallets
- Metal inert gas MIG welders
- Electrochemical etching devices
- Micrometers
- Computerized numerical control CNC metal-cutting machines
- Milling machines
- Needlenose pliers
- Nut drivers
- Paint application brushes
- Paint application rollers
- High-volume low-pressure HVLP spray guns
- Curing ovens
- Assembly robots
- Rotating mandrels
- Tube cutters
- Flame cutters
- Pneumatic drills
- First assembly jigs
- Power chippers
- Cordless drills
- Bench grinders
- Edge planers
- Belt sanders
- Cutoff saws
- Power drivers
- Anti-vibration gloves
- Protractors
- Pry bars
- Gear pullers
- Center punches
- Ratchets

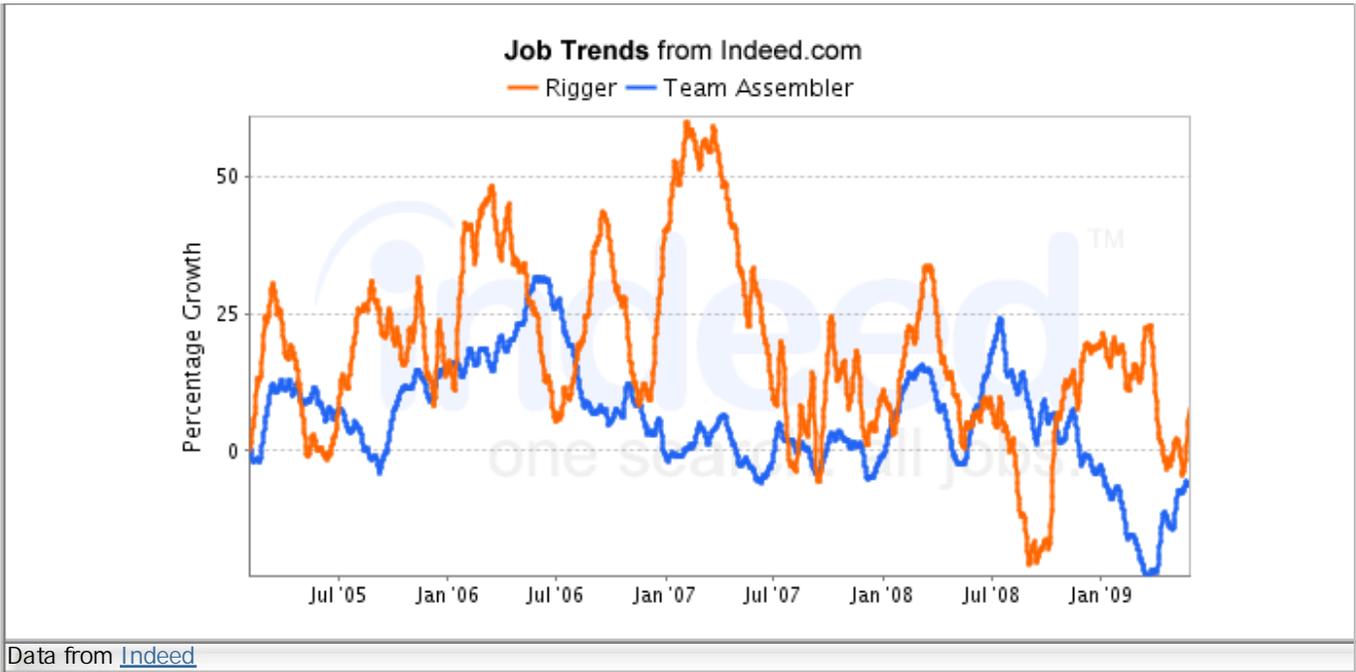


- Line reamers
- Chopper guns
- Respirators
- Snap ring pliers
- Alligator jaw compression riveters
- Steel rules
- Safety glasses
- Scaffolding
- Straight screwdrivers
- Scribes
- Adhesive application robots
- Beverly shears
- Socket wrenches
- Soldering guns
- Spanner wrenches
- Case wrenches
- Timing lights
- Layout squares
- Squeegees
- Bearing staking tools
- Measuring tapes
- Taps
- Drafting templates
- Tensiometers
- Fuel control wrenches
- Beading tools
- Crimping tools
- Lapping tools
- Tungsten inert gas TIG welding equipment
- Turnbuckles
- Radial drills
- Ultrasonic inspection equipment

	<ul style="list-style-type: none"> <li>• Trimming knives</li> <li>• Vacuum pumps</li> <li>• Wedges</li> <li>• Tack welding equipment</li> <li>• Welding hoods</li> <li>• Welding robots</li> <li>• Spot welding equipment</li> <li>• Cable cutters</li> <li>• Jib cranes</li> <li>• Brakes</li> </ul>
--	---

Labor Market Comparison			
Maine Department of Labor.			
Description	Riggers	Team Assemblers	Difference
Median Wage	\$ 39,140	\$ 23,730	\$( 15,410)
10th Percentile Wage	\$ 32,550	\$ 18,550	\$( 14,000)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 45,120	\$ 28,380	\$( 16,740)
90th Percentile Wage	\$ 50,700	\$ 32,810	\$( 17,890)
Mean Wage	\$ 40,090	\$ 25,040	\$( 15,050)
Total Employment - 2532	250	3,850	3,600
Employment Base - 2006	235	3,958	3,723
Projected Employment - 2541	206	3,691	3,485
Projected Job Growth - 2006-2541	-12.3 %	-6.7 %	5.6 %
Projected Annual Openings - 2006-2541	2	82	80
Special			
Special Occupations:			

National Job Posting Trends
Trend for Riggers and Team Assemblers



Programs			
Related Programs			
Sheet Metal Worker			
Sheet Metal Technology/Sheetworking. A program that prepares individuals to apply technical knowledge and skills to form, shape, bend and fold extruded metals, including the creation of new products, using hand tools and machines such as cornice brakes, forming rolls, and squaring shears.			
Institution	Address	City	URL
Northern Maine Community College	33 Edgemont Dr	Presque Isle	<a href="http://www.nmcc.edu">www.nmcc.edu</a>
Shoe, Boot and Leather Repairer			
Machine Shop Technology/Assistant. A program that prepares individuals to apply technical knowledge and skills to fabricate and modify metal parts in support of other manufacturing, repair or design activities, or as an independent business.			
No information on schools for the program			
Window Treatment Maker and Installer			
Electromechanical Technology/Electromechanical Engineering Technology. A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers engaged in developing and testing automated, servomechanical, and other electromechanical systems. Includes instruction in prototype testing, manufacturing and operational testing, systems analysis and maintenance procedures, and report preparation.			
Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>
Central Maine Community College	1250 Turner St	Auburn	<a href="http://www.cmcc.edu">www.cmcc.edu</a>

**Maine Statewide Promotion Opportunities for Riggers**

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-9096.00	Riggers	100	3	250	\$39,140.00	\$0.00	-12%	2	
51-4192.00	Lay-Out Workers, Metal and Plastic	87	2	180	\$43,870.00	\$4,730.00	-24%	3	
53-7021.00	Crane and Tower Operators	85	3	240	\$41,940.00	\$2,800.00	-2%	4	
49-9051.00	Electrical Power-Line Installers and Repairers	84	3	280	\$47,750.00	\$8,610.00	9%	12	
47-2011.00	Boilermakers	84	4	60	\$39,260.00	\$120.00	12%	3	
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	82	3	170	\$47,860.00	\$8,720.00	-9%	3	
49-9044.00	Millwrights	82	3	830	\$41,280.00	\$2,140.00	-12%	11	
47-2082.00	Tapers	81	2	70	\$39,910.00	\$770.00	5%	3	
53-6051.07	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation	80	3	60	\$42,890.00	\$3,750.00	5%	2	
51-4111.00	Tool and Die Makers	80	3	160	\$51,670.00	\$12,530.00	-11%	2	
47-2111.00	Electricians	79	3	2,910	\$43,650.00	\$4,510.00	1%	89	
47-1011.00	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	79	3	3,190	\$46,630.00	\$7,490.00	3%	77	
49-9041.00	Industrial Machinery Mechanics	78	3	990	\$39,370.00	\$230.00	7%	25	
49-9052.00	Telecommunications Line Installers and Repairers	78	3	720	\$56,120.00	\$16,980.00	0%	19	
45-1011.05	First-Line Supervisors/Managers of Logging Workers	78	4	240	\$41,590.00	\$2,450.00	4%	8	

Special Occupations:

Top Industries for Team Assemblers					
Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Employment services	561300	15.68%	199,847	252,932	26.56%
Motor vehicle parts manufacturing	336300	7.79%	99,321	80,278	-19.17%
Motor vehicle manufacturing	336100	4.50%	57,395	57,191	-0.35%
Other wood product manufacturing	321900	3.65%	46,477	43,797	-5.77%

Motor vehicle body and trailer manufacturing	336200	3.47%	44,237	44,350	0.25%
Plastics product manufacturing	326100	3.40%	43,379	45,983	6.00%
Architectural and structural metals manufacturing	332300	2.80%	35,620	38,043	6.80%
Medical equipment and supplies manufacturing	339100	2.66%	33,860	34,635	2.29%
Other fabricated metal product manufacturing	332900	2.47%	31,442	27,859	-11.39%
Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	333400	2.41%	30,715	28,255	-8.01%
Other general purpose machinery manufacturing	333900	2.36%	30,035	27,113	-9.73%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	1.84%	23,417	22,419	-4.26%
Agriculture, construction, and mining machinery manufacturing	333100	1.79%	22,809	21,297	-6.63%
Household appliance manufacturing	335200	1.65%	21,088	15,957	-24.33%
Semiconductor and other electronic component manufacturing	334400	1.65%	21,011	18,365	-12.59%

### Top Industries for Riggers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Ship and boat building	336600	13.35%	1,643	1,656	0.74%
Employment services	561300	12.68%	1,562	1,779	13.91%
Federal government, excluding postal service	919999	11.51%	1,417	1,206	-14.92%
Support activities for mining	213100	6.80%	837	709	-15.34%
Other specialty trade contractors	238900	4.72%	581	578	-0.53%
Other building equipment contractors	238290	4.72%	581	567	-2.46%
Other motor vehicle dealers	441200	3.98%	490	591	20.61%
Commercial and industrial machinery and equipment rental and leasing	532400	3.26%	402	442	9.97%
Performing arts companies	711100	3.25%	401	367	-8.47%
Specialized freight trucking	484200	2.76%	340	345	1.37%
Nonresidential building construction	236200	2.06%	254	256	0.84%
Promoters of events, and agents and managers	7113-4	1.90%	234	287	22.58%
Other heavy and civil engineering construction	237900	1.72%	212	205	-3.33%
Logging	113310	1.58%	194	145	-25.60%
Architectural and structural metals manufacturing	332300	1.17%	145	139	-3.87%

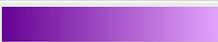


# TORQ Analysis of Riggers to Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters

ANALYSIS INPUT					
Transfer	Title	O* NET	Filters		
From Title:	Riggers	49-9096.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	47-3015.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS														
Grand TORQ:												87		
Ability TORQ				Skills TORQ				Knowledge TORQ						
Level				88	Level				85	Level				89
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add						
Ability	Level	Gap	Imp	Skill	Level	Gap	Imp	Knowledge	Level	Gap	Imp			
Near Vision	50	9	59	Installation	62	13	76	Public Safety and Security	48	7	69			
Extent Flexibility	57	9	56	Learning Strategies	63	8	72							
Static Strength	44	3	50											
Oral Comprehension	50	2	56											
LEVEL and IMP (IMPORTANCE) refer to the Target Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters. GAP refers to level difference between Riggers and Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters.														

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Riggers	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	Importance
Manual Dexterity	46 	41 	62 
Near Vision	41 	50 	59 
Oral Comprehension	48 	50 	56 
Information Ordering	46 	44 	56 
Extent Flexibility	48 	57 	56 
Arm-Hand Steadiness	41 	41 	53 
Trunk Strength	44 	44 	53 
Problem Sensitivity	48 	37 	50 
Multilimb Coordination	48 	35 	50 
Static Strength	41 	44 	50 
Skill Level Comparison - Abilities with importance scores over 69			

Description	Riggers	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	Importance
Installation	49 	62 	76 
Learning Strategies	55 	63 	72 
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Riggers	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	Importance
Public Safety and Security	41 	48 	69 

### Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Riggers	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	Description	Riggers	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters
10+ years	3% 	0% 	Doctoral	0% 	0% 
8-10 years	0% 	0% 	Professional Degree	0% 	0% 
6-8 years	7% 	11% 	Post-Masters Cert	0% 	0% 
4-6 years	10% 	13% 	Master's Degree	0% 	0% 
2-4 years	32% 	12% 	Post-Bachelor Cert	0% 	0% 
1-2 years	3% 	3% 	Bachelors	0% 	0% 
6-12 months	3% 	14% 	AA or Equiv	0% 	0% 
3-6 months	31% 	24% 	Some College	3% 	0% 
1-3 months	0% 	4% 	Post-Secondary Certificate	9% 	46% 
0-1 month	0% 	0% 	High School Diploma or GED	79% 	33% 
None	8% 	14% 	No HSD or GED	7% 	19% 

Riggers	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters
<b>Most Common Educational/Training Requirement:</b>	
Short-term on-the-job training	Short-term on-the-job training
<b>Job Zone Comparison</b>	
<b>3 - Job Zone Three: Medium Preparation Needed</b>	<b>2 - Job Zone Two: Some Preparation Needed</b>
Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.	These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.
Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.	Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

### Tasks

Riggers	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters
Core Tasks	Core Tasks



## Generalized Work Activities:

- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Repairing and Maintaining Mechanical Equipment - Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

## Specific Tasks

## Occupation Specific Tasks:

- Align, level, and anchor machinery.
- Attach loads to rigging to provide support or prepare them for moving, using hand and power tools.
- Attach pulleys and blocks to fixed overhead structures such as beams, ceilings, and gin pole booms, using bolts and clamps.
- Clean and dress machine surfaces and component parts.
- Control movement of heavy equipment through narrow openings or confined spaces, using chainfalls, gin poles, gallows frames, and other equipment.
- Dismantle and store rigging equipment after use.
- Fabricate, set up, and repair rigging, supporting structures, hoists, and pulling gear, using hand and power tools.
- Install ground rigging for yarding lines, attaching chokers to logs and then to the lines.
- Manipulate rigging lines, hoists, and pulling gear to move or support materials such as heavy equipment, ships, or theatrical sets.
- Select gear such as cables, pulleys, and winches, according to load weights and sizes, facilities, and work schedules.
- Signal or verbally direct workers engaged in hoisting and moving loads, in order to ensure safety of workers and materials.
- Test rigging to ensure safety and reliability.
- Tilt, dip, and turn suspended loads to maneuver over, under, and/or around obstacles, using multi-point suspension techniques.

## Generalized Work Activities:

- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Operating Vehicles, Mechanized Devices, or Equipment - Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.

## Specific Tasks

## Occupation Specific Tasks:

- Assist pipe fitters in the layout, assembly, and installation of piping for air, ammonia, gas, and water systems.
- Assist plumbers by performing rough-ins, repairing and replacing fixtures, and locating and repairing leaking or broken pipes.
- Clean and renew steam traps.
- Clean shop, work area, and machines, using solvent and rags.
- Cut or drill holes in walls or floors to accommodate the passage of pipes.
- Cut pipe and lift up to fitters.
- Disassemble and remove damaged or worn pipe.
- Excavate and grade ditches, and lay and join pipe for water and sewer service.
- Fill pipes with sand or resin to prevent distortion, and hold pipes during bending and installation.
- Fit or assist in fitting valves, couplings, or assemblies to tanks, pumps, or systems, using hand tools.
- Immerse pipe in chemical solution to remove dirt, oil, and scale.
- Install gas burners to convert furnaces from wood, coal, or oil.
- Measure, cut, thread and assemble new pipe, placing the assembled pipe in hangers or other supports.
- Mount brackets and hangers on walls and ceilings to hold pipes, and set sleeves or inserts to provide support for pipes.
- Requisition tools and equipment, select type and size of pipe, and collect and transport materials and equipment to work site.

techniques.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- apply cleaning solvents
- clean equipment or machinery
- direct and coordinate activities of workers or staff
- dismantle or reassemble rigging
- fabricate, assemble, or disassemble manufactured products by hand
- move or fit heavy objects
- perform safety inspections in industrial, manufacturing or repair setting
- position, align, or level machines, equipment, or structures
- read work order, instructions, formulas, or processing charts
- repair specialized rigging
- set up specialized rigging
- signal directions or warnings to coworkers
- test mechanical products or equipment
- use hand or power tools
- use knowledge of metric system
- use pneumatic tools
- use precision measuring tools or equipment
- verify levelness or verticality, using level or plumb bob

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- apply adhesives, caulking, sealants, or coatings
- apply cleaning solvents
- assemble and install pipe sections, fittings, or plumbing fixtures
- assist mechanic, or extractive or construction trades craft worker
- bend tubing or conduit
- build or repair structures in construction, repair, or manufacturing setting
- clean equipment or machinery
- clean rooms or work areas
- cut, bend, or thread pipe for gas, air, hydraulic, or water lines
- cut, shape, fit, or join wood or other construction materials
- fabricate, assemble, or disassemble manufactured products by hand
- measure and mark reference points or cutting lines on workpieces
- move materials or goods between work areas
- move or fit heavy objects
- repair or replace gas, steam, sewer, or water piping or fixtures
- requisition stock, materials, supplies or equipment
- use acetylene welding/cutting torch
- use basic plumbing techniques
- use hand or power tools
- use measuring devices in construction or extraction work
- use pipe fitting equipment
- use two-way radio or mobile phone

Tools - Examples

- Expanding-jaw pliers
- Adjustable wrenches
- Air compressors
- Augers
- Backhoes
- Bandsaws
- Bench chain vises
- Block and tackle equipment
- Butane torches
- Bolt cutters



- Boring machines
- Box end wrenches
- Calipers
- Caulking guns
- Wire tracers
- Compactors
- Deburring tools
- Line locators
- Utility pumps
- Diagonal cut pliers
- Test pumps
- Video diagnostic tools
- Drain cleaning cables
- Plungers
- Dredges
- Drilling machines
- Dump trucks
- Explosimeters
- Flat files
- Flow gauges
- Pipe freezing kits
- Forklifts
- Gas leak detection devices
- Generators
- Brazing equipment
- Telescopic inspection mirrors
- Graders
- Rotary hammers
- Ball peen hammers
- Allen wrenches
- Chain falls
- Hole cutting tools

- Gasket cutters
- Cranes
- Hydraulic valve turners
- Tractor pipe carrier attachments
- Manual screw jacks
- Ladders
- Pipe lasers
- Lathes
- Trutest smoke detectors
- Transits
- Automatic levels
- Light pickup trucks
- Ultrasonic leak detectors
- Channel lock pliers
- Manlifts
- Magnetic locators
- Metal inert gas MIG welders
- Centering head tools
- Moisture meters
- Mud pumps
- Universal nut wrenches
- Hollow core socket wrenches
- Ohmmeters
- Oilers
- Mandrels
- Manual benders
- Pipe extractors
- Pipelayers
- Mini tubing cutters
- Aligning clamps
- End pipe wrenches
- Pneumatic drills

- Air operated grinders
- Air hammers
- Sandblasters
- Cordless drills
- Bevel grinding machines
- Circular saws
- Cordless screwdrivers
- Air pressure gauges
- Rodders
- Crowbars
- Compression sleeve pullers
- Ratchet wrenches
- Reamers
- Safety harnesses
- Hacksaws
- Scaffolding
- Impact screwdrivers
- Sewage pumps
- Narrow mouth shovels
- Belting slings
- Slip pliers
- Soldering equipment
- Basin wrenches
- Die heads for threading machines
- Staple guns
- Rubber strap wrenches
- Sump pumps
- Swaging tools
- Hand tachometers
- Powered tampers
- Measuring tapes
- Non-contact infrared thermometers

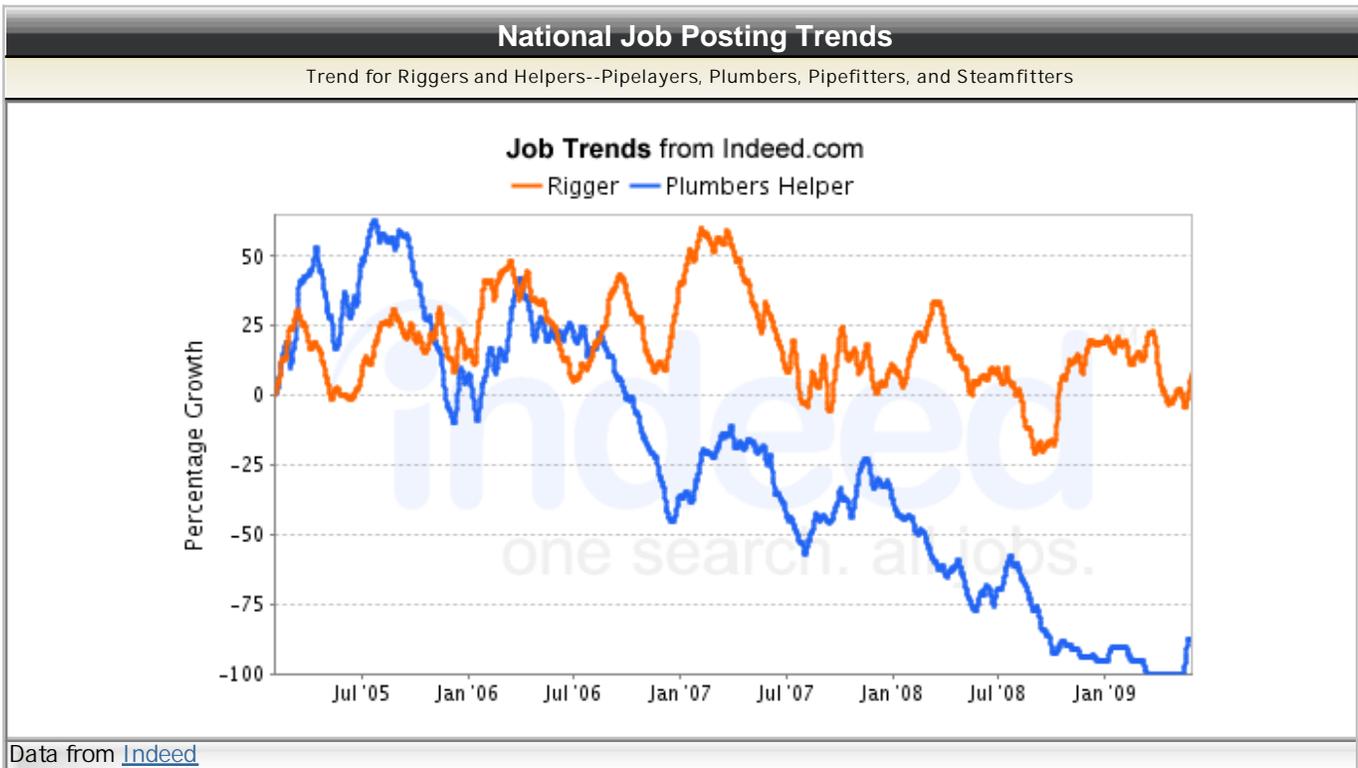
- Die heads for plastic pipe/conduit
- Pipe threaders
- Tin snips
- Chain tongs
- Four-in-one keys
- Excavators
- Track loaders
- Cable plows
- Crimping tools
- Tungsten inert gas TIG welding equipment
- Two way radios
- Vacuum gauges
- Vibration analyzers
- Amp meters
- Ditch pumps
- Water sampling devices
- Alternating current/direct current AC/DC welders
- Welding hoods
- Bulldozers
- Wheel loaders
- Winches
- Air wire brushes
- Cable saws
- Drill presses

### Labor Market Comparison

Maine Department of Labor.

Description	Riggers	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	Difference
Median Wage	\$ 39,140	\$ 25,760	\$( 13,380)
10th Percentile Wage	\$ 32,550	\$ 18,110	\$( 14,440)
25th Percentile Wage	N/A	N/A	N/A

75th Percentile Wage	\$ 45,120	\$ 31,390	\$( 13,730)
90th Percentile Wage	\$ 50,700	\$ 42,050	\$( 8,650)
Mean Wage	\$ 40,090	\$ 27,550	\$( 12,540)
Total Employment - 2532	250	320	70
Employment Base - 2006	235	333	98
Projected Employment - 2541	206	362	156
Projected Job Growth - 2006-2541	-12.3 %	8.7 %	21.1 %
Projected Annual Openings - 2006-2541	2	11	9
Special			
Special Occupations:			



### Programs

Related Programs

Plumbing Technology/Plumber

Plumbing Technology/Plumber. A program that prepares individuals to practice as licensed plumbers by applying technical knowledge and skills to lay out, assemble, install, and maintain piping fixtures and systems for steam, natural gas, oil, hot water, heating, cooling, drainage, lubricating, sprinkling, and industrial processing systems in home and business environments. Includes instruction in source determination, water distribution, waster removal, pressure adjustment, basic physics, technical mathematics, blueprint reading, pipe installation, pumps, welding and soldering, plumbing inspection, and applicable codes and standards.

Institution	Address	City	URL
Wasington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>
Northern Maine Community College	33 Edgemont Dr	Presque Isle	<a href="http://www.nmcc.edu">www.nmcc.edu</a>
Northern Maine Community College	33 Edgemont Dr	Presque Isle	<a href="http://www.nmcc.edu">www.nmcc.edu</a>
Northern Maine Community College	33 Edgemont Dr	Presque Isle	<a href="http://www.nmcc.edu">www.nmcc.edu</a>
Southern Maine Community College	2 Fort Road	South Portland	<a href="http://www.smccME.edu">www.smccME.edu</a>
Southern Maine Community College	2 Fort Road	South Portland	<a href="http://www.smccME.edu">www.smccME.edu</a>

Maine Statewide Promotion Opportunities for Riggers									
O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-9096.00	Riggers	100	3	250	\$39,140.00	\$0.00	-12%	2	
51-4192.00	Lay-Out Workers, Metal and Plastic	87	2	180	\$43,870.00	\$4,730.00	-24%	3	
53-7021.00	Crane and Tower Operators	85	3	240	\$41,940.00	\$2,800.00	-2%	4	
49-9051.00	Electrical Power-Line Installers and Repairers	84	3	280	\$47,750.00	\$8,610.00	9%	12	
47-2011.00	Boilermakers	84	4	60	\$39,260.00	\$120.00	12%	3	
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	82	3	170	\$47,860.00	\$8,720.00	-9%	3	
49-9044.00	Milwrights	82	3	830	\$41,280.00	\$2,140.00	-12%	11	
47-2082.00	Tapers	81	2	70	\$39,910.00	\$770.00	5%	3	
53-6051.07	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation	80	3	60	\$42,890.00	\$3,750.00	5%	2	
51-4111.00	Tool and Die Makers	80	3	160	\$51,670.00	\$12,530.00	-11%	2	
47-2111.00	Electricians	79	3	2,910	\$43,650.00	\$4,510.00	1%	89	
47-1011.00	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	79	3	3,190	\$46,630.00	\$7,490.00	3%	77	
49-9041.00	Industrial Machinery Mechanics	78	3	990	\$39,370.00	\$230.00	7%	25	
49-9052.00	Telecommunications Line Installers and Repairers	78	3	720	\$56,120.00	\$16,980.00	0%	19	



45-1011.05	First-Line Supervisors/Managers of Logging Workers	78	4	240	\$41,590.00	\$2,450.00	4%	8
Special Occupations:								

### Top Industries for Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Plumbing, heating, and air-conditioning contractors	238220	75.60%	63,986	72,257	12.93%
Nonresidential building construction	236200	3.50%	2,962	3,318	12.05%
Self-employed workers, primary job	000601	2.83%	2,391	2,548	6.54%
Other specialty trade contractors	238900	1.56%	1,323	1,463	10.52%
Electrical contractors	238210	1.55%	1,312	1,376	4.86%
Local government, excluding education and hospitals	939300	1.06%	895	1,006	12.34%
Residential building construction	236100	0.75%	638	718	12.61%
Employment services	561300	0.67%	568	719	26.56%
Highway, street, and bridge construction	237300	0.59%	495	533	7.66%
Remediation and other waste management services	562900	0.39%	330	436	32.25%
Power and communication line and related structures construction	237130	0.38%	325	342	5.19%
Other heavy and civil engineering construction	237900	0.36%	301	323	7.41%
Land subdivision	237200	0.30%	257	256	-0.15%
Unpaid family workers, primary job	000701	0.24%	204	161	-20.89%
Natural gas distribution	221200	0.21%	177	145	-18.16%

### Top Industries for Riggers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Ship and boat building	336600	13.35%	1,643	1,656	0.74%
Employment services	561300	12.68%	1,562	1,779	13.91%
Federal government, excluding postal service	919999	11.51%	1,417	1,206	-14.92%
Support activities for mining	213100	6.80%	837	709	-15.34%
Other specialty trade contractors	238900	4.72%	581	578	-0.53%
Other building equipment contractors	238290	4.72%	581	567	-2.46%
Other motor vehicle dealers	441200	3.98%	490	591	20.61%
Commercial and industrial machinery and equipment rental and leasing	532400	3.26%	402	442	9.97%
Performing arts companies	711100	3.25%	401	367	-8.47%

Specialized freight trucking	484200	2.76%	340	345	1.37%
Nonresidential building construction	236200	2.06%	254	256	0.84%
Promoters of events, and agents and managers	7113-4	1.90%	234	287	22.58%
Other heavy and civil engineering construction	237900	1.72%	212	205	-3.33%
Logging	113310	1.58%	194	145	-25.60%
Architectural and structural metals manufacturing	332300	1.17%	145	139	-3.87%

# TORQ Analysis of Riggers to Paving, Surfacing, and Tamping Equipment Operators

ANALYSIS INPUT					
Transfer	Title	O* NET	Filters		
From Title:	Riggers	49-9096.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Paving, Surfacing, and Tamping Equipment Operators	47-2071.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS														
Grand TORQ:												87		
Ability TORQ				Skills TORQ				Knowledge TORQ						
Level				89	Level				85	Level				86
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add						
Ability	Level	Gap	Imp	Skill	Level	Gap	Imp	Knowledge	Level	Gap	Imp			
Control Precision	53	9	62	No Skills Upgrade Required!				No Knowledge Upgrades Required!						
Multilimb Coordination	57	9	62											
Static Strength	50	9	50											
Hearing Sensitivity	41	7	56											
Rate Control	35	5	56											
Reaction Time	48	4	53											
Speech Recognition	37	2	56											
Flexibility of Closure	37	2	50											
Trunk Strength	46	2	50											

LEVEL and IMPT (IMPORTANCE) refer to the Target Paving, Surfacing, and Tamping Equipment Operators. GAP refers to level difference between Riggers and Paving, Surfacing, and Tamping Equipment Operators.

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Riggers	Paving, Surfacing, and Tamping Equipment Operators	Importance
Problem Sensitivity	48 	41 	72 
Control Precision	44 	53 	62 
Multilimb Coordination	48 	57 	62 
Oral Comprehension	48 	46 	59 
Arm-Hand Steadiness	41 	34 	59 
Manual Dexterity	46 	39 	59 

Depth Perception	51		46		59	
Oral Expression	50		42		56	
Deductive Reasoning	41		37		56	
Inductive Reasoning	41		37		56	
Information Ordering	46		44		56	
Rate Control	30		35		56	
Near Vision	41		35		56	
Hearing Sensitivity	34		41		56	
Speech Recognition	35		37		56	
Speech Clarity	37		35		56	
Perceptual Speed	41		37		53	
Selective Attention	46		44		53	
Finger Dexterity	39		35		53	
Reaction Time	44		48		53	
Far Vision	50		35		53	
Flexibility of Closure	35		37		50	
Visualization	53		44		50	
Static Strength	41		50		50	
Trunk Strength	44		46		50	
Extent Flexibility	48		44		50	

Skill Level Comparison - Abilities with importance scores over 69

Description	Riggers	Paving, Surfacing, and Tamping Equipment Operators	Importance
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Riggers	Paving, Surfacing, and Tamping Equipment Operators	Importance

### Experience & Education Comparison

Related Work Experience Comparison				Required Education Level Comparison			
Description	Riggers	Paving, Surfacing, and Tamping Equipment Operators	Description	Riggers	Paving, Surfacing, and Tamping Equipment Operators		
10+ years	3%	8%	Doctoral	0%	0%		
8-10 years	0%	0%	Professional Degree	0%	0%		
6-8 years	7%	0%	Post-Masters Cert	0%	0%		
4-6 years	10%	1%	Master's Degree	0%	0%		
2-4 years	32%	14%	Post-Bachelor Cert	0%	0%		
1-2 years	3%	31%	Bachelors	0%	0%		
6-12 months	3%	26%	AA or Equiv	0%	0%		
3-6 months	31%	0%	Some College	3%	0%		
1-3 months	0%	0%	Post-Secondary Certificate	9%	14%		
0-1 month	0%	0%	High School Diploma or GED	79%	66%		
None	8%	17%	No HSD or GED	7%	18%		



## Most Common Educational/Training Requirement:

Short-term on-the-job training

Moderate-term on-the-job training

## Job Zone Comparison

3 - Job Zone Three: Medium Preparation Needed

2 - Job Zone Two: Some Preparation Needed

Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

## Tasks

## Riggers

## Paving, Surfacing, and Tamping Equipment Operators

## Core Tasks

## Core Tasks

## Generalized Work Activities:

## Generalized Work Activities:

- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Repairing and Maintaining Mechanical Equipment - Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

- Operating Vehicles, Mechanized Devices, or Equipment - Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

## Specific Tasks

## Specific Tasks

## Occupation Specific Tasks:

## Occupation Specific Tasks:

- Align, level, and anchor machinery.
- Attach loads to rigging to provide support or prepare them for moving, using hand and power tools.
- Attach pulleys and blocks to fixed overhead structures such as beams, ceilings, and gin pole booms, using bolts and clamps.
- Clean and dress machine surfaces and component parts.
- Control movement of heavy equipment through narrow openings or confined spaces, using chainfalls, gin poles, gallows frames, and other equipment.

- Control paving machines to push dump trucks and to maintain a constant flow of asphalt or other material into hoppers or screeds.
- Coordinate truck dumping.
- Cut or break up pavement and drive guardrail posts, using machines equipped with interchangeable hammers.
- Drive and operate curbing machines to extrude concrete or asphalt curbing.
- Drive machines onto truck trailers, and drive trucks to transport machines and material to and from job sites.
- Fill tanks, hoppers, or machines with paving materials.

- Dismantle and store rigging equipment after use.
- Fabricate, set up, and repair rigging, supporting structures, hoists, and pulling gear, using hand and power tools.
- Install ground rigging for yarding lines, attaching chokers to logs and then to the lines.
- Manipulate rigging lines, hoists, and pulling gear to move or support materials such as heavy equipment, ships, or theatrical sets.
- Select gear such as cables, pulleys, and winches, according to load weights and sizes, facilities, and work schedules.
- Signal or verbally direct workers engaged in hoisting and moving loads, in order to ensure safety of workers and materials.
- Test rigging to ensure safety and reliability.
- Tilt, dip, and turn suspended loads to maneuver over, under, and/or around obstacles, using multi-point suspension techniques.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- apply cleaning solvents
- clean equipment or machinery
- direct and coordinate activities of workers or staff
- dismantle or reassemble rigging
- fabricate, assemble, or disassemble manufactured products by hand
- move or fit heavy objects
- perform safety inspections in industrial, manufacturing or repair setting
- position, align, or level machines, equipment, or structures
- read work order, instructions, formulas, or processing charts
- repair specialized rigging
- set up specialized rigging
- signal directions or warnings to coworkers
- test mechanical products or equipment
- use hand or power tools
- use knowledge of metric system
- use pneumatic tools
- use precision measuring tools or equipment
- verify levelness or verticality, using level or plumb bob

- Inspect, clean, maintain, and repair equipment, using mechanics' hand tools, or report malfunctions to supervisors.
- Install dies, cutters, and extensions to screeds onto machines, using hand tools.
- Light burners or start heating units of machines, and regulate screed temperatures and asphalt flow rates.
- Observe distribution of paving material to adjust machine settings or material flow, and indicate low spots for workers to add material.
- Operate machines that clean or cut expansion joints in concrete or asphalt and that rout out cracks in pavement.
- Operate machines to spread, smooth, level, or steel-reinforce stone, concrete, or asphalt on road beds.
- Operate oil distributors, loaders, chip spreaders, dump trucks, and snow plows.
- Operate tamping machines or manually roll surfaces to compact earth fills, foundation forms, and finished road materials, according to grade specifications.
- Place strips of material such as cork, asphalt, or steel into joints, or place rolls of expansion-joint material on machines that automatically insert material.
- Set up and tear down equipment.
- Set up forms and lay out guidelines for curbs, according to written specifications, using string, spray paint, and concrete/water mixes.
- Shovel blacktop.
- Start machine, engage clutch, and push and move levers to guide machine along forms or guidelines and to control the operation of machine attachments.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- clean equipment or machinery
- drive truck with capacity greater than 3 tons
- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery
- maintain or repair construction machinery or equipment
- measure, weigh, or count products or materials
- monitor production machinery/equipment operation to detect problems
- operate earth-moving or other heavy construction equipment
- perform safety inspections in construction or resource extraction setting
- prepare site or surfaces for concrete or masonry work
- read specifications



- read work order, instructions, formulas, or processing charts
- understand construction specifications
- use hand or power tools
- use measuring devices in construction or extraction work

---

#### Tools - Examples

---

- Adjustable wrenches
- Paving finishing machines
- Asphalt distributor trucks
- Chip spreaders
- Cold in-place recyclers
- Compactors
- Vibrating concrete screeds
- Paving curbing machines
- Desktop computers
- Dump trucks
- Flatbed truck trailers
- Motor graders
- Claw hammers
- Asphalt heating equipment
- Transits
- Laser levels
- Locking pliers
- Surveying tapes
- Milling equipment
- Profiling equipment
- Nut drivers
- Pavement marking machines
- Pneumatic paving breakers
- Asphalt mixing equipment
- Personal computers
- Jackhammers
- Concrete saws
- Self-contained breathing apparatus



- Respirators
- Asphalt paving machines
- Road heater-planers
- Manual rollers
- Straight screwdrivers
- Snow plows
- Straightedges
- String lines
- Tamping machines
- Two way radios
- Wheeled loaders

### Labor Market Comparison

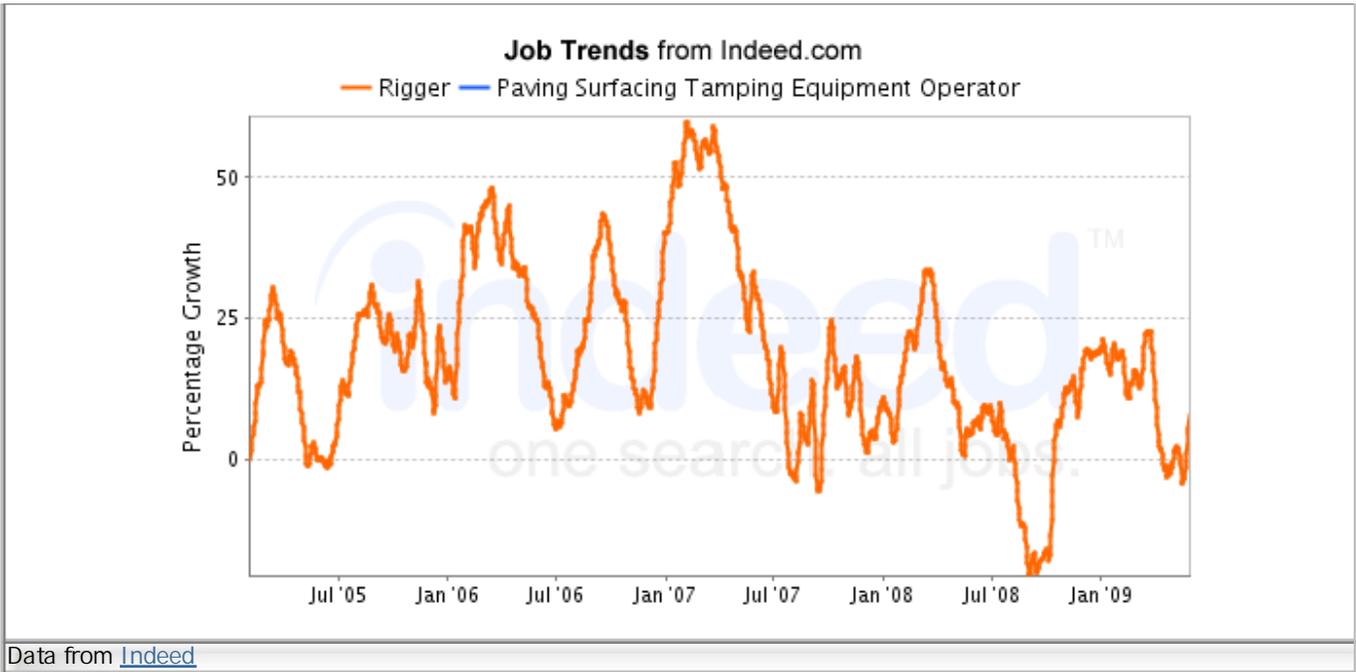
Maine Department of Labor.

Description	Riggers	Paving, Surfacing, and Tamping Equipment Operators	Difference
Median Wage	\$ 39,140	\$ 25,520	\$( 13,620)
10th Percentile Wage	\$ 32,550	\$ 18,390	\$( 14,160)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 45,120	\$ 30,060	\$( 15,060)
90th Percentile Wage	\$ 50,700	\$ 36,900	\$( 13,800)
Mean Wage	\$ 40,090	\$ 26,340	\$( 13,750)
Total Employment - 2532	250	320	70
Employment Base - 2006	235	324	89
Projected Employment - 2541	206	327	121
Projected Job Growth - 2006-2541	-12.3 %	0.9 %	13.3 %
Projected Annual Openings - 2006-2541	2	7	5
Special			

Special Occupations:

### National Job Posting Trends

Trend for Riggers and Paving, Surfacing, and Tamping Equipment Operators



Programs			
Related Programs			
Construction Equipment Operator			
<p>Construction/Heavy Equipment/Earthmoving Equipment Operation. A program that prepares individuals to apply technical knowledge and skills to operate and maintain a variety of heavy equipment, such as a crawler tractors, motor graders and scrapers, shovels, rigging devices, hoists, and jacks. Includes instruction in digging, ditching, sloping, stripping, grading, and backfilling, clearing and excavating.</p>			
Institution	Address	City	URL
Wasington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>

Maine Statewide Promotion Opportunities for Riggers									
O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-9096.00	Riggers	100	3	250	\$39,140.00	\$0.00	-12%	2	
51-4192.00	Lay-Out Workers, Metal and Plastic	87	2	180	\$43,870.00	\$4,730.00	-24%	3	
53-7021.00	Crane and Tower Operators	85	3	240	\$41,940.00	\$2,800.00	-2%	4	
49-9051.00	Electrical Power-Line Installers and Repairers	84	3	280	\$47,750.00	\$8,610.00	9%	12	
47-2011.00	Boilermakers	84	4	60	\$39,260.00	\$120.00	12%	3	



49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	82	3	170	\$47,860.00	\$8,720.00	-9%	3
49-9044.00	Millwrights	82	3	830	\$41,280.00	\$2,140.00	-12%	11
47-2082.00	Tapers	81	2	70	\$39,910.00	\$770.00	5%	3
53-6051.07	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation	80	3	60	\$42,890.00	\$3,750.00	5%	2
51-4111.00	Tool and Die Makers	80	3	160	\$51,670.00	\$12,530.00	-11%	2
47-2111.00	Electricians	79	3	2,910	\$43,650.00	\$4,510.00	1%	89
47-1011.00	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	79	3	3,190	\$46,630.00	\$7,490.00	3%	77
49-9041.00	Industrial Machinery Mechanics	78	3	990	\$39,370.00	\$230.00	7%	25
49-9052.00	Telecommunications Line Installers and Repairers	78	3	720	\$56,120.00	\$16,980.00	0%	19
45-1011.05	First-Line Supervisors/Managers of Logging Workers	78	4	240	\$41,590.00	\$2,450.00	4%	8

Special Occupations:

### Top Industries for Paving, Surfacing, and Tamping Equipment Operators

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Highway, street, and bridge construction	237300	32.60%	20,949	22,554	7.66%
Other specialty trade contractors	238900	29.66%	19,061	21,067	10.52%
Local government, excluding education and hospitals	939300	23.93%	15,377	17,274	12.34%
Poured concrete foundation and structure contractors	238110	2.31%	1,484	1,673	12.73%
Petroleum and coal products manufacturing	324100	1.97%	1,264	955	-24.51%
Self-employed workers, secondary job	000602	1.34%	863	859	-0.45%
State government, excluding education and hospitals	929200	0.77%	493	484	-1.87%
Other heavy and civil engineering construction	237900	0.59%	381	409	7.41%
Self-employed workers, primary job	000601	0.44%	283	301	6.54%
Management of companies and enterprises	551100	0.38%	243	280	15.28%
Employment services	561300	0.33%	215	272	26.56%

Land subdivision	237200	0.33%	211	211	-0.15%
Nonresidential building construction	236200	0.33%	215	241	12.05%
Waste collection	562100	0.30%	196	247	26.08%
Power and communication line and related structures construction	237130	0.21%	138	145	5.20%

### Top Industries for Riggers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Ship and boat building	336600	13.35%	1,643	1,656	0.74%
Employment services	561300	12.68%	1,562	1,779	13.91%
Federal government, excluding postal service	919999	11.51%	1,417	1,206	-14.92%
Support activities for mining	213100	6.80%	837	709	-15.34%
Other specialty trade contractors	238900	4.72%	581	578	-0.53%
Other building equipment contractors	238290	4.72%	581	567	-2.46%
Other motor vehicle dealers	441200	3.98%	490	591	20.61%
Commercial and industrial machinery and equipment rental and leasing	532400	3.26%	402	442	9.97%
Performing arts companies	711100	3.25%	401	367	-8.47%
Specialized freight trucking	484200	2.76%	340	345	1.37%
Nonresidential building construction	236200	2.06%	254	256	0.84%
Promoters of events, and agents and managers	7113-4	1.90%	234	287	22.58%
Other heavy and civil engineering construction	237900	1.72%	212	205	-3.33%
Logging	113310	1.58%	194	145	-25.60%
Architectural and structural metals manufacturing	332300	1.17%	145	139	-3.87%



# TORQ Analysis of Riggers to Rail-Track Laying and Maintenance Equipment Operators

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Riggers	49-9096.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Rail-Track Laying and Maintenance Equipment Operators	47-4061.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:										86	
Ability TORQ			Skills TORQ				Knowledge TORQ				
Level			87	Level			79	Level			91
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Imp	Skill	Level	Gap	Imp	Knowledge	Level	Gap	Imp
Control Precision	57	13	68	Troubleshooting	60	14	72	No Knowledge Upgrades Required!			
Static Strength	53	12	62	Repairing	63	8	73				
Rate Control	42	12	53								
Dynamic Strength	44	12	53								
Flexibility of Closure	46	11	56								
Speed of Limb Movement	41	9	56								
Reaction Time	51	7	65								
Hearing Sensitivity	42	8	53								
Response Orientation	48	7	56								
Visual Color Discrimination	39	7	53								
Multilimb Coordination	53	5	68								
Trunk Strength	50	6	56								
Finger Dexterity	44	5	59								
Perceptual Speed	44	3	53								
Stamina	42	3	53								
Auditory Attention	41	2	50								
Arm-Hand Steadiness	42	1	65								
Far Vision	51	1	62								
Near Vision	42	1	59								
LEVEL and IMPT (IMPORTANCE) refer to the Target Rail-Track Laying and Maintenance Equipment Operators. GAP refers to level difference between Riggers and Rail-Track Laying and Maintenance Equipment Operators.											

### ASK ANALYSIS

#### Ability Level Comparison - Abilities with importance scores over 50

Description	Riggers	Rail-Track Laying and Maintenance Equipment Operators	Importance
Manual Dexterity	46	46	68
Control Precision	44	57	68
Multilimb Coordination	48	53	68
Depth Perception	51	46	68
Problem Sensitivity	48	42	65
Arm-Hand Steadiness	41	42	65
Reaction Time	44	51	65
Static Strength	41	53	62
Far Vision	50	51	62
Finger Dexterity	39	44	59
Near Vision	41	42	59
Flexibility of Closure	35	46	56
Visualization	53	50	56
Response Orientation	41	48	56
Speed of Limb Movement	32	41	56
Trunk Strength	44	50	56
Perceptual Speed	41	44	53
Rate Control	30	42	53
Dynamic Strength	32	44	53
Stamina	39	42	53
Visual Color Discrimination	32	39	53
Hearing Sensitivity	34	42	53
Oral Comprehension	48	46	50
Oral Expression	50	42	50
Deductive Reasoning	41	41	50
Inductive Reasoning	41	39	50
Information Ordering	46	42	50
Extent Flexibility	48	48	50
Gross Body Coordination	41	39	50
Auditory Attention	39	41	50

#### Skill Level Comparison - Abilities with importance scores over 69

Description	Riggers	Rail-Track Laying and Maintenance Equipment Operators	Importance
Repairing	55	63	73
Troubleshooting	46	60	72

#### Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Riggers	Rail-Track Laying and Maintenance Equipment Operators	Importance
-------------	---------	---	------------

### Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Riggers	Rail-Track Laying and Maintenance Equipment Operators	Description	Riggers	Rail-Track Laying and Maintenance Equipment Operators
10+ years	3%	0%	Doctoral	0%	0%
8-10 years	0%	1%	Professional Degree	0%	0%
6-8 years	7%	0%	Post-Masters Cert	0%	0%
4-6 years	10%	4%	Master's Degree	0%	0%
2-4 years	32%	10%	Post-Bachelor Cert	0%	0%
1-2 years	3%	21%	Bachelors	0%	0%
6-12 months	3%	14%	AA or Equiv	0%	0%
3-6 months	31%	3%	Some College	3%	12%
1-3 months	0%	8%	Post-Secondary Certificate	9%	8%
0-1 month	0%	1%	High School Diploma or GED	79%	71%
None	8%	33%	No HSD or GED	7%	7%

Riggers	Rail-Track Laying and Maintenance Equipment Operators
---------	---

Most Common Educational/Training Requirement:	
Short-term on-the-job training	Moderate-term on-the-job training

Job Zone Comparison	
<p><b>3 - Job Zone Three: Medium Preparation Needed</b></p> <p>Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.</p> <p>Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.</p> <p>Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.</p>	<p><b>1 - Job Zone One: Little or No Preparation Needed</b></p> <p>No previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a cashier even if he/she has never worked before.</p> <p>These occupations may require a high school diploma or GED certificate. Some may require a formal training course to obtain a license.</p> <p>Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.</p>

### Tasks

Riggers	Rail-Track Laying and Maintenance Equipment Operators
Core Tasks	Core Tasks
<p>Generalized Work Activities:</p> <ul style="list-style-type: none"> <li>Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.</li> <li>Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).</li> <li>Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing,</li> </ul>	<p>Generalized Work Activities:</p> <ul style="list-style-type: none"> <li>Operating Vehicles, Mechanized Devices, or Equipment - Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.</li> <li>Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).</li> <li>Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to</li> </ul>

lifting, balancing, walking, stooping, and handling of materials.

- Repairing and Maintaining Mechanical Equipment - Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Specific Tasks

Occupation Specific Tasks:

- Align, level, and anchor machinery.
- Attach loads to rigging to provide support or prepare them for moving, using hand and power tools.
- Attach pulleys and blocks to fixed overhead structures such as beams, ceilings, and gin pole booms, using bolts and clamps.
- Clean and dress machine surfaces and component parts.
- Control movement of heavy equipment through narrow openings or confined spaces, using chainfalls, gin poles, gallows frames, and other equipment.
- Dismantle and store rigging equipment after use.
- Fabricate, set up, and repair rigging, supporting structures, hoists, and pulling gear, using hand and power tools.
- Install ground rigging for yarding lines, attaching chokers to logs and then to the lines.
- Manipulate rigging lines, hoists, and pulling gear to move or support materials such as heavy equipment, ships, or theatrical sets.
- Select gear such as cables, pulleys, and winches, according to load weights and sizes, facilities, and work schedules.
- Signal or verbally direct workers engaged in hoisting and moving loads, in order to ensure safety of workers and materials.
- Test rigging to ensure safety and reliability.
- Tilt, dip, and turn suspended loads to maneuver over, under, and/or around obstacles, using multi-point suspension techniques.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- apply cleaning solvents
- clean equipment or machinery
- direct and coordinate activities of workers or staff
- dismantle or reassemble rigging
- fabricate, assemble, or disassemble manufactured products by hand

determine whether events or processes comply with laws, regulations, or standards.

- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.

Specific Tasks

Occupation Specific Tasks:

- Adjust controls of machines that spread, shape, raise, level, and align track, according to specifications.
- Clean and make minor repairs to machines and equipment.
- Clean tracks, and clear ice and snow from tracks and switch boxes.
- Clean, grade, and level ballast on railroad tracks.
- Cut rails to specified lengths, using rail saws.
- Dress and reshape worn or damaged railroad switch points and frogs, using portable power grinders.
- Drill holes through rails, tie plates, and fishplates for insertion of bolts and spikes, using power drills.
- Drive graders, tamping machines, brooms, and ballast cleaning/spreading machines to redistribute gravel and ballast between rails.
- Drive vehicles that automatically move and lay tracks or rails over sections of track to be constructed, repaired, or maintained.
- Engage mechanisms that lay tracks or rails to specified gauges.
- Grind ends of new or worn rails to attain smooth joints, using portable grinders.
- Lubricate machines, change oil, and fill hydraulic reservoirs to specified levels.
- Observe leveling indicator arms to verify levelness and alignment of tracks.
- Operate single- or multiple-head spike driving machines to drive spikes into ties and secure rails.
- Operate single- or multiple-head spike pullers to pull old spikes from ties.
- Operate tie-adzing machines to cut ties and permit insertion of fishplates that hold rails.
- Operate track-wrench machines to tighten or loosen bolts at joints that hold ends of rails together.
- Paint railroad signs, such as speed limits and gate-crossing warnings.
- Patrol assigned track sections so that damaged or broken track can be located and reported.
- Push controls to close grasping devices on track or rail sections so that they can be raised or moved.
- Raise rails, using hydraulic jacks, to allow for



- move or fit heavy objects
- perform safety inspections in industrial, manufacturing or repair setting
- position, align, or level machines, equipment, or structures
- read work order, instructions, formulas, or processing charts
- repair specialized rigging
- set up specialized rigging
- signal directions or warnings to coworkers
- test mechanical products or equipment
- use hand or power tools
- use knowledge of metric system
- use pneumatic tools
- use precision measuring tools or equipment
- verify levelness or verticality, using level or plumb bob

ue removal and replacement.

- Repair and adjust track switches, using wrenches and replacement parts.
- Spray ties, fishplates, and joints with oil to protect them from weathering.
- String and attach wire-guidelines machine to rails so that tracks or rails can be aligned or leveled.
- Turn wheels of machines, using lever controls, to adjust guidelines for track alignments and grades, following specifications.

#### Detailed Tasks

#### Detailed Work Activities:

- grade or redistribute earth for roads or other construction
- maintain or repair construction machinery or equipment
- operate earth-moving or other heavy construction equipment
- read specifications
- use measuring devices in construction or extraction work

## Labor Market Comparison

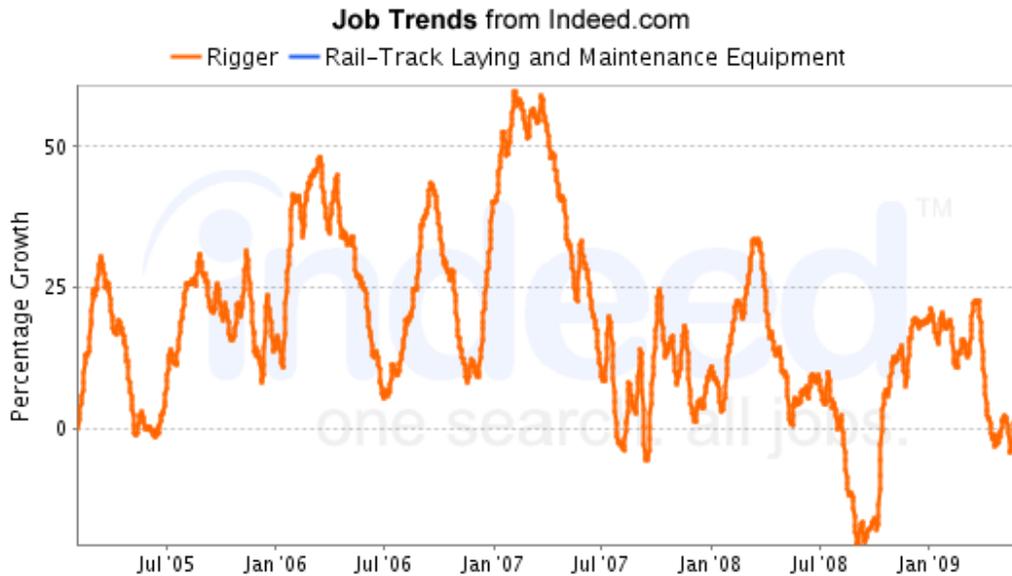
Maine Department of Labor.

Description	Riggers	Rail-Track Laying and Maintenance Equipment Operators	Difference
Median Wage	\$ 39,140	\$ 36,960	\$( 2,180)
10th Percentile Wage	\$ 32,550	\$ 26,530	\$( 6,020)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 45,120	\$ 43,700	\$( 1,420)
90th Percentile Wage	\$ 50,700	\$ 48,640	\$( 2,060)
Mean Wage	\$ 40,090	\$ 36,940	\$( 3,150)
Total Employment - 2532	250	120	-130
Employment Base - 2006	235	114	-121
Projected Employment - 2541	206	123	-83
Projected Job Growth - 2006-2541	-12.3 %	7.9 %	20.2 %
Projected Annual Openings - 2006-2541	2	4	2
Special			

Special Occupations:

## National Job Posting Trends

Trend for Riggers and Rail-Track Laying and Maintenance Equipment Operators



Data from [Indeed](http://Indeed.com)

## Programs

### Related Programs

#### Construction Equipment Operator

Construction/Heavy Equipment/Earthmoving Equipment Operation. A program that prepares individuals to apply technical knowledge and skills to operate and maintain a variety of heavy equipment, such as a crawler tractors, motor graders and scrapers, shovels, rigging devices, hoists, and jacks. Includes instruction in digging, ditching, sloping, stripping, grading, and backfilling, clearing and excavating.

Institution	Address	City	URL
Wasington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>

#### Heavy Equipment Main. and Repairer

Heavy Equipment Maintenance Technology/Technician. A program that prepares individuals to apply technical knowledge and skills in the field maintenance and repair of heavy equipment, and in the general maintenance and overhaul of such equipment. Includes instruction in inspection, maintenance, and repair of tracks, wheels, brakes, operating controls, pneumatic and hydraulic systems, electrical circuitry, engines and in techniques of welding and brazing.

Institution	Address	City	URL
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Wasington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>



### Maine Statewide Promotion Opportunities for Riggers

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-9096.00	Riggers	100	3	250	\$39,140.00	\$0.00	-12%	2	
51-4192.00	Lay-Out Workers, Metal and Plastic	87	2	180	\$43,870.00	\$4,730.00	-24%	3	
53-7021.00	Crane and Tower Operators	85	3	240	\$41,940.00	\$2,800.00	-2%	4	
49-9051.00	Electrical Power-Line Installers and Repairers	84	3	280	\$47,750.00	\$8,610.00	9%	12	
47-2011.00	Boilermakers	84	4	60	\$39,260.00	\$120.00	12%	3	
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	82	3	170	\$47,860.00	\$8,720.00	-9%	3	
49-9044.00	Millwrights	82	3	830	\$41,280.00	\$2,140.00	-12%	11	
47-2082.00	Tapers	81	2	70	\$39,910.00	\$770.00	5%	3	
53-6051.07	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation	80	3	60	\$42,890.00	\$3,750.00	5%	2	
51-4111.00	Tool and Die Makers	80	3	160	\$51,670.00	\$12,530.00	-11%	2	
47-2111.00	Electricians	79	3	2,910	\$43,650.00	\$4,510.00	1%	89	
47-1011.00	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	79	3	3,190	\$46,630.00	\$7,490.00	3%	77	
49-9041.00	Industrial Machinery Mechanics	78	3	990	\$39,370.00	\$230.00	7%	25	
49-9052.00	Telecommunications Line Installers and Repairers	78	3	720	\$56,120.00	\$16,980.00	0%	19	
45-1011.05	First-Line Supervisors/Managers of Logging Workers	78	4	240	\$41,590.00	\$2,450.00	4%	8	

Special Occupations:

### Top Industries for Rail-Track Laying and Maintenance Equipment Operators

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Rail transportation	482100	77.98%	11,412	11,820	3.58%
Other heavy and civil engineering construction	237900	9.03%	1,322	1,420	7.41%



Local government, excluding education and hospitals	939300	3.51%	514	577	12.34%
Nonresidential building construction	236200	1.09%	160	179	12.05%
Coal mining	212100	0.76%	111	112	0.99%

### Top Industries for Riggers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Ship and boat building	336600	13.35%	1,643	1,656	0.74%
Employment services	561300	12.68%	1,562	1,779	13.91%
Federal government, excluding postal service	919999	11.51%	1,417	1,206	-14.92%
Support activities for mining	213100	6.80%	837	709	-15.34%
Other specialty trade contractors	238900	4.72%	581	578	-0.53%
Other building equipment contractors	238290	4.72%	581	567	-2.46%
Other motor vehicle dealers	441200	3.98%	490	591	20.61%
Commercial and industrial machinery and equipment rental and leasing	532400	3.26%	402	442	9.97%
Performing arts companies	711100	3.25%	401	367	-8.47%
Specialized freight trucking	484200	2.76%	340	345	1.37%
Nonresidential building construction	236200	2.06%	254	256	0.84%
Promoters of events, and agents and managers	7113-4	1.90%	234	287	22.58%
Other heavy and civil engineering construction	237900	1.72%	212	205	-3.33%
Logging	113310	1.58%	194	145	-25.60%
Architectural and structural metals manufacturing	332300	1.17%	145	139	-3.87%

## Industry & Occupational Data Sources

TORQ Results: The TORQ Scores is based upon an proprietary algorithm applied against Knowledge, Skills and Ability levels and importance derived from O\*NET 12.

ASK Analysis, Experience & Education Levels and Tasks: O\*Net 12

Labor Market Comparisons Occupational Projections data from Maine Department of Labor

National Posting Trends Indeed.com

Labor Pool & Promotions Opportunities: Occupational Projections data from Maine Department of Labor

Top Industries: Occupational Employment Statistics program (U.S. Bureau of Labor Statistics)