

THE BC
SHIPBUILDING
& SHIP REPAIR
CAREER KIT

GET ON BOARD
CHART A COURSE
TO **SUCCESS**

PLAN YOUR
**FUTURE
CAREER**



**SHIPBUILDING
& SHIP REPAIR**

We are Shipbuilders.ca

BC's Shipbuilding and Ship Repair Industry. **Work with us.**





Funding provided through the Canada-British Columbia Labour Market Development Agreement

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the 1990s, the number of people in the world who are poor has increased. The number of people living on less than \$1 a day has increased from 1.2 billion in 1981 to 1.5 billion in 1998.

There are a number of reasons for this. One is that the world population has increased. The number of people in the world has increased from 5 billion in 1981 to 6 billion in 1998. This means that there are more people who need to be fed and clothed and housed.

Another reason is that the world economy has not grown as fast as it should. The world economy has grown by 1.5% per year since 1981. This is a very slow rate of growth. It means that there is not enough money to create enough jobs for all the people in the world.

A third reason is that the world's resources are being used up. The world's forests are being cut down. The world's rivers are being polluted. The world's oceans are being overfished. This means that there are fewer resources available to feed and clothe and house the world's population.

There are a number of things that we can do to help solve these problems. We can reduce our consumption of resources. We can recycle our waste. We can support fair trade. We can help to create jobs in the developing world.

It is our responsibility to help solve these problems. We have the power to make a difference. We can help to create a world where everyone has enough to eat, enough to wear, and enough to live in.

Let's work together to make a difference. Let's help to create a world where everyone has enough to eat, enough to wear, and enough to live in.

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THE NEXT GENERATION OF SHIPBUILDERS

Shipbuilding provides high paying careers with excellent benefits, great working conditions, numerous opportunities to learn on the job and a lifestyle that most only dream of!

And there has never been a better time to join Canada's next generation of shipbuilders. Over the next decade alone, BC's shipbuilding industry will be recruiting well over 4,000 individuals to work with us in both the shipbuilding and ship repair sector and the metal plate and fabrication sector.

Our Career Kit introduces you to the real shipbuilders of BC, and provides resources and tools to learn more about working in the shipbuilding and ship repair industry.

To further explore our exciting career opportunities, or to download any elements of the Career Kit, please visit BC's shipbuilding and ship repair industry website at WeAreShipbuilders.ca

WE BUILD CAREERS

EXPLORE HIGH-DEMAND OCCUPATIONS

There has never been a better time to join a safe, well-paying and technologically advanced industry that has major projects lined up over the next two decades! BC's shipbuilding and ship repair industry employers are seeking new talent, giving the next generation of shipbuilders the opportunity to get the training they need, and secure long-term employment on the west coast of British Columbia.

Learn more about these high demand occupations and start planning your career as a shipbuilder with the following **Shipbuilding Occupation Sheets**.

HIGH DEMAND
**SHIPBUILDING
OCCUPATIONS**



SKILLED TRADES

BOILERMAKER

CARPENTER

HEAVY DUTY MECHANIC

INDUSTRIAL ELECTRICIAN

JOINER

MACHINIST

METAL FABRICATOR/SHIPFITTER

MILLWRIGHT

PAINTER & DECORATOR

PIPEFITTER/STEAMFITTER

PLUMBER

SHEET METAL WORKER

WELDER

SHIPYARD JOBS

INBOARD OUTBOARD MECHANIC

SANDBLASTER

SHIPYARD LABOURER

**TECHNICIANS &
TECHNOLOGISTS**

ELECTRICAL & ELECTRONICS ENGINEERING
TECHNOLOGISTS & TECHNICIANS

MECHANICAL ENGINEERING TECHNOLOGISTS
& TECHNICIANS

ELECTRIC MOTOR SYSTEMS TECHNICIAN
(WINDER ELECTRICIAN)

FIND OUT MORE ONLINE AT: **We are [Shipbuilders.ca](http://WeareShipbuilders.ca)**

We are Shipbuilders.

BC's Shipbuilding and Ship Repair Industry. **Work with us.**

SKILLED TRADES

BOILERMAKER

Other job titles:

Marine boilermaker

Construction boilermaker

Pressure vessel boilermaker

Maintenance boilermaker

Related Careers:

Marine fitter

Welder

Metal fabricator/fitter

Pipefitter/steamfitter

Progression to supervisory positions is

YOU CAN EARN

\$40 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Career development

Dental and medical benefits

Employee assistance plan

Pensions

Ongoing training

West Coast living

BOILERMAKER



IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU**.

DESCRIPTION

Boilermakers assemble, install, test, maintain and repair boilers, vessels, tanks, towers, heat exchangers and other heavy metal or steel structures. Boilers hold liquids and pressurized cases that are used in many industries.

Many different skills are used as a boilermaker. Boilermakers inspect and maintain boilers routinely and also update and change out different parts either as needed, or to increase overall efficiency. Often boilers need to be taken apart to be repaired; sometimes they require strengthening using joints or metal pieces, and other times an entire section of the boiler needs to be replaced completely. Also, boilermakers often install special, technologically advanced equipment to decrease air pollution and help the environment.

KEY RESPONSIBILITIES

- ✦ Read and understand blueprints and specifications to plan tasks in the right order.
- ✦ Lay out plate, sheet steel, or other heavy metal and mark lines for bending and cutting using various tools and instruments.
- ✦ Fit and weld metal parts or sections together to fabricate boilers, tanks, piping and other metal structures.
- ✦ Set up and operate heavy-metal working machines and equipment such as rolls, shears, flame cutters, drill presses, and maintenance cranes.
- ✦ Repair and perform regular maintenance on boilers and other associated heavy-metal structures.
- ✦ Erect and install boilers according to specifications with a wide range of hand-held and larger power tools.

THIS JOB IS FOR YOU IF..

- ✦ You like to follow a plan and see the results of your hard work immediately
- ✦ You are mechanically inclined and like working with heavy metal products and large vessels.
- ✦ You are passionate about boilermaking and may have established experience doing so in shipbuilding or a related industry.
- ✦ You are keen to work with and apply the latest technological innovations in boilermaking.
- ✦ You are a problem solver with a strategic approach to large projects.



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GETTING STARTED

Careers as a boilermaker in the BC shipbuilding & ship repair industry usually begin with an apprenticeship in Red Seal trades or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (WELDER)

www.learnnowbc.ca/trades/TradesFinder.aspx

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a boilermaker. In order to be eligible for industry certification as a boilermaker, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a boilermaker, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

<http://www.red-seal.ca>

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools, or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/steeltrades

BOILERMAKER UNIONS

INTERNATIONAL BROTHERHOOD OF BOILERMAKERS – LOCAL 191

www.boilermakers.org/local/191

INTERNATIONAL BROTHERHOOD OF BOILERMAKERS, IRON SHIPBUILDERS, BLACKSMITHS, FORGERS & HELPERS

www.boilermakers359.org

MARINE AND SHIPBUILDERS UNION - LOCAL 506

www.marineandshipbuilderslocal506.ca

MARINE WORKERS & BOILERMAKERS INDUSTRIAL UNION – LOCAL 1

www.marineworkers.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7262

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER BC TRADES

www.discovertradesbc.ca

INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADES ROCK

www.tradesrock.com/shipping.php

TRADES WOMEN.CA

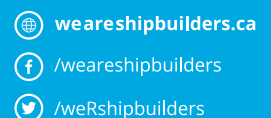
www.tradeswomen.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 7262

FIND OUT MORE ONLINE AT: **We are Shipbuilders.ca**



We are Shipbuilders.

BC's Shipbuilding and Ship Repair Industry. **Work with us.**

SKILLED TRADES

CARPENTER



CARPENTER

Other job titles:

Builder

Woodworker

Construction carpenter

Related careers:

Joiner

Shipwright

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$32 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Daycare

Dental and medical plans

Employee assistance plans

Flexible work days

Four-day work weeks

Pensions

Training

West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Carpenters erect, build, repair, and maintain structures, fixtures, furniture and other items using different types of materials, including wood and lightweight steel. In a shipbuilding environment, carpenters build forms, scaffolding, shelters, towers and other structures.

Carpenters are expected to be able to work from blueprints and schematics, design good work layouts, apply the right measurements, and pick the right materials in order to make sure they build, repair or maintain the best structures possible. A passion for detail and precision comes in handy when embarking on a fulfilling career in carpentry.

KEY RESPONSIBILITIES

- ✦ Read and interpret blueprints, drawings and sketches to determine specifications and calculate requirements in conformance with building codes.
- ✦ Measure, cut, shape, assemble and join materials made of wood, lightweight steel and other solid substances.
- ✦ Build foundations, install beams & scaffolding and erect walls & roof systems.
- ✦ Fit and install trim and other finishing items such as doors, stairs, mouldings, hardware and other fixtures.
- ✦ Prepare and forecast project or construction costs.

THIS JOB IS FOR YOU IF...

- ✦ You enjoy physically active and constantly changing work in a cutting-edge environment.
- ✦ You enjoy basic problem solving using solid arithmetic skills and sound logic.
- ✦ You like to see the results of your hard work and craftsmanship immediately.
- ✦ You consider yourself a master of manual dexterity and really enjoy working with your hands.



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GETTING STARTED

Careers as a carpenter in the BC shipbuilding & ship repair Industry usually begin with an apprenticeship in Red Seal trades or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (ELECTRICIAN)

<http://www.learnnowbc.ca/trades/TradesFinder.aspx>

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a carpenter. In order to be eligible for industry certification as a carpenter, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a carpenter, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

<http://www.red-seal.ca>

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC., Please see the BC Education Planner website <http://www.educationplanner.ca>

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bccit.ca/study/programs/1560ttcert

CAMOSUN COLLEGE

www.camosun.bc.ca

COLLEGE OF THE ROCKIES

www.cotr.bc.ca

NORTH ISLAND COLLEGE

www.nic.bc.ca/programs/trades_and_technology

NORTHWEST COMMUNITY COLLEGE

www.nwcc.bc.ca/Programs/Trades/Carpentry/index.cfm

THOMPSON RIVERS

www.tru.ca/trades.html

VANCOUVER ISLAND UNIVERSITY

www.viu.ca/tat

CARPENTER UNIONS

CONSTRUCTION MAINTENANCE AND ALLIED WORKERS (CMAW)

www.cma.ca/contact/local-union-contacts

MARINE & SHIPBUILDERS UNION - 506

www.marineandshipbuilderslocal506.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

BRITISH COLUMBIA REGIONAL COUNCIL OF CARPENTERS

www.thecarpentersunion.ca/

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7262

TRADES TRAINING & APPRENTICESHIP RELATED INFO

BC CONSTRUCTION INDUSTRY TRAINING ORGANIZATION (CITO)

www.bccito.ca

DISCOVER BC TRADES

www.discovertradesbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 7271

FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



weareshipbuilders.ca

[/weareshipbuilders](https://www.facebook.com/weareshipbuilders)

[/weareshipbuilders](https://www.instagram.com/weareshipbuilders)

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SKILLED TRADES

HEAVY DUTY MECHANIC



HEAVY DUTY MECHANIC

Other job titles:

Heavy duty equipment technician

A HD Mechanic is designated as a **Heavy duty equipment technician** under the Interprovincial Standards Red Seal program.

Related careers:

Marine mechanical technician

Inboard/outboard mechanic

Diesel engine mechanic

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$40 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Dental and medical plans

Employee assistance plans

Flexible work days

Pensions

Training

West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Heavy duty equipment mechanics repair, troubleshoot, adjust, overhaul and maintain heavy-duty equipment used in virtually all industrial sectors of BC's economy, including shipbuilding and ship repair. Heavy duty mechanics are like master puzzle builders and focus much of their time taking heavy equipment apart and/or putting it back together again. This includes engines, transmissions, exhaust systems, fuel systems, generators and other ship related machinery.

Heavy duty mechanic jobs aren't just a game of heavy lifting; heavy duty mechanics are often master trouble-shooters who work with highly specialized equipment, computerized systems and technical specifications. A typical day in a heavy-duty mechanic's life is often unpredictable, and daily tasks shift along with changes in project priorities and achievements.

KEY RESPONSIBILITIES

- ❖ Inspect, monitor, and maintain engines, transmissions, exhaust systems, fuel systems, generators, cranes, graders, other heavy construction equipment and equipment accessories or attachments.
- ❖ Diagnose faults or malfunctions using computers and other highly specialized devices.
- ❖ Adjust, repair or replace defective parts, components or attachments using power and hand-held tools.
- ❖ Test repaired or installed equipment to ensure proper performance and to ensure the equipment meets manufacturer's specifications.
- ❖ Engage in highly physical duties and tasks with a strict emphasis on workplace health and safety regulations and best practices.

THIS JOB IS FOR YOU IF...

- ❖ You pride yourself on your excellent hand-eye coordination and attention to detail.
- ❖ You enjoy physically active tasks and large scale industrial projects.
- ❖ You are a problem solver with a passion for the inner workings of engines and machinery.
- ❖ You consider yourself a master of manual dexterity and pride yourself on your steady arms and hands.
- ❖ You enjoy seeing the results of your hard work come together to create large-scale team successes.



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GETTING STARTED

Careers in the BC shipbuilding & ship repair industry usually begin with an apprenticeship in a Red Seal trade or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school councillor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM FINDER

www.learnnowbc.ca/trades/TradesFinder.aspx

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a heavy duty equipment mechanic. In order to be eligible for industry certification as a heavy duty equipment mechanic, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a heavy duty equipment mechanic, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/3650appr

COLLEGE OF NEW CALEDONIA

www.cnc.bc.ca

NORTH ISLAND UNIVERSITY

www.nic.bc.ca/programs/apprenticeship_training

NORTHERN LIGHTS COLLEGE

www.nlc.bc.ca/Programs/TradesApprenticeships.aspx

OKANAGAN COLLEGE

www.okanagan.bc.ca/Page602.aspx

THOMPSON RIVERS

www.tru.ca/trades.html

VANCOUVER COMMUNITY COLLEGE

www.vcc.ca/programscourses/program-areas/transportation-trades/heavy-duty-mechanic-apprentice

SHIPYARD HEAVY-DUTY MECHANIC TRADE UNIONS

INTERNATIONAL ASSOCIATION OF MACHINISTS LODGE 692

www.ibew213.org

MARINE AND SHIPBUILDERS UNION - LOCAL 506

www.marineandshipbuilderslocal506.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7312

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER BC TRADES

www.discovertradesbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

TRANSPORTATION CAREER DEVELOPMENT ASSOCIATION OF BC (TRANSCDA)

www.transportationcareers.ca

NOC: 7312

FIND OUT MORE ONLINE AT: **We are Shipbuilders.ca**



BC JOBS PLAN



BC SHIPBUILDING & SHIP REPAIR BOARD

weareshipbuilders.ca

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[/weRshipbuilders](https://twitter.com/weRshipbuilders)

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SKILLED TRADES

INDUSTRIAL ELECTRICIAN



INDUSTRIAL ELECTRICIAN

Other job titles:

Marine electrician

Electrical control builder

Related Careers:

Electrical technician

Electrician

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$45 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Daycare

Dental and medical plans

Employee assistance plans

Flexible work days

Four-day work weeks

Pensions

Training

West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Electricians lay out, assemble, install, test, troubleshoot and repair electrical wiring, fixtures and other devices in vessels, buildings and other structures. In a shipbuilding environment, electricians assemble systems that are tied to the main power generation unit(s) and electrical operations in a vessel; their roles and influence touch virtually all aspects of the inner workings of a ship.

Electrical work requires more than just an aptitude for stringing up wires and cables. Electricians also need to have a wide array of technical skills to read and interpret drawings, blueprints and schematics from other departments to be able to collaborate and map out work plans and projects. As well, electricians are keen at trouble shooting while adhering to strict health, safety and building regulations.

KEY RESPONSIBILITIES

- ✦ Install, maintain and test the integrity of electric circuits through the splicing, joining and connection of wiring systems.
- ✦ read and interpret drawings, blueprints, schematics and electrical code specifications to determine layout of industrial electrical equipment installations.
- ✦ Install, repair, test and maintain electrical equipment and vessel-wide electronic systems.
- ✦ Install, maintain, repair and test the integrity of control equipment and electrical distribution infrastructure (i.e. wires, panels, relays, switches, etc.).
- ✦ Plan and install electrical infrastructure, including physical outlay of wiring, conduits and other materials & equipment.
- ✦ Collaborate and plan projects with other areas of the shipbuilding workforce to guarantee safety, efficiency, effective construction and the overall integrity of the vessel itself.

THIS JOB IS FOR YOU IF...

- ✦ You are passionate about systems and navigating your way through a mess of colour coded wires to achieve success.
- ✦ You are a strong communicator who enjoys mathematics and precise details.
- ✦ You are physically active and thrive in environments where both your mind and your body are put to good use.
- ✦ You like to see the immediate results of all of your hard work and dedication.
- ✦ You enjoy working with evolving technologies and electronic systems.



SSRB | BC SHIPBUILDING & SHIP REPAIR BOARD

GETTING STARTED

Careers as an industrial electrician in the BC shipbuilding & ship repair industry usually begin with an apprenticeship in Red Seal trades or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (ELECTRICIAN)

www.learnnowbc.ca/trades/TradesFinder.aspx

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become an electrician. In order to be eligible for industry certification as an electrician, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as an electrician, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

<http://www.red-seal.ca>

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/3400appr

COLLEGE OF NEW CALEDONIA

www.cnc.bc.ca

KWANTLEN POLYTECHNIC

www.kwantlen.bc.ca/trades.html

NORTHERN LIGHTS COLLEGE

www.nlc.bc.ca/Programs/TradesApprenticeships.aspx

THOMPSON RIVERS UNIVERSITY

www.tru.ca/trades.html

UNIVERSITY OF FRASER VALLEY

www.ufv.ca/Trades.htm

VANCOUVER ISLAND UNIVERSITY

www.viu.ca/tat

ELECTRICIAN UNIONS

IBEW LOCAL 213

www.ibew213.org/training-apprenticeships

IBEW LOCAL 230

www.ibew230.org/training.html

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

ELECTRICAL JOINT TRAINING COMMITTEE

www.ejtc.org/electrician-apprenticeships

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7242

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER BC TRADES

www.discovertradesbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA

www.tradeswomen.ca

TRADES ROCK

www.tradesrock.com/shipping.php

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 7242

FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



BC JOBS PLAN



BC SHIPBUILDING & SHIP REPAIR BOARD

weareshipbuilders.ca

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SKILLED TRADES

JOINER



JOINER

Other job titles:

Cabinet maker

A Joiner is designated as a **Cabinet maker** under the Interprovincial Standards Red Seal program.

Woodworker

Cabinetry carpenter

Related careers:

Carpenter

Shipwright

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$38 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Dental and medical plans

Employee assistance plans

Flexible work days

Pensions

Training

West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Joiners construct, erect, install, maintain, and repair structures, furniture, and fixtures made of wood, lightweight steel and other materials. Joiners perform similar tasks to carpenters with the slight difference being that joiners often join wood without the help of nails and carpenters use nails instead. Also, joiners often do the majority of their work in workshops, producing items such as cabinetry, furniture, window frames and stairs whereas a carpenter typically works on-site.

Similar to carpenters, joiners are expected to be able to work from blueprints and schematics, design furniture and fixture layouts, apply the right measurements, and pick the right materials in order to make sure they build, repair, or maintain the best structures and fixtures possible. A passion for detail and precision is essential when embarking on a fulfilling career as a joiner.

KEY RESPONSIBILITIES

- ❖ Read and interpret blueprints, schematics and drawings to determine specifications and calculate requirements.
- ❖ Build foundations, floor beams, subflooring, walls and roof systems.
- ❖ Fit and install trim and finishing items such as doors, stairs, mouldings and hardware.
- ❖ Oversee apprentices and other construction workers.
- ❖ Prepare layouts with conformance to building codes and regulations.

THIS JOB IS FOR YOU IF..

- ❖ You have good hand-eye coordination, manual dexterity, mathematical aptitude and good conceptual skills.
- ❖ You enjoy working on fixtures, furniture, and finishings and generally contributing more refined carpentry skills to a project.
- ❖ You enjoy being physically active and changing tasks and projects.
- ❖ You consider yourself an expert craftsman and like working with your hands.
- ❖ You enjoy working with innovative building materials and construction technologies.



BC SHIPBUILDING & SHIP REPAIR BOARD

GETTING STARTED

Careers in the BC shipbuilding & ship repair industry usually begin with an apprenticeship in a Red Seal trade or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (CABINET MAKER)

www.learnnowbc.ca/trades/TradesFinder.aspx

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a joiner. In order to be eligible for industry certification as a joiner, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a joiner, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

<http://www.red-seal.ca>

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools, or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/4850appr

COLLEGE OF NEW CALEDONIA

www.cnc.bc.ca/programs-courses/trades.htm

THOMPSON RIVERS UNIVERSITY

www.tru.ca/trades/apprenticeship/joinery.html

UNIVERSITY OF THE FRASER VALLEY

www.ufv.ca/joinery/

JOINER UNIONS

CONSTRUCTION MAINTENANCE AND ALLIED WORKERS (CMAW)

www.cmaw.ca/contact/local-union-contacts

MARINE & SHIPBUILDERS UNION - 506

www.marineandshipbuilderslocal506.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

BC CONSTRUCTION ASSOCIATION

www.bccasn.com

BC REGIONAL COUNCIL OF CARPENTERS

www.thecarpentersunion.ca/

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7272

TRADES TRAINING & APPRENTICESHIP RELATED INFO

BC CONSTRUCTION INDUSTRY TRAINING ORGANIZATION (CITO)

www.bccito.ca

DISCOVER BC TRADES

www.discovertradesbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradetrainingbc.ca

NOC: 7272

FIND OUT MORE ONLINE AT: **We are Shipbuilders.ca**



BC JOBS PLAN



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SKILLED TRADES

MACHINIST



MACHINIST

Other job titles:

Tooling inspector
Toolroom machinist
Precision machinist

Related careers:

Millwright
Industrial mechanic
Heavy duty mechanic
Tool and die maker

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$38 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships
Bonuses
Career growth
Dental and medical plans
Employee assistance plans
Flexible work days
Pensions
Training
West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Machinists set up and operate a variety of machine tools to cut or grind metals, plastics and other materials to make or modify parts or products with precise dimensions. Machining and tooling inspectors inspect machined parts and tooling in order to maintain a high degree of safety, integrity, and quality control.

Machinists make very unique instruments and components with specific requirements for use in industrial machinery or products. Good knowledge of metals and their behaviors in different conditions, as well as the insight to match processes with machine tools, are solid traits inherent in a good machinist. A passion for learning about ongoing technological developments and an eagerness to always keep pace are key traits of an expert machinist.

KEY RESPONSIBILITIES

- ❖ Read and interpret blueprints, schematics, drawings and charts to determine the next plan of action.
- ❖ Install, operate and maintain a variety of machine tools including computer numerically controlled (CNC) tools in order to perform varying machining tasks like sawing, turning, milling, boring, planning, drilling and precision grinding.
- ❖ Verify dimensions for accuracy and conformance to manufacturer specifications with the use of precision measuring tools.
- ❖ Compute dimensions and allowances in order to measure and lay out work pieces.

THIS JOB IS FOR YOU IF...

- ❖ You have strong communication, reading, and math skills.
- ❖ You are able to take measurements with exact precision and accuracy.
- ❖ You enjoy coupling your computerized technical skills with your mechanical skills to create a finished product.
- ❖ You enjoy physical labour applied through different tasks and project priorities.
- ❖ You have a passion for following technological innovations as they are applied to industrial machinery and processes.



SSRB | BC SHIPBUILDING & SHIP REPAIR BOARD

GETTING STARTED

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Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (MILLWRIGHT/MACHINIST)

www.learnnowbc.ca/trades/TradesFinder

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a machinist. In order to be eligible for industry certification as a machinist, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a machinist, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools, or other expenses. If you are considering an apprenticeship, visit the Red seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/3900appr

COLLEGE OF NEW CALEDONIA

www.cnc.bc.ca

SELKIRK COLLEGE

www.selkirk.ca/program/millwright-machinist

MACHINIST UNIONS

INTERNATIONAL ASSOCIATION OF MACHINISTS LODGE 692

www.iamaw692.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7231

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA

www.tradeswomen.ca

TRADES ROCK

www.tradesrock.com/shipping

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

TRANSPORTATION CAREER DEVELOPMENT ASSOCIATION OF BC (TRANSCDA)

www.transportationcareers.ca

NOC: 7231

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weareshipbuilders.ca

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[/weRshipbuilders](https://twitter.com/weRshipbuilders)

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SKILLED TRADES

METAL FABRICATOR OR SHIPFITTER



METAL FABRICATOR/ SHIPFITTER

Other job titles:

Marine fitter

Platework fabricator

Related careers:

Boilermaker

Pipefitter/steamfitter

Welder

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$38 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Dental and medical plans

Employee assistance plans

Flexible work days

Pensions

Training

West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Metal fabricator or shipfitters make and repair metal parts used in the construction of ships, tanks, towers, boilers, pressure vessels and other similar structures and products.

They layout, cut and fabricate structural steel, plate and miscellaneous ferrous and non-ferrous metals and assemble and fit metal sections and plates together to form complete units or sub-units, such as frames, plates, girders and chutes that are used later in the assembly process.

Some fabricators are employed in structural steel, boiler and platework fabrication plants. others are employed by shipyards and ship repair facilities.

KEY RESPONSIBILITIES

- ❖ Study engineering drawings and blueprints to determine the materials required and to plan the order of tasks to cut metal most efficiently.
- ❖ Assemble, fit, and install prefabricated metal parts and components to build heavy industrial machinery in ships and other vessels.
- ❖ Move, align and set assemblies and components into position using lifting devices like cranes and pulleys.
- ❖ Set up and operate various heavy-duty metalworking machines such as brake presses, shears, cutting torches, grinders and drills, including computer numerical control (CNC) equipment, to bend, cut, form, punch, drill or otherwise form heavy metal components.
- ❖ Inspect parts, subassemblies and finished products to ensure quality and solid working function.

THIS JOB IS FOR YOU IF...

- ❖ You are passionate about bringing numerous parts and processes together to create a finished product.
- ❖ You are focused on the details, and you can easily predict the next move in a project.
- ❖ You are into new technologies and a technical focus on problem solving.
- ❖ You like watching the results of your hard work in action almost immediately.



SSRB | BC SHIPBUILDING &
SHIP REPAIR BOARD

GETTING STARTED

Careers in the BC shipbuilding & ship repair industry usually begin with an apprenticeship in a Red Seal trade or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (METAL FABRICATOR)

www.learnnowbc.ca/trades/TradesFinder

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a metal fabricator. In order to be eligible for industry certification as a metal fabricator, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a metal fabricator, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools, or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/metalfabrication

CAMOSUN COLLEGE

www.camosun.ca

KWANTLEN POLYTECHNIC UNIVERSITY

www.kpu.ca/calendar/2013-14/apprentices

THOMPSON RIVERS UNIVERSITY

www.tru.ca/trades/foundation/welding/metal_fabrication

SHIPFITTER UNIONS

INTERNATIONAL BROTHERHOOD OF BOILERMAKERS – LOCAL 191

www.boilermakers.org/local/191

MARINE AND SHIPBUILDERS UNION 506

www.marineandshipbuilderslocal506.ca

MARINE WORKERS & BOILERMAKERS INDUSTRIAL UNION – LOCAL 1

www.marineworkers.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

CANADIAN WELDING BUREAU, CWB

www.eng.cwbgroup.org

THE CANADIAN WELDING ASSOCIATION

www.cwa-acs.org

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7263

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER BC TRADES

www.discovertradesbc.ca

INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA

www.tradeswomen.ca

TRADES ROCK

www.tradesrock.com/shipping

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradetrainingbc.ca

NOC: 7263

FIND OUT MORE ONLINE AT: **We are Shipbuilders.ca**



BC JOBS PLAN



BC SHIPBUILDING & SHIP REPAIR BOARD

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[/weRshipbuilders](https://twitter.com/weRshipbuilders)

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BC's Shipbuilding and Ship Repair Industry. **Work with us.**

SKILLED TRADES

MILLWRIGHT

Other job titles:

Industrial mechanic
Maintenance mechanic
Plant maintenance mechanic

Related careers:

Machinist
Industrial instrument technician
Heavy duty mechanic
Tool and die maker

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$40 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships
Bonuses
Career growth
Dental and medical plans
Employee assistance plans
Flexible work days
Pensions
Training
West Coast living

MILLWRIGHT



IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Millwrights and industrial mechanics install, maintain, troubleshoot and repair stationary industrial machinery and mechanical equipment. Although millwrights were historically responsible for building watermills and windmills primarily out of wood, their roles have evolved with the times and they now work with steel and other materials and must often combine the skills of other mechanical trades to install machinery or assemble machines with pre-fabricated parts.

Millwrights are typically highly knowledgeable about construction and demobilization and often shift projects and priorities quickly in any construction project. One week they may be setting up conveyor belts, and the next week they may be installing industrial water treatment systems. Because of their training and expertise, Millwrights are generally chose to work on tasks that involve setting heavy machinery.

KEY RESPONSIBILITIES

- ✦ Install, align, dismantle and move stationary industrial machinery and mechanical equipment such as pumps, fans, conveyors, furnaces and generators according to layout plans.
- ✦ Install, troubleshoot and maintain power transmission, vacuum, hydraulic, and pneumatic system and programmable logic controls.
- ✦ Construct foundations for machinery and direct other workers to construct foundations.
- ✦ Inspect and examine machinery and equipment to detect and investigate irregularities and malfunctions.
- ✦ Operate hoisting and lifting equipment such as cranes, jacks, and tractors to position machinery and parts during the installation, set-up, and repair of machinery.

THIS JOB IS FOR YOU IF..

- ✦ You have strong communication, reading and math skills.
- ✦ You are able to take measurements with exact precision and accuracy.
- ✦ You enjoy coupling your computerized technical skills with your mechanical skills to create a finished product.
- ✦ You enjoy physical labour applied through different tasks and projects.
- ✦ You have a passion for following technological innovations as they are applied to industrial machinery and processes.



SSRB | BC SHIPBUILDING & SHIP REPAIR BOARD

GETTING STARTED

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Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (MILLWRIGHT/MACHINIST)

www.learnnowbc.ca/trades/TradesFinder

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a millwright. In order to be eligible for industry certification as a millwright, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a millwright, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/3950appr

KWANTLEN POLYTECHNIC

www.kwantlen.bc.ca/trades

NEW CALEDONIA

www.cnc.bc.ca

NORTHERN LIGHTS COLLEGE

www.nlc.bc.ca/Programs/TradesApprenticeships

MILLWRIGHT UNIONS

INTERNATIONAL ASSOCIATION OF MACHINISTS LODGE 692

www.iamaw692.ca

MILLWRIGHT'S BRITISH COLUMBIA

www.millwrights2736.com

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7311

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA

www.tradeswomen.ca

TRADES ROCK

www.tradesrock.com/shipping

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 7311

FIND OUT MORE ONLINE AT: **We are Shipbuilders.ca**



BC JOBS PLAN



BC SHIPBUILDING & SHIP REPAIR BOARD

weareshipbuilders.ca

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We are Shipbuilders.

BC's Shipbuilding and Ship Repair Industry. **Work with us.**

SKILLED TRADES

PAINTER & DECORATOR



PAINTER & DECORATOR

Other job titles:

Detailer

Finisher

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$38 hr

This is the high end of the Canadian average. Wage rates vary based on experience demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Dental and medical plans

Employee assistance plans

Flexible work days

Pensions

Training

West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Painters and decorators use brushes spray equipment to apply paint, enamel, lacquer, and other non-metallic protective and decorative coatings to surfaces of various products. Painters and decorators are also mixologists – they are responsible for selecting the appropriate paints or mix paints and often tend to operate specialized equipment for the application of protective or decorative coatings.

Painters and decorators could also be considered industrial artists – not only are they responsible for large-scale items, but they also deal with smaller items, touch ups, finishes, and often use stencils, decals, and other paint-related finishings to complete the look of ship interiors and exteriors under construction or repair.

KEY RESPONSIBILITIES

- ✦ Select appropriate paint or mix paints using automated paint mixing equipment according to pre-determined formulas and specifications.
- ✦ Operate equipment to clean, wash, strip, sand, fill dents or otherwise prepare items for painting, lacquering or other protective coatings.
- ✦ Clean and maintain painting and coating, ventilation, compressed air and protective equipment.
- ✦ Prepare and apply stencils, computer-generated decals or other decorative items and touches and finished products.
- ✦ Operate hand-held and automated spray guns and other painting tools to paint or coat stationary items with protective or decorative coatings.

THIS JOB IS FOR YOU IF..

- ✦ You consider yourself a bit of a trades artist and enjoy approaching industrial products as giant unfinished canvasses.
- ✦ You have an eye for detail and can envision the larger picture.
- ✦ You are a master of manual dexterity.
- ✦ You are passionate about applying technological innovations in painting and coating to large, industrial projects.
- ✦ You enjoy working with stencils, computer-generated decals, and other print/press -based technologies.



SSRB | BC SHIPBUILDING & SHIP REPAIR BOARD

GETTING STARTED

Careers in the BC shipbuilding & ship repair industry usually begin with an apprenticeship in a Red Seal trade or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (PAINTER & DECORATOR)

www.learnnowbc.ca/trades/TradesFinder

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a painter. In order to be eligible for industry certification as a painter, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a painter, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools, or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

FINISHING TRADES INSTITUTE OF BC

www.ftibc.ca/apprentice/painting

PAINTER & DECORATOR UNIONS

THE INTERNATIONAL UNION OF PAINTERS AND ALLIED TRADES

www.iupat.org/pages/about/contact-us/BC

CAREER RESOURCES

CONSTRUCTION SECTOR COUNCIL

www.csc-ca.org

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

MASTER PAINTERS & DECORATORS ASSOCIATION OF BC

www.paintinfo.com/assoc/mpda

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7294

TRADES TRAINING & APPRENTICESHIP RELATED INFO

BC CONSTRUCTION INDUSTRY TRAINING ORGANIZATION (CITO)

www.bccito.ca

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradetrainingbc.ca

NOC: 7294

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SKILLED TRADES

PIPEFITTER / STEAMFITTER



PIPEFITTER / STEAMFITTER

Other job titles:

Marine pipefitter

Fire sprinkler fitter

Sprinkler system installer

Apprentice pipe fitter-steamfitter

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$40 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Dental and medical plans

Employee assistance plans

Flexible work days

Pensions

Training

West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Steamfitters and pipefitters lay out, assemble, fabricate, maintain, troubleshoot and repair piping systems carrying water, steam, chemicals and fuel in heating, cooling, lubricating and other process piping and fire suppression systems.

Their work also includes specialty piping systems that are composed of stainless steel, chrome-moly, nickel, monel and inconel that require special joining techniques. Steamfitters and pipefitters work on the highest pressure and temperature systems out of all of the trades and they require a sound knowledge of scientific and technical principles to complete their work safely and effectively.

KEY RESPONSIBILITIES

- ✦ Read blueprints, drawings and specifications to determine the layout of plumbing system, water supply networks, and wastewater drainage systems.
- ✦ Locate, mark and cut positions and pathways for pipe connections, passage holes and fixtures in walls and floors.
- ✦ Measure, cut, bend and thread pipes using hand and power tools or machines.
- ✦ Weld, braze, cement, solder and thread joints to join pipes and fabricate sections of a piping system.
- ✦ Test pipes for leaks and troubleshoot potential problems using testing equipment.
- ✦ Sprinkler system installers also perform some or all of the following duties:
- ✦ Install clamps, brackets and hangers to support piping systems and sprinkler & fire protection equipment using hand and power tools.
- ✦ Install sprinkler heads and mount prepared pipe in supports.
- ✦ Install valves, alarms and other sprinkler system or fire suppression equipment.

THIS JOB IS FOR YOU IF...

- ✦ You like working with closed, pressurized systems and fire suppression technologies.
- ✦ You are well versed on building codes and regulations and you have a keen interest in staying up to date.
- ✦ You enjoy physically active work.
- ✦ You are mechanically inclined and like working with different metals and their properties.



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GETTING STARTED

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Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (PIPEFITTER)

www.learnnowbc.ca/trades/TradesFinder

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a pipefitter. In order to be eligible for industry certification as a pipefitter, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a pipefitter, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/4400appr

CAMOSUN COLLEGE

www.camosun.ca

COLLEGE OF THE ROCKIES

www.cotr.bc.ca/trades/cotr_web.asp?IDNumber=206

PIPEFITTER UNIONS

MARINE AND SHIPBUILDERS UNION - LOCAL 506

www.marineandshipbuilderslocal506.ca

UA CANADA LOCAL 170

www.ualocal170.com/Sub11/Layout10

UA CANADA LOCAL 324

www.ualocal324.com

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

CANADIAN WELDING BUREAU, CWB

www.eng.cwbgroup.org

THE CANADIAN WELDING ASSOCIATION

www.cwa-acs.org

UNITED ASSOCIATION CANADA

www.uacanada.net/careers_steamfitter

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7252

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA

www.tradeswomen.ca

TRADES ROCK

www.tradesrock.com/shipping

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 7252

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SKILLED TRADES

PLUMBER

Other job titles:

Marine plumber

Plumbing mechanic

Maintenance plumber

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$33 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Dental and medical plans

Employee assistance plans

Flexible work days

Pensions

Training

West Coast living

PLUMBER



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DESCRIPTION

Plumbers install, repair and maintain pipes, fixtures, and other plumbing equipment used for water distribution and waste water disposal. Plumbers read blueprints, drawings and specifications to determine the layout of plumbing systems, water supply networks and wastewater & drainage systems.

Plumbers work in cooperation with other trades and labourers on most projects to ensure that specifications are met and that building codes and safety regulations are always followed. This work often involves mapping out positions and cutting passages for plumbing and associated fixtures through walls and floors. The ability to perform precise measurements and join pipes using proper materials and techniques are definitely the core of a plumber's occupation.

KEY RESPONSIBILITIES

- ✦ Read blueprints, drawings and specifications to determine the layout of plumbing system, water supply networks and wastewater drainage systems.
- ✦ Locate, mark, and cut positions and pathways for pipe connections, passage holes and fixtures in walls and floors.
- ✦ Measure, cut, bend and thread pipes using hand and power tools or machines.
- ✦ Join pipes using couplings, clamps, screws, blots, cement or soldering, brazing and welding equipment.
- ✦ Test pipes for leaks and troubleshoot potential problems using air and water pressure gauges.

THIS JOB IS FOR YOU IF...

- ✦ You enjoy working cooperatively with other trades to achieve a finished product.
- ✦ You are well versed on building codes and regulations and you have a keen interest in staying up to date.
- ✦ You have solid negotiation, communication, team building and technical skills.
- ✦ You are passionate about water distribution and waste water disposal systems.



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GETTING STARTED

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Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (PLUMBER)

www.learnnowbc.ca/trades/TradesFinder

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a plumber. In order to be eligible for industry certification as a plumber, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a plumber, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools, or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/4150appr

CAMOSUN COLLEGE

www.camosun.ca

NORTHERN LIGHTS COLLEGE

www.nlc.bc.ca/Programs/TradesApprenticeships

THOMPSON RIVERS

www.tru.ca/trades

PLUMBER UNIONS

UA CANADA LOCAL 170

www.ualocal170.com

UA CANADA LOCAL 324

www.ualocal324.com

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

PLUMBING OFFICIALS' ASSOC. OF BC

www.bcplumbingofficials.com

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7251

TRADES TRAINING & APPRENTICESHIP RELATED INFO

BC CONSTRUCTION INDUSTRY TRAINING ORGANIZATION (CITO)

www.bccito.ca

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

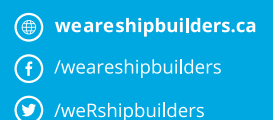
www.itabc.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 7251

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SKILLED TRADES

SHEET METAL WORKER



SHEET METAL WORKER

Other job titles:

Platework fabricator

Platework fitter

Related Careers:

Welder

Metal fabricator/fitter

Pipefitter/steamfitter

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$34 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Dental and medical plans

Employee assistance plans

Flexible work days

Pensions

Training

West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Sheet metal workers fabricate, assemble, install and repair sheet metal products. Sheet metal workers use many types of different metals in their daily tasks, including steel, copper, brass, nickel, stainless steel, aluminum and tin plate to make many different products. Sheet metal workers may specialize in on-site installation, shop manufacture of products or in the servicing and maintenance of installed equipment and systems.

A career as a sheet metal worker involves so much more than just sheets of metal; it's a game of metal manipulation. Sheet metal workers have a good knowledge of the different properties of different metals and often have to be innovative in their approach to the fabrication and alteration of parts by trimming, filing, and buffing while using welds, bolts, cement, rivets, solder, caulks, clips, and many other tools and processes to get the job done.

KEY RESPONSIBILITIES

- ✦ Read and understand blueprints, schematics and drawings, as well as work specifications to be performed in order to lay out, measure and mark sheet metal.
- ✦ Develop patterns for sheet metal using computer-assisted design and drafting software packages (CAD) as well as operate computerized laser or plasma cutting equipment to cut sheet metal.
- ✦ Fit and join sheet metal parts using riveting, welding, soldering and small equipment to fabricate products such as ventilation shafts, exhaust hoods, eavestroughs, partition frames, air & head ducts, material handling systems, roof decking, and sheet metal buildings.
- ✦ Install and inspect sheet metal products according to specifications and building codes.
- ✦ Rig, hoist, and move various pieces of heavy equipment and heavy metal materials frequently.

THIS JOB IS FOR YOU IF...

- ✦ You have strong communication, reading, and math skills.
- ✦ You are able to take measurements with exact precision and accuracy.
- ✦ You enjoy coupling your computerized technical skills with your mechanical skills to create a finished product.
- ✦ You enjoy physical labour applied through different tasks and project priorities.
- ✦ You have a passion for following technological innovations as they are applied to industrial machinery and processes.



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GETTING STARTED

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Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (SHEETMETAL WORKER)

www.learnnowbc.ca/trades/TradesFinder

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a sheetmetal worker. In order to be eligible for industry certification as a sheetmetal worker, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a sheetmetal worker, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

Red Seal trade certification allows for movement between provinces.

THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

ARCHITECTURE SHEET METAL

www.archmetalbc.com/training

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/4350appr

CAMOSUN COLLEGE

www.camosun.ca

OKANAGAN COLLEGE

www.okanagan.bc.ca/Page602

SHEET METAL WORKER UNIONS

MARINE & SHIPBUILDERS UNION - 506

www.marineandshipbuilderslocal506.ca

SHEET METAL WORKS INTERNATIONAL

www.smwia276.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

CANADIAN WELDING BUREAU, CWB

www.eng.cwbgroup.org

THE CANADIAN WELDING ASSOCIATION

www.cwa-acs.org

SHEET METAL WORKERS INT ASSOC.

www.smwia.org/Careers

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7261

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA

www.tradeswomen.ca

TRADES ROCK

www.tradesrock.com/shipping

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 7261

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SKILLED TRADES

WELDER

Other job titles:

Welder/fitter

Fabricator

Related Careers:

Metal fabricator/fitter

Pipefitter/steamfitter

Boilermaker

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$38 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Bonuses

Career growth

Dental and medical plans

Employee assistance plans

Flexible work days

Pensions

Training

West Coast living

WELDER



IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Welders operate welding equipment to join or sever metals in beams, vessels, girders, piping and other ferrous and non-ferrous components. Machine operators who operate previously set up production welding, brazing, and soldering equipment are also included as part of this occupation.

Welding usually involves fusing and melting pieces of metal together by applying heat. In gas welding, the flame from the combustion of burning gases melts the metal. In electric arc welding, heat is created as an electric current and flows through an arc between the tip of the welding electrode and the metal. Both produce the same result: filler materials are melted to fill the join or seam and make the metal stronger.

KEY RESPONSIBILITIES

- ✦ Read and interpret blueprints, drawings and other welding specifications.
- ✦ Operate welding equipment to fuse metal segments using processes such as gas tungsten arc welding (GTAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), plasma arc welding (PAW), shielded metal arc welding (SMAW), oxy-acetylene welding (OAW), resistance welding and submerged arc welding (SAW).
- ✦ Clean, inspect, repair and shape component parts, often with the use of a cutting torch.
- ✦ Develop patterns for projects or flow directions given in layouts, blueprints and work orders.
- ✦ Repair worn parts of metal products by reinforcing them through welding on extra layers.

THIS JOB IS FOR YOU IF...

- ✦ You have great vision and good hand-eye coordination.
- ✦ You are patient, can envision the final product and enjoy putting things together.
- ✦ You consider yourself a master metal craftsman and have steady hands.
- ✦ You enjoy physical labour and working with different metals and welding processes.



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GETTING STARTED

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Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (WELDER)

www.learnnowbc.ca/trades/TradesFinder

EDUCATION & TRAINING

Most apprenticeships require you to have a high school diploma and to complete a foundations certificate as a prerequisite prior to starting your apprenticeship. Check with available training providers to learn their specific eligibility requirements.

There are different pathways you can take in order to become a welder. In order to be eligible for industry certification as a welder, you can complete a three to five-year apprenticeship program or you can apply a combination of over four years of practical work experience as a welder, plus some high school, college or other industry courses.

RED SEAL CERTIFICATION

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THE INTERPROVINCIAL STANDARDS RED SEAL PROGRAM

www.red-seal.ca

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.bc.ca

CAMOSUN COLLEGE

www.camosun.ca

COLLEGE OF NEW CALEDONIA

www.cnc.bc.ca

KWANTLEN POLYTECHNIC

www.kwantlen.bc.ca/trades

NORTH ISLAND COLLEGE

www.nic.bc.ca/programs/apprenticeship_training

WELDER UNIONS

INTERNATIONAL BROTHERHOOD OF BOILERMAKERS - LOCAL 191

www.boilermakers.org/local/191

MARINE AND SHIPBUILDERS UNION - LOCAL 506

www.marineandshipbuilderslocal506.ca

UA CANADA LOCAL 324

www.ualocal324.com

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

CANADIAN WELDING BUREAU, CWB

www.eng.cwbgroup.org

THE CANADIAN WELDING ASSOCIATION

www.cwa-acs.org

UNITED ASSOCIATION WELDER CAREERS

www.uacanada.net/careers_welder

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7265

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA

www.tradeswomen.ca

TRADES ROCK

www.tradesrock.com/shipping

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 7265

FIND OUT MORE ONLINE AT: **We are Shipbuilders.ca**



weareshipbuilders.ca

[/weareshipbuilders](https://www.facebook.com/weareshipbuilders)

[/weareshipbuilders](https://www.instagram.com/weareshipbuilders)

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BC's Shipbuilding and Ship Repair Industry. **Work with us.**

SHIPYARD JOBS

INBOARD/OUTBOARD MECHANIC

Other job titles:

Small engine mechanic
Power equipment technician
Small equipment mechanic
Small engine repairer

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$28 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships
Bonuses
Career growth
Dental and medical plans
Employee assistance plans
Flexible work days
Pensions
Training
West Coast living

INBOARD/OUTBOARD MECHANIC

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Inboard/outboard mechanics test, repair and service small gasoline and diesel-powered engines and equipment, such as small tractors, outboard motors, drivetrains, and other accessories used in the marine and shipbuilding industry. An inboard/outboard mechanic's tasks involve all aspects of repairs to gasoline outboard motors, gasoline & light diesel inboard motors and stern drive units.

Small engine mechanics disassemble and inspect small motors to troubleshoot for defective parts and components using various hand tools and gauges. As well, they are responsible for monitoring performance and ensuring that all small engine systems are adjusted appropriately and are in good working order.

KEY RESPONSIBILITIES

- ✦ Inspect, test, and diagnose engines and mechanical components in order to isolate and repair faults.
- ✦ Review work orders and coordinate work to be performed with supervisor.
- ✦ Advise other departments on work performed and general condition of facility equipment.
- ✦ Perform routine scheduled maintenance and service on site equipment.
- ✦ Estimate and determine certain repair and replacement costs.

THIS JOB IS FOR YOU IF...

- ✦ You enjoy pulling apart, repairing, and maintaining small engines and equipment.
- ✦ You enjoy the troubleshooting process and how it applies to motorized equipment.
- ✦ You enjoy physical activity and working with your hands and with small parts.
- ✦ You are good at estimating costs and timing and at making sound judgements.
- ✦ You are a good communicator and enjoy the process of consultation.



SSRB | BC SHIPBUILDING & SHIP REPAIR BOARD

GETTING STARTED

Careers as an inboard/outboard mechanic in the BC shipbuilding & ship repair industry usually begin with an apprenticeship in skilled trades or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

ACE-IT HIGH SCHOOL PROGRAM (INBOARD/OUTBOARD MECHANIC)

www.learnnowbc.ca/trades/TradesFinder.aspx

EDUCATION & TRAINING

High school graduation is preferred for entry into an inboard/outboard mechanic apprenticeship. Check with available training providers to see their specific eligibility requirements. After high school, there are different pathways you can take to become an inboard/outboard mechanic. In order to be eligible for certification as an inboard/outboard mechanic, you can complete a three or four-year apprenticeship program in small engine or equipment repair, or you can apply a combination of over four years of work experience in the trade, plus some high school, college or other industry courses.

APPRENTICESHIP SPONSORS

Employer sponsored apprentices are selected and sponsored through an application process. Union sponsored apprentices are selected and sponsored through their trade union and can be recruited by employers based on the needs of a shipyard.

APPRENTICESHIP GRANTS

Apprentices can receive up to \$4,000 in grants to pay tuition, travel, tools or other expenses. If you are considering an apprenticeship, visit the Red Seal program for information on how to get started.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BC MARINE TRADES ASSOCIATION

www.bcmta.com/careers/education-training

CAMOSUN COLLEGE

www.camosun.ca

NORTH ISLAND COLLEGE

www.nic.bc.ca

VANCOUVER ISLAND UNIVERSITY

www.viu.ca/mmt/marine-apprenticeship.asp

INBOARD/OUTBOARD MECHANIC UNIONS

INTERNATIONAL ASSOCIATION OF MACHINISTS LODGE 692

www.iamaw692.ca

MARINE AND SHIPBUILDERS UNION - LOCAL 506

www.marineandshipbuilderslocal506.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7335

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

TRANSPORTATION CAREER DEVELOPMENT ASSOCIATION OF BC (TRANSCDA)

www.transportationcareers.ca

NOC: 7335

FIND OUT MORE ONLINE AT: **We are Shipbuilders.ca**



BC JOBS PLAN



BC SHIPBUILDING & SHIP REPAIR BOARD

weareshipbuilders.ca

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[/weRshipbuilders](https://twitter.com/weRshipbuilders)

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SHIPYARD JOBS

SANDBLASTER

Other job titles:

Metal fabrication labourer
Bench grinder
Chipper
Finisher

YOU CAN EARN

\$37 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand, and location.

BENEFITS CAN INCLUDE

Apprenticeships
Bonuses
Career growth
Dental and medical plans
Employee assistance plans
Flexible work days
Pensions
Training
West Coast living

SANDBLASTER

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WESTCOAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Sandblasters or metal fabrication labourers remove excess metal and unwanted materials from metal parts, castings, and other metal products and perform other labouring activities for metal fabrication trades. They do so using sandblasters, grinders, buffers, and other hand-held and powered tools.

Similar to a regular labourer, this occupation is responsible for ensuring metalworking areas are clean, and assists all metal-based tradespeople with everyday activities. General construction labourer experience is often an asset as a sandblaster works in much of the same capacity, except their labour activities are focused more on structural steel, boiler & platework, heavy machinery manufacturing and sheet metal fabrication.

KEY RESPONSIBILITIES

- ✦ Assist structural steel & platework fitters, sheet metal workers, metalworking machine operators and other metal workers with general duties, including reading and interpreting work orders.
- ✦ Operate metal cleaning equipment such as wheelabrators, deburrers and shotblasters to remove excess welds, rust, scale and other material from the surfaces of metal parts, castings and other metal products.
- ✦ Clean and prepare work areas, including loading and unloading vehicles and sorting metal sheets, parts, and scrap materials.
- ✦ Immerse metal products in cleaning solutions and/or polish metal products to a mirror finish.

THIS JOB IS FOR YOU IF...

- ✦ You enjoy physical labour and performing different tasks and duties from day to day.
- ✦ You are keen to work with metal-based tradespeople on a common project.
- ✦ You consider yourself a good assistant/helper and are keen to learn as you go.
- ✦ You are keen to add work experience to a future metal-based trades apprenticeship career pathway.
- ✦ You are someone who knows you want to get into metal-based trades but doesn't really know where to begin.



BC SHIPBUILDING &
SHIP REPAIR BOARD

GETTING STARTED

Careers as a sandblaster in the BC shipbuilding & ship repair industry usually begin with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to moving on to becoming a sandblaster.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

EDUCATION & TRAINING

Currently, there are no defined academic requirements for someone to be eligible to become a sandblaster. Certification for abrasive blasters can be done through the Steel Structures Painting Council (SSPC). In BC, only the holder of a valid Blaster's Certificate issued by WorkSafeBC, or acceptable to WorkSafeBC, is permitted to conduct or direct a blasting operation, and then only if the work involved is within the scope of that certificate.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

THE COATINGS SOCIETY/STEEL STRUCTURES PAINTING COUNCIL

www.sspc.org/Abrasive-Blasting-Program-C7-recert

TRAIN CANADA

www.traincanada.com/site/seaspan

WORK SAFE BC

www2.worksafebc.com/topics/blasting/CertificationRequirementsAndExaminations.asp?ReportID=33988

SANDBLASTER UNIONS

INTERNATIONAL ASSOCIATION OF MACHINISTS LODGE 692

www.iamaw692.ca

LABOURERS INTERNATIONAL UNION OF NORTH AMERICA (LIUNA) - LOCAL 1611

www.cswu1611.org

MARINE AND SHIPBUILDERS UNION - LOCAL 506

www.marineandshipbuilderslocal506.ca

MARINE WORKERS & BOILERMAKERS INDUSTRIAL UNION - LOCAL 1

www.marineworkers.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/9612

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADES ROCK

www.tradesrock.com/shipping.php

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

TRADES WOMEN.CA

www.tradeswomen.ca

NOC: 9612

FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



BC JOBS PLAN



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[/weRshipbuilders](https://twitter.com/weRshipbuilders)



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SHIPYARD JOBS

SHIPYARD LABOURER

SHIPYARD LABOURER

Other job titles:

Maintenance labourer
Construction labourer
Construction helper
Trades helper

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$35 hr

This is the high end of the Canadian average. Wage rates vary based on experience, demand, and location.

BENEFITS CAN INCLUDE

Apprenticeships
Bonuses
Career growth
Dental and medical plans
Employee assistance plans
Flexible work days
Pensions
Training
West Coast living

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WESTCOAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Trades helpers and labourers assist other skilled trades in the performance of some of their tasks. This includes all trades – mechanics, carpenters, plumbers, electrical workers, welders, and many more. Labourers, as the name indicates, spend the bulk of their time performing moderate physical labour on-site or in a workshop setting.

Consider labourers as trades assistants who can do almost any physical task, including loading, unloading, erecting, dismantling, cleaning, maintaining, and tending to machinery and other shipyard and vessel fixtures. Given the number of trades and skill sets this occupation appeals to, the tasks of a labourer typically do not stay the same from day to day.

KEY RESPONSIBILITIES

- ✦ Load and unload construction materials as well as relocate various materials around shipyards.
- ✦ Erect and dismantle concrete forms, scaffolding, ramps, catwalks, shoring and barricades required on shipbuilding and ship repair sites.
- ✦ Remove and clean up rubble, debris and spills that occur during the shipbuilding and repair process.
- ✦ Perform general maintenance on hoists and other equipment.
- ✦ Perform labour, maintenance and trades assistance activities as directed.

THIS JOB IS FOR YOU IF...

- ✦ You enjoy physical labour and different tasks and duties from day to day.
- ✦ You are keen to work with a variety of different trades on a common project.
- ✦ You consider yourself a good assistant/helper and are keen to learn as you go.
- ✦ You are motivated to add shipyard work experience and develop connections to obtain to a future apprenticeship career in the shipbuilding and repair industry.
- ✦ You are someone who knows you want to get into trades but doesn't really know where to begin.

GETTING STARTED

It is natural for workers to spend an entire career as a shipyard labourer, however, many start their careers as shipyard labourers and then move on to a specific trade within the shipbuilding and ship repair industry. Many skilled trades who have earned a certificate of qualification get their start in shipbuilding and ship repair as a shipyard labourer prior to being accepted into an apprenticeship program. Knowledge and competencies for the shipyard labourer are achieved through targeted training courses and experience on the job.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

EDUCATION & TRAINING

Currently, there are no defined academic requirements for someone to be eligible to become a labourer. Some experience as a general construction labourer may be required for construction trade helpers.

ITABC offers an occupational certificate for experienced (4000 hours) shipyard labourers. This credential can be obtained through completing an assessment process offered at IMTARC. Safety courses and certain certifications may be required, depending on the industry.

TRAINING PROVIDERS

CONSTRUCTION AND SPECIALIZED WORKERS UNION 1161

<http://www.cswu1611.org/contractors/home.html>

INDUSTRY TRAINING AUTHORITY OF BC

www.itabc.ca

TRAIN CANADA

www.traincanada.com/site/seaspan

WORK SAFE BC

www2.worksafebc.com

SHIPYARD LABOURER UNIONS

INTERNATIONAL ASSOCIATION OF MACHINISTS LODGE 692

www.iamaw692.ca

INTERNATIONAL UNION OF PAINTERS AND ALLIED TRADES, DISTRICT COUNCIL 38

www.dc38.ca

LABOURERS INTERNATIONAL UNION OF NORTH AMERICA (LIUNA) - LOCAL 1611

www.cswu1611.org

MARINE WORKERS & BOILERMAKERS INDUSTRIAL UNION - LOCAL 1

www.marineworkers.ca

MARINE AND SHIPBUILDERS UNION - LOCAL 506

www.marineandshipbuilderslocal506.ca

CAREER RESOURCES

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7611

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

TRADES ROCK

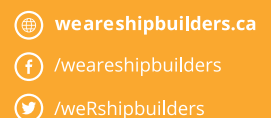
www.tradesrock.com/shipping.php

TRADES WOMEN.CA

www.tradeswomen.ca

NOC: 7611

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TECHNICIANS & TECHNOLOGISTS

ELECTRICAL & ELECTRONICS ENGINEERING TECHNOLOGISTS & TECHNICIANS

Other job titles:

Test technician

Computer systems technician

Communication technician

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$40 hr

This is the high end of the Canadian average. Wage rates will vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Career development

Ongoing training opportunities

Dental and medical benefits

Employee assistance plan

Pensions

Ongoing training

West Coast living

ELECTRICAL & ELECTRONICS ENGINEERING TECHS

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU**.

DESCRIPTION

Electrical and electronics engineering technologists & technicians may work independently or provide technical support and services in the design, development, testing, production and operation of electrical and electronic equipment and systems.

These workers often provide advanced technical assistance and solutions to problems and challenges encountered before, during, and after project construction. They are highly skilled problem solvers that can assemble electrical and electronic systems and prototypes according to engineering data and electrical principles. They often collaborate with other departments to identify, define, and solve developmental problems.

KEY RESPONSIBILITIES

- ✦ Design, develop and test power equipment and systems, industrial process control systems, telecommunication, broadcast, recording and audiovisual systems, micro-electronic systems & circuits, computers, computer systems and networks and computer software.
- ✦ Conduct, supervise, or assist in the installation, commissioning, and operation of electrical and electronic equipment and systems other than aircraft electronics or instruments.
- ✦ Set up and operate specialized and standard test equipment to diagnose, test and analyze the performance of electrical and electronic components, assemblies and systems.
- ✦ Carry out or assist in applied research in fields of electrical & electronic engineering and physics under the direction of other scientists or engineers.
- ✦ Write or assist in writing specifications, schedules, technical reports, control schedules and budgets as required.

THIS JOB IS FOR YOU IF...

- ✦ You are keen to be involved in a career that is an integral to almost all construction industries.
- ✦ You want to be involved in every step from design to implementation of electronic devices and systems.
- ✦ You want to be at the forefront and potentially influencing electrical engineering innovations.
- ✦ You consider yourself a bit of an electromagnetic scientist and are passionate about harnessing and converting electromagnetic energy.



SSRB | BC SHIPBUILDING & SHIP REPAIR BOARD

GETTING STARTED

Careers in the BC shipbuilding & ship repair industry typically begin with graduates obtaining an entry level job after completing certification, or with workers moving over from other sectors such as electrical utilities, communications, manufacturing, consulting firms, and a wide range of processing and transportation industries.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary per-apprenticeship programs as a great place to start learning about the trades.

EDUCATION & TRAINING

Completion of a two or three-year college program in electrical or electronics engineering technology, computer engineering technology, telecommunications technology or an equivalent is usually required for a career as an electrical engineering technologist. Completion of a one or two-year college program in electrical or electronics engineering technology is usually required for electrical or electronics engineering technicians.

Trade certification as an electrical engineering technologist or technician typically requires supervised work experience for a period of at least two years.

Continuing technical education throughout an electrical or electronics engineering technologist or technician's career is also necessary to remain current in the field. Individuals can seek out this additional training or it may be offered by employers or the industry.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/energy/study

CAMOSUN COLLEGE

www.camosun.ca

NORTH ISLAND COLLEGE

www.nic.bc.ca/programs/trades_and_technology

OKANAGAN COLLEGE

www.okanagan.bc.ca/Programs/Areas_of_Study/engineeringtechnologies

UNIVERSITY OF THE FRASER VALLEY

www.ufv.ca/trades

ELECTRICAL AND ELECTRONICS ENGINEERING TECHNOLOGISTS AND TECHNICIANS UNIONS

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS - IBEW LOCAL 213

www.ibew213.org

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS - IBEW LOCAL 230

www.ibew230.org

CAREER RESOURCES

APPLIED SCIENCE TECHNOLOGISTS AND TECHNICIANS OF BC (ASTTBC)

www.asttbc.org

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

CANADA ASSOCIATION OF INFORMATION TECHNOLOGY PROFESSIONALS

www.cipts.ca

CANADIAN COUNCIL OF TECHNICIANS AND TECHNOLOGISTS

www.cctt.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/2241

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

<https://www.imtarc.com>

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA (INFO FOR WOMEN)

www.tradeswomen.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 2241

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[/weRshipbuilders](https://twitter.com/weRshipbuilders)

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TECHNICIANS & TECHNOLOGISTS

MECHANICAL ENGINEERING TECHNOLOGISTS & TECHNICIANS

Other job titles:

Engineering assistant
Ship repair technician
Technical inspector
Marine engineering technologist

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$45 hr

This is the high end of the Canadian average. Wage rates will vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships
Career development
Ongoing training opportunities
Dental and medical benefits
Employee assistance plan
Pensions
Ongoing training
West Coast living

MECHANICAL ENGINEERING TECHNOLOGISTS & TECHNICIANS

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU.**

DESCRIPTION

Mechanical engineering technologists and technicians provide technical support and services to project teams and the shipbuilding workforce. Mechanical engineering technologists and technicians are often involved in the research & development and mechanical equipment design. This means that they are often highly involved in the process of testing, quality control, and project management concerning mechanical engineering innovations.

Mechanical engineering technologists and technicians spend a great deal of time applying scientific and engineering principles to solve mechanical engineering design problems. They are often involved in specialized electronics and computer manufacturing and other fields that involve the transmission of power and energy through mechanical systems.

KEY RESPONSIBILITIES

- ❖ Prepare and interpret conventional and computer-assisted design (CAD) engineering designs, drawings and specifications for machines and components, power transmission systems, process piping, heating, ventilating and air-conditioning systems.
- ❖ Design moulds, tools, dies, jigs and fixtures for use in manufacturing processes.
- ❖ Conduct tests and analyses of machines, components and materials to determine their performance, strength, response to stress and other characteristics.
- ❖ Prepare standards and schedules and supervise mechanical maintenance programs or operations of mechanical plans.
- ❖ Prepare cost and material estimates, project schedules, reports, contracts and tender documents.

THIS JOB IS FOR YOU IF...

- ❖ You are highly skilled and passionate about engineering, physics and material sciences.
- ❖ You have a broad understanding of core scientific concepts as well as computer-aided engineering tools and product life cycle management techniques.
- ❖ You are keen to be on the leading edge of physics and engineering developments.
- ❖ You are highly analytical and scientific in your approach to shipbuilding design and construction.

GETTING STARTED

Technologists and technician careers in the BC shipbuilding & ship repair industry typically begin with graduates obtaining an entry level job after completing certification, or with workers moving over from other sectors such as electrical utilities, communications, manufacturing, consulting firms, and a wide range of processing and transportation industries.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

EDUCATION & TRAINING

Completion of a two or three-year college diploma program in mechanical engineering technology is usually required for mechanical engineering technologists. Completion of a one or two-year college program in mechanical engineering is usually required for mechanical engineering technicians. Most college programs require high school graduation for entry, or an equivalency of course achievement. Check your local training provider for entry requirements.

Trade certification as a mechanical engineering technologist or technician typically requires supervised work experience for a period of at least two years.

Continuing technical education throughout a mechanical engineering technologist or technician's career is also necessary to remain current in the field. Individuals can seek out this additional training or it may be offered by employers or the industry.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

www.bcit.ca/study/programs/mechanicalengineering

CAMOSUN COLLEGE

www.camosun.ca

NORTH ISLAND COLLEGE

www.nic.bc.ca/programs/trades_and_technology

OKANAGAN COLLEGE

www.okanagan.bc.ca/Programs/Areas_of_Study/engineeringtechnologies.html

UNIVERSITY OF THE FRASER VALLEY

www.ufv.ca/trades

CAREER RESOURCES

APPLIED SCIENCE TECHNOLOGISTS AND TECHNICIANS OF BC (ASTTBC)

www.asttbc.org

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

CANADA ASSOCIATION OF INFORMATION TECHNOLOGY PROFESSIONALS

www.cips.ca

CANADIAN COUNCIL OF TECHNICIANS AND TECHNOLOGISTS

www.cctt.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/2232

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

<https://www.imtarc.com>

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA (INFO FOR WOMEN)

www.tradeswomen.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradestrainingbc.ca

NOC: 2232

FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



weareshipbuilders.ca

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[/weRshipbuilders](https://twitter.com/weRshipbuilders)

We are Shipbuilders.

BC's Shipbuilding and Ship Repair Industry. **Work with us.**

TECHNICIANS & TECHNOLOGISTS

ELECTRIC MOTOR SYSTEMS TECHNICIAN

Other job titles:

Winder electrician

Winder technician

Electrical mechanic

Electrical utility technician

Progression to supervisory positions is possible with experience.

YOU CAN EARN

\$45 hr

This is the high end of the Canadian average. Wage rates will vary based on experience, demand and location.

BENEFITS CAN INCLUDE

Apprenticeships

Career development

Ongoing training opportunities

Dental and medical benefits

Employee assistance plan

Pensions

Ongoing training

West Coast living

ELECTRIC MOTOR SYSTEMS TECHNICIAN

IF YOU WANT **GOOD PAY**, THE OPPORTUNITY TO **EARN WHILE YOU LEARN**, AN ACTIVE **WEST COAST LIFESTYLE** AND THE CHANCE TO WORK BUILDING & MAINTAINING **INCREDIBLE HIGH-TECH SEAGOING VESSELS**, THEN THE BC SHIPBUILDING & SHIP REPAIR INDUSTRY IS **THE PLACE FOR YOU**.

DESCRIPTION

Electric motor systems technicians (winder electricians) maintain, test, rebuild and repair electric motors, transformers, switchgears, and other electrical equipment. They are often involved with the installation of electrical machines, systems and equipment in many heavy industries, including shipbuilding and ship repair.

Unlike an electrician, electrical motor systems technicians focus much of their work on installing, reconditioning, repairing, servicing, and testing motor generators, transformers, control panels, and other motorized or mechanized electrical systems. Electrical motor service technicians often perform predictive and preventative maintenance services on motorized electrical equipment as well.

KEY RESPONSIBILITIES

- ✦ Test, monitor and repair electrical, electronic & mechanical components and systems using specialized testing and measuring devices.
- ✦ Troubleshoot and repair electric motors, transformers, switchgears, generators and other electro-mechanical equipment.
- ✦ Perform static or dynamic balancing of armatures or rotors through welding, brazing or soldering electronic connections or by aligning and adjusting parts.
- ✦ Recondition shafts, commutators and other parts through the process of machining.
- ✦ Perform on-site service and repair duties.

THIS JOB IS FOR YOU IF...

- ✦ You are passionate about motorized electric and electromagnetic systems and navigating your way through a mess of colour coded wires to achieve success.
- ✦ You are a strong communicator who enjoys mathematics and precise details.
- ✦ You are physically active and thrive in environments where both your mind and your body are put to good use.
- ✦ You like to see the immediate results of all of your hard work and dedication.
- ✦ You enjoy working with evolving electronic and electromagnetic technologies.



SSRB | BC SHIPBUILDING & SHIP REPAIR BOARD

GETTING STARTED

Careers in the BC shipbuilding & ship repair industry usually begin with an apprenticeship in a skilled trade or with a job directly at a shipyard. Many get their start in shipbuilding as a shipyard labourer prior to being accepted into an apprenticeship program.

Discuss possible career steps with your school counsellor, career counsellor, or a union hall representative and consider high school trades programs and post-secondary pre-apprenticeship programs as a great place to start learning about the trades.

EDUCATION & TRAINING

High school graduation is preferred for entry into an electric motor systems technician apprenticeship, including Math 12, English 12 and Physics 12.

Check with available training providers to see their specific eligibility requirements. After high school, there are different pathways you can take to become an electric motor systems technician.

In order to be eligible for certification as an electric motor systems technician, you can complete a four-year apprenticeship program or you can apply a combination of over four years of work experience as an electric motor systems technician, plus some high school, college or other industry courses.

BC apprentices registered in this program must take their technical training in Alberta.

TRAINING PROVIDERS

We have provided a listing of some of the training providers for this career below. For a complete listing of training program information in BC, Please see the BC Education Planner website www.educationplanner.ca

ALBERTA TECHNICAL TRAINING

www.tradesecrets.alberta.ca/trades-occupations/profiles/030

ELECTRIC MOTOR SYSTEMS TECHNICIAN UNIONS

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS – IBEW LOCAL 213

www.ibew213.org

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS – IBEW LOCAL 230

www.ibew230.org

CAREER RESOURCES

APPLIED SCIENCE TECHNOLOGISTS AND TECHNICIANS OF BC (ASTTBC)

www.asttbc.org

BC SHIPBUILDING & SHIP REPAIR INDUSTRY

www.weareshipbuilders.ca

CANADIAN COUNCIL OF TECHNICIANS AND TECHNOLOGISTS

www.cctt.ca

WORKBC.CA

www.workbc.ca/Job-Seekers/Career-Profiles/7333

TRADES TRAINING & APPRENTICESHIP RELATED INFO

DISCOVER SKILLS BC

www.discoverskillsbc.ca

THE INDUSTRIAL MARINE TRAINING AND APPLIED RESEARCH CENTRE (IMTARC)

www.imtarc.com

THE INDUSTRY TRAINING AUTHORITY OF BRITISH COLUMBIA (ITABC)

www.itabc.ca

TRADESWOMEN.CA (INFO FOR WOMEN)

www.tradeswomen.ca

TRADES TRAINING BC (TRADES TRAINING PROGRAMS & SERVICES HUB)

www.tradetrainingbc.ca

NOC: 7333

FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**

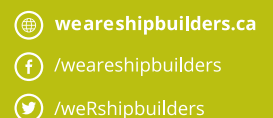


CHART A COURSE TO SUCCESS

SHIPBUILDING & SHIP REPAIR CAREER PATHWAYS

Start planning your career as a shipbuilder with the following Career Pathways Map.



**CAREER
PATHWAYS**

Shipbuilding & Ship Repair Skilled Trades Pathways

ALL TRADES APPRENTICES START HERE



THE SHIPBUILDING RELATED TRADES:

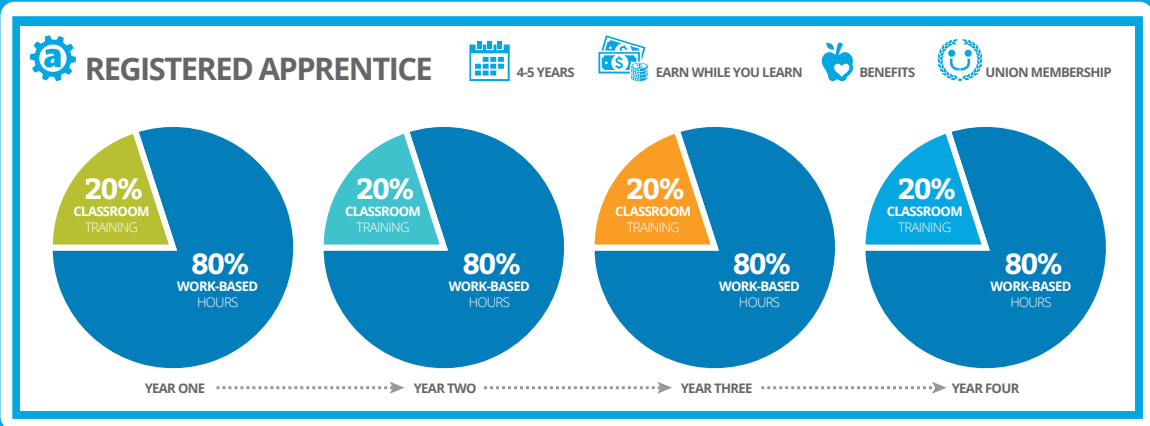
- BOILERMAKER
- CARPENTER
- HEAVY DUTY MECHANIC
- INBOARD-OUTBOARD MECHANIC
- INDUSTRIAL ELECTRICIAN
- JOINER / SHIPWRIGHT
- MACHINIST
- METAL FABRICATOR / SHIPFITTER
- MILLWRIGHT
- PAINTER
- PIPEFITTER / STEAMFITTER
- PLUMBER
- WELDER

OTHER SHIPBUILDING RELATED CAREERS:

- ELECTRICAL MOTOR SYSTEMS TECHNICIAN & TECHNOLOGIST
- ELECTRICAL-ELECTRONICS ENGINEERING TECHNICIAN & TECHNOLOGIST
- MECHANICAL ENGINEERING TECHNICIAN & TECHNOLOGIST
- SANDBLASTER
- SHEET METAL WORKER
- SHIPYARD LABOURER
- ADMINISTRATOR
- ACCOUNTANT
- ESTIMATOR
- TRAINING SPECIALIST
- SAFETY COORDINATOR
- NAVAL ARCHITECT

EXPLORE YOUR CAREER OPTIONS AND CHOOSE AN APPRENTICE PROGRAM IN ONE OF THE MANY SHIPBUILDING RELATED TRADES

GAIN EMPLOYMENT WITHIN INDUSTRY OR UNION AND REGISTER YOUR APPRENTICESHIP



OBTAIN YOUR ITA **CERTIFICATE OF QUALIFICATION (CofQ)** ALSO KNOWN AS YOUR **TICKET**

IF YOU HAVE EXTENSIVE EXPERIENCE WORKING IN A TRADE (ANYWHERE) BUT ARE NOT CERTIFIED IN CANADA YOU CAN CHALLENGE YOUR TRADE CERTIFICATION

You may challenge for an ITA Certificate of Qualification if you have the required knowledge, training and skills through previous experience. Generally, challengers are required to complete 1.5 times the hours required for an apprenticeship. Once the challenge exam is passed with a mark of 70% or better, you will become a certified tradesperson.

CHALLENGERS START HERE

CONTINUE WORKING AS A **CERTIFIED** or **RED SEAL CERTIFIED** JOURNEYMAN TRADESPERSON





WE ARE
SHIPBUILDERS

WE ARE SHIPBUILDERS

The hardworking men and women of shipbuilding form the backbone of our lucrative industry, and represent a family built on pride, mutual respect and equality. We love our work, and take immense pride in our accomplishments.

Find out what it takes to be a shipbuilder by reading the following profiles, videos and stories that have been shared from the heart and soul of our industry – BC's shipbuilders.

**WE ARE
SHIPBUILDERS**

WORKER PROFILES

Whether you are in school and exploring your options, or are experienced and considering a career change, the shipbuilding and ship repair industry offers adventure and challenge with a secure future. Though our career paths and backgrounds may differ, we are a solid team and each and every one of us has earned our "bragging rights."

From the construction, conversion, refit and refurbishment of naval and commercial vessels, to the provision of vital emergency repairs on seagoing ships, we work together to ensure the safety, transport, enjoyment and well-being of countless people.

Learn more about being a shipbuilder by reading the following profiles that were provided by BC's shipbuilders.

**WORKER
PROFILES**



“ Trade foundation programs are a great help when starting out... and try and study up on shipbuilding terminologies. The more you know about the structure of a ship, the better off you will be in the beginning of your career. ”



JACOB BURNIKELL

Welding Foreman



EMPLOYER

Seaspan Shipyards



EDUCATION & TRAINING

Apprenticeship/Training
Washington Marine Group

On-the-Job Training
Seaspan Shipyards



YEARS SHIPBUILDING

● ● ● ● ● ○ ○ ○ ○ ○

13 Years

Like many shipbuilders, Jacob was initially drawn to shipbuilding through his attraction to water and boats, and has been working on marine vessels for his entire welding and fabricating career.

Jacob received all of his training on-the-job, and now enjoys a fulfilling career as a Welding Foreman with Seaspan Shipyards.

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Jacob Burnikell

SEASPAN SHIPYARDS



WELDING FOREMAN

Q What attracted you to a career in the shipbuilding industry?

A *I've always been drawn to the water. From an early age, I have always been interested in boats.*

Q Describe a typical day on the job:

A *A typical day on the job is overseeing a crew of approximately 20-50 workers. I have regular and senior chargehands who report directly to me. I have been working on marine vessels for my entire welding and fabricating career.*

Q What type of environment do you work in?

A *I work in a shipyard, which includes outdoor work as well as indoor shop work.*

Q What do you feel are good traits and skills for someone who wants to do your job?

A *Having a solid work ethic. A sense of pride, and accountability in your work.*

Q What type of training did you receive?

A *All of my training has been on-the-job. I was mentored in the beginning of my career by a very experienced, and patient foreman, who took the extra time to help me learn and expand my skills.*

Q What is the best way for someone to prepare for employment in the shipbuilding industry?

A *Trade foundation programs are a great help when starting out... and try and study up on shipbuilding terminologies. The more you know about the structure of a ship, the better off you will be in the beginning of your career.*

Q What do you like the most about the shipbuilding industry and your job?

A *The shipbuilding Industry is ever changing; no vessel is the same and every challenge has a unique solution.*

Q What are your thoughts about the future of the shipbuilding and repair industry?

A *My hope is that we have a bright future for shipbuilding in BC. The expansion of the yard should draw customers from around the world. We have a long road to prove ourselves, but I know the entire province is on board and ready for the challenge.*



FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



“ I love my job because I get to work in many different areas and it never gets boring for me. I like to work hard and enjoy using my brain to overcome challenges as they present themselves. I really enjoy working with the people around me... we're a good example that you can have fun at work and keep up with production and work safety. ”

SEAN LEVER
**Metal Fabricator/
Welding Supervisor**

EMPLOYER
Meridian Marine

EDUCATION & TRAINING
Metal Fabricator Red Seal B.C.I.T.
Fabricator Apprenticeship Meridian Marine
CWB welding Certification Challenged Testing
CWB welding supervisor Certified Supervisor
Confined Space Certified

YEARS SHIPBUILDING
● ● ● ○ ○ ○ ○ ○
7 Years

Sean is the son of a seasoned shipbuilder and followed in his Dad's footsteps by pursuing a career in shipbuilding. He's never regretted his decision, and now works side-by-side with his Dad at Meridian Marine.

Sean's \$2,000 award-winning profile provides an honest insight into the day-to-day aspects of a welding supervisor / metal fabricator, and speaks volumes about the value of training, and the respect prevalent within the industry.

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Sean Lever

MERIDIAN MARINE



METAL FABRICATOR WELDING SUPERVISOR

Q What do you do in the shipbuilding industry?

A I am a red seal metal fabricator, CWB certified welder, and a CWB certified welding supervisor, I do ship repair as well as new construction. I fabricate and assemble steel components for ships, and barges. I do the layout of steel for cutting, bending/forming, drilling and welding. As a welder I weld these components. As a welding supervisor I supervise other welders and make sure the quality of welding and fit of all components are to the standards of 47.1.

Q Describe a typical day on the job

A I usually start by getting putting on coveralls as well as the proper PPE for the day. I then find out what the jobs for the day are from either the owners or from one of the 2 Superintendents. From there it varies day to day, depending on which site I am working at. Which is one thing that keeps my job interesting and new almost every day.

Q What type of environment do you work in?

A I work in the shipyard or at various job sites. That means I could be in the shop area indoors, on a ship on the dockside outdoors. I could be inside of a ship or at various types of job sites/shipyards, depending on the type of work.

Q What do you feel are good traits and skills for a person who wants to work in your job?

A A person who wants to work in my field should want to work with their hands, and expect to work hard. It is very tough work but is very fulfilling at the end of the day. They should be a person who asks a lot of questions because you learn something new each day. A person who enjoys solving problems and going up against many different challenges would do well in our industry.

Q What do you like most about the shipbuilding industry and your job?

A I love my job because I get to work in many different areas and it never gets boring for me. I like to work hard and enjoy using my brain to overcome challenges. I really like working with the people around me, we're a good example that you can have fun at work and still keep up with production and working safety.

Q Tell us about your work-related education and training

A I started my Metal Fabricator apprenticeship with Meridian Marine in 2006, with my father as my mentor who has over 40 years experience. I went to BCIT at the burnaby location for 5 weeks every year for 4 years. During this time I learned how to weld from experienced welders I worked with. I completed my red seal for metal fabrication in 2011. I challenged my CWB welding test in 2011 with no schooling. In 2012 I completed the CWB welding supervisor course. I am confined space awareness certified and forklift operator certified.

Q What attracted you to a career in the shipbuilding industry?

A I graduated high school in 2006 with the idea of becoming an auto mechanic because I wanted a job where I could work with my hands, but I was offered an apprenticeship through Meridian Marine where I was a laborer from time to time. My dad was the foreman and I decided to follow in his footsteps as well as fulfill my needs for the type of career I wanted. I accepted the offer and began in October 2006. I haven't regretted it since.

Q What do you feel is the best way for an individual to prepare for employment in the shipbuilding and repair industry?

A They should start off with an open mind and prepare to learn because the apprenticeship goes by fast. Over time they will learn a whole new thought process in a working environment that will better themselves as a builder as well as a person. School is very important and it starts the theory portion of the journey. Respect those who teach because you will be in their shoes one day. Expect to be frustrated in the beginning, but it will get easier with time as you learn.

Q What are your thoughts about the future of the shipbuilding and repair industry?

A I am very happy and excited for the industry to grow; it means a good future for myself and others like me. I can't wait to tackle the new challenges and learn what this industry has to offer. I look forward to seeing new faces, young and old.

 Watch Sean's video profile online at WeareShipbuilders.ca

FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



“ Make sure you're in the best trade for you and your skill set, and know what motivates you... learning does not stop once you start or finish a job, you need to be ready to continue to learn from others and willing to share your knowledge. ”

Merike Kolga's drive, combined with on-the-job training and her impressive background in adult education, has secured her a position as a Training Specialist with Seaspan.

As someone who helps mold and shape the shipbuilding and ship repair workforce, Merike exemplifies all of the qualities inherent in a quality shipbuilder: enthusiasm, professionalism, a healthy work ethic, flexibility, and perhaps most importantly, a sense of humour.

MERIKE KOLGA

Training Specialist



EMPLOYER

Seaspan Shipyards



EDUCATION & TRAINING

Bachelor of Arts
University of Toronto

Teacher/Trainer Certificate
Centennial College

Bachelor of Ed.
Adult Education - Brock University



YEARS SHIPBUILDING

● ○ ○ ○ ○ ○ ○ ○

1 Year

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Merike Kolga

SEASPAN SHIPYARDS



SHIPYARD TRAINING SPECIALIST

Q What attracted you to a career in the shipbuilding industry?

A For me, shipbuilding is an industry that represents personal and professional opportunity.

Q What do you like the most about the shipbuilding industry and your job?

A I was attracted to the history and the potential of the industry as a whole. I enjoy interacting with apprentices and journeypersons at different levels in the organization. This gives me an appreciation, an awareness and an understanding of each trade and the occasional hands-on learning opportunity within a trade.

Q What do you feel is the best way for an individual to prepare for work in the shipbuilding industry?

A I would recommend investing in yourself first. Make sure you're in the best trade for you and your skill set, know what motivates you in your trade, be dedicated to your trade and personal & professional development, recognize that learning does not stop once you start/finish a job, and be willing to share your knowledge and learn from others.

Q What does a typical day at work look like?

A A day as a training specialist is anything but typical. I have multiple responsibilities including supporting and leading projects, internal programs, research, and general consulting on current and future projects. A busy day likely includes meetings with 2-3 project teams, followed by design/development, strategy, planning and communication work.

Q What type of work-related training does a training specialist require?

A My focus on adult education includes a bachelor of arts, a teacher/training certificate, and a bachelor of education in adult education. I am currently perusing a masters in adult education. Additional training and development include on-the-job course development & facilitation, CSTD volunteering and conference participation.

Q What do you feel are good traits for someone who wants to do your job?

A Good communication skills, enthusiasm, professionalism, flexibility, a healthy work ethic, a sense of humor, and experience in the field of adult education are the most important.

Q What are your thoughts about the future of the shipbuilding and repair industry?

A This is an industry undergoing change but full of potential. A careful alignment of resources, communication and participation are key. Having a clear understanding of how communities and companies can work together, followed by action and results will put British Columbians a good place and bring more sustainability to the industry.



FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



weareshipbuilders.ca

[/weareshipbuilders](https://www.facebook.com/weareshipbuilders)

[/weRshipbuilders](https://twitter.com/weRshipbuilders)



“ Good communication skills are key, especially listening to others, as well as being a problem solver and being able to troubleshoot. Someone who takes pride in their work, recognizes the abilities of their co-workers, enjoys a team working environment, and sets an example by pitching in to get the job done definitely has good traits & skills for this job. ”



ART POL

**Marine
Electrician
Chargehand /
Electrical
Supervisor**



EMPLOYER

BC Ferries



EDUCATION & TRAINING

Red Seal Industrial Electrician
BCIT

4 Year Apprenticeship
Primarily in Marine on ships & terminals

Additional Certifications
Various on-the-job training certificates
obtained relating to supervision, safety
and equipment operating



YEARS SHIPBUILDING



33 Years

Art is a Red Seal Industrial Electrician and a Senior Electrical Supervisor at the BC Ferries fleet-maintenance facility in Richmond, BC.

The concept of “ships as floating cities” inspired Art to begin his 33 year career as a shipbuilder, and he continues to rise in the field through hard work, leadership, continued job-related training, his willingness to mentor others and a dedication to safety.

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Art Pol
BC FERRIES



MARINE ELECTRICIAN CHARGEHAND / SUPERVISOR

Q What attracted you to a career in the shipbuilding industry?

A I have always been attracted to seeing ships in port and seeing them sail on the water and was amazed at what it takes to make a ship run. I had an interest primarily on how ships are floating cities handling all of the necessary functions to make them habitable for people.

Q What do you like most about the shipbuilding industry and your job?

A I like that I help keep the ferries running and knowing our part in the Big Picture when it comes to safely transporting people to and from various ports on our coastline. I like making sure that what we do is done properly. There is a feeling of satisfaction when the ship leaves because it is in better shape than when it came in. Specifically, I like working with tools and equipment that are technical in nature and dealing with issues that require thought and coordination in order to work through.

Q What type of an environment do you generally work in?

A My work usually happens on-board in the engine rooms of ships, but I work in any area of the ship that needs to get work done. It can be noisy or dirty depending on what is happening. Part of the day might be spent overhauling equipment for Survey or it might be spent in the office handling the administrative aspects of the work.

Q What does your work entail?

A I look after the electrical maintenance of ship systems to ensure they meet the standards to which they were originally built and to make sure they still function properly. I work with governing bodies (i.e. Transport Canada, Lloyds, ABS) to make sure electrical systems comply with regulations.

Q What kind of training did you obtain?

A I completed a 4 year apprenticeship in the Industrial Electrical trade, working primarily in the marine field on both ships and terminals. My technical schooling was done at BCIT (8 weeks at the time, now 10 weeks per year) and through school district courses offered at night. I've also obtained my Certificate of Apprenticeship and Red Seal in the Electrical Work Trade with interprovincial status. Through the course of my work, I've also received various on the job training certificates relating to safety and equipment operating licenses.

Q What do you feel are good traits and skills for a person who wants to work in your job?

A Good communication skills are key, especially listening to others. Being a problem solver and being able to troubleshoot electrical faults is also important. Someone who takes pride in their work, recognizes the abilities of their co-workers, enjoys a team environment, and sets an example by pitching in to get the job done definitely has good traits and skills for this job.

Q What do you feel is the best way for an individual to prepare for a job in the industry?

A Make sure that you have the right background, basic skill set and high school requirements. (ie Math, Physics, English). Have an interest in making things work and building something that will last a long time. Go to the various yards and talk with some of the workers, and get in contact with any of the trade unions to see what they offer and how to join up.



FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



“ The industry is mainly unionized, comes with a highly diversified workforce, has great working environments, and offers good pay. I really enjoy learning about and working on something so unique and specialized. ”



Carolyn McCall is an Electrician with Seaspan Shipyards in Victoria, BC. Carolyn strengthens the core of our proud and growing shipbuilding industry with her solid work ethic, her attention to detail, and her passion for learning highly technical specialized systems.

CAROLYN MCCALL
Electrician



EMPLOYER

Seaspan Shipyards



EDUCATION & TRAINING

Red Seal Electrician
Camosun college trades & technology
On-the-Job Training
Seaspan Shipyards



YEARS SHIPBUILDING

● ○ ○ ○ ○ ○ ○ ○
2 Years

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BC's Shipbuilding and Ship Repair Industry. **Work with us.**



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Carolyn McCall

SEASPAN SHIPYARDS



ELECTRICIAN

Q What does your job entail?

A I install and terminate navigational components, maintain and update cable structures and electrical components onboard ships. Currently I'm working on a ship refit that's part of the Royal Canadian Navy program to modernize it's Canadian Patrol Frigates.

Q What type of training did you receive?

A I went to the Camosun College Trades and Technology School and took the construction electrician program. I then received my Red Seal certification and Journeyman status in December 2013.

Q What do you feel are good traits and skills for a person who wants to do your job?

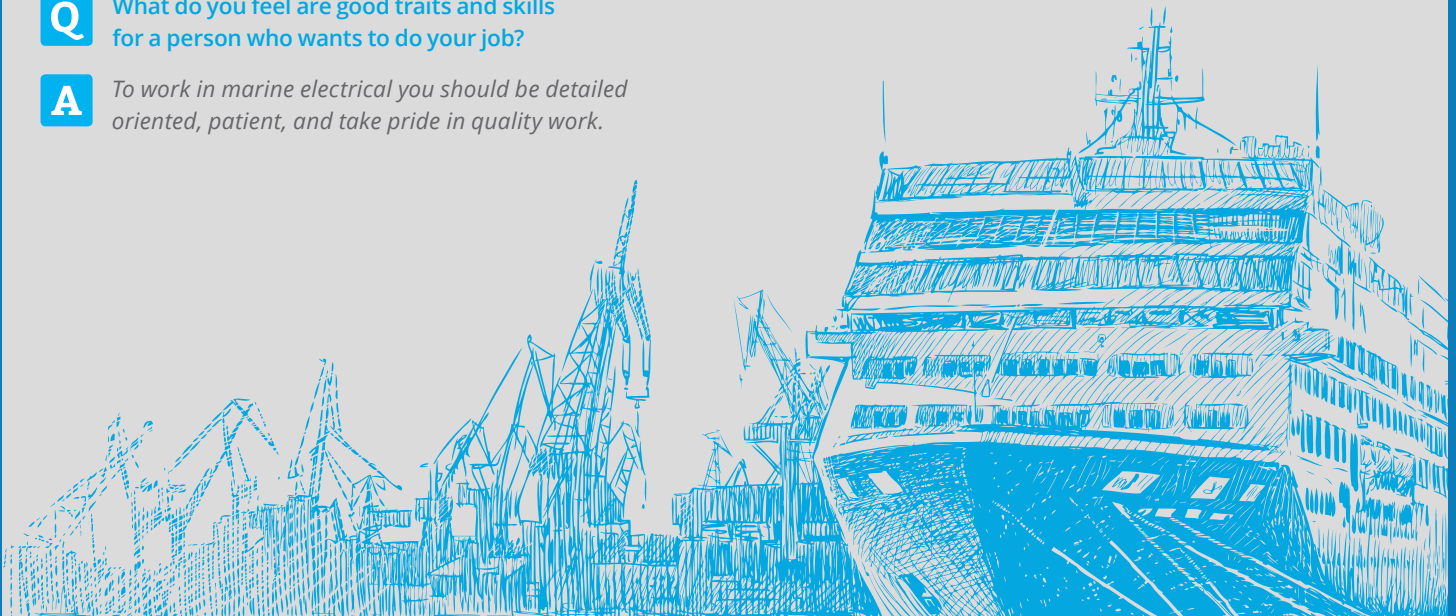
A To work in marine electrical you should be detailed oriented, patient, and take pride in quality work.

Q What do you feel is important to prepare for work in the shipbuilding and ship repair industry?

A Elements necessary to get ready for a career in the industry include a combination of hard work, education, and a valid security clearance!

Q What attracted you to the shipbuilding and ship repair industry?

A Some of the reasons I chose to become a shipbuilder are that the industry is mainly unionized, comes with a highly diversified workforce, has great working environments, and offers good pay. I really enjoy learning about and working on something so unique and specialized and I feel the the future in shipbuilding will be strong and prosperous!



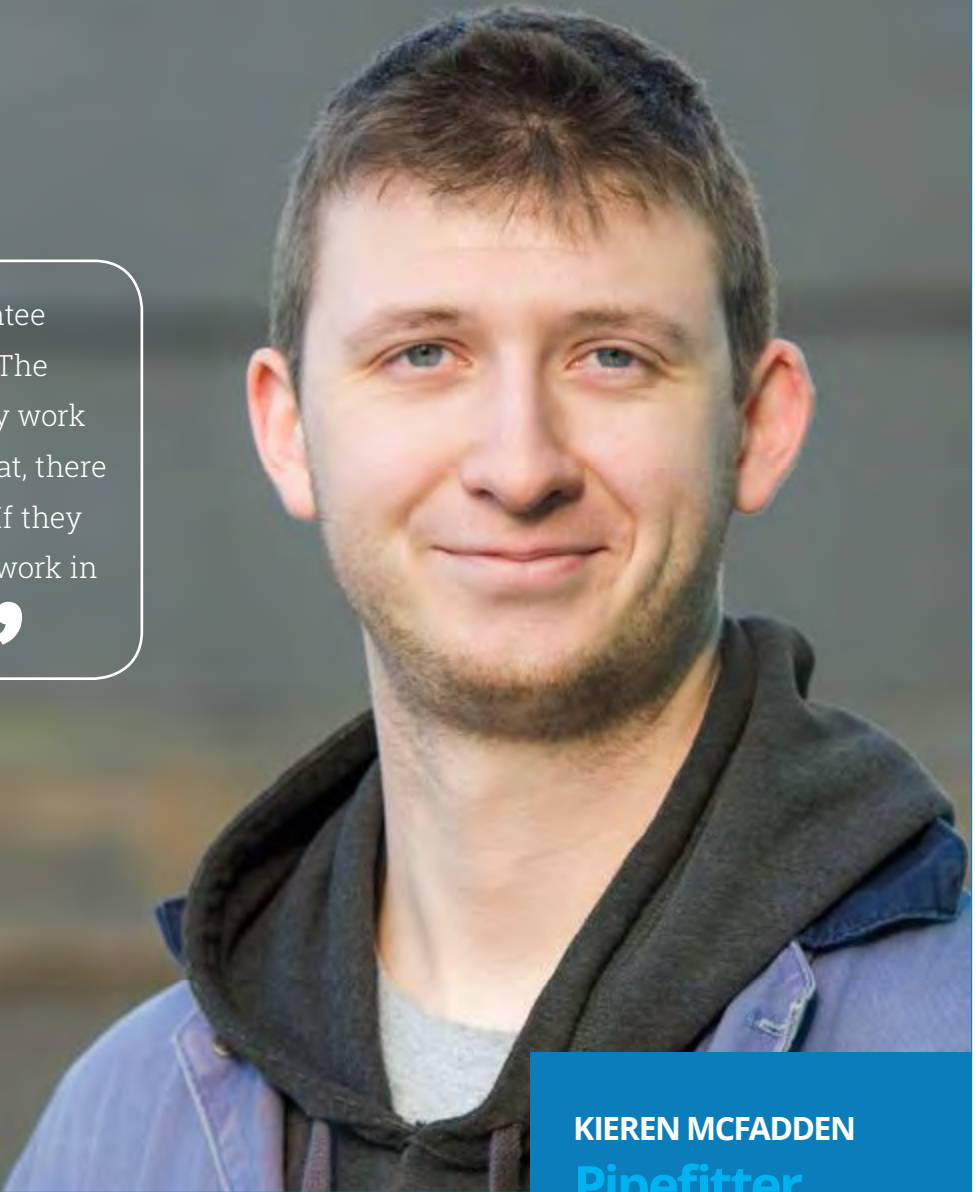
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weareshipbuilders.ca

[/weareshipbuilders](https://www.facebook.com/weareshipbuilders)

[/weareshipbuilders](https://www.instagram.com/weareshipbuilders)



“ The industry will guarantee work for the next 10-15 years. The West Coast will provide steady work for years to come and after that, there will always be jobs available. If they aren't here, a red seal lets me work in other Canadian provinces. ”

Kieren is a Pipefitting Apprentice at Meridian Marine with a very promising future. Motivated by the many career pathways, training options, and apprenticeship opportunities that are available in this proud and growing industry, Kieren looks forward to a rewarding career on BC's West Coast.

KIEREN MCFADDEN

**Pipefitter
Apprentice**

EMPLOYER

Meridian Marine

EDUCATION & TRAINING

Pipefitter Apprentice
Year 1

Other Certifications
Forklift, Crane, Drydocking, Confined
Space, Propane & ERT.

YEARS SHIPBUILDING



1 Year

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Kieren McFadden

MERIDIAN MARINE



PIPEFITTER APPRENTICE

Q What attracted you to a career in the shipbuilding industry?

A I was attracted by the fact that there is guaranteed work in this industry for the next 10-15 years at least. It represents a good paying job and a great opportunity.

Q Describe a typical day in the shipyard:

A Generally we start at our shipyard in Richmond at 6:30am. We set up the tools and equipment we will need and set out tasks for the day. Based on the scope of work, we may spend the day: out on the dock or on one of the many vessels tied up; in the shop making up pieces for a current job; preparing to go to a job site; improving our facilities or even taking extra courses such as confined space, drydocking, ERT, etc. We work hard, get done what needs to be done, and are usually off work by 3pm.

Q What do you think is the best way for someone to prepare for a job in the shipbuilding and ship repair industry?

A Try to take courses in high school that get you into metalwork or anything in the field of trades. Try to get part-time or summer jobs in the shipyards as a labourer while you are in high school just to see the industry and see if it's really for you. Lastly, get into the trades as soon as possible so you can be a fully qualified tradesperson as fast as possible.

Q What kind of education and training did you receive?

A I am a first year apprentice pipefitter. I attended my first month of classroom education in January 2014. I have taken courses that certify me to work with forklifts, cranes, drydocking, confined spaces, ERT, and propane.

Q What do you feel are good traits and skills for a person who wants to work in your job?

A I think you should be a hardworking individual, a problem solver, outgoing, have a good grasp of basic math and physics, eager to learn, enthusiastic about your job and the work you do.

Q What do you like most about the shipbuilding industry and your job?

A I feel like there will always be opportunity for me, wherever I decide to work in the future. Whether it be here on BC's coast or in other countries, there will always be a need for skilled tradespeople. There is always something more to learn and new skills through which to receive certification, and that keeps the job new and interesting.

Q What does your job entail?

A I am still brand new to the pipefitting trade but I have already worked on piping systems on fuel barges, deep-sea vessels, floating vessels at mining locations, and BC Ferries' fleet vessels. The duties and the environments I work in change daily. We usually start at 6:30 am and, based on the scope of the work, we could be out on the dock on one of the many vessels tied up, or in the shop making pieces for a current job, or getting ready to go to a job site, or improving our facilities. We could also be taking extra courses such as confined space, drydocking, ERT, etc. We work hard, get what needs to be done, and we're usually off work by 3 p.m.

Q What are your thoughts about the future of the shipbuilding and ship repair industry?

A The industry will guarantee work for the next 10-15 years. The West Coast will provide steady work for years to come and after that, there will always be jobs available. If they aren't here, they will be in other Canadian provinces or potentially other countries.

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BC JOBS
PLAN



BC SHIPBUILDING &
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SHIPYARD CAREERS

“ I assist different trades with their work. On any given day, I could be taking a zodiac rescue boat down the river, or using tools to remove a clutch, or overhauling an engine. If there is an emergency, I can also help in any situation due to being a member of the Emergency Response Team. ”



CARLOS SIGUENZA

Shipyard Labourer



EMPLOYER

BC Ferries



EDUCATION & TRAINING

On-the-Job Training and Job Certifications
 first aid, transport endorsement, confined space, forklift training, man lift training, JLG aerial lift training, asbestos contingency, lead abatement, dangerous goods, fire suppression, pleasure craft & more.



YEARS SHIPBUILDING

● ● ● ● ● ● ○ ○
 15 Years

Carlos, a Labourer at the BC Ferries fleet-maintenance facility in Richmond, is a positive and energetic man who was honoured to share his knowledge and advice on the shipbuilding industry.

Every day for Carlos is unique from the last, and his profile demonstrates the importance of camaraderie and that the daily routine of a labourer is anything but.

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Carlos Siguenza
BC FERRIES



**SHIPYARD
LABOURER**

Q What do you like most about the shipbuilding industry and your job?

A *I enjoy a variety of jobs. I never get bored because I am always doing something different. It is also a great place to meet new friends due to the fact that a lot of co-workers share similar interests. It is an industry that keeps me in great physical shape and also keeps my mind constantly stimulated.*

Q What does your job entail?

A *I assist different trades with their work. On any given day, I could be taking a zodiac rescue boat down the river, or using tools to remove a clutch, or overhauling an engine. If there is an emergency, I can also help in any situation due to being a member of the Emergency Response Team.*

Q Describe a typical day at the Maintenance Facility.

A *The day starts with a small safety meeting, followed by a full body stretch to get the blood flowing and reduce injuries. Then I get assigned to the department that I'll be working with that day and then basically we just get to it and get the job done in the most efficient and safest way possible.*

Q What kind of training and education did you need?

A *The types of training I currently have include: first aid, transport endorsement, confined space, forklift training, man lift training, JLG arial lift training, asbestos contingency, lead abatement, dangerous goods, fire suppression, pleasure craft, and probably many more that I just can't think of right now.*

Q What do you think is the best way for an individual to prepare for work in the industry?

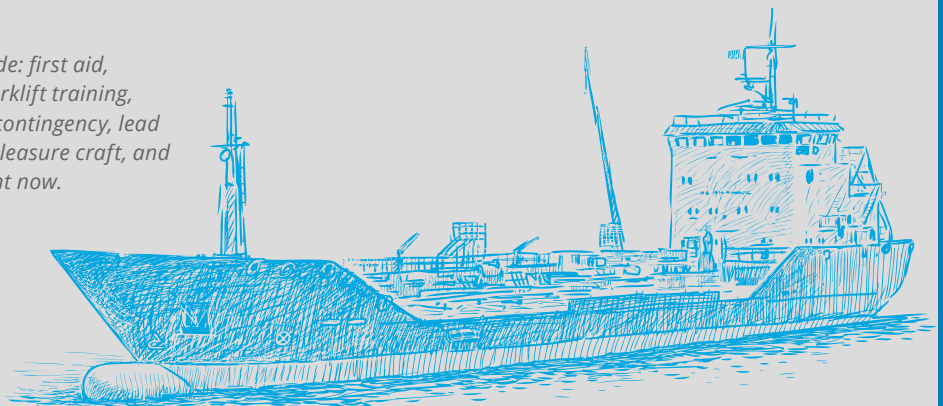
A *I think you should have basic knowledge of the industry, experience working with tools, be fit, and create a resume that enhances your skills.*

Q What are your thoughts on the future of the shipbuilding and ship repair industry?

A *I believe that there is a bright future ahead for the shipbuilding and ship repair industry. As the workforce ages, there will be more openings and positions available. It would be an ideal career consideration for young people because I truly believe that they would never have to worry about ever being without a job.*

Q What inspires you to continue your career in the shipbuilding industry?

A *I am a very proud first time father of a beautiful 20-month old boy. He and my wife are my inspiration in being a better man and they are the reason why at the end of the day, all that matters is that I come home to them after doing the safest job possible.*



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“ What do I like most about the shipbuilding industry? The people for starters!

There is a lot of passion in this industry. The pride and each individuals sense of ownership is great when a vessel, built from scratch, is complete & delivered. ”



Heather Christie is a Contract Manager with Seaspan Victoria Shipyards. As a manager, Heather’s inclination to ask a lot of questions and organize people and projects is definitely matched by the passion, pride, and support.

HEATHER CHRISTIE

Contract Manager



EMPLOYER

Seaspan Shipyards



EDUCATION & TRAINING

Certified Accountant
CGA

On-the-Job Certification
Project Management Certification



YEARS SHIPBUILDING

● ● ● ○ ○ ○ ○ ○

8 Years

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Heather Christie

SEASPAN SHIPYARDS



**CONTRACT
MANAGER**

Q What do you like the most about your job and the shipbuilding industry?

A *The people, for starters! There is a lot of passion in this industry. I previously worked in New Construction and the pride of ownership was great when a vessel was built from scratch and then delivered.*

Q What does your job entail?

A *I negotiate and manage contracts for surface fleet vessel undergoing refits with Victoria Shipyards. This involves making sure contractual deliverables are completed, reports are produced, and financial analysis is provided to all stakeholders. I also prepare bids for upcoming projects or for presentation to stakeholders.*

Q What do you feel are good traits and skills for a person who wants to work in your job?

A *Attention to detail; good rapport with clients to ensure collective agreement on issues; understanding of financial statements and ability to compare costs/revenue and actual to estimated costs. Understanding of project management in order to support the program director, and good ability to communicate, both written and verbal.*

Q What attracted you to a career in the shipbuilding industry?

A *I started in the accounting department and was offered a position on a new construction project. It was definitely a good fit for me and I haven't looked back since!*

Q What do you like most about the shipbuilding industry and your job?

A *The people for starters! There is a lot of passion in this industry. I previously worked in New Construction and the pride of ownership was great when a vessel, built from scratch, was delivered.*

Q What are your thoughts on the future of the shipbuilding and ship repair industry?

A *I think there will be a lot of work in Canada for all types of jobs in the BC shipbuilding and ship repair industry for many, many years to come.*



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“ The things that I like most about the shipbuilding industry are the people you meet, and that rewarding feeling you get every time you complete a job properly, using all your skill sets to make a meaningful and productive day of work. ”



WALTER SCOTT

Pipefitter & Work Package Controller



EMPLOYER

Seaspan Shipyards



EDUCATION & TRAINING

3 Year Apprenticeship
Pipefitting Trade

On-the-Job Training
Work Package Controller Courses



YEARS SHIPBUILDING



30+ Years

Walter has been working in the shipbuilding industry for over thirty years, and is currently employed at Victoria Shipyards as a pipefitter and work package controller. Growing up by the river, watching the ships sailing in and the submarines dock at the nearby shipyard influenced Walter's choice of careers, and he encourages the next generation of shipbuilders to make their mark in this strong and vibrant industry.

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Walter Scott SEASPAN SHIPYARDS



PIPEFITTER & WORK PACKAGE CONTROLLER

Q What attracted you to a career in the shipbuilding industry?

A I was attracted by the ships I would see sailing down the river where I grew up. They were submarines, and there was a shipyard right up the river from the base. It was a major employer in the area, and so it was a natural choice to seek employment there. I later moved to Victoria and used the skills I had gained to get a job with Seaspan.

Q Describe what a pipefitter / work package controller does on the job:

A Installing, repairing and/or fabricating pipe pieces or systems. In conjunction with commissioning personnel, I maintain the work packages for work onboard ships. I deal with the tagout/ripout of systems (electrical/mechanical), liaise with emergency personnel in case of an emergency, track manageable tasks (MT's), and manage various other situations that arise.

Q What do you like most about the shipbuilding industry and your job?

A The things that I like most about the shipbuilding industry are the people you meet, and that rewarding feeling you get every time you complete a job properly, using all your skill sets to make a meaningful and productive day of work.

Q What do you feel are good traits and skills for someone who wants to do your job?

A Math skills, blueprint reading and an understanding of how systems work are a key component of pipefitting, and computer skills are a key component of the work package controller. In my work, both skill sets are intermingled.

Q What is the best way to become a pipefitter in the shipbuilding industry?

A Take a pre-apprenticeship course, sign up for an apprenticeship at a pipefitters union hall near you, and from there they will help advise you on a course of action.

Q What type of training did you receive?

A I started by completing a 3 year apprenticeship for pipefitting and have done a vast amount of on-the-job training, including various computer courses needed for the Work Package Controller position.



FIND OUT MORE ONLINE AT: **WeareShipbuilders.ca**



“ Shipbuilding in BC has a great future with the recent Federal Government announcement of the construction of non-combat vessels. This alone guarantees long-term employment but the real benefits will be the growth of this industry that comes around this announcement. Either many other companies will open up branches in the Vancouver area, or start-up businesses will emerge because of the need to fill gaps in the industry. ”

Entering the industry 45 years ago through his passion of working with both steel and wood, Nick has excellent advice to share with future shipbuilders. Nick's enthusiasm, extensive training and pride in the industry have resulted in a very rewarding career, and Nick now looks forward to each day as the Barge Maintenance Supervisor at Seaspan.

NICK PEARSON

Barge Maintenance Supervisor Fabricator / Shipbuilder



EMPLOYER

Seaspan Shipyards



EDUCATION & TRAINING

4 Year Apprenticeship
As a Shipbuilder in the UK

Shipbuilding Craft Studies
Diploma

Additional Certifications
Steel Fabrication Certification
Welding CWB & DMF Certifications
Certificate of Microcomputing



YEARS SHIPBUILDING



45 years

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Nick Pearson
SEASPAN SHIPYARDS

BARGE MAINTENANCE SUPERVISOR FABRICATOR / SHIPBUILDER

Q What does your job entail?

A I look after the scheduled maintenance and repair of the fleet of Seaspan barges. The barges have a scheduled maintenance program and there are also ongoing unscheduled repairs that need to be taken care of along the West Coast of North America. These repairs can be steel, mechanical, or electrical in nature. I also complete a dry survey in the new construction shop of the many new barges being built at Vancouver Shipyards.

Q What attracted you to a career in the shipbuilding industry?

A As a child I liked working with both wood and steel at school. The chance for long-term employment was also attractive. Little did I know I would still be working in the shipyards 45 years later!

Q What do you feel is the best way to prepare for work in the shipbuilding and repair industry?

A Go to a local community college or trade school and take trades discovery courses. Once you have an idea of what you'd like to do, take a pre-apprenticeship course at the learning centre that best suits your needs. Then, apply to either a shipbuilding or repair company or local union in the discipline of your choice. If this isn't possible, research shipbuilding and other trades online and see what a proud bunch us shipbuilders are!

Q What kind of training did you receive in order to be able to do your job?

A I spent four years as an apprentice shipbuilder as well as received diplomas in shipbuilding craft studies in the United Kingdom. I've also obtained a certificate of microcomputing from Capilano College and a BC Trades qualification provincial certificate in steel fabrication. On top of all of that, I've received welding tickets from the Canadian Welding Bureau and DMF.

Q What do you feel are good traits and skills for someone who wants to do your job?

A Be self-motivated, a good communicator and a good listener. Have good computer and project management skills. Being a skilled tradesperson or experienced surveyor is an asset.

Q What are your thoughts on the future of the shipbuilding industry?

A Shipbuilding in BC has a great future with the recent Federal Government announcement of the construction of non-combat vessels. This alone guarantees long-term employment but the real benefits will be the growth of this industry that comes around this announcement. Either many other companies will open up branches in the Vancouver area, or start-up businesses will emerge because of the need to fill gaps in the industry.

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SHIPYARD STORIES

Our workforce is the core of our industry. We rely on solid teamwork and camaraderie to succeed, and provide ongoing support and guidance to ensure that success. The fiercely proud men and women of our industry represent a vast array of personalities, skill sets and experiences, and all of us recognize the importance of mentorship, ongoing training, good work ethics and mutual respect.

Whether we're just beginning our careers, or have a lifetime of experiences behind us, we've all got a story to share. Learn more about BC's shipbuilders by reading the stories.



BC SHIPBUILDING &
SHIP REPAIR BOARD

SHIPYARD
STORIES

**SHIPYARD
STORIES**



Callum Campbell
CAPILANO MARITIME DESIGN



**NAVAL
ARCHITECT**

Any kid will tell you that if you want to see your boat float, you shouldn't push it into the water while you're draining the bathtub. However, in real life, you come across situations you can't control that are similar to this. Last summer, I found myself standing on the shores of BC's Upper Arrow Lake among the company of shipyard colleagues and a scattering of people from the community, literally watching the water drain from our bathtub; the water level in the dammed lake was falling, and quickly.

A ferry hull had been built next to the lake over the few months preceding launch day, which was July 28th. It seemed like it would be so easy to get the hull into the water – all we would need is a couple of bulldozers to push it along greased rails. It was truly an exciting moment when the hull slid down the rails and touched the surface of the water for the first time, but then it stopped. The water was creeping away from us, inch by inch.

It took 21 hours from start to finish, but we eventually chased the water down. First, we had a plane go fetch us diving equipment. Then, we sent a diver down to cut the stops from the end of the rails. Then, we bulldozed the hull further into the water. Finally, we called on friendly local boaters to help haul the hull with all of their power, and eventually the hull floated free at last!

Not every day on the job is such a dramatic race against time. There are tedious hours of detailed work too, but nothing beats the feeling of putting a hundred or more heads (and hands) together to get a ferry into the water. Nothing beats the satisfaction of knowing you helped change something in the world that day. Nothing beats knowing that, because of our work, a kid is going to be transported safely across a body of water, and that maybe one day he'll also be inspired to go home and make a boat of his own.



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Glenn Gerbrandt
VANCOUVER SHIPYARDS CO.



**CHIEF
ESTIMATOR**

We are Shipbuilders.

It's a phrase that resonates pride and speaks volumes. For me, it conjures up haunting visions of spectacular ships built by mankind over the centuries. Ever since we first dreamed of sailing the oceans, we set out to build floating platforms: from rafts to dhows, sailing ships, fighting ships, cargo ships, cruise ships and nuclear powered aircraft carriers, to name just a few. Iconic names like Kon-Tiki, Mayflower, Bluenose, Titanic, Bismarck and Queen Mary are names that have been forever etched into our memories and the maritime history books.

Canada is a land of shipbuilders. We have the longest coastline in the world and a proud heritage of building ships in this country. The St. Roch, an auxiliary RCMP schooner built in 1928 in North Vancouver, was the first vessel in 1944 to negotiate the Northwest Passage in both directions. Such epic voyages helped strengthen Canadian Arctic sovereignty. With global warming gradually opening up more of our pristine Arctic, and many countries vying to capitalize on its soon-to-be accessible natural resources, it is now imperative to re-establish Canadian sovereignty.

On Oct. 19/11, Seaspan Vancouver Shipyards was awarded a National Shipbuilding Procurement Strategy (NSPS) contract by the Federal Government to construct seven new non-combat ships. Just this past October, another ten non-combat vessels were added to the list. These seventeen vessels are comprised of supply ships, science vessels, offshore patrol vessels, medium endurance multi-tasked vessels and a state-of-the-art icebreaker. The NSPS program is a major shot in the arm for our shipyard and will re-energize Canada's proud shipbuilding heritage. It will also provide a much needed vessel presence for our Pacific, Atlantic and Arctic coastlines as it replaces an aging and inadequate fleet.

The NSPS announcement could not have come at a better time. In fact, it was just in time. Over the last twenty years, with fewer vessels being built by Canadian yards and with the resulting job loss, the younger generation could not gain leeway in the industry. It was left to those shipbuilders nearing retirement to carry the torch, and we fully expected to go down with the ship, taking with us a lifetime of knowledge and expertise. With the awarding of NSPS the government essentially threw us a life-ring. Now we have ships to build! The soon-to-be retirees will become mentors who can pass on their knowledge before gracefully bowing out. We have lost the better part of the middle generation of workers and as one pundit pointed out, "the yard will now be run by grandparents and grandchildren". The contract also provided the stimulus for a shipyard upgrade. It's currently undergoing a \$200 million dollar modernization program that will make it second to none. Now Vancouver Shipyards will be busy for decades to come and can offer the younger generation an entire gamut of interesting career paths to choose from. And what careers they will be!

The term "Shipbuilder" encompasses a virtual armada of challenging and interesting jobs. Unlike single faceted organizations, shipyards are comprised of a diverse multitude of skilled marine tradespeople including welders, fabricators, mechanics, electricians, carpenters, pipefitters, painters, outfitters, project managers, and tech office personnel, and more. All of the foregoing trades are required to construct a technologically complex ship. It is the ultimate definition of teamwork. These ships are built not just with the aid of sophisticated computers and software but with hands-on craftsmanship by tradespeople who skillfully mould metal, wood and plastic into floating works of art. Generally, it takes anywhere from one to three years to build vessels of this size and complexity. When each of these new ships is launched, trialed, tested and turned over to its new owners, either the Canadian Coast Guard or Royal Canadian Navy, the sense of pride one will experience in contributing to its construction will be immense. I know, I've experienced it.

I started working at Vancouver Shipyards (VSY) by serving a four year apprenticeship as a marine draftsman. I loved the creative aspects of drawing ships and ships' structures on paper and then watching them magically materialize on the shop floor. After completing my apprenticeship, I worked a further two years as a journeyman draftsman. I soon realized however, that without a continuous flow of ships to build there was a strong likelihood of being laid off. If one couldn't find shipyard work here on the West Coast, it often meant looking for it in the Maritimes or down south in the Gulf States. Since I enjoyed living in Vancouver (often voted as one of the world's greenest and most beautiful cities) and didn't want to worry about when the next pay cheque might arrive, I elected to transfer to the Estimating Department. I went from being creative with drawings to being creative with numbers. My prime responsibility was to win repair and new-build contracts through an open bidding process in an extremely competitive arena. It was my hope that my new career path had more longevity than the former. I guess you could say my strategy paid off as I'm still estimating for Vancouver Shipyards today - that's thirty-nine years and counting. With the award of the NSPS contract, today's young shipyard tradesperson need not fret about job security as I once did.



Artist's rendition of Vancouver Shipyards after completion of Modernization Program



Glenn Gerbrandt

VANCOUVER SHIPYARDS CO.



CHIEF ESTIMATOR

I've been involved in an interesting and eclectic mix of vessels, constructed and launched at VSY over the years. Tugs, ferries, fish boats, barges, seismic survey vessels, fireboats, supply vessels and an ice-breaker have been christened "on the hard", just prior to being launched into the waters of Vancouver Harbour. These vessels all entered the water by means of either a slow, methodical syncrolift launch or the very exciting (and somewhat alarming) side launch. The syncrolift method employs an elevator-like horizontal platform to lower the vessel at the speed of molasses, whereas a side launch involves a simultaneous trigger release of launch sleds and the encouragement of gravity and grease to induce the vessel to slide broadside down sloped ramps, usually with an uncomfortable combination of momentum and speed.

A memorable side launch occurred in 1983 when VSY completed the M/V MISCAROO, our Hull Number 106. The MISCAROO was the first icebreaking supply vessel to be built in Canada to Canadian Coast Guard Arctic Class 4 Regulations. It was designed to operate in -50C temperatures in the Beaufort Sea and break level ice up to 1.2 metres thick while progressing at a constant speed of 3 knots. And she was heavy! When side launched, at a lightship weight of 3,650 metric tonnes, this vessel packed substantial mass and momentum when she hit the water. I watched the resulting displacement wave, perhaps some 2 to 3 metres high, travel out into the harbour and en route, engulf a newspaper photographer who was standing on the shoreline. As the wave broke over him, all I could see was an outstretched arm reaching skyward with camera in hand. We all had quite a laugh at his expense once we realized he wasn't hurt, although his feelings and camera may well have been.

The launch was spectacular and was witnessed by hundreds of people. It is one that I will never forget. I snapped the photograph above of the actual launch moments after the MISCAROO slammed into the water and seconds before the newspaper photographer was drenched. And no,

I wasn't the damp photographer, thankfully. After watching the BCFS "Queen of Alberni" side launched a few years earlier, I knew that a high vantage point was prudent. I also recall an incident where we were pushing the massive log barge "Seaspan Rigger" onto the launch sleds in preparation for a side launch. It very nearly had serious consequences. We were using front-end loaders and pressurized water castors to transfer the vessel on a very thin layer of water somewhat akin to a wake-boarder sliding along in shallow water. The problem arose when one loader operator did not hear the horn which was the signal to stop pushing the vessel. When he finally did stop, the vessel's sideways momentum carried it much further than planned. Consequently, one end of the vessel skewed diagonally on the sleds and came dangerously close to coming off the launch-ways. It was a near miss and we were very fortunate. As I stated earlier, side launches are exciting!

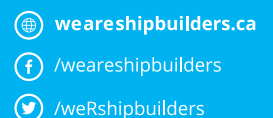
After all these years I'm still enjoying my career in shipbuilding. It's been a bumpy ride at times, sailing with the wind at our backs in the good times and weathering the storms in the bad. Either way, it's been interesting, challenging and rewarding. I will also add "creative" to that mix. The outlook now is for fair winds and calm seas. Not only am I looking forward to the initial launch of these first few NSPS vessels, I'll also relish the role as a mentor. And then it will be my turn to gracefully bow out. What more could one ask for in a career?

To those contemplating a career in shipbuilding, I say "Get on board". Play a key role on the next great team of Canadian shipbuilders and etch your own indelible stamp on ships whose omnipresence will protect our coastlines, shape our future and strengthen Canadian Arctic sovereignty. It will be a rewarding career and one that will resonate with pride...

We are Shipbuilders.

Story and photos by Glenn Gerbrandt
Shipyard modernization image provided by Seaspan ULC

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Cavan Rider
MERIDIAN MARINE



SHIPYARD LABOURER

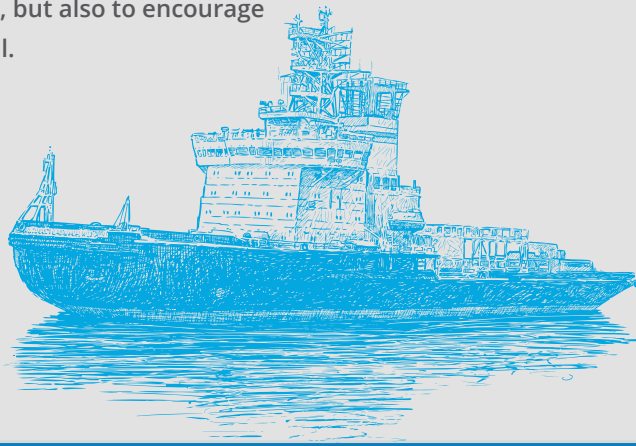
I recently began working in the field of shipbuilding. I'm used to working with my hands, but I've been looking for a field that challenged me and taught me new skills instead of something that had me doing the same thing from day to day. **I knew within the first week I had found that job.**

I first met one of the most senior welders on the site, and was introduced to his son shortly after; his son also was a welder. The very next day I met one of the owners, a former welder himself, and his son too. It was a little surprising to me that his son had also taken up the craft. That is when I realized that within my first week, I had met two people that had not only taken up this kind of work - not as a job, but as a career - and their sons had too. **Fathers could count on shipbuilding as a great career to provide for not only their families, but also to encourage that in the next generation as well.**

That said something to me. That told me that there is confidence there. Not just for the present, but for the future too. That this was something that was here to stay. We are needed, and there was pride in working here. A son could look up to his father and say, *"I want to do that too, one day."* There was a sense of security for me, and of growth. That is a strong synergy, a sustainable industry. I feel empowered working at my job.

I know that I can count on the people I work with, like a family, because that is what many of them literally are. **We work hard, we get things done** and we make sure the world's demands for cargo can be met, no matter what. I like my new family.

We are Shipbuilders.



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Monica Szpak
BC FERRIES



REFIT SAFETY COORDINATOR

I've been working on ships for just over two years and from day one I've always felt like I'm welcome and part of the team. The reason I started working in the shipbuilding industry was the diversity it offers and the ever-changing daily job duties and requirements.

One of the best parts of my job is working with different tradespeople on-site and learning what they do and why they do it. I'm not a mechanic, nor a welder, nor an electrician, nor a painter, and so on. My job is all about safety and keeping tradespeople safe. Part of my daily job consists of reviewing risk assessments and signing off on all hot work, confined space entry permits and lockouts. I'm aware of all of the activities that take place on all of the ships I work with. I'm also an active member of the Emergency Response Team and I develop rescue plans. I love my job.

To sum it all up, my job means that the workers stay safe and go home to their families at the end of each day. We all leave the gate at the same time.

Everyone asks me why I don't just go to Fort Mac and try to get paid more money. I mean, why would I? I have a great job here, I am paid well, my friends and family are here, and I get to go home at the end of the day and sleep in my own bed. If I left, I'd might make more money, but I'd leave everything behind that's important to me and come home to nothing... I'd become a stranger in my own city. Why would I want that?

I am a shipbuilder and part of a constantly growing industry right here in BC.



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Brent Longton

BC FERRIES

ELECTRICIAN APPRENTICE

About 10 years ago I was finishing up high school in North Delta BC, and I figured I would follow in my older brother's footsteps and head off to university. I enrolled at college and chose subjects like Biology, Chemistry (*which was unquestionably difficult*), English, and Philosophy. I found myself doing pretty well as my first year went on, but I saw myself slowly losing the once present motivation that is needed to carry on into the following years. I just wasn't into getting a bachelor's degree anymore, so I decided to find a job and pursue different avenues.

I began working at a small sawmill, chopping wood up and making crates. It was a tough job, but I'm a very active guy so the hard work gave me some kind of satisfaction at the end of the day. I didn't make much money, but I realized later I gained a *few skills* like working with heavy equipment and troubleshooting machinery that would come into play in the next few years.

So, chopping wood is fun and all, but it wasn't for me. I began painting houses the following summer, which seemed tedious, slightly monotonous, and less than gratifying at the time, but proved to be another job that began to harness my skills in trades. I needed more.

A family member worked for BC Ferries at the time and suggested I apply at Deas Dock in Richmond; a simple decision that led me to where I am today. I have always liked boats, as I own a late 70's cobra speedboat. I started working, as a cleaner on the vessels, but wasn't really into it. Then at the dock, I began as a labourer and began to get my hand in all the trades. I worked as a marine engine mechanic's helper for a few years, stripping down engines and rebuilding them alongside a tradesman. I considered pursuing the trade, but felt my mind was suited for something different. Over the years I worked on plumbing, welding, painting, upholstery, life-saving appliances, and finally electrical. Then the light bulb turned on (*I debated not writing that, but clearly I did*).

I enrolled at BCIT for my pre-apprenticeship program in electrical. I felt as though I needed a career and not just a job. My family depends on me so I figured it was the right time to step it up. I continued working at night at BC Ferries as a trades helper, and would go to BCIT during the day.

My employer was notably understanding and helpful during those times. I've always had a knack for math so electrical was extremely satisfying. Not only did I begin to realize the complexity of the theory, but also applying the knowledge to circuits and machinery was enjoyable and motivating. Working at the dock and at shipyards, I was able to apply the electrical knowledge to the job and see results I hadn't seen in the past.

After finishing up trade school, I slowly transitioned full time into our Electrical shop. As time passed, I learned from the seasoned veterans of the trade, who all seemed to have different skills to offer. Hard work and persistence led me into my apprenticeship.

I am currently a third year apprentice and work on all electrical aspects of our vessels. The work is pretty diverse as I could be working on a generator, disconnecting motors, and then troubleshooting various ground faults or problems the ship may be having. The next day I may be pulling in cable runs for new circuits or equipment, so it definitely keeps me on my toes. I get to work on shore side electrical on occasion, but my passion is working in the marine field.

What I really like about working in the electrical trade is the constant evolution of new technologies that I can install, test, and maintain. Having the ability to be innovative and possibly inventive definitely turns my crank. I also like the idea of wiring something up and seeing it function as a part of a ship. I have been afforded so many interesting experiences with my job, and even recently had the opportunity to fly overseas to receive additional training on some of the systems utilized by our fleet - what a rewarding opportunity!

Being involved in shipbuilding and shipyard work has proven to be a great start to my career as an electrician. I see a bright future for anyone that has the chance to be involved in BC shipbuilding, as it could be a huge industry and is experiencing an economic uprising. **I would suggest to anyone who doesn't mind getting their hands dirty, is mechanically inclined, and wants to see a positive outcome for our province, get into shipbuilding trades.** I almost forgot, it pays well too.



Watch Brent's video profile
online at WeareShipbuilders.ca

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SHIPBUILDER VIDEOS

Our industry presents numerous opportunities for continuous growth, and rewards those who strive for success. We are a community built on teamwork, and receive great pay and benefits to accomplish the work that we love, in an area that we love to work. We've taken different paths to get where we are, and are proud to share our knowledge with the next generation of shipbuilders.

Meet the real shipbuilders of British Columbia and find out what it's like to work in shipbuilding and ship repair on the West Coast!

Videos profiling the men and women of BC's shipbuilding and ship repair industry are available at WeareShipbuilders.ca

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