



Hot Jobs in Alaska

www.jobs.state.ak.us

Have you figured out your future?

Jobs in the Oil, Gas, Mineral, Construction and Transportation Industries



**ALASKA DEPARTMENT OF LABOR
& WORKFORCE DEVELOPMENT**

This project was funded in part by a grant awarded under the President's High Growth Job Training Initiative, as implemented by the U.S. Department of Labor's Employment and Training Administration and the State of Alaska, Department of Labor & Workforce Development.

A Message from the Commissioner



Many high paying jobs in Alaska don't require a four-year degree, but do require training after high school. The training can range from several weeks to a couple of years depending on your interests. The jobs in this booklet are the jobs Alaska employers will be looking to fill in high demand industries.

I've been a heavy equipment operator for the past 32 years and made an excellent life for my family in Fairbanks. I became an operator because that's what my father did and Alaska is a great place to do this kind of work. I got to enjoy the outdoors, meet lots of interesting people throughout the state, and make a great living. I had to work hard to train for this job by learning how to weld and doing well in math and science classes. As an operator, I helped build roads, pipelines and commercial buildings. Now, as the Commissioner for the Alaska Department of Labor and Workforce Development, it is my job to help get you prepared for the careers waiting for you.

There are jobs in the oil, gas, mining, construction and transportation industries to research in this booklet. Imagine future jobs on the gas line and how many trained workers will be needed. Imagine the team-work needed to accomplish projects like building an 800 mile long gas line. Imagine the relationships with your co-workers, the mutual respect for their skills and knowledge to pull the big projects together. Imagine the support jobs also available in these industries.

There is something for everyone inside this booklet. Remember, you can accomplish what you set your mind to. So, dream big and think about what you would like to do.

We want to help you find out what you can do now that will help you get a great paying job later. This booklet will help you get there. It is also available on line at <http://www.jobs.state.ak.us/hotjobs/>

I wish you the best of luck and invite you to talk to your teachers, parents, guardians, community leaders, business people and your local Job Centers for assistance.

Sincerely,

Click Bishop, Commissioner
Alaska Department of Labor and Workforce Development

How to Find Out More Information about Hot Jobs in Alaska

Alaska Department of Labor www.jobs.state.ak.us

The Department of Labor's web site holds a wealth of information about jobs – from learning about what jobs are available to finding a job in a field that interests you. Please check out the following web sites for more information on Hot Jobs!

Alaska's Labor Exchange System - ALEXsys <http://alexsys.labor.state.ak.us/>

The Alaska Labor Exchange System (ALEXsys) is a new tool that helps you find out about jobs and helps match job seekers with employers. ALEXsys can also link you to information about what jobs are hot in Alaska, helps you build a resume, and it even has a "personal recruiter" that contacts you via email when a new job comes online that you qualify for. It's a fast and easy way to learn more about jobs in Alaska.

Labor Market Information

In the Alaska Department of Labor's world, information on our web site about jobs is under the topic Labor Market Information. Go to www.jobs.state.ak.us and click on Labor Market Information on the left hand side of the page. From there you will see the following links:

Alaska Career Information System www.akcis.org

To receive a password to log on to the AKCIS website, please email hotjobs@labor.state.ak.us.

The Alaska Career Information System (AKCIS) has been a great help in preparing information for this report. AKCIS is an annually updated online program that provides comprehensive, user-friendly career information. It is designed to help young people through adults explore career and educational opportunities in Alaska and throughout the U.S., including detailed descriptions of more than 500 jobs, information about colleges, universities and technical schools and more.

America's Career InfoNet www.acinet.org/acinet

Career Voyages www.careervoyages.gov/

Career Voyages is another great site you can access on the Department's Labor Market Information site. Career Voyages lets you explore careers through videos, so you can see real people talking about their jobs and what they do.

Occupational Information Network – O*net OnLine <http://online.onetcenter.org/>

America's Career InfoNet and O*net OnLine are U.S. Department of Labor sites that also provide helpful and important information about jobs throughout the country. You can use these sites to find out even more information about jobs you may be interested in.

Hot Jobs in Alaska

In the Oil & Gas, Mining, Construction and Transportation Industries

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How to Use this Publication

As a high school student, you're probably pretty busy. There are sports and dances and activities, not to mention homework! So sitting down and really thinking about what you want to do with your life after high school probably isn't at the top of your priority list.

Hard as it is to imagine, your time in high school will fly by before you know it. That's why the folks at the Alaska Department of Labor & Workforce Development and the U.S. Department of Labor want you to know about some jobs that will be in demand in Alaska when you get out of high school.

This publication focuses on "Hot Jobs in Alaska" that don't require a four-year degree. The jobs are ones that are in demand, provide good pay and the opportunity for a great lifestyle.

Please take the time to go through this booklet and read about 20 jobs in the oil and gas, mining, construction and transportation industries in Alaska. You'll learn what each job involves, how much money you can make, what skills are required and what classes you can take right now to prepare for these jobs. You'll also learn where you can go to get training that will qualify you for these jobs.

Take the time to ask questions, talk with your parents, teachers, guidance counselors and the professionals from the Alaska Department of Labor's Job Centers. Look online at www.jobs.state.ak.us. Most of all, take the time out of your busy days to think about what you want your future to look like. There's a whole world of possibilities out there for you!



If you're a girl, read this page!

Many of the "hot jobs" profiled in this booklet are considered "non-traditional" jobs. They are jobs that girls don't often think about.

But maybe it's time you should.

The U.S. Department of Labor defines a non-traditional career field as one that has 25 percent or less women working in it. They want to encourage women to become involved in these jobs and have programs to prepare you for these fields and to help you become successful in them. This includes many broad categories, such as math, science, and engineering, as well as occupations in construction trades, law enforcement, auto repair, printing, computer maintenance and repair, and many other fields.

Right now, less than 15 percent of all working women have jobs in these non-traditional fields. Most of these jobs are in technical fields that don't require a four-year college degree.

Why should you consider a non-traditional career?

The answer is simple. These jobs provide higher pay and better benefits than many of the jobs women traditionally take. For example, more than half of all working women are employed in low paying support jobs such as retail salespeople, waitresses and hairdressers. Women traditionally dominate these fields, but those women who work in non-traditional fields make 20-30 percent more than those who work in traditional fields. And besides better pay, there are more opportunities for advancement and better benefits (like healthcare insurance and more vacation time) in many of the jobs listed in this publication. And studies show that women who choose a job in a non-traditional career like their jobs and are better able to support themselves and their families.

Although you may not think so at first, finding out more about non-traditional jobs may help you see that one of these jobs might be right for you. And you don't need Supergirl strength to be successful.

Take a look at the jobs listed in this publication and think seriously about whether or not one of them might be right for you.



What's this job all about?

Do you enjoy making sure numbers add up just right? Are you the kind of person who has to know exactly where every penny of your money goes? If so, you just might be interested in a job as a bookkeeping or accounting clerk. They manage the financial records of companies or clients. They are essential workers at most companies because they keep track of financial data. This information is used for reports, research, financial statements, and payroll use. An accounting clerk is an entry-level position for most companies. In smaller offices bookkeepers usually handle all the financial transactions. In larger companies, bookkeeping and accounting clerks help the company's bookkeeper, controller or finance director with a wide range of tasks. As a bookkeeping or accounting clerk, you'll enter details of a transaction – like the amount of a check and the check number – into a computer program. You might also make sure payments are up-to-date and you might prepare payroll checks. If you start out as an accounting clerk in many Alaskan businesses, you may have the chance to move up into jobs within the finance department with more responsibility and more pay. If you decide you want to work in this field you need to be detail oriented and you need to be exacting. A company doesn't want to know it has "about" \$10,000 in an account, it wants to know it has "exactly" \$9,950 to spend when their bills come due! You should also enjoy working with computers and working at a desk indoors. An important part of being a bookkeeping or accounting clerk is being honest. You're working with other people's money, so integrity is a key factor.

Here's what Bookkeeping and Accounting Clerks do:

- Record money taken in or spent.
- Help summarize spending habits and prepare reports for managers and supervisors.
- Help prepare bank deposits by collecting cash and checks.
- Enter the details of transactions, like the amount of the check and check number.
- Find totals for accounts and compute interest charges.
- Monitor loans, accounts payables and accounts receivable.
- Make sure payments are up-to-date.
- Prepare payrolls and pay bills.
- Create and file vouchers and invoices.
- Help make sure your company complies with federal and state laws.
- Verify the records that other workers enter.
- Correct or note errors for accountants or other workers to fix.
- Use accounting software and computers to track and compute accounting records.
- Use computer spreadsheets to organize data.
- Code documents and post transactions.
- Review invoices, bank statements and check reports.
- Use word processing programs to write letters to customers.

How much money can I make?

Median Wage: \$17.18 per hour.

In Alaska, the median wage for bookkeeping and accounting clerks is \$2,978 per month (\$17.18 per hour). Half of all bookkeeping and accounting clerks earn between \$2,468 and \$3,564 per month (\$14.24 and \$20.56 per hour). Nationally, the median wage for bookkeeping and accounting clerks is \$2,458 per month (\$14.18 per hour). Half of all bookkeeping and accounting clerks earn between \$1,967 and \$3,030 per month (\$11.35 and \$17.48 per hour). Pay varies by area of the country,

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a bookkeeping and accounting clerk. You should take courses in high school that prepare you to earn a high school diploma. Here is a list of high school courses that will help prepare you. Don't worry if some of these classes aren't available at your school. Take as many as you can. Many of these courses are also available at the technical school or college level.

Business

- Exploration of Business and Office Careers
- Office Procedures, Office Services
- Keyboarding, Word Processing
- Recordkeeping, Accounting
- Office Machines
- Business Work Experience

Computer and Information Sciences

- Business Computer Applications

English Language and Literature

- English and Language Arts
- English Composition
- Business and Applied English

Marketing

- Marketing
- Marketing Management

Mathematics

- General Math
- Applied Math
- Pre-Algebra, Algebra
- Probability and Statistics
- Business Math, Advanced Business Math

Social Sciences and History

- Consumer Law
- Business Law

size of the city, and type and size of the employer.

Bookkeeping and accounting clerks who work full time usually receive benefits including sick leave, health insurance, and paid vacation. Some employers also provide a retirement plan.

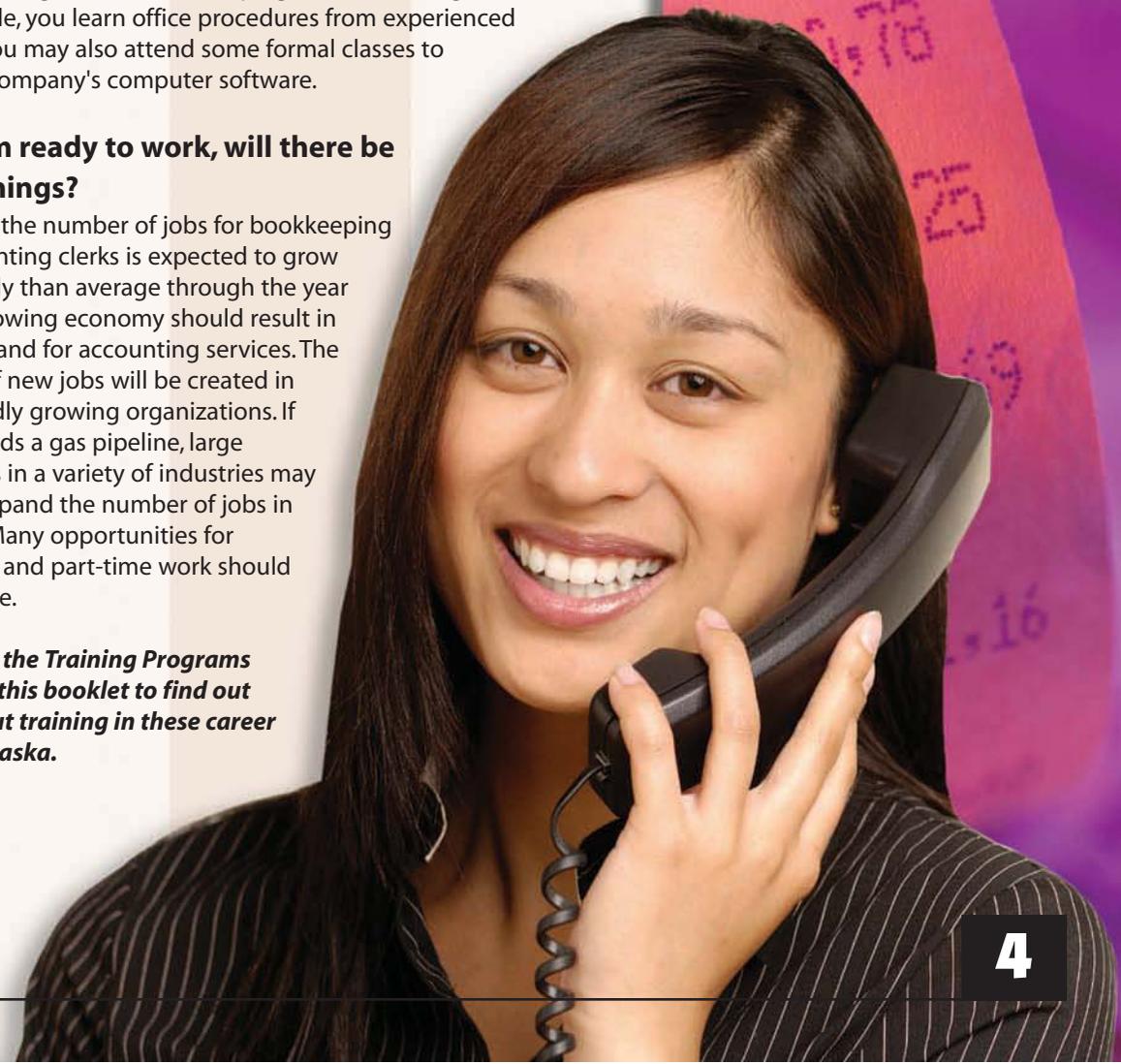
How long does it take to receive training?

To work as a bookkeeping or accounting clerk, you must have a high school diploma or GED, complete training in bookkeeping and accounting procedures, have keyboarding and computer skills, and be comfortable with detailed work. Many bookkeeping and accounting clerks have completed some college courses or an associate degree. You can learn bookkeeping and accounting skills at high schools, business schools, or two-year colleges. Employers usually provide on-the-job training for new bookkeeping and accounting clerks. For example, you learn office procedures from experienced workers. You may also attend some formal classes to learn the company's computer software.

When I'm ready to work, will there be job openings?

Nationally, the number of jobs for bookkeeping and accounting clerks is expected to grow more slowly than average through the year 2014. A growing economy should result in more demand for accounting services. The majority of new jobs will be created in small, rapidly growing organizations. If Alaska builds a gas pipeline, large companies in a variety of industries may need to expand the number of jobs in this field. Many opportunities for temporary and part-time work should be available.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.





Building Maintenance Workers (Maintenance and Repair Workers)

What's this job all about?

Building maintenance workers keep buildings in good shape. They fix plumbing, electrical fixtures, machinery, and even take care of the structure of buildings. If you choose this field you will use carpentry, electrical, plumbing, and masonry skills to keep buildings in good shape. You'll plan routine maintenance of buildings and have to schedule your work.

Some of the maintenance you'll do happens in almost every building. For example, maintenance and repair workers repair leaky faucets, clear clogged drains, and replace light bulbs. Other tasks are more specific to the building they maintain.

Maintenance workers in apartment buildings are more likely to fix walls, roofs, windows, doors, and floors. Hospital or factory maintenance workers might install machines, systems, and fixtures. Some workers lay brick to repair foundations, walls, and chimneys. In Alaska, maintenance workers often have to deal with snow removal and problems caused by snow, ice and extreme cold temperatures. Arctic climates can cause a lot of extra wear and tear on buildings! Overall, maintenance workers have to enjoy doing a variety of things to keep buildings in good working order.

Here's what Building Maintenance Workers do:

- Make repairs.
- Inspect the structure or equipment and diagnose the causes of problems.
- Take apart machines and fix them by cleaning, lubricating parts or replacing worn or broken parts.
- Reassemble machines and test them.
- Use a variety of hand and power tools like hammers, wrenches, and screwdrivers and use machine tools to repair and construct parts.
- Repair and maintain systems that control the temperature in buildings and even the lights.
- Keep track of work orders and the repair jobs.
- Document purchases and what items cost.
- Read blueprints, catalogs, and manuals.
- Check prices with suppliers and estimate costs of a job.
- Building maintenance workers in smaller buildings often do all the repairs themselves except for very difficult or large jobs. In larger buildings, they may work only in a particular area or do general maintenance.

How much money can I make?

Median Wage: \$19.45 per hour.

In Alaska, the median wage for building maintenance workers is \$3,371 per month (\$19.45 per hour). Half of all building maintenance workers earn between \$2,441 and \$4,361 per month (\$14.08 and \$25.16 per hour). Nationally, the median wage for building maintenance workers is \$2,602 per month (\$15.01 per hour). Wages vary with the employer, duties, and skill of the worker. Government and hospital jobs tend to pay more and real estate and hotel or motel jobs provide lower pay. Union members often receive higher wages than non-union workers. Building maintenance workers who work full time usually receive benefits like sick leave, paid vacation, and health insurance.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a maintenance worker. You should take courses in high school that prepare you to earn a high school diploma. Below is a list of high school courses that will help prepare you. You don't have to take all of them, but you should consider them in planning for high school. Some of these courses are also available at colleges and technical schools.

Construction Trades

- Construction Career Exploration
- Construction
- Carpentry, Woodworking
- Heating, Ventilation, and Air Conditioning
- Plumbing
- Electricity
- Industrial Electricity
- Building Maintenance
- Construction Trades Work Experience

Drafting

- Drafting, Technical and Mechanical
- Blueprint Reading

Health and Safety Education

- Safety and First Aid

Industrial and Technology Education

- Exploration of Careers
- General Industrial Arts
- Metal and Wood Technology
- Industrial Safety and First Aid
- Industrial and Technology Education Work Experience

Mathematics

- General Math
- Applied Math

Physical Education

- Physical Education
- Fitness and Conditioning Activities

How long does it take to receive training?

To work as a building maintenance worker, you must have a high school diploma or GED, complete on-the-job training; and be in good physical condition. No formal training is required beyond high school but some building maintenance workers take courses at professional technical schools. They learn skills in trades such as plumbing and construction. Building maintenance workers often learn their skills by working with experienced construction workers. For example, you may work as a helper for a plumber, electrician, or carpenter. You begin by doing simple tasks such as fixing leaky faucets and changing light bulbs. Gradually you progress to more complex tasks, such as repairing machinery or creating parts. Most building maintenance workers receive training on the job from an experienced worker. You need between one and four years to be fully trained in this occupation. In large buildings that have maintenance crews, you may specialize in one craft area. In smaller buildings that have only one worker, you need all-around skills.

When I'm ready to work, will there be job openings?

In Alaska, the outlook for job openings for building maintenance workers is excellent to 2014 with average growth projected. Nationally, the number of jobs for building maintenance workers is expected to grow at about an average rate.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

If you like figuring out what's wrong with big engines and fixing them, working as a bus or truck mechanic or a diesel engine specialist may be the right job for you.

Did you know the average gas tank in a car holds about 15 gallons of fuel? The average city bus gas tank holds nearly 200 gallons. A bus can be as tall as two adults and as long as half the length of a football field. So it makes sense that keeping a bus or truck running takes more work than your average car. In addition to buses and trucks, these mechanics work on the diesel engines in heavy equipment such as bulldozers, cranes, or tractors.

In the construction, mining, and oil and gas industry in Alaska there are lots of big equipment with diesel engines. And there is a big need to maintain and repair bus and truck engines in Alaska's severe climate. If you like fixing things, this can be a great field for you to consider.

Here's what Bus and Truck Mechanics and Diesel Engine Specialists do:

- Maintain vehicles to help prevent future problems and avoid bigger problems later on.
- Examine and adjust vehicles' safety features; change oil, check batteries, adjust brakes, and grease parts. They also clean or replace parts, pistons, bearings, gears, and valves.
- Fix vehicles that aren't working.
- Use hand-held computers like motor analyzers, chassis charts, and pressure gauges to identify problems and take systems apart to fix them.
- Read job orders in order to learn what work should be done on vehicles.
- Listen to the sound of engines to identify problems.
- Follow the factory guidelines for upgrading parts or tuning engines.
- Install parts and look at how they fit within the engine.
- Check if there is enough space for parts to operate.
- Maintain and repair shop machinery like pumps and compressors.
- Troubleshoot problems independently.

How much money can I make?

Median wage: \$23.37 per hour.

Half of all bus and truck mechanics earn between \$3,401 and \$4,689 per month (\$19.62 and \$27.05 per hour). Many bus and truck mechanics in Alaska are members of a union. Union members are usually paid more than non-union members. Most full-time bus and truck mechanics receive benefits like health insurance, sick leave, and paid vacation. Some employers also provide uniforms, money for tools, or pay for additional training.

How long does it take to receive training?

Depending on your ability and focus, becoming certified as a journeyman bus and truck mechanic or diesel engine specialist takes about three to five years as an apprentice. You have to

HELPFUL HIGH SCHOOL COURSES

Here are some of the high school courses that can help prepare you. While you don't have to take all of them, you should consider them in your planning. Some of these classes are also available at colleges and technical schools.

Business

- Introduction to Business
- Computer and Information Sciences
 - Basic Computer
 - General Computer Applications
 - Computer Technology

Construction Trades

- Electricity and Electronics

Electronics

- Energy, Power, and Transportation Technologies
 - Introduction to Auto Repair
 - Introduction to Mechanics
 - Advanced Auto Mechanics
 - Automotive Service
 - Diesel Mechanics and Repair
 - Transportation Technology Work Experience

Health and Safety Education

- Safety and First Aid
- Drivers' Education

Industrial and Technology Education

- Exploration of Careers
- General Industrial Arts
- Materials and Processes
- Industrial Safety and First Aid
- Equipment Maintenance and Repair
- Industrial and Technology Education Work Experience

Mathematics

- Integrated Math
- General Math
- Applied Math
- Business Math

complete 6000 hours of on-the-job training and nine to eleven weeks of classroom instruction that are required per year. If you go through a technical school or university program, the amount of time it takes varies.

When I'm ready to work, will there be job openings?

In Alaska, the outlook for job openings for bus and truck mechanics is above average in Alaska to 2014. If a gas pipeline is built in Alaska it is expected that there will be many more jobs open in these fields. Nationally, the number of jobs for bus and truck mechanics is expected to grow about as fast as average through the year 2014.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

If you enjoy working with your hands, carpentry is a trade worth considering. Carpenters cut, fit, and assemble wood and other materials to construct buildings. There are several different types of carpenters that specialize in different things. A carpenter might specialize in foundations or finish work. A carpenter who works for a general contractor often has to do a wide range of tasks involved in new construction.

If you choose to be a carpenter you'll have to work outside and in Alaska that can sometimes mean uncomfortable conditions. Rain, cold, bugs and more can come with the job. But for many people who choose this field, working outdoors is a part of what they enjoy about the job. You'll also probably need to travel and relocate to take available jobs. When there's a big building job going on in a community, you might travel there to work during the week or for several weeks at a time. You have to be in good health, and you have to be fairly strong and agile. Carpenters need good hand-eye coordination as well. Many people who choose this field say they really enjoy the feeling they get knowing that they were a part of building something new.

Here's what Carpenters do:

- Refer to blueprints and receive instructions from supervisors.
- Figure out the right dimensions of the building and the materials to be used.
- Layout, measure, and mark the wood or other materials, using measuring tapes and squares.
- Cut or shape the wood, using hand and power tools.
- Join and assemble the materials using nails, screws, staples, or glue.
- Check their work for accuracy, using levels or framing squares.
- Follow safety rules and regulations.
- Keep the work site clean to avoid accidents or inspection violations.
- Build forms for concrete foundations.
- Examine structural supports for decay and replace them.
- Install or repair siding.
- Build, install, or repair wood fixtures such as cabinets.
- Install components, such as floors, stairs, or wall panels that were built off-site.
- Build components from scratch.
- Carpenter supervisors sometimes estimate the amount and type of materials needed for a job. They order materials and have them delivered before workers arrive on the job. They may also make arrangements with subcontractors, such as plumbers and electricians.

How much money can I make?

Median wage: \$25.55 per hour.

In Alaska, the median wage for carpenters is \$4,429 per month. Hours spent on the job can be cut back because of bad weather or downturns in construction activity, so your overall earnings may be lower. Union workers often earn higher wages. Apprentices generally earn about half the wage of skilled carpenters and as they gain experience and skills, they receive higher pay. Full-time carpenters may receive benefits like paid vacation, sick leave, and health insurance. Self-employed carpenters must provide their own insurance.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a carpenter. You need courses in English, math, science, and social studies, physical education, health, and applied art or second language. Here is a list of high school courses that will help prepare you:

Business

Introduction to Business, business accounting and computer classes

Construction Trades

Exploration of Construction Careers
Construction
Carpentry, Framing Carpentry
Woodworking, Cabinetmaking
Construction Trades Work Experience

Drafting

Drafting, Architectural
Blueprint Reading

Health and Safety Education

Safety and First Aid

Industrial and Technology Education

Exploration of Careers
General Industrial Arts
Industrial Safety and First Aid
Equipment Maintenance and Repair
Industrial and Technology Education Work Experience

Mathematics

Integrated Math, General Math
Applied Math, Pre-Algebra
Algebra, Business Math

Physical Education

Physical Education, Fitness and Conditioning Activities

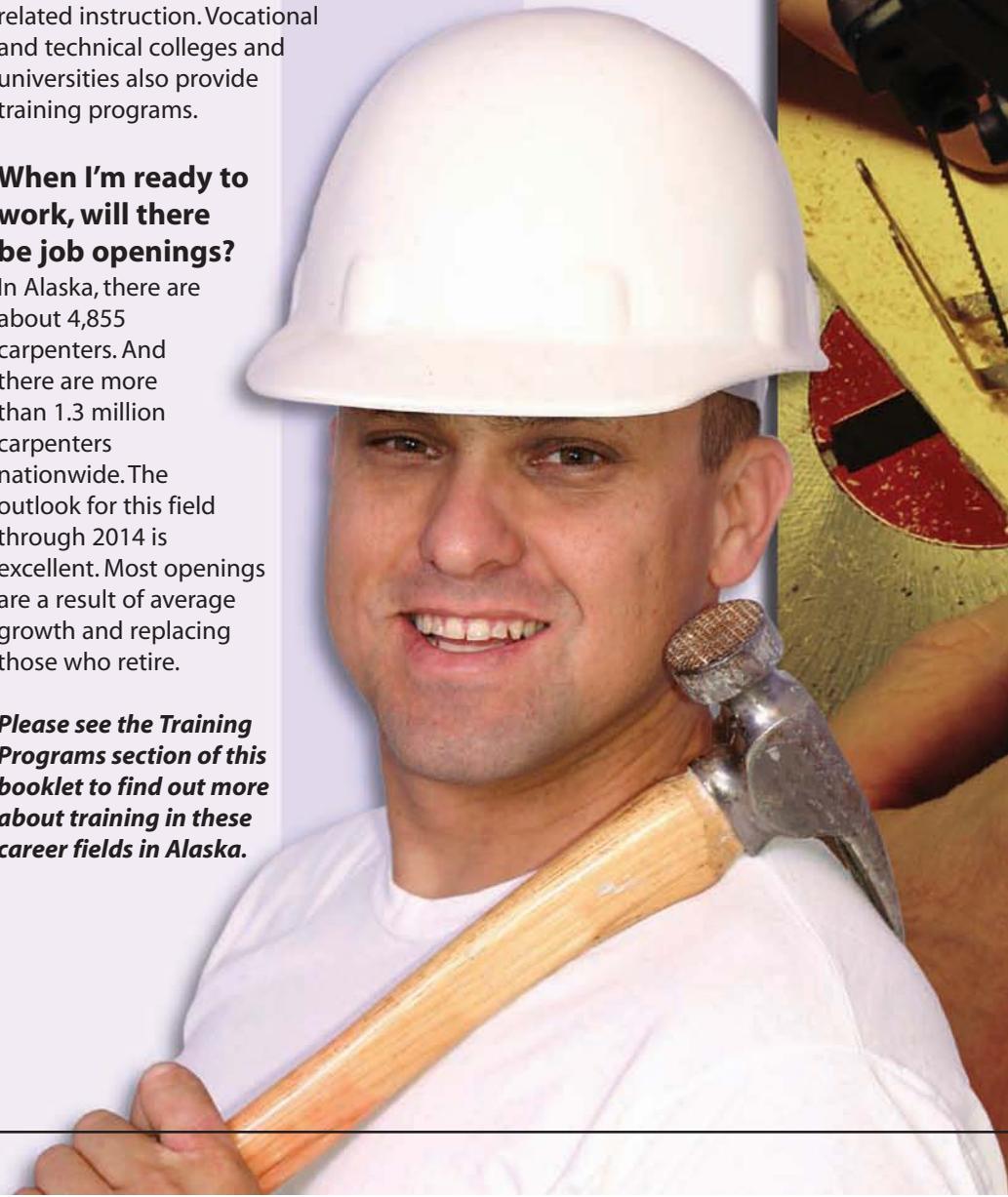
How long does it take to receive training?

There are several pathways to becoming a carpenter. You can become an apprentice through a union if you are 18 years old, have a high school diploma or a GED, and are accepted. It takes about four years and requires about 6,000 to 7,000 hours of on-the-job training and an average of seven weeks of classroom instruction per year to become a journeyman. You can also train through non-union programs requiring a four-year apprenticeship and a minimum of 8,000 hours on-the-job-training plus related instruction. Vocational and technical colleges and universities also provide training programs.

When I'm ready to work, will there be job openings?

In Alaska, there are about 4,855 carpenters. And there are more than 1.3 million carpenters nationwide. The outlook for this field through 2014 is excellent. Most openings are a result of average growth and replacing those who retire.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



Construction Foremen

First-Line Supervisors/Managers of Construction Trades & Extraction Workers/Blue Collar Supervisors

What's this job all about?

Construction Foremen are also called First-Line Supervisors, Managers of Construction Trades, and Blue-Collar Supervisors. Whatever the title used, the people in these jobs direct, help, and train workers in physically active jobs. Construction foremen in Alaska have to be willing to work in what may be difficult weather conditions and often difficult working conditions.

They often spend time away from home, working on job sites in remote locations over a period of time. Many of their duties involve managing people, hiring, firing and evaluating other workers. They also help resolve problems between workers and they supervise and train new employees. Being a supervisor means you can combine the ability to get along with others and solve people problems with the technical knowledge needed to get the job done.

Here's what a Construction Foreman does:

- Estimate the number of workers and the amount of materials needed to complete projects.
- Create budgets.
- Analyze all requirements of a project.
- Plan and establish work goals and coordinate work.
- Keep records of how work is progressing.
- Revise tasks or reassign workers to improve progress.
- Lay out construction sites and assign workers to specific jobs.
- Order supplies and equipment.
- Discuss prices and work details with customers.
- Interpret design plans for other workers as well as inspect their work.
- Work alongside the workers they supervise.
- Perform construction tasks in addition to their supervisory duties.

How much money can I make?

Median Wage: The median wage for construction foremen varies depending on the type of worker they supervise:

| <i>Type of Worker Supervised</i> | <i>Median Hourly Wage</i> |
|--|---------------------------|
| Construction and mining worker | \$34.12 |
| Laborers and material mover | \$21.67 |
| Mechanics, installers, and repairer | \$31.39 |
| Production and operating worker | \$27.35 |
| Transportation and material moving vehicle operator | \$29.39 |

Wages also vary by the number and type of workers supervised. In addition, supervisors who belong to a union usually receive higher wages. Construction Foremen who work full time usually receive benefits. Typical benefits include sick leave, paid vacation, and health insurance. Some employers also provide a retirement plan. Supervisors who are self-employed must provide their own insurance and retirement plan.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a construction foreman. You should take courses in high school that prepare you to earn a high school diploma. Below is a list of high school courses that will help prepare you. While you do not have to take all of them, you should consider them in planning for high school. Some of these courses are also available at the technical or college level. Because this occupation is so broad, the list of courses is longer than most.

Business

Introduction to Business
Business Management
General Computer Applications

Construction Trades

Construction/Carpentry
Framing Carpentry/Woodworking/Plumbing
Residential Wiring/Industrial Electricity
Electricity and Electronics

Drafting

Drafting/Blueprint Reading

English Language and Literature

English and Language Arts (Four years)
Language Arts Laboratory
English Grammar/Public Speaking
Business and Applied English

Health and Safety Education

Drivers' Education

Industrial and Technology Education

General Industrial Arts/Materials and Processes
Metal and Wood Technology
Industrial Safety and First Aid
Production Systems/Manufacturing Systems
Technology Systems/Emerging Technologies
Research and Development
Equipment Maintenance and Repair
Upholstery
Machining, Metalworking
Sheet Metal, Welding

Social Sciences and History

Business Law

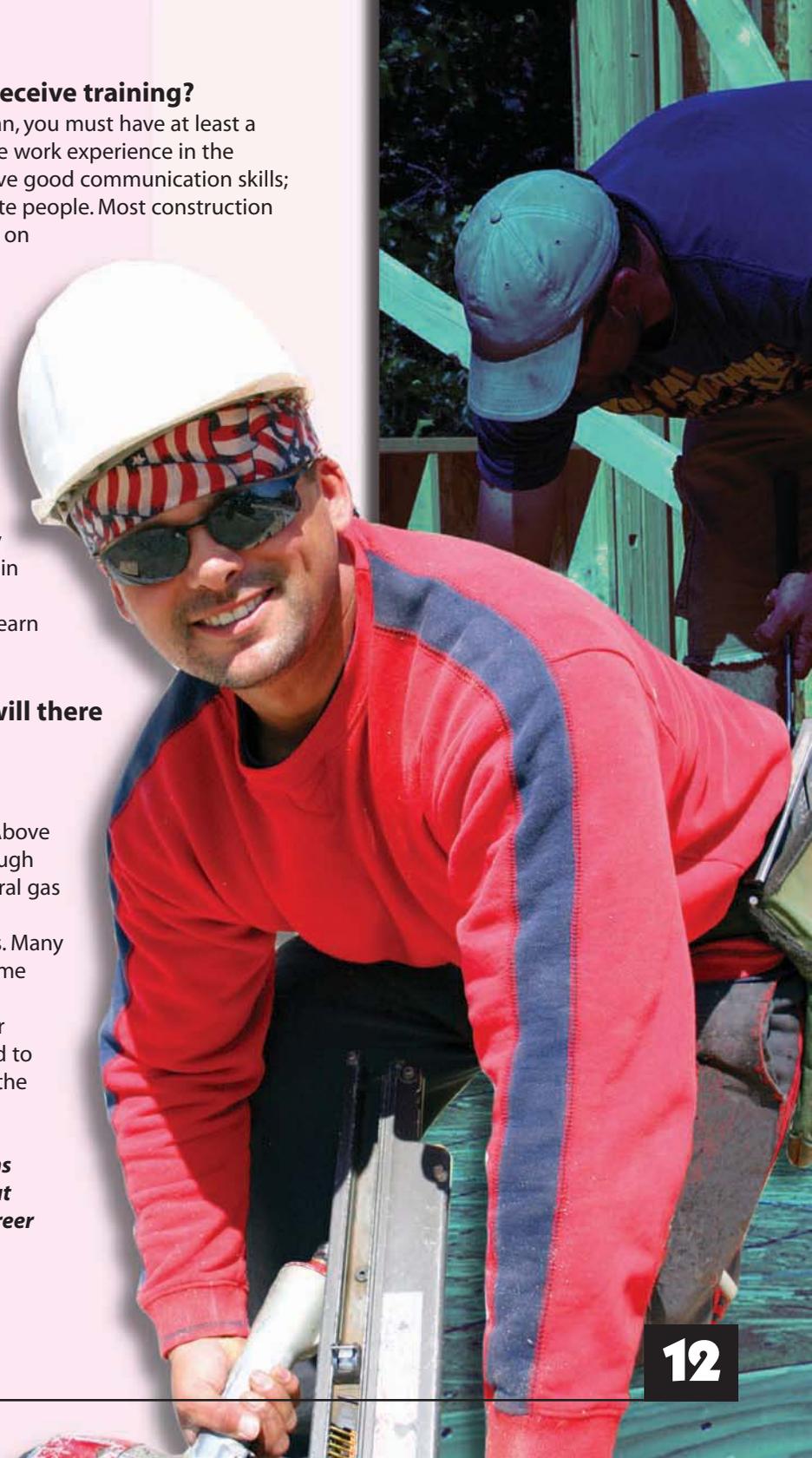
How long does it take to receive training?

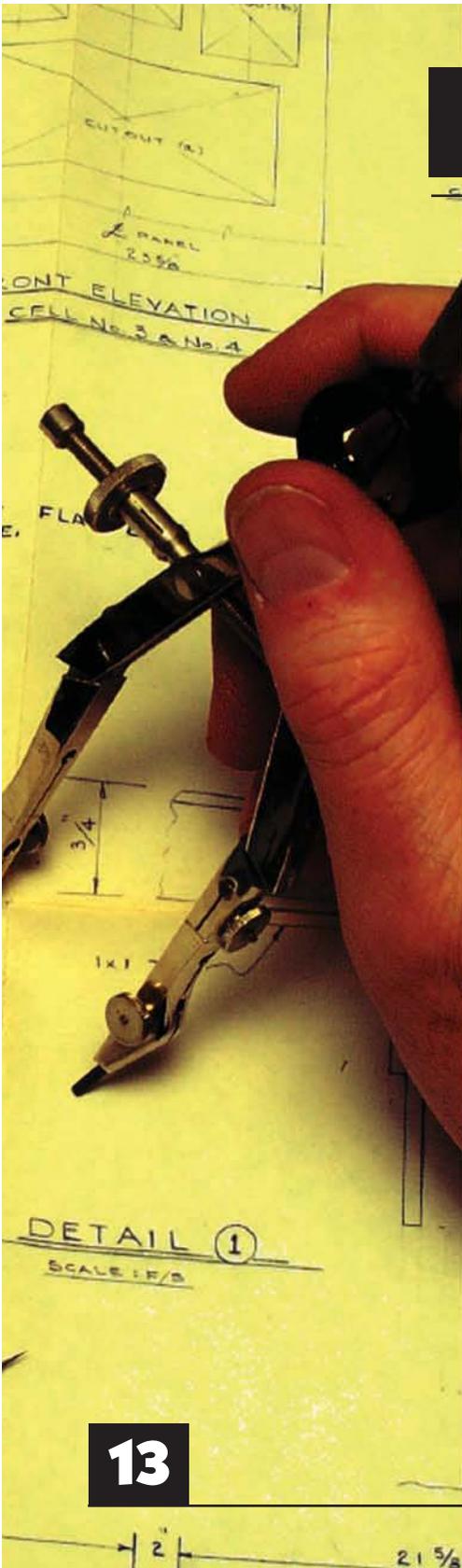
To work as a construction foreman, you must have at least a high school diploma or GED; have work experience in the occupation being supervised; have good communication skills; and be able to direct and motivate people. Most construction foremen learn most of their skills on the job, however, they must have completed an apprenticeship program. In addition, they must work for a few years in trades such as carpentry or plumbing and have experience as a worker. Another way to prepare for construction foremen positions is to get a degree in engineering or construction management. Many employers train new supervisors in management theory and human resources. Supervisors may also learn new computer software.

When I'm ready to work, will there be job openings?

The outlook for job openings for supervisors of construction and extraction workers is excellent. Above average growth is expected through 2014. With the building of a natural gas pipeline in Alaska, there will be a tremendous need for supervisors. Many openings in this field will also come from replacing those who retire. Nationally, the number of jobs for construction foremen is expected to grow as fast as average through the year 2014.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.





Drafters

(CAD Drafter, 3-D Imaging Designer)

What's this job all about?

Drafters make detailed drawings of things that will be manufactured or built. Architects who design buildings and engineers who design products work with drafters to prepare technical drawings. Production and construction workers follow these drawings to build everything from televisions to office buildings. The drawings made by drafters show the technical details of products and structures from all sides and they include the exact dimensions and materials to be used, and the procedures to be followed.

CAD stands for Computer Assisted Design. These drafters use a special computer program to make drawings, and some even design three dimensional models.

Here's what Drafters, CAD Drafters, and 3-D Imaging Designers do:

- Prepare technical drawing.
- Meet with engineers, architects, and others who need the technical drawings.
- Learn details about the project or item that will be built.
- Visit job sites to collect data and take measurements or get measurements from clients.
- Take rough information and turn it into sketches or scale drawings.
- Use their own knowledge of the field to fill in some of the details on drawings.
- Refer to technical handbooks and tables.
- Create several different versions of a drawing reflecting a different manufacturing or construction approach.
- Work with computer programs.
- Coordinate the work of other drafters.

How much money can I make?

Median Wage: \$21.40 per hour to \$26.01 per hour.

In Alaska, the median wage for drafters varies by the type of work and location. Drafters generally make between \$3,709 and \$4,508 per month. Drafters who work full time usually receive benefits. Typical benefits include health insurance, a retirement plan, and paid vacations.

How long does it take to receive training?

Many drafters have a four year college degree in drafting. However, employers often provide training in computer-aided drafting (CAD) software. Rapid changes in CAD software require you to spend time each year learning new techniques and software programs. The drafting programs at technical schools are similar to those at colleges, however, the programs at technical schools generally have less course work in theory and liberal arts and are aimed at preparing people for jobs. In addition, drafting and CAD assistants can learn skills on the job.

HELPFUL HIGH SCHOOL COURSES

If you are interested in this occupation, you should take courses in high school that prepare you to enter college. Some of these courses are also available at the technical or college level.

Computer and Information Sciences

- Basic Computer
- General Computer Applications
- Computer Graphics

Construction Trades

- Construction

Drafting

- Exploration of Drafting Careers
- Drafting, Architectural
- Drafting, Technical and Mechanical
- CAD Design and Software
- Blueprint Reading/Drafting Work Experience

Energy, Power, and Transportation Technologies

- Introduction to Mechanics

Fine and Performing Arts

- Art/Drawing and Painting
- Computer Assisted Art

Industrial and Technology Education

- General Industrial Arts
- Materials and Processes
- Metal and Wood Technology
- Production Systems/Manufacturing Systems
- Technology Systems/Emerging Technologies

Mathematics

- Pre-Algebra, Algebra
- Geometry, Trigonometry

Precision Metalwork

- Machining
- Metalworking
- Sheet Metal

When I'm ready to work, will there be job openings?

In Alaska, there are about 323 architectural and civil drafters employed in this occupation. Nationally, about 230,000 drafters work in this medium-sized occupation. The outlook for drafters varies by the area of specialization but generally the outlook is average to 2014.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.





Driller

(Also called Exploration Driller, Construction and Well Driller, Gas and Oil Driller)

What's this job all about?

Drillers use equipment to drill holes in the earth to take samples or to insert pipes. Gas and oil drillers operate the equipment used to drill for gas and oil and minerals. Construction and well drillers may drive trucks with equipment to drilling sites. Exploration drillers work in the mining industry and drill for precious metals. In Alaska, drilling sites are usually hard to reach, so equipment may be flown in by helicopter. Gas and oil and mineral drillers set up the drilling equipment at the area geologist and geophysist believe they will find gas or oil or precious minerals. They install a derrick, a tower-like steel structure that supports the drilling equipment, stabilize the drill rig with supports and they select the various tools that are needed for drilling. Both of these jobs use big equipment to get the job done.

Many drillers in Alaska have to travel to their work sites. They may work as part of a crew for 12-hour days for weeks and then have weeks off to go home or on vacation. For some drillers, this work schedule is part of what they like about their jobs. You should consider whether you might like that type of work schedule if considering this job.

Here's what Drillers do:

- Place a drill, level it, get it stabilized and make sure all the parts are attached.
- Check how deep to dig and make sure the drill is at the right angle.
- Control the speed of the equipment during drilling.
- Monitor the depth of the drill and make the drill longer when needed.
- During the drilling process workers may add lubricants or water into the well to cool off the diamond bit, as the bits are expensive.
- Monitor the process by watching and listening to the sound of the drill to know when the drill has reached a tough layer, and decide if any changes are needed.
- Deal with different soil surfaces and textures.
- Take samples and record the location and depth where they were taken.
- Make holes for power poles or create underground tunnels.
- Operate machinery, maintain and repair it.
- Work outside, often in extreme weather conditions.
- Travel to the worksite, sometimes even travel internationally.

How much money can I make?

Median Wage: Gas and oil drillers: \$31.05 per hour, Construction and well drillers: \$24.37 per hour.

Half of all construction and well drillers earn between \$3,753 and \$4,626 per month (\$21.65 and \$26.69 per hour). Nationally, the median wage for construction and well drillers is \$2,813 per month (\$16.23 per hour). In Alaska, the median wage for gas and oil drillers is \$5,382 per month. Half of all gas and oil drillers earn between \$3,397 and \$6,119 per month (\$19.60 and \$35.30 per hour). A good portion of what drillers can make comes from working overtime hours, so your income can be quite a bit higher than the median wage. Gas and oil drillers who work full time usually receive benefits like sick leave, paid vacation, and health insurance. Some employers also provide a retirement plan.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work in these fields. You should take courses in high school that prepare you to earn a high school diploma. Here are some of the classes that will help prepare you for this field: Some of these courses are also available at colleges and technical schools.

Construction Trades

Exploration of Construction Careers
Construction
Construction Trades Work Experience

Drafting

Drafting, Technical and Mechanical
Blueprint Reading

Energy, Power, and Transportation Technologies

Introduction to Mechanics

Health and Safety Education

Safety and First Aid

Industrial and Technology Education

Exploration of Careers

General Industrial Arts

Equipment Maintenance and Repair
Industrial Safety and First Aid
Industrial and Technology Education Work Experience

Life and Physical Sciences

Earth Science
Geology

Mathematics

Integrated Math
General Math
Pre-Algebra, Algebra

Physical Education

Physical Education
Fitness and Conditioning Activities

How long does it take to receive training?

To work as a driller you need a high school diploma or GED. You can prepare for these jobs by taking courses at a professional technical or two-year school. Courses in shop, general math, and drafting may be helpful. A few colleges offer programs in drilling. Most drillers learn skills informally on the job. You may start with little or no training and learn skills from an experienced worker over time. You do need to be physically fit, however. Many workers in Alaska also learn their skills through being employed by gas, oil and mining companies. These programs usually take two years to complete. In Alaska, oilfield operations are becoming more technical, so some employers are looking for a higher level of skill.

When I'm ready to work, will there be job openings?

According to Alaska industry representatives there is indication for a higher than average growth for drillers through 2014. Most openings are expected to result from growth in the occupation and the possibility of a natural gas pipeline being built.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

Electricians install, test, and maintain electrical systems. In the past electricians chose to work either in construction or maintenance. Today many work in both. In general, construction electricians assemble and install electrical systems.

Maintenance electricians maintain and repair systems.

If you choose to work in this field in Alaska, you should be prepared to work in all types of weather conditions. Your work may also take you to different locations, so you may have to stay away from home for periods of time if you are working on a big project.

Here's what Electricians do:

- Read blueprints to learn where to put circuits, outlets, and other equipment.
- Plan how to install wires and conduit (pipe or tubing) in the walls and concealed areas of homes and businesses.
- Install metal or plastic boxes for switches and outlets.
- Pull insulated wires or cables to boxes to complete circuits.
- Connect wires to circuit breakers, transformers, and other components.
- Use soldering guns.
- Test that all the circuits work properly.
- Follow the national electric code as well as state and local building codes.
- Install fiber optic or coaxial cables for computers and telephones.
- Connect motors to electrical power.
- Install electronic controls for industrial equipment.
- Use hand tools like screwdrivers, pliers, knives, and hacksaws and use power tools and testing equipment, like voltmeters.
- Keep electrical systems and equipment in good working order.
- Inspect equipment and fix problems.
- Check equipment for safety and warn managers when equipment is not safe.
- Install new electrical equipment and repair systems.

How much money can I make?

Median Wage: \$28.03 per hour.

In Alaska, the median wage for electricians is \$4,859 per month. Half of all electricians earn between \$3,831 and \$5,888 per month (\$22.10 and \$33.97 per hour) and wages vary according to region and type of work. Apprentices start at about half the wage of skilled workers and receive raises as their skills improve. Full-time electricians may receive benefits such as health insurance, sick leave, and paid vacation. Those who work for small companies may need to provide their own insurance.



Michelle Rushton, 21, is an apprentice electrician. She is shown here learning about the iron worker trade as part of her experience in Alaska Works "Women in the Trades" program.

MICHELLE 21

R U S H T O N

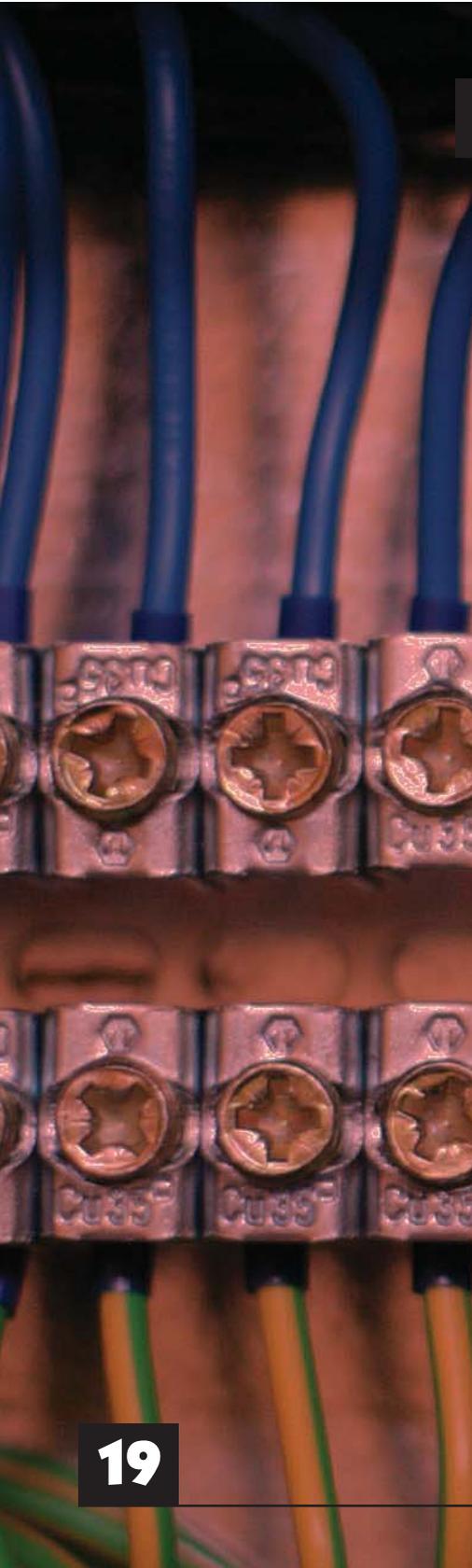
Michelle Rushton likes to work hard and she likes to work outside. Like many young people who finish high school, Michelle started looking seriously at what she wanted to do with her life after she received her GED. Luckily for her, she saw an ad in the newspaper for Alaska Works Partnership's "Women in the Trades Program" and decided to apply. "The program is a 30-day program that exposed us to all the trades," Michelle said. "It was really great for me because it opened my eyes to a lot of things."

Michelle had never before been talked to about the possibility of a career in the construction industry. "No one ever talked to me about the trades when I was growing up," she said. "The program made me realize that it is a great opportunity to be in a trade." Michelle said one of her hardest decisions after being in the Alaska Works Partnership program, and being exposed to a variety of construction trades, was picking which trade she wanted to pursue. "I had the hardest time deciding what to go in to because I respect them all," she said.

But her interest in working hard and the opportunity to work both inside and outside ultimately attracted Michelle to apply for the electrical apprenticeship program. Michelle was accepted and is now working alongside a journeyman electrician learning the intricacies of her job.

"I show up at 7 a.m. every day, attend safety meetings a couple of times a day and then my day involves doing whatever the journeyman tells me to do," she said. Michelle loves the work – both inside and outside – and says she's even learned to deal with working alongside of mostly men all day long.

"It's a great field for women," she said. "It's a great field for anyone."



Electricians

How long does it take to receive training?

There are a number of pathways to becoming an electrician in Alaska. You can become an apprentice through a union or non-union program. You can attend a trade school or technical program to learn skills, but when you finish your trade-related course and get a certificate of completion, you still need to finish all parts of an approved apprenticeship program. Apprenticeship programs in this field take about four years to complete the minimum of 8000 hours of on-the-job training and a minimum of 144 hours per year of related classroom instruction required to reach a journeyman level.

When I'm ready to work, will there be job openings?

In Alaska, about 2,035 electricians are employed. Nationally, about 659,400 electricians work in this occupation. The outlook for job openings for electricians is excellent to 2014. Average growth is projected. Nationally, the number of jobs for electricians is expected to grow as fast as average through the year 2014.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as an electrician. Here is a list of high school courses that will help prepare you:

Business

Introduction to Business

Construction Trades

Exploration of Construction Careers
Construction

Electricity and Electronics

Residential Wiring
Industrial Electricity, Electronics
Construction Trades Work Experience

Drafting

Drafting
Blueprint Reading

Energy, Power, and Transportation Technologies

Energy and Power

Health and Safety Education

Safety and First Aid
Industrial and Technology Education
Exploration of Careers
General Industrial Arts

Industrial Safety and First Aid

Industrial and Technology Education Work Experience

Life and Physical Sciences

Physics

Mathematics

Integrated Math, General Math
Applied Math, Pre-Algebra
Algebra, Business Math

Physical Education

Physical Education, Fitness and Conditioning Activities



Freight Handlers

(Laborers and Freight, Stock and Material Movers)

What's this job all about?

Freight handlers move materials from one spot to another, like into and out of trucks. They load, unload, and stack a wide variety of materials that can be large, heavy, oddly shaped, fragile, or some combination of all of these. They must know how to move each type of item safely and quickly. Freight handlers use dollies, hand trucks, and wheelbarrows to move small or light items. They use hoists and cranes to move larger, heavier items.

Alaska is known for being a hub for transportation, so there is a real need for freight handlers in the state. If you are considering this job, you'll need to be physically fit, and you'll probably find yourself working in a wide range of weather conditions. Many Alaskans in this field say they like being able to move around on their jobs, so if you don't like to sit in one spot all day, this just might be a job you're interested in.

Here's what Freight Handlers do:

- Use dollies, hand trucks, wheelbarrows, hoists, and cranes to move freight.
- Attach slings to steady loads while they are being moved.
- Guide loads to pallets, trucks, ships, or shelves in warehouses.
- Position containers in the correct spot to receive items.
- Brace loads to prevent shifting during transport.
- Install braces, pads, and straps to secure loads.
- Direct the spouts that transfer liquid items to new containers.
- Shovel some items, such as ice or gravel, into containers.
- Operate banding machines to band materials together.
- Maintain equipment by adjusting and replacing rollers, belts, plugs, and caps.
- Assemble and take apart containers and crates.
- Read work orders or listen to instructions.
- Keep records of what they move, using paper or hand-held computers.
- Monitor items by putting identification tags on loaded containers or marking them.
- Freight handlers who load and unload ships are called stevedores or longshoremen. Freight handlers also include furniture movers and baggage and cargo handlers.

How much money can I make?

Median Wage: \$13.26 per hour.

In Alaska, the median wage for freight handlers is \$2,298 per month (\$13.26 per hour). Half of all freight handlers earn between \$1,896 and \$2,844 per month (\$10.94 and \$16.41 per hour). Nationally, the median wage is \$1,718 per month (\$9.91 per hour). Freight handlers often receive extra pay for working with difficult or dangerous cargo. Handlers who belong to a union often receive higher wages than non-union workers. Freight handlers who work full time usually receive benefits such as sick leave, paid vacation, and health insurance. Some employers also provide a retirement plan.

HELPFUL HIGH SCHOOL COURSES

Although a high school degree is usually not required to work as a freight handler, it is important that you receive one to keep your career options open. Below is a list of high school courses that will help prepare you. You don't have to take all of them, but you should consider them in planning for high school. Some of these courses are also available at the technical or college level.

Business

Recordkeeping

Computer and Information Sciences

Basic Computer

Energy, Power, and Transportation Technologies

Introduction to Mechanics

Energy and Power

English Language and Literature

English and Language Arts

Reading

Health and Safety Education

Safety and First Aid

Drivers' Education

Industrial and Technology Education

Exploration of Careers

General Industrial Arts

Materials and Processes

Industrial Safety and First Aid

Equipment Maintenance and Repair

Industrial and Technology Education

Marketing

Warehouse Operations

Mathematics

General Math, Applied Math

Physical Education

Physical Education

Fitness and Conditioning Activities

Weight Training

How long does it take to receive training?

To work as a freight handler, you need excellent physical health and stamina, on-the-job training; and little or no experience. You don't need formal training to work in this field however, a good way to train for this job is to complete an apprenticeship. Formal apprenticeship programs include a combination of training on the job and classroom training. Apprenticeships in Alaska are sponsored by employers, employer associations, and some are jointly sponsored by employers and unions. Most freight handlers learn their skills on the job by beginning as helpers. Military experience loading ships, trucks, or cargo planes is good background for these jobs.

When I'm ready to work, will there be job openings?

In Alaska, the outlook for job openings for freight handlers is good to 2014. Average growth is projected. Outlook information is not available specifically for freight handlers, however they are part of the larger group of "freight, stock, and material movers." As long as the economy remains strong, the number of items needing to be moved will continue to grow and cause a demand for freight handlers. However, an increase in automation may limit the growth of this occupation because with automated handling systems, fewer people are needed for manual loading and unloading. If the Alaska gas pipeline comes online, there will be a large need for this occupation.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

Hazardous material workers help protect people and the environment. These workers remove and dispose of harmful materials like asbestos, chemicals, lead paint, oil, aviation and motor fuels. Hazardous material workers remove these items in a safe and timely fashion so that they do not harm people or the environment.

There are many aspects of hazardous waste removal and varying levels of certification and licensing required by law, depending on the severity of the hazard. In Alaska, hazardous material workers are often the first responders when hazardous materials are released into the environment. Their first job may be to take immediate action to stop the release, then contain the hazardous material to minimize the impact to the environment. Later, they will be called in to clean it up. Mold removal is a growing area of work for hazardous waste removal workers, since mold growth is associated with health problems. Hazardous waste removal workers can and do play a role in oil spill cleanup and spills of chemicals that may occur. They also might deal with hazardous materials on old military and industrial sites, in the petro-chemical, mining, fisheries, healthcare and manufacturing industries. Cleanup of fires in locations like pharmacies or scientific offices, or even residential fuel leaks, may also be part of the job.

Here's what Hazardous Waste Removal Workers do:

- Remove lead paint by applying chemicals.
- Scrape off hazardous paint and store it in special bags.
- Use brooms, mops, and other tools to clean contaminated areas.
- Remove items that can be cleaned or must be disposed.
- Use radiation survey meters to locate and evaluate contaminated materials.
- Use high-pressure cleaning equipment to wash areas, and also package materials for disposal.
- Build concrete storage boxes.
- Transfer materials from the site to these cement boxes and other storage.
- Transport materials to treatment and disposal sites.
- Drive trucks and forklifts to move materials.
- Organize materials at disposal sites and make sure all items are labeled.

How much money can I make?

Median Wage: \$28.69 per hour.

In Alaska, the median wage for hazardous material workers is \$4,973 per month (\$28.69 per hour). Half of all hazardous material workers earn between \$3,753 and \$6,462 per month (\$21.65 and \$37.28 per hour). The wages vary by region and by the type of material handled. Treatment, storage, and disposal workers earn slightly more than asbestos and lead workers. Hazardous material workers usually receive benefits like paid vacation, sick leave, and health insurance. Some employers also offer a retirement plan.

HELPFUL HIGH SCHOOL COURSES

If you are interested in this occupation, you should take courses in high school that prepare you to get a high school diploma. Below is a list of high school courses that will help prepare you. While you do not have to take all of them, you should consider them in course planning.

Some of these courses are also available at colleges and technical schools.

Construction Trades

Exploration of Construction Careers

Industrial and Technology Education

General Industrial Arts

Materials and Processes

Industrial Safety and First Aid

Life and Physical Sciences

Biology

Chemistry

Chemistry in the Community

Physics

Mathematics

Integrated Math

General Math

Pre-Algebra, Algebra

Advanced Algebra courses

Physical Education

Physical Education

Fitness and Conditioning Activities

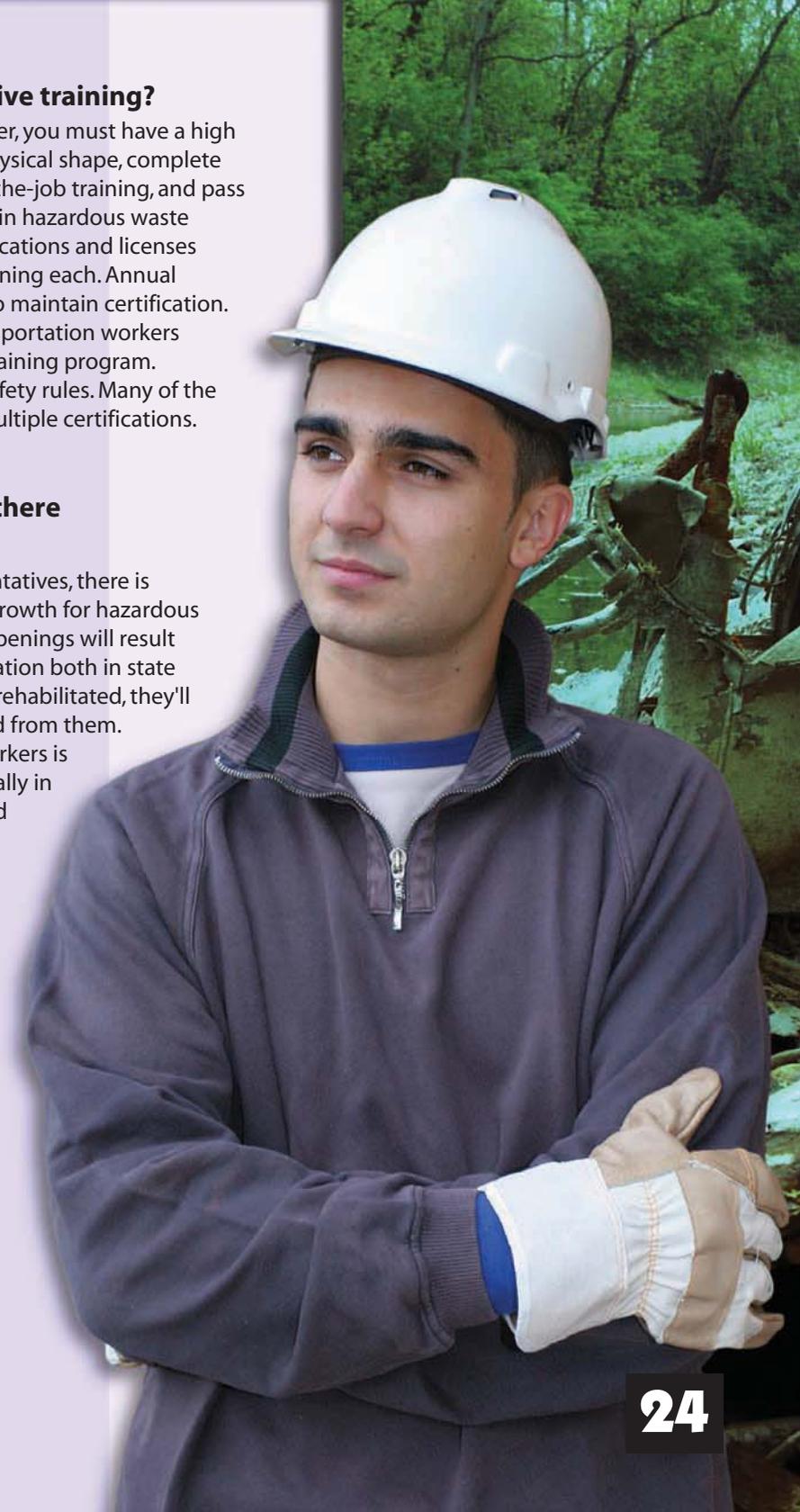
How long does it take to receive training?

To work as a hazardous material worker, you must have a high school diploma or GED, be in good physical shape, complete classroom course work, complete on-the-job training, and pass a federal or state licensing exam. Within hazardous waste operations, there are numerous certifications and licenses which may require 8 – 40 hours of training each. Annual refresher courses are often required to maintain certification. For example, hazardous material transportation workers must complete a 32-40 hour formal training program. These workers also take courses on safety rules. Many of the hazardous material workers obtain multiple certifications.

When I'm ready to work, will there be job openings?

According to Alaska industry representatives, there is indication for a higher than average growth for hazardous material workers through 2014. Job openings will result from the overall growth of this occupation both in state and nationally. As older buildings are rehabilitated, they'll need both lead and asbestos removed from them. A new area for hazardous material workers is the removal of mold. In Alaska, especially in Southeast, mold can be a problem and people are increasingly becoming aware of health problems, such as asthma, that are affected by mold. The need for hazardous material workers is not affected by the economy. These workers will always be needed.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

Heavy truck drivers drive large trucks or tractor-trailers to transport goods and materials. They have to park their trucks or trailers so they can be loaded easily. This may require following hand signals from coworkers who direct them to the proper location. Once trucks are in the proper spot, drivers load items. They may help wrap large items before they are loaded, or cover the entire load if it is on a flatbed. Truck drivers secure some items with straps, ropes, or chains. Once trucks are loaded, drivers carefully inspect them to insure that they can be driven safely.

On the road, drivers concentrate on their driving and on other drivers in order to prevent accidents. In Alaska, being a heavy truck or tractor-trailer driver can involve long hauls on lonely roads and sometimes dangerous roads. Alaska's winter driving conditions can be hazardous, and driving through mountain passes with a big rig requires skill and caution. If you're interested in this job, you should consider that you might not be spending every night sleeping in your own bed at home as these drivers often have responsibility for long hauls.

Here's what Heavy Truck Drivers and Tractor-Trailer Drivers do:

- Use two-way radios to contact their supervisors and give updates on their position.
- Keep their trucks filled with gasoline, oil, and other fluids.
- Keep several types of records and fill out forms to prove that goods were picked up and delivered and are being driven safely.
- Keep logs of what items they delivered, how much the items weighed, and when deliveries were made.
- Spend most of their time driving and away from home.
- Could work days, evenings and weekends.

How much money can I make?

Median Wage: \$20.81.

In Alaska, the median wage for heavy truck drivers is \$3,607 per month (\$20.81 per hour). Half of all heavy truck drivers earn between \$3,065 and \$4,304 per month (\$17.68 and \$24.83 per hour). Nationally, the median wage for heavy truck drivers is \$2,857 per month (\$16.48 per hour). Half of all heavy truck drivers earn between \$2,250 and \$3,562 per month (\$12.98 and \$20.55 per hour). Heavy truck drivers who transport goods across long distances are typically paid by the mile. The rate per mile varies greatly, depending on the employer and the type of cargo. Those who drive larger trucks typically earn higher wages. Heavy truck drivers who work full time often receive benefits such as health insurance, sick leave, and paid vacation. Truck drivers who are self-employed must provide their own insurance.

How long does it take to receive training?

To work as a heavy truck driver, you must have a high school diploma or GED, be at least 18 years old (for in-state driving) or 21 years old (for driving across state borders), be in good health, and have a commercial driver's license (CDL). Most new drivers learn through formal programs. Many private and public vocational schools offer tractor-trailer driver training programs. These programs typically award a certificate or

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a heavy truck driver or tractor-trailer driver. You should take courses in high school that prepare you to earn a high school diploma. Here is a list of high school courses that will help prepare you. Some of these courses are also available at the technical or college level.

Business

- Keyboarding/Word Processing
- Recordkeeping
- Accounting
- Introduction to Business
- Business Management

Computer and Information Sciences

- Basic Computer
- General Computer Applications

Energy, Power, and Transportation Technologies

- Introduction to Mechanics
- Diesel Mechanics and Repair

English Language and Literature

- English and Language Arts
- English Grammar

Health and Safety Education

- Safety and First Aid
- Drivers' Education

Mathematics

- General Math/Consumer Math
- Applied Math
- Business Math

Physical Education

- Fitness and Conditioning Activities
- Weight Training
- Lifetime Fitness Education

Social Sciences and History

- Geography
- Business Law

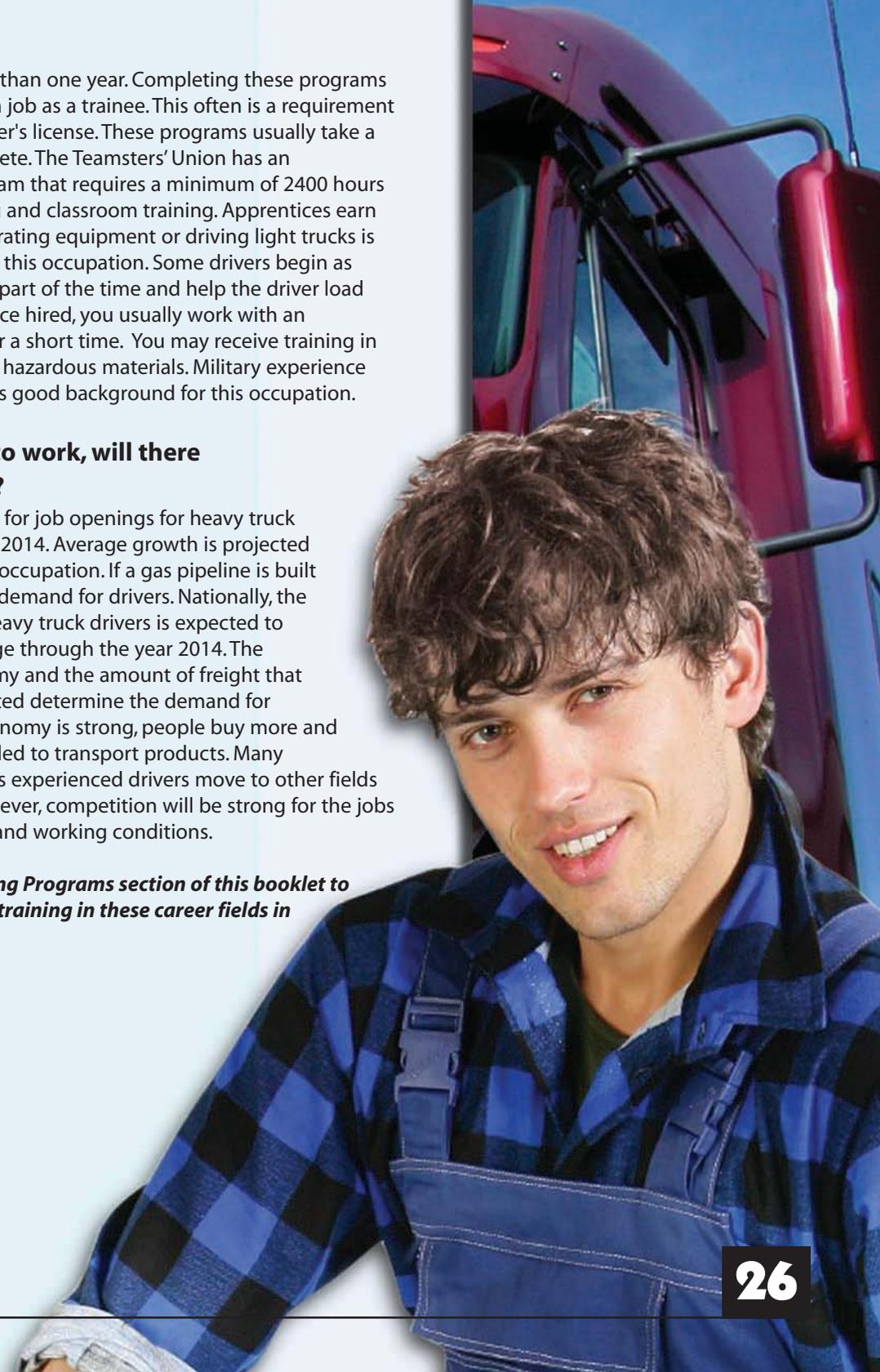
Since many heavy truck drivers are self-employed, you may find it useful to take business management, accounting, and computer courses.

diploma and last less than one year. Completing these programs should help you get a job as a trainee. This often is a requirement for a commercial driver's license. These programs usually take a few months to complete. The Teamsters' Union has an apprenticeship program that requires a minimum of 2400 hours of on-the-job training and classroom training. Apprentices earn while they learn. Operating equipment or driving light trucks is good background for this occupation. Some drivers begin as assistants. They drive part of the time and help the driver load and unload cargo. Once hired, you usually work with an experienced driver for a short time. You may receive training in special cargo, such as hazardous materials. Military experience driving heavy trucks is good background for this occupation.

When I'm ready to work, will there be job openings?

In Alaska, the outlook for job openings for heavy truck drivers is excellent to 2014. Average growth is projected due to growth in the occupation. If a gas pipeline is built there will be a heavy demand for drivers. Nationally, the number of jobs for heavy truck drivers is expected to grow as fast as average through the year 2014. The growth of the economy and the amount of freight that needs to be transported determine the demand for drivers. When the economy is strong, people buy more and truck drivers are needed to transport products. Many openings will occur as experienced drivers move to other fields of work or retire. However, competition will be strong for the jobs with the best wages and working conditions.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

Mining is the process of digging into the earth to extract natural minerals. Miners in mechanized mines operate machinery that extracts various minerals, coal, sand, gravel, building stone, fertilizers and other materials that are needed for hundreds of uses. For example, coal for energy, copper for wiring, and gold for jewelry and electronic components. Many other minerals are used to make medicines and household products. Miners extract metallic minerals such as copper, gold, iron, lead, silver, and zinc. Metal produced by miners is found in virtually every product you use or buy. Nonmetallic minerals such as stone, sand, gravel, and clay are also mined.

Alaska is the world's largest producer of zinc, a major producer of gold, silver, lead, tin, and coal. Alaska also produces sand and gravel used for construction and in concrete. There are two types of mining: surface mining and underground mining. The type of mine depends on how deep the minerals are under the earth's surface. Alaska has several underground mines and numerous surface operations. Alaska's history is tied closely to its mining heritage. In the early 1900's, the Alaska-Juneau, the Independence and other mines, and of course the Alaska Gold Rush, brought early settlers who worked and helped develop the state's resources. Today, mining continues to be a vital industry.

Here's what Miners do:

- Use carefully controlled explosives to loosen rock from the ore body.
- Operate loaders and excavators to move the broken rock and load it into haul trucks.
- Operate large off-road haul trucks to transport broken rock to the mill or stockpile.
- Operate various machinery to reclaim previously mined areas and return them to a productive state.
- Plan for and carry out mining operations that strictly follow permitted activities.
- Operate machinery that crushes and grinds mineral bearing rock to extract the valuable metals from the waste.
- Strictly follow worker safety, health, and environmental laws and regulations.
- Maintain mining machinery to ensure a safe and productive operation.

How much money can I make?

Median Wage: \$18.80 per hour.

Wages vary by area of the country and employer and by the type of mining operation. A 2006 survey by the Alaska Miners' Association showed \$72,000 as the average annual wage for Alaska miners. Many miners make much more when they gain experience and gain mining skills. Many mines in Alaska are camp jobs and miners work various shifts with a typical schedule being two weeks on and two weeks off. Most major mines generally offer full time workers benefits such as sick leave, paid vacations, health insurance, profit sharing, and retirement plans.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a miner. You should take courses in high school that prepare you to earn a high school diploma. Below is a list of high school courses that will help prepare you for a job as a miner. You don't have to take all of them, but you should consider them in planning for high school. Some of these courses are also available at colleges and technical schools.

Construction Trades

Exploration of Construction Careers
Construction
Construction Trades Work Experience

English Language and Literature

Reading

Health and Safety Education

Safety and First Aid

Industrial and Technology Education

Exploration of Careers
General Industrial Arts
Industrial Safety and First Aid
Equipment Maintenance and Repair
Industrial and Technology Education Work Experience

Life and Physical Sciences

Earth Science
Geology
Physical Science

Mathematics

Integrated Math
General Math
Applied Math
Pre-Algebra
Algebra

Physical Education

Physical Education
Fitness and Conditioning Activities

How long does it take to receive training?

To work as a miner, you must have a high school diploma or GED, be at least 18 years old, be in good physical condition, and be free of drugs and alcohol. A background check may be required if the miner will have access to explosives on the job.

The federal regulations under MSHA (Mine Safety and Health Administration) require a minimum of 24 hours mandatory health and mine safety training for surface miners and 40 hours for underground miners. This training must take place prior to being assigned tasks at a mine. In addition, the miner must receive "task training" for any new task they are assigned.

Some people train to be miners by taking formal training. Some professional technical and two-year schools offer mine technology courses. Usually, the minimum time to become entry-level task trained is one month, while specialized cases such as underground or hard rock may require up to six weeks. Most miners also receive training on the job from an experienced worker. Training includes operations and maintenance of mining machines, mine safety, and first aid. Appropriate training usually takes four to six months to complete.

When I'm ready to work, will there be job openings?

According to Alaska industry representatives, there is indication of higher than average growth for miners and mining machine operators through 2014. Many openings are expected to result from replacing those who retire or otherwise permanently leave the occupation.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

Are you someone who just has to stop and look at the big trucks on the road? You just might be interested in being a heavy equipment mechanic. These are the folks that maintain and fix the machines used in construction, logging and other industrial work. They are a big part of making sure construction jobs stay on time and on track.

When most people think of Alaska they think "big" and this is one job with potentially big opportunities. The gas and oil industry throughout the state, as well as the construction, transportation and mining industries statewide, have big machines with big engines that need knowledgeable mechanics to fix them. And if a gas pipeline is built in our state, there will be even more need for people who know how to keep the big machines moving.

Here's what Mobile Heavy Equipment Mechanics do:

- Maintain equipment so it operates safely.
- When equipment breaks down, examine it for defects.
- Use hand-held computers to diagnose parts that need repair and fix them.
- Use jacks or hoists to lift and move large parts.
- Check parts for damage using gauges and meters.
- Clean parts by spraying them with or soaking them in solvent.
- Grease and oil parts that need it.
- Repair or replace damaged or worn parts.
- Use welding equipment to fix broken frames or parts.
- Reassemble equipment and test it for performance and safety.
- Heavy equipment mechanics in large repair shops perform more complex repairs. They may rebuild engines, fix electrical problems, or repair hydraulic pumps.
- Able to independently trouble shoot problems, able to work in remote locations, and ability to work independently.

How much money can I make?

Median Wage: \$26.14 per hour.

In Alaska, the median wage for heavy equipment mechanics is about \$4,531 per month. This amount varies slightly by region. Wages and benefits vary by employer. Full-time mechanics may receive benefits such as sick leave, vacation pay, and health insurance.

How long does it take to receive training?

Depending on your ability and focus, becoming certified as a journeyman mobile heavy equipment mechanic takes about three to five years as an apprentice to earn the required total of 6000 hours of on-the-job training and nine to eleven weeks of classroom instruction per year. If you go through a technical school or a university program, getting training varies.

HELPFUL HIGH SCHOOL COURSES

Below is a list of high school courses that will help prepare you for this occupation. While you do not have to take all of them, you should consider them in course planning. Some of these courses are also available at colleges and technical schools.

Construction Trades

Electronics

Energy, Power, and Transportation Technologies

Introduction to Mechanics

Advanced Auto Mechanics

Automotive Service

Diesel Mechanics and Repair

Health and Safety Education

Safety and First Aid

Drivers' Education

Industrial and Technology Education

Exploration of Careers

General Industrial Arts

Industrial Safety and First Aid

Equipment Maintenance and Repair

Industrial and Technology Education Work Experience

Mathematics

General Math

Applied Math

When I'm ready to work, will there be job openings?

The outlook for job openings for heavy equipment mechanics is above average to 2014. Average growth is projected. Besides the openings that occur from people in this field retiring, even more openings will occur if a gasline is built. Demand for heavy equipment mechanics follows growth in the economy and Alaska's economy is expected to continue to grow.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

Operating engineers and construction equipment operators use machinery to move construction materials. Generally machines are used to move objects short distances, such as around a factory or construction site. They use equipment to smooth or grade the ground. They may also dump, remove, or spread rock and earth. Operating engineers and construction equipment operators are unique because they know how to operate several different types of equipment, such as cranes, bulldozers, and hoists.

Bulldozer operators run tractors equipped with attachments, such as blades and cable winches. They dig out dirt, trees, and rocks in order to level the ground. Crane and tower operators lift and move materials using booms and cables supported by towers. They watch for hand signals or listen to radioed instructions from other workers. Hoist and winch operators lift and pull loads with their equipment. If you are interested in working in this field in Alaska, you'll need to be prepared to work outside in sometimes difficult conditions. Along with our weather challenges in Alaska, operating engineers often work in physical locations that provide challenges – like in Alaska's dense forests and steep terrain. This is one job that you'll never find boring!

Here's what Operating Engineers do:

- Operate many types of equipment in a variety of different applications.
- Operate equipment efficiently and expediently at the same time.
- Set up and inspect equipment.
- Attach hoses, belts, and other equipment to tractors.
- Make adjustments to blades, buckets, and booms.
- Use stakes and guidelines on the ground to help them line up their equipment.
- Do maintenance and make minor repairs on their machines.
- Clean and service their equipment.
- Keep records of the materials they moved.
- Do some manual loading and unloading.
- Operate valves on air compressors or pumps at construction sites.

How much money can I make?

Median Wage: \$25.85 per hour.

In Alaska, the median wage for operating engineers and construction equipment operators is \$4,481 per month (\$25.85 per hour). Half of all of these workers earn between \$3,799 and \$5,271 per month (\$21.92 and \$30.41 per hour). Nationally, the median wage for operating engineers and construction equipment operators is \$2,987 per month (\$17.23 per hour). Half of all operating engineers and construction equipment operators earn between \$2,330 and \$3,994 per month (\$13.44 and \$23.04 per hour). Wages vary according to the type of machinery being operated. Crane and tower operators generally earn the highest wages. In general, union workers receive higher wages. Union operating engineers and construction equipment operators and those working for government agencies generally receive health insurance and a retirement plan.

How long does it take to receive training?

To work as an operating engineer, you must have a high school diploma or GED, complete on-the-job training, be in good physical condition; and have a good ability to judge distance.



C H A R L I E 29

For Colleen Charlie, all of the sacrifices that have to be made to become an Operating Engineer are more than worth it. Colleen grew up in Minto, Alaska, a village of 258 residents located northwest of Fairbanks. After graduation from Minto High School, Colleen took a job as an admissions clerk at the Chief Andrew Isaac Health Center in Fairbanks. Seeing her boyfriend, Ryan, participate in an Operating Engineers apprenticeship program inspired her to take advantage of an opportunity to take part in a training program funded by the Department of Labor & Workforce Development at the Palmer Training Center. Colleen and Ryan's son Noah was two months old when she had the chance to change her career path. "I saw how much money Ryan was making as an Operating Engineer and I thought 'I could do that job,'" Colleen said. "So I quit my job and went down to Palmer to take advantage of the opportunity to learn."

Colleen's path to become an Operating Engineer was a slow process. After completing her classes in Palmer she took part in another Department of Labor funded program at the Center for Employment Education and was able to get her CDL. While there, she also took a Hazardous Materials class and then went on to participate in an Alaska Works Partnership's apprenticeship preparation program. "All of the classes I took really helped me to build up my resume and be competitive when I applied to be an apprentice myself,"

Colleen said. Now, as an Operating Engineer apprentice, Colleen continues to make sacrifices to get where she wants to be. "As an apprentice when they say 'jump' I ask 'How high?'" she said. "One of the sacrifices for me as a mother of two children is that as an apprentice you can't turn down jobs. I have a three-month-old daughter and had to leave her to take a job away from home when she was a month old."

Colleen went to work on the Dalton Highway, where she was assigned to drive one of the big rollers. "Sometimes I get to drive the dozers and loaders," she said. But Colleen stated that she knows the sacrifices she makes occasionally working away from home are to make life better for herself and for her children. "I have healthcare, medical, dental and vision benefits and a great retirement plan," she said. "In one week I make more money than I made in a month at my old job. And I get time and a half for working on the weekends," she said. Colleen's advice for anyone wanting to get behind the wheel of the really big rigs is this: "If you have the drive and the motivation, go for it!" While Colleen acknowledged that it was hard to leave her village, and hard to make the adjustments to her new life, she said it has been totally worth it. "You know it's worth it when you get your first paycheck," she said.



Operating Engineer, Construction Equipment Operator

Some operating engineers learn their skills through apprenticeship training programs. To apply for an apprenticeship, you must be at least 18 years old. Apprenticeship programs usually consist of three to five years of on-the-job training and at least 144 hours of classroom training each year. Professional technical schools also offer programs in heavy equipment operation. Operating engineers learn their skills through a union apprenticeship or on-the-job training. The International Union of Operating Engineers sponsors three-year apprenticeships. Competition is strong for entry into apprenticeship programs because job openings are limited and pay is good. Private vocational schools also offer training in operating certain types of construction equipment. Many operating engineers learn their skills informally on the job. In this case, you learn from an experienced worker. The military is also a good source of training. If you receive this type of training in the military, you may earn credit for previous work experience when you enter a civilian apprenticeship program.

When I'm ready to work, will there be job openings?

In Alaska, the outlook for job openings for operating engineers is excellent to 2014. Average growth is projected. Nationally, the number of jobs for operating engineers and construction equipment operators is expected to grow about as fast as average through the year 2014. The outlook for this occupation varies with the state of the economy. When the economy is growing, the government spends more on roads, highways, and bridges, creating new jobs. When the economy is slow the government usually does only basic maintenance of roads and bridges. Alaska's potential for a natural gas pipeline means that there will be a growing economy and need for operating engineers.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as an operating engineer. You should take courses in high school that prepare you to earn a high school diploma. Below is a list of high school courses that will help prepare you. While you do not have to take all of them, you should consider them in planning for high school. Some of these courses are also available at colleges and technical schools.

Business

Introduction to Business

Computer and Information Sciences

General Computer Applications

Construction Trades

Exploration of Construction Careers/Construction
Construction Trades Work Experience

Drafting

Drafting/Blueprint Reading

Energy, Power, and Transportation Technologies

Introduction to Mechanics
Diesel Mechanics and Repair
Energy and Power

English Language and Literature

Business and Applied English

Health and Safety Education

Health and Fitness/Safety and First Aid
Drivers' Education

Industrial and Technology Education

Equipment Maintenance and Repair

Mathematics

General Math/Applied Math
Algebra/Geometry
Trigonometry/Business Math

Physical Education

Physical Education
Fitness and Conditioning Activities
Lifetime Fitness Education

Precision Metalwork

Sheet Metal/Welding



What's this job all about?

Plumbers and pipefitters install and repair pipe systems that carry water, steam, air, or other fluids or gases. Our modern system of plumbing - based on the technology of ancient Romans - removes waste and treats water. At the same time, it removes the chance for diseases to spread. Calling the plumber to fix a leaking pipe isn't just about fixing a nuisance. It's also helping maintain public health and it's helping to make sure the structure of buildings remains strong and intact.

Plumbers and pipefitters are considered a single trade. However, workers usually specialize in one area. Plumbers install and repair water, waste, and gas systems in homes and commercial buildings. Pipefitters install and repair pipe systems used in manufacturing. They also work on pipe systems that generate electricity and heat and cool buildings. Some pipefitters specialize in one type of system. For example, they may specialize in hospital work, where they install oxygen and gas. Steamfitters install pipe systems that move liquids or gases under high pressure. Plumbers and pipefitters in Alaska coordinate their work in a wide variety of industries, from new construction, to remodeling, to the oil and gas industry. There will be an increased need for members of this trade during the construction of a natural gas pipeline in Alaska.

Here's what Plumbers and Pipefitters do:

- Study blueprints, drawings, and building codes.
- Inspect buildings to determine what materials to use.
- Select pipe sizes and types and other materials.
- Fit piping into the building with the least amount of waste; measure and mark areas where pipes will be installed.
- Cut holes in walls, ceilings, or floors where the pipes will go.
- Hang steel supports from ceiling joists for large systems.
- Cut and bend the lengths of pipe, using saws, pipe cutters, and pipe-bending machines.
- Install the pipe, fixtures, and appliances.
- Connect the system to water, gas, or sewer lines.
- Check the system with pressure gauges to be sure it is free from leaks and operates properly.
- Repair and maintain plumbing, replace defective fittings and broken pipes.
- Modify existing pipes and maintain related equipment.
- Operate pump equipment to remove water from flooded areas, such as basements or manholes.
- Direct other workers in cutting, assembling, and installing pipe systems.
- Provide cost quotes to customers, negotiate contracts.

How much money can I make?

Median Wage: \$27.58.

This occupation is included in the larger group of "pipelaying fitters, pipefitters, and plumbers." The median wage for this group is \$4,781 per month (\$27.58 per hour). Half of all of these workers earn between \$3,602 and \$5,651 per month (\$20.78 and \$32.60 per hour). Nationally, the median wage for plumbers and pipefitters is \$3,513 per month (\$20.27 per hour). Apprentices usually begin at about half the wage rate paid to experienced plumbers and pipefitters. Wages increase regularly as their skills improve. Full-time salaried plumbers may earn benefits such as vacation, sick leave, and health insurance. After an initial waiting period, apprentices receive the same benefits as experienced plumbers and pipefitters. Self-employed plumbers and pipefitters must provide their own insurance.



D U N C A N

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The first place Rachael Duncan lived after graduating from Alyeska Central School and moving out of her parent's house was a cabin without running water near Salcha, Alaska. "I lived there with a roommate for two years," she said, "so it's no wonder I have a real appreciation for what plumbers and pipefitters actually do." Rachael was working for minimum wage as a cook and a waitress when her mother told her about an ad she saw in the newspaper for an Alaska Works Partnership class for plumbers and pipefitters.

"I like doing construction work and had done some remodeling," Rachael said, "so I decided to try to sign up." At the same time, Rachael was hearing about the possibility of a gas pipeline getting built in Alaska in the local news reports. "I realized a gasline would need a lot of pipefitters. When a pipeline gets built in Alaska there could be another big boom with many job opportunities," she said. Rachael loved the class and managed to get a job as a welder's helper. She then decided to apply for an apprenticeship program in the plumbing trade and the rest is history. Now she's working alongside a journeyman plumber every day on a large building project in Fairbanks. "I just got done helping my journeyman plumb all the unit heaters and air handlers in a large commercial building," she said, "and now we're working to get all the sinks and toilets installed." Rachael is one of only three

women on her job site. "None of the men give us a hard time," she said. "Once they get to know you they start being themselves around you."

"I'd really like to see more young women go into the construction field," she said. "It doesn't matter what kind of trade you do, my advice is that it's really worth it." The hardest part of the transition to her new job, she said, was the math. "My advice to anyone interested in this trade is to really focus on math while you're in school. Everyone always struggles with the math. I was lucky that in the class I took, I got a refresher course that helped me. Now I use the math every day to figure out take-offs in a pipe or to help find elevations and it's a much more natural thing." Other advice Rachel gives to young people interested in the trades is to stay away from drugs. "They do random drug tests on the job site in all the trades and if you fail, you lose your job. I always tell young people that it's not worth it to throw away a good paying career and an excellent opportunity by using drugs," she said.

Rachael said her life has done nothing but get better since she started her apprenticeship. "I'm making close to \$600 more a week than I made as a waitress," she said. "Now I have a car and my roommate and I are renting a really nice three bedroom apartment – with plumbing!"



Plumbers and Pipefitters

How long does it take to receive training?

To work as a plumber or pipefitter, you must have a high school diploma or GED, complete classroom coursework, complete on-the-job training, have a license to work as a contractor, pass a state or local licensing exam, and have good communication skills. Nearly all plumbers and pipefitters learn their skills through union apprenticeship training programs.

Apprenticeship programs usually consist of three to five years of on-the-job training. Each year you receive at least 144 hours of classroom training. Prepare for an apprenticeship by taking courses at a professional technical school or two-year college. The military is an excellent source of training. The military trains people to install and repair plumbing and pipe systems on aircraft, missiles, and ships. If you receive training in the military, you may earn credit for previous work experience when you enter a civilian apprenticeship program.

When I'm ready to work, will there be job openings?

The outlook for job openings for plumbers and pipefitters in Alaska is good to 2014, with average growth projected. Most openings are expected to result from replacement needs; replacing those who retire or otherwise permanently leave the occupation. Nationally, the number of jobs for plumbers and pipefitters is expected to increase about as fast as average through the year 2014. The demand for plumbers and pipefitters is expected to outpace the supply of workers trained in this field. In addition, several thousand jobs will occur each year as workers retire or leave the occupation so job opportunities will be good. However, job openings and apprenticeships vary with local conditions. New construction is expected to grow slowly through the year 2014. Much of the work for plumbers will stem from the repair and maintenance of residential, commercial, and industrial pipe systems. Jobs for plumbers and pipefitters are usually less affected by the economy than other construction trades. This is because plumbing repairs often cannot be put off.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a plumber or pipefitter. You should take courses in high school that prepare you to earn a high school diploma. Here is a list of high school courses that will help prepare you. Some of these courses are also available at the technical or college level.

Business

Introduction to Business

Construction Trades

Exploration of Construction Careers

Plumbing

Construction Trades Work Experience

Drafting

Drafting

Blueprint Reading

Industrial and Technology Education

Exploration of Careers

General Industrial Arts

Materials and Processes

Industrial Safety and First Aid

Equipment Maintenance and Repair

Industrial and Technology Education Work Experience

Life and Physical Sciences

Chemistry

Physics

Mathematics

Integrated Math

General Math, Applied Math

Pre-Algebra, Algebra

Business Math

Precision Metalwork

Welding





Process Operators

Petroleum Pump System Operators, Refinery Operators and Gaugers, Gas and Oil Plant Operators

What's this job all about?

Gas and oil plant operators – also called “process operators” – control the refining process for crude oil or natural gas.

Alaska is blessed with lots of oil and gas resources. These natural resources are a big part of Alaska's economy and the oil industry provides many job opportunities throughout the state. In its natural form, however, oil (usually called "crude oil") is not very useful. However, because of oil's chemical makeup, it can be easily changed, and the different results become a wide variety of finished products.

To make these oil-based products, the oil has to be refined. Gas and oil plant operators work at refineries. These are factories where crude oil and natural gas are transformed into other products. At refineries, oil and gas go through processing to get the final products.

There are many types of gas and oil plant operators. Gas distribution operators work for companies such as power plants and steel mills. They manage the gas or oil flow to fuel the furnaces or boilers. Petroleum pump system operators control the movement of products from processing to holding tanks. Gaugers test and control oil and gas flows at wells, tank farms, and refineries.

Here's what Process Operators do:

- Monitor all steps of the refining process.
- Make sure the proper temperatures are maintained and the right ingredients are mixed together.
- Take samples to inspect the quality of what is being produced.
- Use gauges or meters to check the color and quality of the product.
- Keep logs of meter readings, test results, and adjustments they make.
- Inspect equipment for safety problems, leaks, or wear.
- Look for problems that may require stopping production to make repairs.
- Check flow meters and panel lights for correct information.
- Discuss repairs with maintenance staff or perform their own repairs.
- Shut down machines in an emergency.

How much money can I make?

Median wage: \$24.96 per hour.

Wage information for petroleum pump system operators in Alaska is not available. Nationally, the median wage for gas plant operators is \$4,326 per month (\$24.96 per hour). Half of all gas plant operators earn between \$3,742 and \$5,016 per month (\$21.59 and \$28.94 per hour). Wages are similar for oil plant operators. Wages vary by the operator's level of experience and training. Union workers tend to be paid more than non-union workers. Many employers offer benefits such as health, dental and retirement plans, vacations and sick leave. Some major oil companies offer cash bonuses and profit-sharing plans.

How long does it take to receive training?

To work as a process operator, you must have a high school diploma or GED; and complete on-the-job training. Some gas and oil plant operators earn a certificate. A few professional technical schools and two-year colleges offer programs related to this field. Larger companies have their own training programs. Smaller companies usually send new employees to training workshops.

HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a process operator. You need courses in English, math, science, and social studies, physical education, health, and applied art or second language. Here is a list of high school courses that will help prepare you:

Computer and Information Sciences

General Computer Applications

English Language and Literature

English and Language Arts (Four years)

Industrial and Technology Education

Exploration of Careers

Materials and Processes

Industrial Safety and First Aid

Technology Systems, Emerging Technologies

Equipment Maintenance and Repair

Industrial and Technology Education Work Experience

Life and Physical Sciences

Physical Science

Chemistry and Advanced Chemistry

Physics

Mathematics

General Math

Pre-Algebra, Algebra

Geometry

Trigonometry

Calculus

Many gas and oil plant operators learn their skills on the job from experienced workers. Professional organizations, businesses, universities, and community colleges all offer training workshops. On-the-job training includes classroom and hands-on work experience. Your training may also include computer simulated plant operations. After training, another worker supervises your work for a period of time. Training may last up to 12 months.

When I'm ready to work, will there be job openings?

According to Alaska industry representatives there is indication for a higher than average growth for process operators through 2014. This is a high growth field not only because of retirees in the oil companies, but because it will be needed with the building of a gasline project.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.





Ship Captains and Mates

What's this job all about?

Ship captains direct and navigate all kinds of ships in every type of waterway. Captains or masters are in command of ships. They set the course and speed and steer vessels to avoid hazards and other ships. They are also responsible for taking care of the business of the ship, which may include purchasing supplies, maintaining the vessel, or selling fish caught aboard a fishing vessel. On large ships, captains have deck officers or "mates" as assistants. Mates "stand watch," meaning they oversee the operation of a vessel for part of the day. On smaller vessels, there may be only one mate who alternates watches with the captain.

Alaska has a big need for captains and mates. In Southeast Alaska, the Alaska Marine Highway System is a major transportation link for communities and the people who operate the ships in the system are important to its success. Captains and mates can also be found on oil tankers, fishing and fish processing industry vessels, cruise ships, and Coast Guard vessels. Most mariners work according to a watch schedule aboard a ship. Generally the watch schedule is broken into four hours in the morning and four hours in the evening, but often overtime is required. Because mariners are working away from home, they often work seven days a week aboard the vessel for a period ranging from weeks to months. Some companies have their employees work a week on and a week off, while others work a month on and a month off. Your week or month off is the time you get off the ship to go home. Generally, travel to and from your home is paid for by the company you work for.

Here's what Ship Captains and Mates do:

- Use equipment such as depth finders and radar to watch for hazards.
- Gather information from lighthouses, buoys, and lights.
- Determine the ship's position using navigational aids, charts, and observations.
- Direct the crew who steer the ship, operate the engines, and signal to other vessels.
- Direct the people who perform maintenance or operate towing or dredging gear.
- Make sure proper procedures and safety practices are followed.
- Make sure machinery and equipment are in working order.
- Oversee the loading and unloading of passengers or cargo.
- Keep logs and records of the ship's movements and cargo.
- Stand watch for four hours and are off for eight hours while at sea.

How much money can I make?

Median wage: \$25.46 per hour.

Separate wage information is not available for ship captains and mates in Alaska, however, these occupations are included in the larger group of "ship captains, mates, and pilots." In Alaska, the median wage for this group is \$4,413 per month. Half of all ship captains, mates, and pilots earn between \$3,657 and \$5,394 per month (\$21.10 and \$31.12 per hour). Ship mates have less responsibility than captains, so their wages are usually lower than those of captains. Wages are higher for trips across the ocean than for other waters. Sometimes workers may wait months between jobs, so that can lower their yearly income. Many mariners who work full time on American ships receive benefits like health insurance and sick leave. Some employers also offer retirement plans.

How long does it take to receive training?

To work as a ship captain or mate, you must either complete a 4-year training program at a maritime academy or work your way up over many years; pass an exam; and have a merchant marine

HELPFUL HIGH SCHOOL COURSES

Below is a list of high school courses that will help prepare you for these jobs. While you do not have to take all of them, you should consider them in course planning. Some of these courses are also available at the technical or college level.

Business

Keyboarding/Word Processing
Introduction to Business/Business Management

Computer and Information Sciences

General Computer Applications
Leadership/Executive Internship

Energy, Power, and Transportation Technologies

Introduction to Mechanics
Marine Mechanics and Repair/Barge and Boat Operation
Energy and Power
Transportation Technology Work Experience

English Language and Literature

English and Language Arts (Four years)
Business and Applied English/Public Speaking

Healthcare Sciences

Emergency Medical Technology

Life and Physical Sciences

Earth Science/Geology/Chemistry
Physics/Principles of Technology/Advanced Physics courses
Integrated Science/Environmental Science
Astronomy/Marine Science

Mathematics

Pre-Algebra, Algebra/Geometry/Trigonometry
Pre-Calculus, Calculus
Probability and Statistics/Business Math

Military Science

Introduction to ROTC/Military ROTC/ROTC Drill

Second Language and Literature

Second Language

Social Sciences and History

World Geography/Advanced Geography courses
U.S. Government

Social Science

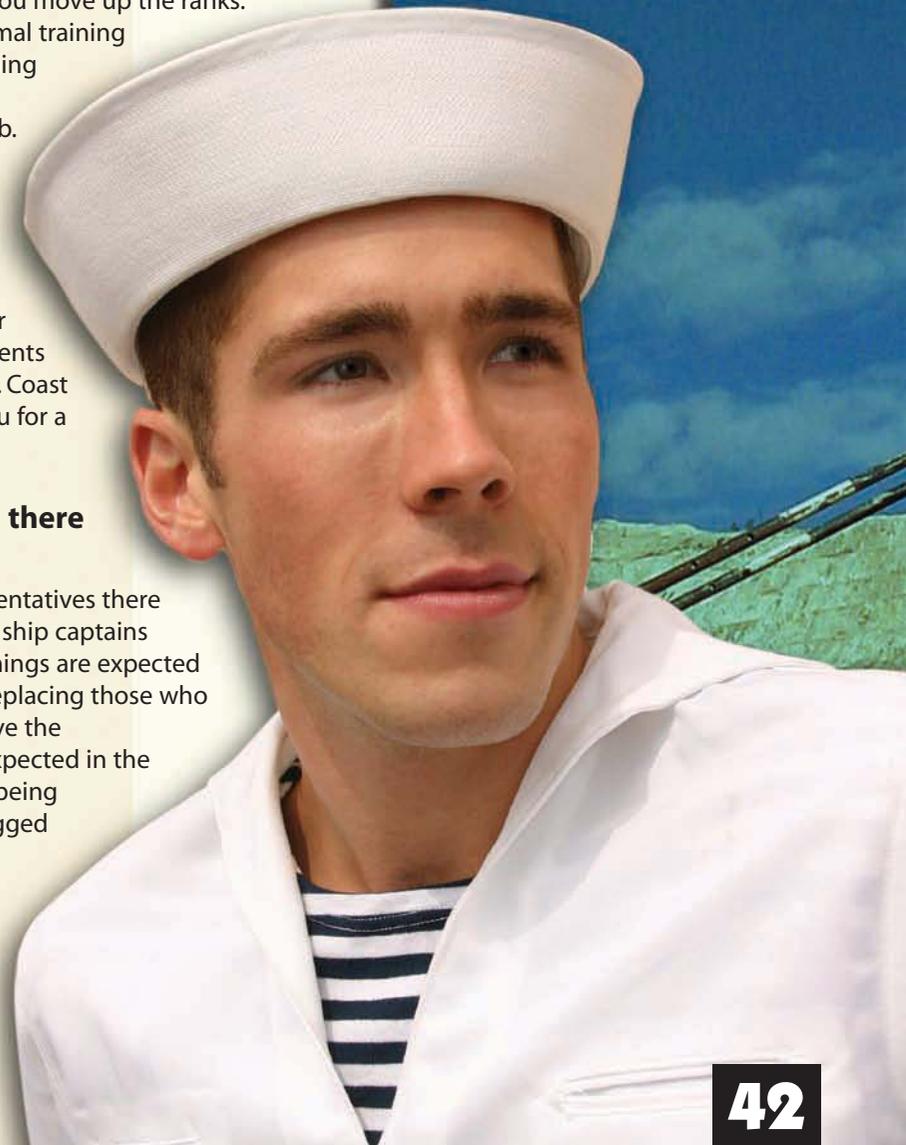
Psychology/Advanced Psychology courses
Sociology

license. Training programs for ship captains and mates are approved and monitored by the U.S. Coast Guard. The Coast Guard is an agency of the U.S. Department of Homeland Security. You must be licensed by this agency to operate vessels for hire. You can prepare for this occupation by attending the U.S. Merchant Marine Academy or one of six national academies. In Alaska, the Alaska Vocational Technical Institute (AVTEC) in Seward has classes that can lead toward certification and can help prepare you for a licensing exam. You also can prepare by gaining experience as a deckhand. Local unions provide experience and training. As you gain experience and pass rating exams, you move up the ranks. This route takes more time than formal training programs. Because of the fast changing demands of technology, you may receive additional training on the job. Employers may provide training or pay for college course work so you can update your technical skills or expand your administrative skills. Many ship captains and mates take training courses or seminars on their own to qualify for special endorsements to their licenses. Experience as a U.S. Coast Guard or Navy officer can qualify you for a merchant marine license.

When I'm ready to work, will there be job openings?

According to Alaska industry representatives there is indication for average growth for ship captains and mates through 2014. Most openings are expected to result from replacement needs; replacing those who retire or otherwise permanently leave the occupation. The fastest growth is expected in the cruise line industry. With new ships being built, both U.S. and international flagged ships will need employees. There is likely to be strong competition for the openings in this occupation.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

Surveying and mapping technicians help surveyors measure and map land. They are part of a team, called a survey party. The team is made up of a party chief, survey technicians, and laborers. The party chief may be an engineer, a licensed land surveyor, or a surveying technician. Survey technicians set instruments to measure the position and elevation of land. Mapping technicians use a variety of information to create maps. They use photographs, data from surveys, and other information. The work of surveying and mapping technicians is being changed by new technologies.

The Global Positioning System (GPS) uses radio signals relayed from satellites to locate points on the ground. Other advancements include earth resources data satellites, improved aerial photography, and geographic information systems (GIS). GIS are computerized data banks of spatial data. These systems are bringing surveying and mapmaking closer together. They also increase the need for computer training. If you work in this field in Alaska, there a number of high growth industries you might work in, including transportation, mining, oil and gas, and construction. You'll work both inside and outside, and will most likely travel to some remote locations.

Here's what Survey and Mapping Technicians do:

Survey Technicians

- Inspect, set up, operate, and adjust these instruments.
- Record measurements and help prepare survey reports.
- Measure vertical and horizontal angles using an instrument called a "theodolite."
- Measure distances between surveying points with electronic equipment. Use satellites to gather data.
- Set instruments to measure the position and elevation.
- Compile notes, make sketches, and enter collected data into computers.
- Supervise laborers who clear brush, drive stakes, and carry equipment.

Mapping Technicians

- Use drafting equipment and computers to make maps.
- Analyze aerial photographs to find data.
- Join several photos together.
- Research old maps and verify points by visiting sites to solve problems.
- Add boundaries, elevations, and color.
- Examine maps for errors and make corrections.
- Supervise workers who draft maps.

How much money can I make?

Median Wage: \$20.91 per hour.

In Alaska, the median wage for surveying and mapping technicians is \$3,624 per month (\$20.91 per hour). Half of all surveying and mapping technicians earn between \$2,936 and \$4,359 per month (\$16.94 and \$25.15 per hour). Nationally, the median wage for surveying and mapping technicians is \$2,607 per month (\$15.04 per hour). Half of all surveying and mapping technicians earn between \$2,007 and \$3,396 per month (\$11.58 and \$19.59 per hour). The technician's specialty and level of experience and responsibility also affect wages. Those who have supervisory duties usually earn higher wages. Surveying and mapping technicians who work full time usually receive benefits such as sick leave, paid vacation, and health insurance. Some employers also provide a retirement plan.

HELPFUL HIGH SCHOOL COURSES

If you are interested in becoming a surveying or mapping technician you should take courses that prepare you for college. Here is a list of high school courses that will help prepare you.

Some of these courses are also available at the technical or college level.

Agriculture and Renewable Natural Resources

Forestry

Computer and Information Sciences

Basic Computer/General Computer Applications

Computer Graphics

Computing Systems/Computer Technology

Network Technology

Computer Science and Programming

Drafting

Drafting, Technical and Mechanical

CAD Design and Software

Blueprint Reading

English Language and Literature

English and Language Arts (Four years)

Technical Writing/English Grammar

Fine and Performing Arts

Drawing and Painting/Photography

Life and Physical Sciences

Earth Science/Geology

Physical Science

Mathematics

Pre-Algebra/Algebra/Advanced Algebra

Geometry/Advanced Geometry

Trigonometry/Advanced Trigonometry

Physical Education

Physical Education

Fitness and Conditioning Activities

Social Sciences and History

World Geography

Geography

U.S. Government

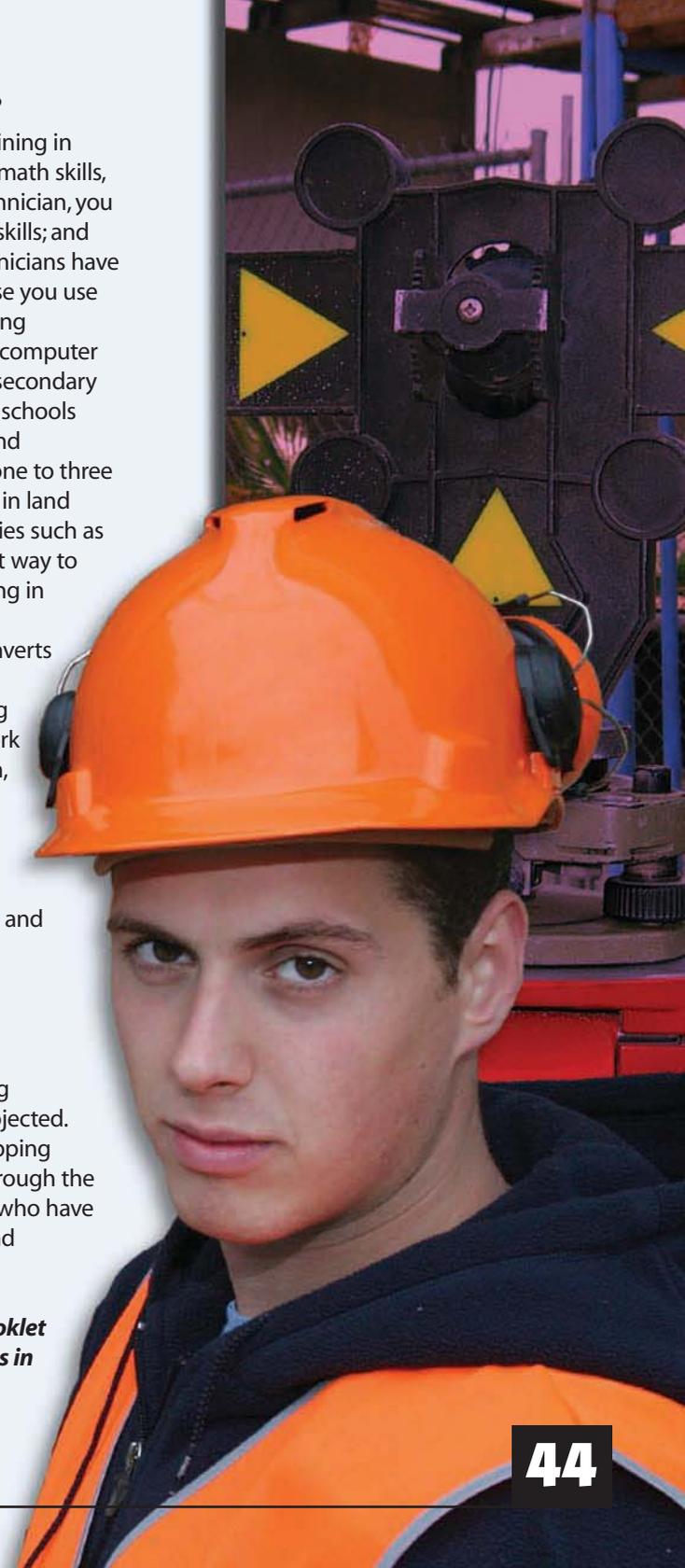
How long does it take to receive training?

To work as a surveying technician, you must have training in surveying, be in good physical condition, have good math skills, and have an eye for detail. To work as a mapping technician, you must have training in drafting, have good computer skills; and have an eye for color and detail. Most mapping technicians have had some specialized postsecondary training. Because you use Geographic Information Systems (GIS), you need strong computer skills and training in drafting, cartography, computer science, or GIS. Surveying technicians also need postsecondary training. Colleges, technical institutes, and vocational schools offer programs in surveying, surveying technology, and engineering technology. These programs take from one to three years to complete. Four-year colleges offer programs in land surveying or engineering. Because of new technologies such as GPS, the longer postsecondary programs are the best way to prepare. High school graduates with no formal training in mapping or geographic information systems start as digitizers. These workers operate equipment that converts map coordinates into computer readable form. High school graduates with no formal training in surveying usually start as apprentices. As an apprentice, you work as a laborer on survey teams. You haul gear, cut brush, and perform other routine tasks. Because of rapid changes in surveying and mapping technology, you spend time each year learning new hardware and software. Military training and experience as a surveyor or mapping technician is good background and can qualify you for jobs at the technician level.

When I'm ready to work, will there be job openings?

The outlook for job openings for survey and mapping technicians is average to 2014. Average growth is projected. Nationally, the number of jobs for surveying and mapping technicians is expected to grow as fast as average through the year 2014. Opportunities will be best for technicians who have formal training in Global Positioning System (GPS) and Geographic Information Systems (GIS).

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.



What's this job all about?

Storage and transportation managers direct the pickup, transport, and storage of goods. Transportation managers work for airlines, trucking companies, railroads, and other shipping organizations. They decide which routes their company will cover. Storage managers coordinate the activities in warehouses. Storage and transportation managers interview, select, and train staff and they supervise the activities of workers. For example, transportation managers supervise workers who dispatch, route, and track vehicles. Storage managers oversee workers who receive, store, and ship products.

Many workers in this industry belong to a union so managers have to make sure their companies follow union rules. For example, managers review transportation schedules to make sure drivers will not be overworked. If you work in this field in Alaska you will most likely work for a large company. Since Alaska is becoming an international transportation hub for shipping, the need for people who can manage and oversee the workers who receive, store and ship products is growing as well. While many managers come into the field with a college degree, you can also work your way up through the job ladder by starting out at entry level positions and learning the field over time. Some people in the field take course work toward a higher degree while they are working their way up.

Here's what Transportation, Storage and Distribution Managers do:

- Develop procedures for workers to follow to accomplish their jobs.
- Consider job duties, government and union rules, and other information when creating these procedures.
- Develop manuals for workers.
- Plan, develop, and apply safety programs.
- When accidents occur, work with the government agencies that inspect them.
- Responsible for their buildings, equipment, and vehicles.
- Inspect vehicles and buildings to make sure they are safe.
- Order repairs, develop plans for warehouse expansions, and purchase new equipment.
- Research equipment and negotiate contracts.
- Analyze financial reports.
- Use the reports to improve services and increase profits.
- Consult with their supervisors to develop new ways of operating.
- Represent their companies at hearings or meetings with government agencies and regulators.
- Bill clients and resolve customer complaints.
- Review invoices, work orders, and demand forecasts to estimate how many workers they will need.
- Schedule the pickup, delivery, or distribution of products or materials.

How much money can I make?

Median wage: \$33.75 per hour

In Alaska, the median wage for storage and transportation managers is \$5,850 per month (\$33.75 per hour). Half of all storage and transportation managers earn between \$4,912 and \$7,292 per month (\$28.34 and \$42.07 per hour). Nationally, the median wage for storage and transportation managers is \$5,760 per month (\$33.23 per hour). Half of all storage and transportation managers earn between \$4,399 and \$7,491 per month (\$25.38 and \$43.22 per hour). Pay varies by the worker's level of experience. New staff are paid less than experienced employees. Storage and transportation managers who work full

HELPFUL HIGH SCHOOL COURSES

If you are interested in this field you should take courses in high school that help you enter college. Here are some of the high school courses that can help prepare you. While you don't have to take all of them, you should consider them in your planning. Some of these classes are also available at colleges and technical schools.

Business

Computer and Information Sciences
Business Computer Applications

English Language and Literature

English and Language Arts (Four years)
English Composition, Technical Writing
Business and Applied English
Public Speaking

Marketing

Marketing
Warehouse Operations
Marketing Management

Mathematics

Pre-Algebra, Algebra
Geometry
Advanced Algebra
Probability and Statistics
Business Math; Advanced Business Math

Social Sciences and History

World Geography, Geography
Economics, Advanced Economics
Consumer Law, Business Law
Social Science
Psychology, Advanced Psychology
Organization Studies

time usually receive benefits. Typical benefits include health insurance, paid vacation, and sick leave. Some also receive a retirement plan.

How long does it take to receive training?

To work as a storage or transportation manager, you must have years of work experience in a related occupation or have a bachelor's degree and experience, be self-confident and persuasive, be able to direct and motivate people, and have strong communication skills. Most storage and transportation managers prepare for this field by earning a bachelor's degree, however many learn through extensive on-the-job experience or training. While education is important to prepare for this occupation, work experience is just as important. Some storage or transportation managers begin in entry-level positions, with only a high school degree or GED. The military is a good source of training for this occupation.

When I'm ready to work, will there be job openings?

In Alaska, the outlook for job openings for storage and transportation managers is good to 2014. Average growth in this field is projected. Nationally, the number of jobs for storage and transportation managers is expected to grow about as fast as average through the year 2014. Growth in this industry closely follows the national economy. When the national economy is doing well, there is an increase in the production and sale of goods. This increases the need for storing and moving goods from suppliers to consumers. When the economy is weak, the demand for these services decreases. Competition is strong in the storage and transportation of goods. The fastest growth for managers will be with courier services, such as UPS and Fed Ex. With more people buying goods over the Internet, more delivery drivers will be needed to deliver these goods. More supervisors will be needed to monitor delivery of these goods. Growth will also be good in the warehousing and storage industry.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.





Welders

Cutters, Solderers and Brazers

What's this job all about?

Welders and solderers use heat to permanently join pieces of metal. Welding is the most common way to permanently join metal parts. Heat applied to metal pieces melts and fuses them together. Because of its strength, welding is used in the building of ships, automobiles, and aircraft. It is also used to manufacture thousands of other products and to join beams in the construction of buildings, bridges, and other large structures. In Alaska, welders have been in high demand on many of the state's largest construction projects, like the building and upkeep of the Trans-Alaska pipeline.

Soldering and brazing are similar processes that are used on electronic and other small equipment. The work of arc and flame cutters is closely related to that of welders. However, instead of joining metals, cutters use heat to cut and trim metal objects to specific dimensions. Cutters also cut up large objects, such as ships, cars, or aircraft. All of these skills will be in high demand in the construction of a natural gas pipeline in Alaska.

Here's what Welders do:

- Plan work from drawings or detailed work orders, deciding how to repair or join metal parts.
- Interpret blue prints.
- Welders use arc, gas, and flame torches, as well as other types of welding equipment; solderers generally use soldering irons.
- Position and secure the work piece using a hoist or crane to move large pieces or hand tools for smaller pieces.
- Use tools or chemicals to clean surfaces.
- Connect hoses or nozzles, and ignite torches or start a power supply.
- Fuse or weld metal parts together.
- Repair broken or cracked metal parts.
- Examine their work to be sure it meets requirements.

How much money can I make?

Median wage: \$23.22 per hour.

In Alaska, the median wage for welders and solderers is \$4,025 per month (\$23.22 per hour). Half of all welders and solderers earn between \$3,411 and \$4,755 per month (\$19.68 and \$27.43 per hour). Nationally, the median wage for welders and solderers is \$2,583 per month (\$14.90 per hour). Wages vary by employer and by the number of hours worked. Many welders work overtime and earn more. More than one-fourth of welders belong to unions, often earning higher wages than non-union members. Benefits vary by employer. Most full-time welders and solderers earn typical benefits. These include vacation, sick leave, and health insurance. Some employers also provide a retirement plan.

How long does it take to receive training?

To work as a welder, you must have a high school diploma or GED; complete a formal training program; complete on-the-job training; and have a good eye for detail. Most welders learn their skills through a formal training program. High schools

HELPFUL HIGH SCHOOL COURSES

A high school diploma or GED is almost always required to work as a welder. You need courses in English, math, science, and social studies, physical education, health, and applied art or second language. Here is a list of high school courses that will help prepare you:

Construction Trades

Exploration of Construction Careers

Drafting

Drafting, Technical and Mechanical
Blueprint Reading

Health and Safety Education

Safety and First Aid

Industrial and Technology Education

Exploration of Careers
General Industrial Arts
Materials and Processes
Metal and Wood Technology
Industrial Safety and First Aid
Equipment Maintenance and Repair
Industrial and Technology Education Work Experience

Mathematics

General Math
Integrated Math
Pre-Algebra, Algebra
Geometry, Trigonometry

Precision Metalwork

Machining
Metalworking
Sheet Metal
Welding
Precision Metalwork Work Experience

and professional technical schools and colleges all offer welding programs. There are also private welding schools and apprenticeship training programs offered by unions. Training can last as short as a few weeks for low-skilled work or many years to be fully-trained. Apprenticeship training usually consists of three to five years of on-the-job training and each year you receive at least 144 hours of classroom training. Other welders learn their skills on the job from an experienced worker. You begin as a helper and gradually learn to operate welding equipment. Some employers will send you for additional training. The military is also an excellent source of training. In the military, you learn brazing and welding techniques and you may earn credit for work experience when you go into a civilian apprenticeship program.

When I'm ready to work, will there be job openings?

In Alaska, the outlook for job openings for welders and solderers is average to 2014. As long as the economy remains strong, the demand for welders and solderers should remain high. However, if the economy slows, workers in some industries may be laid off or work fewer hours. The increasing use of robots to do tasks will have the most impact on low-skilled manual welders. This is because the jobs that become automated are the simple, repetitive ones. Welders who work on construction projects or in equipment repair are less likely to be affected. This is because their jobs are not as easily automated. Job prospects should be excellent for welders with the right skills. Many employers report difficulty finding qualified applicants. In Alaska, construction, repair and upkeep of oil and gas pipelines puts these skills in high demand.

Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.





The programs and schools listed in this section are those in AKCIS as of October, 2006. Other training providers may exist in the State of Alaska that provide training for the profiled occupations. Please visit your nearest Alaska Job Center to explore other training opportunities.

Apprenticeship Programs in Alaska

Alaska Joint Electrical Apprenticeship & Training Trust

5800 B Street, Anchorage, AK 99518

www.ajeatt.org

(907) 337-9508 (phone) • (800) 533-9508 (toll-free)

(907) 337-9500 (fax)

*Electrician

Alaska Operating Engineers Apprenticeship Training

900 West Northern Lights Blvd., Suite 200

Anchorage, AK 99503

(907) 561-5044 (phone) • (907) 561-3672 (fax)

*Operating Engineer

Alaska Teamster Employer Service Training Trust

1049 Whitney Road, Anchorage, AK 99501

(907) 278-3674 (phone) • (907) 279-6088 (fax)

*Heavy Truck Driver, Tractor Trailer Driver

Alaska Works Partnership, Inc.

1413 Hyder Street, Anchorage, AK 99501

(907) 569-4711 (phone) • (907) 569-4716 (fax)

www.alaskaworks.org

*Provides apprenticeship outreach programs for all construction trades, women in the trades and building maintenance repair.

Alaska Works Partnership, Inc. Apprenticeship Outreach and Women in the Construction Trades

PO Box 74313, Fairbanks, AK 99707

(907) 457-2597 (phone) • (866) 457-2597 (toll-free)

(907) 457-2591 (fax)

www.alaskaworks.org

*Provides apprenticeship outreach programs for all construction trades, women in the trades and building maintenance repair.

Anchorage Plumbers & Steamfitters Local 367 Joint Apprenticeship Training Committee

610 West 54th Avenue, Anchorage, AK 99518-1197

(907) 562-2810 (phone) • (907) 562-2587 (fax)

*Plumbers and Pipefitters

Associated Builders and Contractors, Inc.

360 West Benson Blvd., Suite 200, Anchorage, AK 99503

Contact: Apprenticeship Director

(907) 565-5600 (phone) • (907) 565-5645 (fax)

*Carpenter, Construction Foreman

*Electrician

*Painters

*Plumbers and Pipefitters

Associated General Contractors

8005 Schoon Street, Suite 100, Anchorage, AK 99518

(907) 561-5354 (phone) • (907) 562-6118 (fax)

*Carpenter, Construction Foreman

Associated General Contractors

3750 Bonita Street, Fairbanks, AK

(907) 452-1809 (phone) • (907) 456-8599 (fax)

*Carpenter, Construction Foreman

Carpenters Local 2247

Joint Apprenticeship Training Committee

1751 Anka Street, Juneau, AK 99801

(907) 586-3675 (phone) • (907) 586-3675 (fax)

*Carpenter, Construction Foreman

**Fairbanks Plumbers & Steamfitters Local 375
Apprenticeship Training Committee**

1978 Burgess Avenue, Fairbanks, AK 99709
(907) 456-5989 (phone) • (907) 456-5905 (fax)
*Plumbers and Pipefitters

**Fairbanks Sheet Metal Workers International
Association, Local 23**

1260 Aurora Drive, Fairbanks, AK 99709
Contact: Apprenticeship Coordinator
(907) 452-3864 (phone) • (907) 456-3413 (fax)
*Welders

**Heat & Frost Insulators & Asbestos Workers Local 97
Joint Apprenticeship Training Committee**

407 Denali Street, Anchorage, AK 99501
Contact: Apprenticeship Coordinator
(907) 272-8224 (phone) • (907) 277-8860 (fax)
*Hazardous Waste Removal Workers

**International Brotherhood of Electrical Workers
(IBEW) Local 1547**

Apprenticeship Training Committee
813 West 12th Street, Juneau, AK 99801
ibewjno@ptialaska.net
(907) 586-3050 (phone) • (907) 586-9614 (fax)
*Electrician

**International Brotherhood of Electrical Workers
(IBEW) Local 1547 - Ketchikan**

317 Stedman Avenue, Ketchikan, AK 99901
(907) 225-4020 (phone) • (907) 225-3924 (fax)
*Electrician

Ironworkers Local 751

8141 Schoon Street, Anchorage, AK 99518-3047
Contact: Apprenticeship Coordinator
(907) 563-4767 (phone) • (907) 563-2855 (fax)
*Welders

**Juneau Plumbers & Pipefitters Local 262
Apprenticeship Training Committee**

1751 Anka Street, Juneau, AK 99801
(907) 586-2874 (phone) • (907) 463-5116 (fax)
*Plumbers and Pipefitters

Kornfeind Training Center (Electrician)

4782 Dale Road, Fairbanks, AK 99709
(907) 479-4449 (phone) • (800) 479-4495 (toll-free)
(907) 479-0425 (fax)
*Electrician

**Laborers' International Union Local 341
Apprentice Training Program**

13500 Old Seward Highway, Anchorage, AK 99515
(907) 345-3853 (phone) • (907) 345-4479 (fax)
*Building Maintenance Workers, Construction Workers,
Hazardous Waste Removal Workers

Laborers' Local 942 - Apprenticeship Training Annex

2740 Davis Road, Fairbanks, AK 99709
Apprenticeship Information: (907) 456-4584
Alaska Laborers' Training School
(907) 452-3146 (phone) • (907) 452-6285 (fax)
*Building Maintenance Workers, Construction Workers,
Hazardous Waste Removal Workers

Laborers' Local 942

942 West 9th Street, Juneau, AK 99801
(907) 586-2860 (phone) • (907) 586-5757 (fax)

*Building Maintenance Workers, Construction Workers,
Hazardous Waste Removal Workers

**Northern Alaska Carpenters Local 1243
Joint Apprenticeship Training Committee**

P.O. Box 71087, Fairbanks, AK 99707
(907) 452-4626 (phone) • (907) 456-5542 (fax)

*Carpenters

Operating Engineers Union Local #302

900 West Northern Lights Blvd.
Anchorage, AK 99503

www.aoeett.org
(800) 478-5338 (toll-free)

*Operating Engineers

Operating Engineers Union Local #302

909 Glacier Highway, Juneau, AK 99802
(800) 478-9551 (toll-free)

*Operating Engineers

Painters & Allied Trades Local 1140

**Painters, Glassworkers, Floor Coverers, Drywall Finishers
Joint Apprenticeship Training Committee**

650 West International Airport Road, S. 100
Anchorage, AK 99518

Contact: Apprenticeship Coordinator
rspaint@alaska.net

www.ibpat.net/alaska/lu1140.htm
(907) 562-8843 (phone) • (907) 563-8843 (fax)

*Painters, Glassworkers, Floor Coverers, Drywall
Finishers

Painters & Allied Trades Local 1555

Joint Apprenticeship Training Committee

P.O. Box 71428, Fairbanks, AK 99707

Contact: Apprenticeship Coordinator
lu1555rc@mosquitonet.com

www.lu1555.union-yes.cc

(907) 457-4444 (phone) • (907) 457-4446 (fax)

*Painters, Glassworkers, Floor Coverers, Drywall
Finishers

Piledrivers and Divers Union Local 2520

Apprenticeship Training Program

825 East 8th Avenue, Suite #6, Anchorage, AK 99501

Contact: Apprenticeship Coordinator
(907) 272-7577 (phone) • (907) 277-8967 (fax)

Plasterers' and Cement Masons Local 867

Apprenticeship Training Committee

825 East 8th Avenue, Suite #10, Anchorage, AK 99501

Contact: Apprenticeship Coordinator
(907) 272-5113 (phone) • (907) 272-4387 (fax)

opcm867@alaska.com

www.local867.com

Plasterers' and Cement Masons Fairbanks Office

Contact Person: Apprenticeship Coordinator
(907) 456-4619 (phone) • (907) 455-8257 (fax)

Roofers & Waterproofers Local 190

Joint Apprenticeship Training Committee

825 East 8th Avenue, Suite 8, Anchorage, AK 99501

Contact: Apprenticeship Coordinator
(907) 272-4311 (phone) • (907) 277-4311 (fax)

Seafarers International Union

721 Sesame Street, Suite 1C, Anchorage, Alaska 99503
(907) 561-4988 (phone) • (907) 563-0122 (fax)
*Captains and Mates

Sheet Metal Workers International Association, Local 23 Joint Apprenticeship Training Committee

237 North Orca Street, Anchorage, AK 99501-1849
Contact: Apprenticeship Coordinator
(907) 277-5367 (phone) • (907) 274-8219 (fax)
*Welders

Southern Alaska Carpenters – Local's 1281, 2247, & 1501 Joint Apprenticeship Training Committee

8751 King Street, Anchorage, AK 99502
Contact: Apprenticeship Coordinator
(907) 344-1541 (phone) • (907) 349-5823 (fax)
(888) 825-1541 (In state toll-free phone)
*Carpenters

Teamsters Union Local 959

1049 Whitney Road, Anchorage, Alaska 99501
(907) 278-3674 (phone) • (907) 279-6088 (fax)
(907) 565-8101
*Construction Driver

U.S. Department of Labor Bureau of Apprenticeship Training

605 West 4th Avenue, Room G-30, Anchorage, AK 99501
Phone: (907) 271-5035

Business and Secretarial Schools

Alaska Computer Essentials

907 East Dowling, Suite 13, Anchorage, AK 99518
(907) 563-8650 (phone) • (907) 563-8651 (fax)
aceak@alaska.com
*Bookkeeping and Accounting Technology

Charter College

2221 E. Northern Lights Boulevard, Suite 120
Anchorage, AK 99508
(907) 277-1000 (main phone) or (907) 277-1000 (admissions)
(907) 274-3342 (fax)
contact@chartercollege.edu
www.chartercollege.edu
*Accounting and Auditing

H&R Block Tax Services

7731 E. Northern Lights, Anchorage, AK 99504
(907) 338-4848 (phone) • (800) 472-5625 (toll-free)
(907) 338-6009 (fax)
www.hrblock.com/taxes/planning/tax_courses/index.html
*Business Management and Administrative Services

New Frontier Vocational Technical Center

43335 K-Beach Road, Suite 12, Soldotna, AK 99669
(907) 262-9055 (phone) • (907) 262-7144 (fax)
*Bookkeeping and Accounting Technology

Northwest Technical Services

4401 Business Park Blvd., Bldg N, Suite 26
Anchorage, AK 99503
(907) 562-1633 (phone) • (907) 562-5875 (fax)
nwtstraining@ak.net
www.nwts-ak.com
*Secretarial Studies and Office Management

Colleges, Universities and Religious Schools

Alaska Pacific University

4101 University Drive, Anchorage, AK 99508
(907) 564-8248 (phone) • (800) 252-7528 (toll-free)
(907) 564-8317 (fax)
admissions@alaskapacific.edu
www.alaskapacific.edu
*Business Management and Administrative Services

Covenant Life College

Box 1329, Haines, AK 99827
(907) 767-5520 (phone)
*Business Management and Administrative Services
*Secretarial Studies and Office Management

Sheldon Jackson College

801 Lincoln Street, Sitka, AK 99835-7699
(907) 747-5221 (phone) • (800) 478-4556 (toll-free)
(907) 747-6366 (fax)
admissions@sj-alaska.edu
www.sj-alaska.edu
*Business Management and Administrative Services

University of Alaska Anchorage

P.O. Box 141629, Anchorage, AK 99514-1629
(907) 786-1480 (phone) • (907) 786-4888 (fax)
enroll@uaa.alaska.edu
www.uaa.alaska.edu
*Business Management and Administrative Services
*Construction
*Engineering Technologies
*Mechanic and Repair Technologies
*Precision Production (Welding Technologies)
*Transportation

University of Alaska Fairbanks

PO Box 757520, Fairbanks, AK 99775-7480
(907) 474-7500 (phone) • (800) 478-1823 (toll-free)
(907) 474-5379 (fax)
admissions@uaf.edu
www.uaf.edu
*Business Management and Administrative Services
*Engineering Technologies
*Mechanic and Repair Technologies
*Precision Production (Welding)
*Secretarial Studies and Office Management
*Special Programs – Apprenticeship Programs
*Transportation

University of Alaska Southeast - Juneau

11120 Glacier Highway, Juneau, AK 99801
(907) 796-6000 (phone) • (877) 465-4827 (toll-free)
(907) 796-6365 (fax)
uas.info@uas.alaska.edu
www.jun.alaska.edu
*Business Management and Administrative Services
*Construction Trades
*Engineering Technologies
*Mechanic and Repair Technologies
*Precision Production (Welding)
*Secretarial Studies and Office Management
*Special Programs – Apprenticeship Programs

Wayland Baptist University - Anchorage Campus

5530 E. Northern Lights Boulevard, Suite 24
Anchorage, AK 99504
(907) 333-2277 (phone) • (907) 337-8122 (fax)
alaska@wbu.edu
www.wbu.edu/AK
*Business Management and Administrative Services
*Engineering Technologies

Wayland Baptist University - Fairbanks Campus

3419 B Airport Way, Fairbanks, AK 99709
(907) 452-3236 (phone) • (907) 452-3296 (fax)
copelandj@wbu.edu
www.wbu.edu/a/a06b01/fb
*Business Management and Administrative Services

Technical and Vocational Institutes

Alaska Job Corps Center – Palmer Admissions Office

4300 B Street, Suite 100, Anchorage, AK 99503
(907) 562-6200 (phone) • (800) 478-0531 (toll-free)
admissions@alaskajobcorps.com
www.alaskajobcorps.com
*Business Management and Administrative Services
*Construction
*Engineering Technologies
*Precision Production – Welding
*Secretarial Studies and Office Management
*Special Programs – Apprenticeship Programs
*Transportation

Alaska Technical Center

Box 51, Kotzebue, AK 99752
(907) 442-3733 (phone) • (800) 478-3733 (toll-free)
(907) 442-2764 (fax)
mlee1@nwarctic.org
www.nwarctic.org/atc
*Business Management and Administrative Services
*Construction
*Engineering Technologies
*Secretarial Studies and Office Management
*Apprenticeship Programs

Alaska Vocational Institute (AVI)

210 Ferry Way, Suite 200, Juneau, AK 99801
(907) 586-5718 (phone) • (800) 478-6660 (toll-free)
(907) 586-5673 (fax)
info@serrc.org
www.serrc.org
*Business Management and Administrative Services
*Engineering Technologies
*Secretarial Studies and Office Management

Alaska Vocational Technical Center (AVTEC)

PO Box 889, Seward, AK 99664
(907) 224-4141 (admissions) • (800) 478-5389 (toll-free)
(907) 224-4143 (fax)
avtec@labor.state.ak.us
*Building Maintenance
*Business Management and Administrative Services
*Construction
*Engineering Technologies
*Mechanic and Repair Technologies
*Precision Production – Welding
*Secretarial Studies and Office Management
*Transportation

Career Academy

1415 E. Tudor Road, Anchorage, AK 99507-1033
(907) 563-7575 (phone) • (800) 770-7575 (toll-free)
(907) 563-8330 (fax)
admissions@careeracademy.net
www.careeracademy.net
*Secretarial Studies and Office Management
*Transportation

Trade and Commercial Schools

Asbestos Removal Specialists of Alaska

3049 Davis Road, Fairbanks, AK 99709
(907) 451-8550 (phone) • (907) 452-6374 (fax)
arsa@acsalaska.net
*Engineering Technologies

Center for Employment Education

1049 Whitney Road, Anchorage, AK 99501
(907) 279-8451 (main) • (907) 279-8457 (admissions)
(800) 478-4233 (toll-free) • (907) 279-6088 (fax)
cee@acsalaska.net
www.cee-ak.com
*Construction
*Engineering Technologies
*Transportation

Environmental Management Incorporated

206 E. Fireweed Lane, Suite 201, Anchorage, AK 99503
(907) 272-8852 (phone) • (800) 458-2580 (toll-free)
(907) 272-0319 (fax)
training@emi-alaska.com
www.emi-alaska.com
*Construction
*Engineering Technologies

Testing Institute of Alaska, Inc.

2114 Railroad Avenue, Anchorage, AK 99501
(907) 276-3440 (phone) • (907) 279-7093 (fax)
tia@tialaska.com
www.tialaska.com
*Precision Production – Welding

Two-Year Colleges and University of Alaska Off-Campus Programs

Bristol Bay Campus/UAF

527 Seward Street, Dillingham, AK 99576
(800) 478-5109 (toll-free) • (907) 842-5692 (fax)
bbcinfo@uaf.edu
www.uaf.edu/bbc
*Business Management and Administrative Services
*Secretarial Studies and Office Management

Chukchi Campus/UAF

PO Box 297, Kotzebue, AK 99752
(907) 442-3400 (phone) • (800) 478-3402 (toll-free)
(907) 442-2322 (fax)
znlys@uaf.edu
www.chukchi.alaska.edu
*Business Management and Administrative Services
*Secretarial Studies and Office Management
*Special Programs – Apprenticeship Programs

Ilisagvik College

PO Box 749, Barrow, AK 99723
(907) 852-3333 • (800) 478-7337 (toll-free)
(907) 852-2729
www.ilisagvik.cc
*Business Management and Administrative Services
*Construction
*Engineering Technologies
*Secretarial Studies and Office Management
*Special Programs – Apprenticeship Programs
*Transportation

Interior-Aleutians Campus/UAF

PO Box 756720, Fairbanks, AK 99775-6720
(907) 474-2472 (phone) • (888) 474-5207 (toll-free)
(907) 474-5208 (fax)
iacinfo@uaf.ed
www.iac.uaf.edu

Kachemak Bay Campus, Kenai Peninsula College/UAA

533 E. Pioneer Avenue, Homer, AK 99603
(907) 235-7743 (phone) • (9907) 235-1686 (fax)
iykbc1@uaa.alaska.edu
www.homer.alaska.edu
*Business Management and Administrative Services
*Secretarial Studies and Office Management

Kenai Peninsula College/UAA

34820 College Drive, Soldotna, AK 99669
(907) 262-0330 (phone) • (907) 262-0322 (fax)
inklt@uaa.alaska.edu
www.kpc.alaska.edu
*Business Management and Administrative Services
*Secretarial Studies and Office Management
*Engineering Technologies
*Mining and Petroleum Technology
*Precision Technologies
*Secretarial Studies and Office Management

Ketchikan Campus/UAS

2600 7th Avenue, Ketchikan, AK 99901-5798
(907) 228-4508 (main) • (907) 225-4511 (admissions)
(888) 550-6177 (toll-free) • (907) 225-3624 (fax)
gail.klein@uas.alaska.edu
www.ketch.alaska.edu/
*Business Management and Administrative Services
*Engineering Technologies

*Precision Production (Welding)
*Secretarial Studies and Office Management
*Special Programs – Apprenticeship Programs

Kodiak College/UAA

117 Benny Benson Street, Kodiak, AK 99615
(907) 486-4161 (main) • (907) 486-1211 (admissions)
(907) 486-1264 (fax)
bbrown@kodiak.alaska.edu
www.koc.alaska.edu
*Business Management and Administrative Services
*Secretarial Studies and Office Management

Kuskokwim Campus/UAF

201 Akiak Drive, Bethel, AK 99559
(907) 543-4500 (main) • (800) 478-5822 (toll-free)
(907) 543-4527 (fax)
www.kuskokwim.bethel.alaska.edu

Matanuska-Susitna College/UAA

PO Box 2889, Palmer, AK 99645
(907) 745-9774 (main) • (907) 745-9746 (admissions)
(907) 745-9747 (fax)
sgravley@matsu.alaska.edu
www.matsu.alaska.edu
*Business Management and Administrative Services
*Engineering Technologies
*Mechanic and Repair Technologies
*Secretarial Studies and Office Management

Northwest Campus/UAF

Pouch 400, Nome, AK 99762
(907) 443-2201 (phone) • (800) 478-2202 (toll-free)
(907) 443-5602 (fax)
nynwinfo@uaf.edu

www.nwc.uaf.edu

- *Business Management and Administrative Services
- *Secretarial Studies and Office Management

Prince William Sound Community College

PO Box 97, Valdez, AK 99686

(907) 834-1600 (phone) • (800) 478-8800 (toll-free)

(907) 834-1635 (fax)

StudentServices@pwsc.edu

www.pwsc.edu

- *Business Management and Administrative Services
- *Engineering Technologies
- *Secretarial Studies and Office Management

Sitka Campus/UAS

1332 Seward Avenue, Sitka, AK 99835

(907) 747-6653 (phone) • (800) 478-6653

(907) 747-7747 (fax)

student.info@uas.alaska.edu

www.uas.alaska.edu/sitka

- *Business Management and Administrative Services
- *Engineering Technologies
- *Precision Production (Welding)
- *Secretarial Studies and Office Management
- *Special Programs – Apprenticeship Programs

Tanana Valley Campus/UAF

Student Assistance Center

604 Barnette Street, Room 110, Fairbanks, AK 99701

(907) 455-2800 (main) • 907.474.7500 (admissions)

(800) 478-1823 (toll-free) • (907) 455.2828 (fax)

fytcv@uaf.edu

www.uaf.edu/tvc

- *Business Management and Administrative Services
- *Engineering Technologies

*Mechanic and Repair Technologies

*Precision Production (Welding)

*Secretarial Studies and Office Management

*Special Programs – Apprenticeship Programs

*Transportation



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