

Introduction

This booklet is intended for use by those persons who are interested in apprenticeship training or in guiding others toward apprenticeship.

Young people, and people of all ages, should be made aware of the many opportunities offered to them by the construction industry. Particularly, we hope that high school students will be encouraged to pursue studies which will qualify them for and benefit their careers in this industry.

The front door for entry into the skilled trades in the construction industry is apprenticeship. It is the structured and systematic way for a young worker to be introduced to the skills of the trades, to adjust to the work, to advance steadily in both skills and earnings, and with that solid background, to keep pace with the technological changes in the industry.

Apprenticeship, briefly stated, is a system for training and developing skilled craft workers. It combines working on the job under the supervision of skilled workers who have completed an apprenticeship program with related instruction in the classroom.



Pipefitter apprentices

Apprenticeship programs in the construction industry arise out of the collective bargaining agreements between labor and management. The same collective bargaining agreement may provide the establishment of trust funds to operate the apprenticeship program.

No attempt is made in this publication to relate the historic development of apprenticeship. The material is confined to essentials needed by counselors and advisors to direct potential craftsmen toward careers in the skilled trades. Also, the information should prove helpful to teachers and school advisors in planning courses and stressing the value to students of good preparation in basic subjects related to the trades, such as mathematics and science.

No two apprenticeship programs are identical, for each is tailored to meet the needs of its craft and existing local conditions. All programs in the construction industry in Montana conform to the standards recommended in national trades apprenticeship programs and to applicable State and Federal laws, and are registered with the Bureau of Apprenticeship and Training, United States Department of Labor. Any departures from the recommended national trade standards are made only to strengthen the programs and enhance the skills of the apprentice.

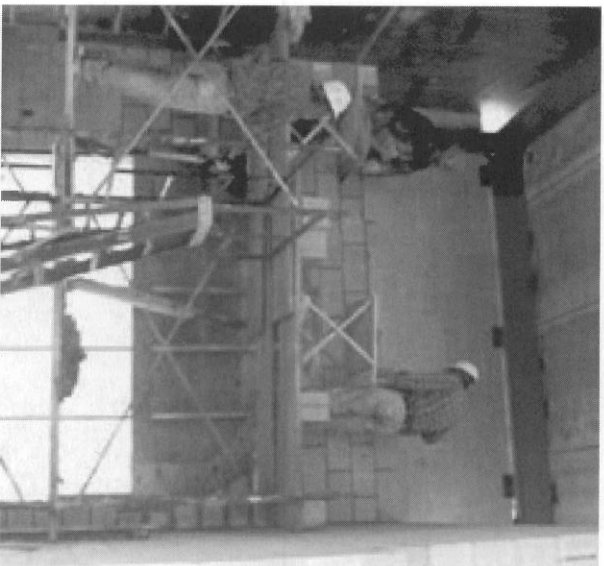
We have confidence in the union construction industry, in our young people, and in their advisors, and trust that this basic information will prove helpful.

Advantages of Apprenticeship

Admittedly, a white collar bias exists in the minds of many people. Too often college education is emphasized to the point of belief that anything less is second-rate. This belief is wrong.

Apprenticeship in the skilled trades of the Construction Industry should be considered as advanced education. It is "the other four year degree." As such, it offers young people marked advantages:

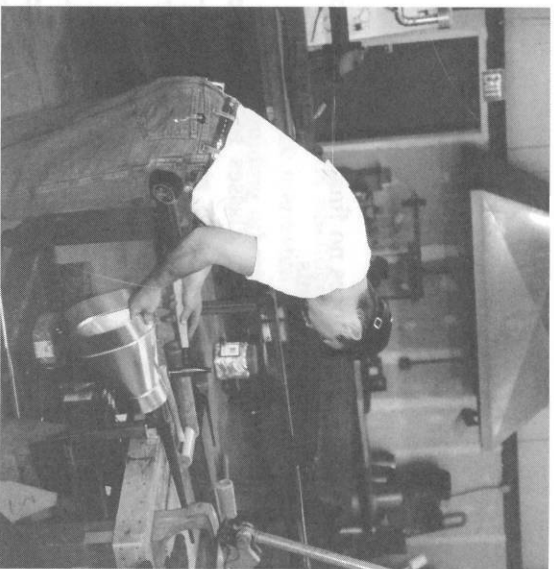
- Apprentices are paid good wages while learning the skills of the trade and are not cheap labor. (See Appendix A.)
- The rate of pay increases with knowledge and ability.
- Apprenticeship offers opportunity for continued wages and job security upon completion of training.
- The apprentice becomes self reliant at a comparatively early age.



Bricklayers working on scaffold

- The apprentice imposes no financial burden to his or her parents.
- Apprenticeship provides classes to learn the theory of their trade and those techniques which cannot be taught economically at the job site.
- Their instructors are capable, practical journeymen selected for the industry by the Joint Apprenticeship and Training Committee.
- The apprentice learns to produce with modern tools and machines, and will gain experience under the most current methods.
- The apprentice learns to properly use tools or install modern industrial materials worth thousands of dollars during his or her apprenticeship. This is one of the many reasons why a competent journeyman cannot be developed in a classroom.
- The apprentice works under the direction of a competent journeyman at all times to receive close personal attention.
- Apprentice progress, as reflected in work reports and class grades, is constantly reviewed by the Joint Apprenticeship Committee to ensure mastery of the subject material and the skills.
- An apprentice is monitored during his or her indenture by the Joint Apprenticeship Committee to insure that he or she has an opportunity to develop all the skills of the craft and become a fully qualified journeyman.
- As journeymen in the construction industry,

Sheet metal worker apprentice



graduates of an apprenticeship program will be engaged in an honorable and respected occupation with opportunities for advancement limited only by their own ability and ambition.

- Statistics show that nearly 75% of apprenticeship program graduates stay in Montana and in the career for which they have trained. (See Appendix A.)

- With experience and study, the apprentice can become a foreman, estimator, or superintendent. Many of the owners and employers in the construction industry started their careers as apprentices.

Plumber apprentice



Operating engineer apprentice



Operating engineer apprentice

How an Apprenticeship Program Operates

Funding

The program for training and developing a skilled craftsman (a journeyman or journeyperson) is provided for in the Collective Bargaining Agreement (contract) between the contractors and unions in the several divisions of the construction industry. That contract may also provide for the use of the Joint Apprenticeship and Training Committee to cover expenses relating to the operation of the program. The contribution to the fund, ranging from five to twenty-five cents per hour, is made by the employers on the basis of the hours worked by the union journeymen.

Joint Apprenticeship and Training Committee (JATC)

The Joint Apprenticeship and Training Committee, which is composed equally of



contractors and union representatives, develops the standards of apprenticeship which define the processes of the trade, the number of hours to be spent in related classroom instruction and the number of "On The Job" working hours. These Standards are registered with the United States Department of Labor.

Term of Apprenticeship

The term of apprenticeship for the construction trades will range from three to five years, depending on the specific trade. Wages paid the apprentices are usually a percentage of the journeyman rate, customarily starting at 50 percent or higher, and increasing progressively every 1,000 or so hours through completion of their apprenticeship at which time the journeyman rate will be received.

Related Classroom Instruction

Apprentices must attend classes of related technical instruction, supplementing their training on the job, to give them a comprehensive understanding of the theoretical aspects of their work.

This related technical instruction is a fundamental feature of apprenticeship. Classes may be conducted on weekends, during the off-season months, or in the evenings.

In class, apprentices learn the basic theories of their trade; on the job, under the direction and supervision of a skilled journeyman, they learn its practice.

Pipeline training with the Laborers

Fees or Charges

Some trades will require manuals, codes, or texts which are used constantly by journeymen. A nominal charge may be made for such essentials. Some crafts may require minimal tuition fees for use of the training facilities.

Indenture

Each apprentice signs an apprenticeship agreement with the Joint Apprenticeship and Training Committee. If the apprentice is a minor, the parent or guardian must also sign the Agreement. This Agreement is then registered with the Apprenticeship and Training Program, Montana Department of Labor and Industry, which awards Certificates of Completion to apprentices upon successful completion of their training.

Training Coordinators

Frequently, the Joint Apprenticeship and the Training Committee employ a person to act as a coordinator to oversee the operations of the program and to supervise the training of apprentices. The Coordinator keeps records of work progress and acts for the committee between meetings. Such coordinators have proven to be of great value to the effectiveness of the apprenticeship program and to the industry.

Pipefitter working in close quarters.



An Operating Engineers' classroom

Benefits Provided Apprentices

Veteran's Benefits

Apprentices who are veterans and enrolled in registered and certified programs (construction industry programs in Montana) are eligible for Veterans Administration training allowances under Public Law 92-540.

Earnings and Fringe Benefits

Wages of the apprentice vary from craft to craft; no attempt is made to state each craft's beginning wages as new contract provisions are negotiated and become effective periodically.

The beginning wage of an apprentice is a percentage of the rate paid a journeyman.

As his or her training and work experience proceed, the apprentice receives pay increases. Such increases usually become effective after 1,000 or so hours of employment, and progress upward to the journeyman rate.

A variety of benefits accrue to union members under the Collective Bargaining Agreement. These benefits provide health and life insurance, medical care, pensions, etc. and are called "Fringe Benefits". These benefits are paid out of a trust fund to which the employer contributes on an hourly basis.

Unemployment Benefits

Apprentices who may become unemployed due to a shortage of work in the respective trade may be eligible for unemployment compensation benefits during their period of unemployment.

Discrimination

The sponsors of this booklet are dedicated to the ideals of Equal Employment Opportunity

with selections made on the basis of qualifications alone without regard to race, creed, color,

national origin, sex, or occupationally irrelevant physical requirements in accordance with objective standards which permit review after full and fair opportunity for application. Furthermore, the sponsors are party to affirmative action through the participation of an outreach program covering the state of Montana.

Probationary Period

A probationary period varying from a few weeks to a few months, is included as a provision in all standards of apprenticeship. During the probationary period, the agreement between the apprentice and the Committee may be terminated by either party without stated cause. The purpose of the probationary period is to afford both the apprentice and the Committee an opportunity to correct obvious mistakes and misunderstandings with a minimum of harm to either party.

Union Membership

Each trade union governs its own admission of apprentices to membership. Generally, apprentices become members at the end of the probationary period and then gain the benefits of union membership.

Tutoring

Refresher Courses may be arranged through the Apprentice Outreach Program for the Apprentice Applicant who needs to upgrade Math, English, or other academic skills, or who require a General Equivalency Diploma.

Tests Used for Qualifying Apprentices

Qualifying Tests

Some Joint Apprenticeship and Training Committees require that the apprentice applicant pass a test before being considered for induction. Any test used by a JATC must have been validated for relevance to the industry.

Applicants who have received average or better grades in high school algebra, geometry and physical sciences should experience no difficulty in passing the qualifying tests. Applicants who do not have such a high school background may need tutoring or special preparation. Since the Joint Apprenticeship and Training Committee places considerable emphasis on the qualifying test grades, the applicant is well advised to prepare for the test by a thorough review of high school mathematics.

The Selection Interview

Up to the point of the selection interview, the applicant process determines only that the basic qualifications are met by the applicant. At the selection interview, the applicant meets personally with the members of the Joint Apprenticeship and Training Committee.

The Committee has before it the individual's application with supporting documents, the qualifying test scores, and the results of the aptitude test, if used. The personal interview is designed to gather other information which indicates whether the applicant can and will successfully complete the apprenticeship.

The Joint Apprenticeship and Training Committee is composed of people who are representatives of both the contractors who will employ apprentices, and of the journeymen who will teach and work with them on the job.

During the course of the interview, which is conducted on an informal and "get acquainted" basis, the Committee evaluates the applicant in these respects:

- Attitudes - toward oneself, fellow workers, supervisors, and society in general.
- Appearance - reflecting their physical condition, personal habits and handi-caps.
- Concept of the trade - work experience and familiarity with the trade; school subjects and grades; willingness to work and study.
- Personal traits - judgment, sense of responsibility, ambition, interests.

The applicant should use the interview to satisfy himself that he will be accorded fair and just treatment throughout the period of his apprenticeship, as provided for by the program Standards and included in the Apprenticeship Agreement.



Operating engineer in backhoe

How to Apply

The jointly sponsored labor and management apprenticeship programs are only interested in those men and women who have a willingness and desire to learn their trade. You, the potential applicant, should read the information provided in this book to decide if a future in the building and construction industry is for you. If the answer is 'Yes', you should take the following steps:

CONTACT the trade of your choice to learn the qualifications, requirements, and make certain that you meet all the requirements before completing an application.

Employment is at times hazardous in these trades. Consider your own ability to perform the work physically, as well as working at great heights. Exposure to extremes in weather should also be considered by you.

COMPLETE the Apprenticeship application of the trade you wish to learn. Each trade has an office where you can pick up applications, or, will mail them to you. Applications for some programs are available only at specified times of the year and those times will be posted or published.

ATTACH any required documents as specified. The following documents may or may not be required by the Joint Apprenticeship and Training Committee of the trade of your choice:

- Birth Certificate or proof of birth document
- DD-214 (Discharge Papers from Active Duty)
- High School Diploma or GED

- High School Transcript
- Letters from former employers (related work experience)

The above information may be helpful to those who interview you. You also want to appear impressive on the application before you are interviewed.

RETURN your application by the specified date.

WAIT for notification by the Joint Apprenticeship and Training committee of date, time, and place you should appear for interview. This is generally done by registered mail.

You will not be eligible to be interviewed until all requirements are met.

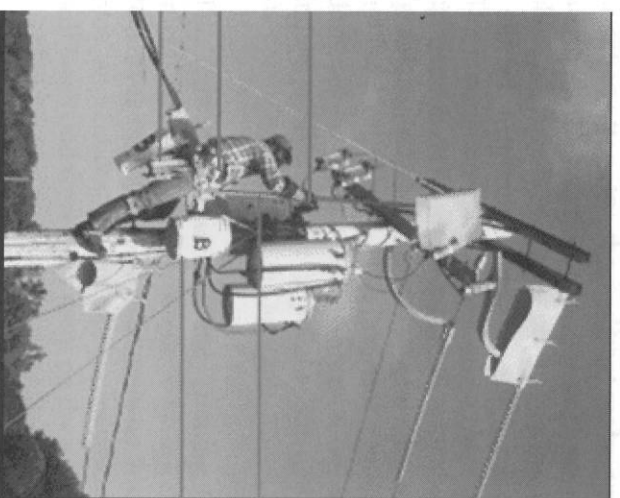
Other Useful Information

Transportation to and from interview must be provided by the applicant.

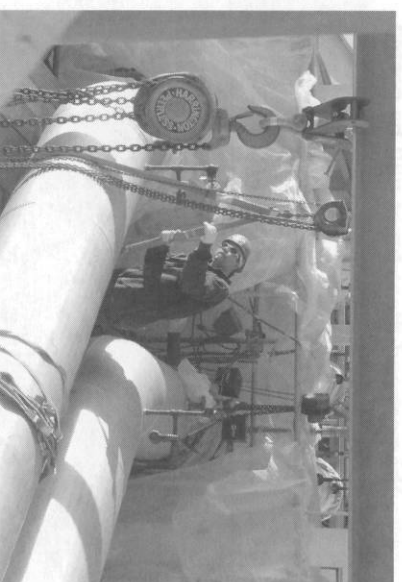
Wages are not paid to apprentices during the trade related instruction (classroom) period. Wages are paid by contractors during on-the-job training, the amount determined by the journeyworker rate and the individual apprentice's progress in the program. Apprentices, if eligible, can receive Veteran's Administration Assistance.

Apprenticeship Programs By Craft

Automotive Technician	10	Lineman	24
Boilermaker	12	Machinist—Automotive Machinist	26
Bricklayer	14	Millwright	28
Carpenter	16	Operating Engineer	30
Construction Craft Laborer	18	Piledriver	32
Electrician—Inside Wireman	20	Plumber-Pipefitter	34
Ironworker	22	Sheet Metal Worker	36



Lineman



Pipefitter

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Automotive Technician

Nature of Work

The Auto Technician is a refined mechanic, able to work on and repair a large variety of cars and trucks. Mechanical skills play a major role in this profession. Tune-ups on many of today's vehicles demand knowledge of computer controlled systems. Technical equipment attached to the vehicle is the only way many problems can be found in today's computerized systems. Anti-lock Braking Systems is another advancement in today's automotive technology. Carburetors have been replaced with fuel injection, and ignition systems are now computers. Rear-end service, transmissions, wheel bearings, drive lines, removing and replacing engine parts all require knowledge. Valve jobs and engine rebuilding may be required in many shops. Ability to service a wide range of vehicles may include some that are twenty-five years or even older. You are Required to supply your own tools.



Entrance Requirements

Age: Minimum of 18 years; may be required to furnish proof of age and proof of citizenship.

Health: May include trouble shooting in adverse weather conditions. Physical strength to work standing and bending for eight hours. Lifting in awkward positions may happen.

Aptitude: Mechanical knowledge, ability to make precise decisions, remain calm under pressure and relate to people.

Education: High School graduate, technical school or vo-tech a big plus. Reading and writing a must. Knowledge of catalogs helpful. Must understand wiring and electronics.

Terms of Apprenticeship

Length of training: Four years (8000 hours).
Related classroom training: 144 hours per year.
Probationary period: First six months.

Credit for previous experience: May be granted depending on advancement abilities and previous schooling, previous employment.

Working Conditions

Auto Technician work is highly active and many times strenuous. Bending and leaning for a long period of time are common place. Much of the work is performed leaning over a fender. Some work may require the technician to lay on his/her back, under the vehicle or in a cramped position under a dash. Technicians are exposed to dirt, oils, brake dust and dripping water during winter. Work is year round, forty-hour weeks, with paid vacation and some holidays off.

Wages

Apprentice wages begin at 50% of Journeyman scale with a raise every 1000 hours of completed time. Work sheets of on the job work must be turned in every month.

Special Characteristics

Knowledge and abilities: Attention to detail, accuracy, and manual dexterity.

Interests: Cars in general, auto restoration, auto racing.

Temperament: Stability, dependability, ability to work and train others, read and study on your own and persistence.

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Program Locations and Additional Information Sources

Physical capacities: Medium to heavy work, physical stamina and ability, frequent leaning, climbing, stooping, crouching, reaching, pushing and pulling.

Tools Used

Hand tools
Air tools
Micrometers
Service manuals
Analyzers
Test meters
Jacks, stands, hoist
Conversion charts

Suggested High School Subjects

Mathematics
English
Auto shop
Welding

Electronics
Reading
General shop

Potential Advancements

Apprentice: Each 1000 hours (approximately 6 months) for advancement and pay raises.

Journeyman: Service writer, shop superintendent, adjuster, or open own shop.

Employment Outlook

There is a continuing need for Apprentices to replace retiring Journeyman and those not willing to upgrade themselves to current technology.

How to Apply

Complete appropriate applications with prospective employers or contact local JATC representative.

Completion Procedures

Upon successful completion of the apprenticeship, the Montana Department of Labor & Industry, Apprenticeship and Training Program will present the registered apprenticeship with a Certificate of Completion.

BOILERMAKER

Nature of Work

Today's field construction boilermaker is involved in more than just the construction of boilers. Boilermakers are a vital part of construction project teams that erect pressure vessel assemblies and fabricate metal plate. A boilermaker may be involved in the installation of a giant superheater section in a large utility boiler, the erection of a 750,000-gallon water storage tank, the placement of a nuclear power plant reactor dome, or the construction of components on a hydroelectric power station.

Entrance Requirements

Age: Minimum of 18 years; will be required to furnish birth certificate.

Health: Physical strength to work standing and bending for eight hours. Ability to work at heights and under adverse conditions.

Aptitude: Mechanical knowledge, ability to remain calm under pressure and work well with people.

Education: High school diploma or equivalent (GED).

Terms of Apprenticeship

Length of training: Four years (6,000 hours).

Related classroom training: 144 hours per year, some self-study lessons and on-the-job modules.

Probationary period: 2,000 hours

Credit for previous experience: None

Working Conditions

Field construction work is by nature an outside

job which means exposure to all types of weather conditions, including extreme heat and cold. When the project is completed, your job is ended. You may have to travel the territory of the local lodge and live away from home for long periods of time.

Wages

Apprentice wages begin at 70% of Journeyman scale with a raise every 1000 hours of completed time. Work sheets of on the job work must be turned in every month.

Special Characteristics

Knowledge and abilities: Attention to detail, accuracy, technical skill, and manual dexterity.

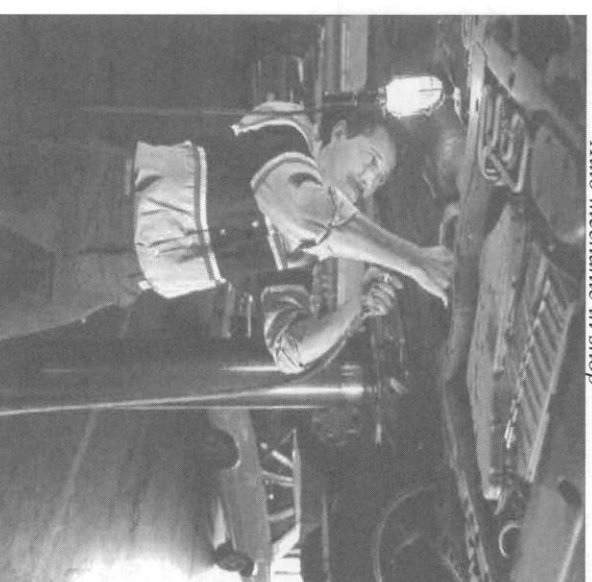
Interests: Welding, working with metal, working with the hands.

Temperament: Stability, dependable, ability to work as part of a team, to study independently.

Physical capacities: Medium to heavy work, physical stamina and ability, frequent leaning, climbing, stooping, crouching, reaching, pushing and pulling.

Tools Used

Hand tools
Air tools
Power tools
Hydraulic tools
Welding & burning tools
Cranes
Blueprints



Auto mechanic in shop

Suggested High School Subjects

Mathematics
Welding
General shop
Reading

Potential Advancements

Apprentice: Each 1000 hours (approximately 6 months) for advancement and pay raises.
Journeyman: Foreman, superintendent or owner of company.

Employment Outlook

The well-documented shortage of journey-level construction workers creates opportunities for new entrants into the field.

How to Apply

Applications are available at the local Boilermakers Union offices on the first Wednesday of each month between 1:00 and 5:00 pm.

Completion Procedures

Upon successful completion of the apprenticeship, the Montana Department of Labor & Industry, Apprenticeship and Training Program will present the registered apprenticeship with a Certificate of Completion.

Program Locations and Additional Information Sources

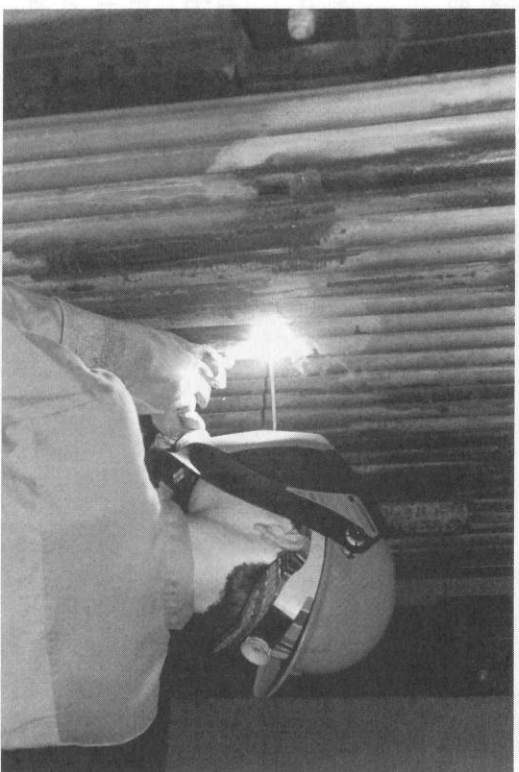
International Brotherhood of Boilermakers
Local Lodge #11
104 W Main
East Helena MT 59635
Phone: 406-227-8757

Western States Apprenticeship
PO BOX 1612
Page, AZ 86040
Phone: 928-645-0270

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreapprenticeship.mt.gov

International Brotherhood of Boilermakers,
Iron Ship Builders, Blacksmiths, Forgers,
and Helpers.

www.boilermakers.org



Boilermaker apprentice

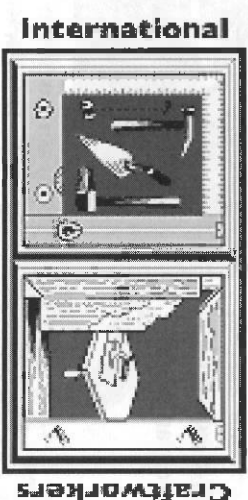
BRICKLAYER

Nature of Work

The Bricklayer builds walls, fireplaces, chimneys, arches, columns, colonnades and other structures using brick, concrete and cinder block, stone masonry, structural tile, pre-cast stone, and concrete panels. The Bricklayer reads blueprints and plans, estimates costs of projects, and works on scaffolds. The work is almost entirely outdoors. The Bricklayer cuts brick, block, stone, or tile to fit specific spaces using hand and machine tools; the Bricklayer mixes mortar using specified ingredients to meet particular color or other requirements. The Bricklayer works to precision measurements and rigid specifications.

Working Conditions

Bricklaying is active and sometimes strenuous work. Scooping, lifting, reaching, banding, and standing for long periods is required to do this job. Much of the work is outdoors and in all kinds of weather. Work is often performed on scaffolding high off the ground, or in cramped quarters. Hazards of the trade include the danger of falls from scaffolding or being struck by falling materials. Exposed to dirt, dust and dampness. Generally a forty-hour week. Work is seasonal in nature.



Entrance Requirements

Age: Minimum 18 years – May be required to furnish proof of age.
Health: Must be able to work in varying weather and temperature situations. Must have physical health and strength to work standing for an eight hour day.
Aptitude: Have an interest in manual labor and outdoor physical activity.
Education: Furnish certificates or transcripts of high school graduation or equivalent.

Term of Apprenticeship

Length of training: Three years (6,000 hours).
Related Classroom instruction: 144 hours per year.
Probationary period: First 500 hours
Credit for previous experience: May be granted after being properly documented (letters from previous employers and transcripts of related instruction) and/or after evaluation by apprenticeship sponsor.

Wages

Apprentices are paid a percentage of journeyman hourly wage, with graduated percentage increases according to number of hours served during employment with signatory contractors. Apprentices are also credited hours for Training, and Union Meeting attendance. Evaluations by The Apprenticeship Committee are also a factor in determining progress to Journeyman Status. Benefits package is paid equal to the Journeyman package throughout training period.

Tools Used

Trowels	Plumb bobs
Masonry Saws	Jointers
Chisels	Levels
Gauge lines	Tuck pointers
Other hand tools	

Suggested High School Subjects

Mathematics	General shop
Mechanical drawing	Welding
Basic communication	Blueprint reading

Special Characteristics

Knowledge and abilities: attention to detail, accuracy, manual dexterity, eye-hand coordination.
Interests: In working with hands in mechanic operations.
Temperament: stability, dependability, ability to work with others, persistence.
Physical capacities: Medium to heavy work, physical stamina and agility, frequent climbing, stooping, crouching, reaching, pushing, and pulling.

Potential Advancements

Journeyman:

Can become foreman, superintendents, contractors, and employers.

Employment Outlook

Continuing growth in residential and business construction creates continuing opportunities for employment. Inquire with program sponsors for opening information.

How to Apply

Complete appropriate applications and interview procedures as required by program sponsors and submit resume.

Completion Procedures

Upon successful completion of the apprenticeship, the Montana Department of Labor & Industry, Apprenticeship and Training Program will present the registered apprentice with a Certificate of Completion.



Program Location and Additional Information Sources

Bricklayers and Allied Craftworkers
Local 3 W.A./I.D./M.T.
Montana Office IATC
P.O. Box 63
Ramsey, MT 59748

Marlin Overton, Field Agent
PO Box 63
Ramsey MT 59748
Cell: 406-544-3027
Fax: 406-782-2579
Email: mthac1953@gmail.com
David Frangoine, Apprenticeship Coordinator
509-290-2644

Spokane Office
3923 E. Main
Spokane, WA 99202
Phone: 509-327-2774
Fax: 509-327-6451

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreapprenticeship.mt.gov

CARPENTER

Nature of Work

The carpenter constructs, remodels, alters, and repairs structures of wood in combination with brick, block, cement, or metals. The carpenter works with wood and wood products including plywood, fiberboard, Masonite, pressed wood, plastic and certain metals. The carpenter builds concrete forms, chutes, and platforms. The carpenter lays out structural units, builds small and large wood and combination buildings or works in combination with bricklayers, masons, ironworkers, and other craft workers on construction, altering or remodeling of small and large residential, commercial and industrial buildings. The carpenter may specialize in segments of the trade such as form builder, bridge builder, finish carpenter, estimator, etc. The carpenter's work is physical in nature, usually outside and requires good health. A carpenter must also be willing to travel.



Entrance Requirements

Age: Minimum 18 years – Must furnish proof of age with application.

Education: Furnish certificate or transcripts of high school graduation or equivalent with application.

Interview Process: Applicants are required to attend a Rate & Rank Session (approximately 6 hours). Those who successfully complete it by scoring 70% or higher are then qualified to be placed on the Eligibility List. Applicants who qualify for Direct Entry are not required to attend a Rate & Rank Session. Inquire with Program Sponsor about these qualifications

Health: Good health – Fit to perform the heavy work of the occupation; must be willing to furnish a doctor's certificate of examination if asked.

Term of Apprenticeship

Length of training: Four years or 5,200-8,000 hours of On The Job Training.

Related classroom instruction: 160 hours per year.

Credit for previous experience: May be granted by program sponsor after being properly documented (letters from previous employers and transcripts of related instruction) and/or after evaluation by program sponsor.

Working Conditions

The apprentice carpenter works both indoors and outdoors, and in all kinds of weather. Construction areas are frequently muddy, dusty, dirty, and noisy. The apprentice must lift and carry building materials, climb ladders and scaffolding, stand, stoop, and often work in cramped or awkward positions. Generally work a forty-hour week. Work is seasonal in nature; expect nine months of regular work per year when the construction market is good.

Wages

Apprentices are paid a percentage of the Journey-level hourly wage rate with periodic increases (every six months) based on satisfactory performance on the job and in related instruction. Inquire with individual program sponsors for Journey-level wage rates.

Special Characteristics

Knowledge and abilities: Accuracy, ability to plan work sequence, mechanical aptitude, form perception, and manual dexterity.

Interests: Working with hand and power tools and various materials, must want to make the trade his/her livelihood.

Temperament: Dependability; ability to work alone or with others.

Tools Used

Plastic welding
Acetylene welding torch
Electric welding
Lumber mill equipment
Surveyor's instruments
Power tools
Hand tools

Suggested High School Subjects

Basic mathematics
Blueprint reading
Trigonometry
Basic communication
Architectural drawing
Plane geometry
Algebra
Shop courses

Potential Advancements

Apprentice: May be evaluated each six months, but at least once a year, (or 1,000 hours) for increases in wages and advancement in training.

Journey-level: Can become foreman, estimators, superintendents, employers, or contractors.

Employment Outlook

With increasing number of building projects and the natural turnover of carpenters, there is need for new apprentices each year.

How to Apply

Secure from program sponsors and complete, an application. Pass entrance and oral interviews as necessary. Inquire with individual

program sponsors for opening information and more specific entry requirements.

Completion Procedure

Upon successful completion of the apprenticeship program, and recommendation of the program sponsor, registered apprentices are awarded a Certificate of Completion by the Montana Department of Labor & Industry, Apprenticeship and Training Program, and the United Brotherhood of Carpenters.

Program Locations and Additional Information Sources

Montana Carpenter Joint Apprenticeship and Training Committee
780 Carter Drive
Helena MT 59601
Phone: 406-443-3255
www.montanacarpenters.com

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov

Youth Website:
www.exploreapprenticeship.mt.gov

United Brotherhood of Carpenters and Joiners of America
www.carpenters.org/apprenticeship

CONSTRUCTION CRAFT LABORER

Nature of Work

Today's construction laborer is a person of many talents, able to work on a variety of construction projects. Physical ability plays a major role in this profession. Laborer's work runs the gamut from pick and shovel to lasers. The ability to perform a variety of jobs on a single construction project is vital to success. Tasks may include: layout and grade setting, carpenter or mason tending, placing and finishing concrete, asbestos or lead abatement, hazardous waste cleanup, raking asphalt, installing guardrail and signs, building scaffolding, traffic control, Piping. The work is seasonal and may require travel.

Entrance Requirements

Age: Minimum age is 18 years.
Residency Requirement: Must be a resident of the State of Montana.

Health: Must be physically capable of performing the hard work of the trade.

Aptitude: Mechanical knowledge, ability to make precise decisions, remain calm under pressure and relate to people.

Term of Apprenticeship

Length of training: 4,000 hours
Related classroom instruction: 144 hours per year for three years.

Credit for previous experience: May be granted by program sponsor with proper documentation and/or evaluation of requisite skills.

Working Conditions

A laborer's work is highly active and very strenuous. Laborers work in all weather and under all conditions, from underground to high in the air. The work is seasonal and can be dangerous. Laborers are not only exposed to extremes in weather, but to physically dangerous jobs and hazardous wastes.

Wages

First 1,333 hours = 75% of journeyman scale
Second 1,333 hours = 85%
Final 1,334 hours = 90%

Special Characteristics

Knowledge and abilities: Attention to detail and manual dexterity.

Interests: Mechanical and physical.

Temperament: Dependability, perseverance, ability to follow and carry out instructions.

Physical capacities: Ability to perform physically demanding tasks in extreme temperatures.

Tools Used

Air tools (jack hammers, pavement breakers, sandblasters)

Hand tools (hammers, shovels, picks, etc.)

Grade setting (levels, engineer's rods, lasers)

Scaffolding, cutting torch, chainsaws, compacted equipment, rock drills, fork lifts, air compressors, blue prints



ELECTRICIAN – INSIDE WIREMAN

How to Apply

Contact the Laborers' Local 1686 office or the Training Program. You will receive a card to mail back to formally request an application. The program accepts applications year around.

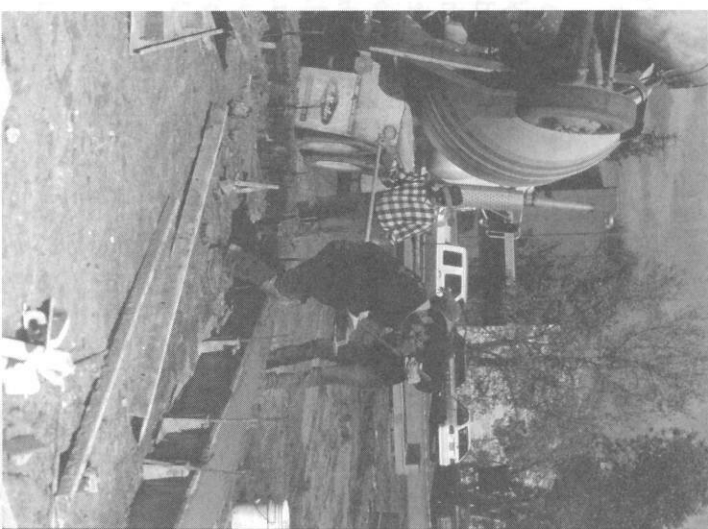
Program Locations and Additional Information Sources

Laborers' Local #1686
PO Box 1173
Helena MT 59624
Phone: 406-442-1441
Toll Free: (800) 988-1686

Laborers' AGC Training Program for Montana
3100 Horseshoe Bend Rd.
Helena MT 59602
Phone: 406-442-9964
Toll Free: (800) 408-9766
Email: trainingcenter@montanalaborers.com
Website: montanalaborerstrusts.org

Laborers International Union of North America
www.laborers.org
www.laborers-agc.org

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreapprenticeship.mt.gov



Laborers pouring curb

Suggested High School Subjects

Mathematics
English
Reading
General shop
Mechanical drawing

Potential Advancements

Apprentice: Evaluation and promotion to next apprentice level each 1,334 hours of work experience and 144 hours of classroom instruction.

Journeyman: May become foreman, general superintendent, company owner, building inspector. With college credit for apprenticeship completion, Journeyworkers may become an engineer or architect. May progress within the union structure to become agent or business manager.

Employment Outlook

Laborers are first on the job and last off the job. As trade technology advances, laborers with exceptional skills will be in demand. The current shortage of construction workers will ensure steady employment.

Nature of Work

The electrician is a licensed craftsman. The electrician plans, lays out, and installs, alters or repairs electrical wiring, fixtures, apparatus and specifications for wiring and equipment to be installed, serviced or altered; installs, changes or repairs electrical wiring consistent with national and state electrical codes. Measures, cuts, bends and installs electrical conduits, wiring, fixtures apparatus and controls. Uses hand tools, special tools and machines to cut, bend, install connections on conduit and thread electrical cable wiring through it. May work under or supervise others.

Entrance Requirements

Age: Minimum of 18 years –
May be required to furnish proof of age.
Health: Good health – Fit to perform work of the occupation; must be willing to furnish a doctor's certificate of examination.
Aptitude: Score a qualifying score on an Industry Aptitude Test provided by a JATC Training Director.
Education: Furnish certificates or transcripts of high school graduation with Algebra—1 one full year creditor and/or G.E.D.

Residency: Must be a Montana resident.

Term of Apprenticeship

Length of training:
• Inside Wireman-Five years (8000 hours)
• Residential-Three years (4,800 hours)
• Tele-communications-Three years (4,800 hours)

Related classroom instruction: Electrical

JATC requires a minimum of 196 hours per year.

Probationary period: Electrical JATC probationary period is the first 25% of program hours.

Credit for previous experience: May be granted after being properly documented (letters from previous employers and transcripts of related instruction) and/or after evaluation by apprenticeship sponsor.

Working Conditions

Electricians usually work in partly completed structures, but may be required to work outside or in cramped quarters. The work requires constant physical activity including lifting of moderate loads, climbing, crawling, pulling and reaching. Most of the work is not on activated electrical systems, but work may be required at times on energized circuits. Hazards include shock and burns, falling objects, and falls. Dirty at times. Usually employed in construction, remodeling or repairing homes, industrial and commercial buildings. Generally work a forty-hour week. Work is year round in nature, but can depend on construction in area.

Wages

Apprentices are paid a percentage of the journeyman hourly rate, with periodic increases based on hours worked, satisfactory performance on the job, and in related instruction. Contact individual program sponsors for current journeyman wage rates.

Special Characteristics

Knowledge and abilities: Ability to plan work sequence, mechanical and mathematical apti-



tude, manual and finger dexterity, form perception and color discrimination.

Interests: In electricity, working with hand and power tools, have an inquiring mind.

Temperament: Ability to work with others, stability, active.

Physical capacities: Physical agility, able to work on high places.

Tools Used

Screwdriver
Tester
Level
Hammer
Current edition of Code
Hacksaw
Pliers
Ruler
Electrician's knife

Suggested High School Subjects

Basic mathematics
Physics
Shop courses
Plane geometry
Trigonometry
Science
Algebra
Blueprint reading

Potential Advancement

Apprentice: Evaluated each six months (or 1,000 hours) for advances in wages and training.

Journeyman: Can become foremen, superintendents, estimators or contractors.

Employment Outlook

Work is available for qualified electricians. Contact program sponsors for information and openings.

How to Apply

All applications must be made in writing and

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mailed to the PO box in Helena. The Electrical JATC holds personal interviews twice a year with the Committee, usually in April and October. Applicants are rated and ranked by the Committee. If qualified, they take ranking applicants first for indenturing. When accepted, secure apprentice electrician's license from State Office of Occupational and Professional Licensing. Applicants are indentured on a year round basis. Classroom instruction is also on a year round basis for one week (38 hours), approximately every seven weeks at the training center in Helena. For entry to other electrical programs, contact individual program sponsors for information and job possibilities. Secure, complete, and submit application forms and transcript of credits, complete oral interviews as required. Take aptitude tests when required. When accepted, secure Apprentice Electrician's license from the State Office of Occupational and Professional Licensing.

Completion Procedure

Upon the successful completion of apprenticeship, the registered apprentice will receive a Certificate of Completion from the Montana Department of Labor and Industry's Bureau of Apprenticeship and Training recognizing him/her as a qualified journeyman. To receive a State license as an electrician, the apprentice must pass a written and performance test before the State Licensing Board.

Program Location and Additional Information Sources

Montana Electrical JATC
P.O. Box 4177
Helena MT 59604
Phone: 406-449-7173

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreapprenticeship.mt.gov

IRONWORKER

Nature of Work

Ironworkers perform tasks of four major types: Structural Steel Work with heavy hand and power tools, with cranes and hoists, with cables and pulleys; use pneumatic wrenches, welding and cutting equipment; hoist and fit prefabricated structural steel pieces together and bolt or weld them permanently in place; work underground, on the surface, high in the air. The work is dangerous, exacting and heavy.

Ornamental Iron In ornamental iron they work to precise measures with steel, stainless steel, bronze, brass and aluminum, making structures, panels, shape and frames. The work requires ingenuity, expert skill and judgment. Usually, structures are prefabricated, but skill and care is required fitting pieces to precise specifications.

Reinforcing Steel This consists of placing rebar and post tensioning cable in concrete slabs, poured in place concrete buildings and parking ramps.

Rigging and Machinery Moving Moves and installs heavy machinery for mills, generating and manufacturing plants. In machinery moving, safety, great ingenuity and skill are required to pick up, transport, and set down machines on prefabricated bases in various structures and locations.

Entrance Requirements

Age: 18 years – May be required to furnish proof of age.

Health: Applicants must be physically able to perform the required work. May be required to present a doctor's certificate of fitness.

Aptitude: Applicants must have a pronounced aptitude and interest in the craft.

Education: Must have a high school diploma or GED.

Term of Apprenticeship

Length of training: 6,000 hours.

Related classroom instruction: 204 hours per year for 3 years.

Probationary period: In some programs six months or 1000 hours with this time counted toward the total term of apprenticeship. The Ironworkers' JATC has a probationary period of 650 hours which does not count as part of the term of apprenticeship.

Credit for previous experience: May be granted after being properly documented and/or after evaluation by apprenticeship sponsor.

Working Conditions

Ironworkers work outdoors and frequently at great heights. Although ironworkers risk injury from falls, the use of safety devices such as hats, safety belts and scaffolding has reduced the frequency of accidents. Ironworkers are also subject to noise and vibrations from impacting and other operations. In most localities, demand is insufficient to keep local crews employed continuously, so ironworkers often travel considerably. Some of the work done by reinforcing ironworkers is extremely hard. Work is seasonal in nature, slowing up in the winter.

Wages

Apprentices are paid a percentage of the journeyman wage rate with increases every six months (or 1,000) hours based on satisfactory performance on the job and in related instruction.

Special Characteristics

Knowledge and abilities: Good judgment,

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safety consciousness, good spatial perception, form perception.

Temperament: Calmness, ability to perform under stress and when confronted with unexpected or critical risks, self-standard for precise attainment of set tolerances, limits and standards.

Physical capacities: Heavy work, climbing, stooping, kneeling, reaching, good sense of balance, ability to work in high places, muscular coordination and dexterity.

Tools Used

Welders Cutting torches
Pliers Levels
Hammers Square
Bars Rules
Wrenches Impact wrenches

Suggested High School Subjects

Mathematics Blueprint reading
Welding Basic Communication
Metal shop Mechanical drawing

Potential for Advancement

Apprentice: Evaluated each six months for advances in wage and training.

Journeyman: Can become foremen, superintendents, contractors.

Employment Outlook

Continuing commercial and industrial construction in the area indicate ample opportunity for employment. Work is seasonal, dependent on weather. Inquire with program sponsors for opening information.

How to Apply

The Ironworkers JATC requires that applicants complete application and furnish required statements; have an oral interview with the Joint Committee or representative. When an opening for apprenticeship occurs, the applicant with the highest total grade will be given

first preference, then the second highest and so forth. Applications will be considered during the open season as announced.

Completion Procedure

Upon the successful completion of apprenticeship, the registered apprentice will receive a certificate of completion from the Montana Department of Labor and Industry's Bureau of Apprenticeship and Training in recognition as a qualified journeyman.

Program Locations and Additional Information Sources

Ironworkers Apprenticeship Training Center
16610 E Euclid
Spokane WA 99216
509-922-3577

Ironworkers Local #14 Union Hall
201 N Russell
Missoula MT 59801
406-829-9051

Ironworkers Local 732 Apprenticeship Training Center
2 Oak Ave
East Helena MT 59635
406-560-1258 or 208-705-4766

International Association of Bridge, Structural, and Ornamental Ironworkers
www.ironworkers.org/becoming

Montana Department of Labor & Industry Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998

Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreapprenticeship.mt.gov

LINEMAN (MOUNTAIN STATES LINE CONSTRUCTORS)

Nature of Work

Power linemen construct and maintain network power lines which transmit high voltage electricity from generating plants to substations and to consumers. They install, repair and maintain cross-country high voltage systems. They transport and set poles and towers, replace and splice broken wires and cables, install and replace insulators, transformers, cross arms, and guy wires. They use special equipment to work on "live lines" without interrupting service.

Entrance Requirements

Age: Minimum age 18 years.
Health: Health and physique to perform the duties of the trade; record of physical examination is required on request.

Education: High School Graduation or equivalent (GED). Submit to Apprenticeship Committee a transcript of high school courses and grades and/or GED results.

Term of Apprenticeship

Length of training: At least 7,000 hours over a minimum period of 3 1/2 years.

Related classroom instruction: 576 hours or 144 hours per year; conducted in a classroom, home study and training yards.

Probationary period: First 1750 hours.

Credit for previous experience: Joint Apprenticeship Committee may grant credit. Documentation of actual work experience as a lineman or line apprentice is required.

Working Conditions

All regular lineman work is done outside, some at considerable height above the ground. Much preliminary work is done at the job site, which is usually in the open country, often in remote areas. Linemen work by rigid safety standards, on live high voltage lines. There is a possibility of electrical shock, cuts, burns and falls. The lineman program covers a five-state area - Colorado, Idaho, Montana, Utah and Wyoming. The apprentice may be transferred throughout this district with short notice. Generally work is a forty-hour week. Seasonal in nature, periodic layoffs are a possibility.

Wages

Apprentices are paid a percentage of the journeyman wage scale beginning at 65% with the advancement schedule for satisfactory work:

1st 1000 hours -	65%
2nd 1000 hours -	75%
3rd 1000 hours -	78%
4th 1000 hours -	81%
5th 1000 hours -	84%
6th 1000 hours -	87%
7th 1000 hours -	90%

Current journeyman wage rates range upward from \$34.00 per hour.

Special Characteristics

Knowledge and abilities: Mechanical and mathematical aptitude, ability to plan work sequence and organize work program, form perception, color discrimination, manual dexterity and muscular coordination.

Interests: Working with hand/power tools, and

electricity; mechanically inclined.

Temperament: Stable, dependable, cooperative, like activity, well-controlled.

Physical capacities: Physical agility, coordination, like to work in high places.

Tools Used

All lineman's common hand tools; climbing spikes and belts; heavily insulated tools, hard hats, "hot sticks", safety slings, safety belts, ropes and pulleys.

Note: Powerline apprentices must furnish themselves with personal tools and a laptop computer.

Suggested High School Subjects

Mathematics
Basic communication
Vocational shop courses
Mechanical drawing
Construction & electric
Blueprint reading

Potential for Advancement

Apprentice: Evaluated each six months for advancement in wages and training.

Journeyman: Become foremen, job superintendents, labor leaders, power line estimators, contractors.

Employment Outlook

With increasing demands for electrical service and the natural turnover of linemen, there is need for new apprentices each year. Check with program sponsors for current openings.

How to Apply

You can apply on-line at www.msleat.org

After the minimum requirements are met, you will have a personal, oral interview.

Each applicant is ranked after the interview and

slotted into an existing pool. Applicants are sent out by top score on down and may be placed anywhere. You are placed in the pool for a period of two years. During which time, you may be indentured. If you are not indentured during the two-year period, you will be removed from the pool.

Applications are usually accepted year round, and interviews are scheduled periodically throughout the year.

Completion Procedure

Upon successful completion of the apprenticeship, the Joint Apprenticeship Committee recommends to the Bureau of Apprenticeship and Training and also the National Joint Apprenticeship and Training Committee for the Electrical Industry, that a certificate of completion of apprenticeship be issued in recognition as a qualified journeyman. No recommendation will be made until the apprentice has met all requirements for completion. The final exam consists of a written portion and a practical portion.

Program Locations and Additional Information Sources

Mountain States Line Constructors Joint Apprenticeship Training Committee
7001 South 900 East, #240
Midvale UT 84047
Phone: 801-562-2929
www.msleat.org

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998

Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreapprenticeship.mt.gov

MACHINIST-AUTOMOTIVE MACHINIST

Nature of Work

A machinist uses other machines to repair parts, or make parts from a blueprint or drawing. Shafts, threaded parts, bushings, packing sleeves, impellers, aluminum and cast housing are just a few of the parts to be repaired. Machines used in this operation include lathes, milling machines, shapers, surface grinders, boring mills, boring bars, and honing machines. Machinists use precision hand tools such as micrometers, height gauges, calipers and thread gauges.

Term of Apprenticeship

Length of training: Four years (8000) hours.
Related classroom training: 144 hours per year.

Probationary period: First six months.

Credit for previous experience: May be granted depending on advancement abilities and previous schooling. Credit from previous employer.

Working Conditions

Mass production of parts can be monotonous. Burns from chips from lathe, dust and carbon from grinding. Dirty clothes from cleaning parts. Keeping work area clean to prevent injuries. Some allergic to solvents and other cleaning agents. Hard toe shoes mandatory, some clothing supplied by employer. Year round work, forty-hour week with paid vacations and some holidays off.

Wages

Apprentices wages begin at 50% of Journeyman scale with a raise every 1000 hours of completed time. Work sheets of On-The-Job work must be turned in every month.

Special Characteristics

Knowledge and abilities: Attention to detail, accuracy, and manual dexterity, coordination.
Interests: Enjoy a masterpiece from a completed job.

Education: High School graduate, Technical School or Vo-Tech. Reading, writing and blueprints. Catalogs and manufacturers specifications a must.



Certificate of Completion.

Physical capacities: Medium to heavy work, physical stamina and agility, frequent lifting, bending, pushing and pulling.

Program Locations and Additional Information Sources

Tools Used

Hand tools
Air tools
Drills
Calipers
Taps & dies
Reamers
Punches & Stamps
Micrometers

Suggested High School Subjects

Mathematics
Auto shop
Geometry
Machine shop
English & reading
Welding

Potential for Advancement

Apprentice: Each 1000 hours (approximately 6 months) for advancement and pay raises.

Journeyman: Shop Foreman, Tool and Die Maker, Owner.

Employment Outlook

Continuing need for Apprentices to replace retiring Machinists. During economic slow down, high demand for rebuilt parts.

How to Apply

Complete appropriate applications with prospective employers or contact local JATC representative.

Completion Procedures

Upon successful completion of the apprenticeship, the Montana Department of Labor and Industry's Bureau of Apprenticeship and Training will present the registered apprentice with a

MILLWRIGHT

Nature of Work

A Millwright lays out, fabricates, assembles, and maintains many different types of machinery – including monorails, conveyors turbine generators, and reactors. She/He uses blueprints, layout instruments, hand tools, power tools, shaft levels, micrometer and dial indicators. She/He must be able to move large parts of machinery with cranes, hoists, and bars. She/He assembles and finishes products using electric arc and acetylene welders. A millwright must also be willing to travel.

Entrance Requirements

Age: Minimum 18 years – May be required to furnish proof of age.

Health: Good health – fit to perform the heavy work of the occupation; must be willing to furnish a doctor's certificate of examination if asked.



Suggested High School Subjects

Basic mathematics
Blueprint reading
Trigonometry
Basic communication
Architectural drawing
Plane geometry
Shop courses
Algebra

Potential for Advancement

Interests: In using hand tools, repair work, working with machines and mechanical devices.
Education: Furnish certificates or transcripts of high school graduation or equivalent.

Term of Apprenticeship

Length of training: Four years or 5,200-8,000 hours.

Related classroom instruction: 160 hours per year.

Credit for previous experience: May be granted after being properly documented (letters from previous employers and transcripts of related instruction) and/or after evaluation by apprenticeship sponsor.

Wages

Apprentices are paid a percentage of the Journey-level hourly wage rate with periodic increases (every six months) based on a satisfactory performance on the job an in related instruction. Inquire with individual program sponsors for journey-level wage rates.



Machinist

Employment Outlook

With natural attrition there is a need for new apprentices each year. Inquire with program sponsors for opening information.

How to Apply

Secure from program sponsors and complete an application. Pass entrance examinations and oral interviews as necessary. Inquire with individual program sponsors for opening information and more specific entry requirements.

Completion Procedure

Upon successful completion of the apprenticeship program and recommendation of the program sponsor, registered apprentices are awarded a certificate of completion by the Montana Department of Labor and Industry's Bureau of Apprenticeship and Training, and the United Brotherhood of Carpenters.

Information Sources

Montana Carpenter Joint Apprenticeship and Training Committee
780 Carter Drive
Helena MT 59601
Phone: 406-443-3255

United Brotherhood of Carpenters and Joiners of America
www.carpenters.org/apprenticeship

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreaapprenticeship.mt.gov



Millwright

OPERATING ENGINEER

(CONSTRUCTION EQUIPMENT OPERATOR)

Nature of Work

Operating Engineers operate and/or maintain a great variety of construction and earth-moving equipment and stationary construction machines. They operate front-end loaders, scrapers, cranes, graders, concrete pavers, and other road and dam equipment such as compressors, earth-boring machines and hoists. They install specially designed attachments for certain jobs. They operate grading and paving machines, excavate, fill and grade right-of-way for highways, streets, canals, dams and other earth moving projects. As a mechanic they lubricate, make minor repairs and maintain all types of power machines including crawler tractors, loaders, small shovels and cranes.

Entrance Requirements

Age: Minimum 18 years – Must be able to furnish proof of age.

Transportation: Must have a *reliable* form of transportation.

Health: Good health; must be physically able to do hard work under all conditions.

Education: Montana requires you to furnish certificates or transcripts of high school graduation or equivalent.

Term of Apprenticeship

Length of training: Three years (4500 hours).

Related classroom instruction: 144 hours per year.

Probationary period: 500 hours.

Credit for previous experience: In some pro-

grams, credit may be granted after being properly documented and/or after evaluation by apprenticeship sponsor. (Operating Engineers JATC will grant credit only after completion of probationary period).

Working Conditions

An Operating Engineer may specialize in one or more types of construction machines. In most cases, particularly on highway construction, the work may be in remote areas and in extremes of climate conditions. Dust, dirt, and high noise levels are frequently present. Hazards of overturning equipment and high-speed traffic may be encountered. All work is outside except work in a repair shop. Generally a forty-hour work week, although overtime may be required. Travel is usually necessary. Work is somewhat seasonal in nature. Skill at operating several pieces of equipment will make one more employable.

Wages

Apprentices are paid a percentage of the journeyman wage rate with advances every 750 hours based on satisfactory performance on the job and in related instruction.

Special Characteristics

Knowledge and abilities: Mechanical reasoning and comprehension.

Interests: Working with mechanical equipment and working with hands

Temperament: Follow instructions and take orders.



PILEDRIVER

Physical capacities: Able to operate machines and do hard work, reaching, stooping, working in awkward positions.

Tools Used

For mechanics: Repair, service and maintenance tools for heavy machines and equipment – wrenches, jacks, hoists, power grinders, welders.

Suggested High School Subjects

Mathematics
Surveying
Mechanics
Welding
Physics
Basic communication
Machine shop

Potential for Advancement

Apprentice: Evaluated every 750 hours for advancement in wages and training.

Journeyman: May advance to higher rated equipment with experience and training; may become foremen, supervisors or contractors; may become field servicemen.

Employment Outlook

Outlook is good for continued employment, although work tends to be seasonal. Continuing and increased instruction will provide opportunities for apprentices. Inquire with program sponsors for information on openings.

How to Apply

Complete application and interview as required by individual program sponsors. Inquire with program sponsor for specific entry requirements.

Completion Procedures

Upon evidence of satisfactory completion of apprenticeship (competency test and required hours) apprentices are recommended to the IATC for completion. Upon approval of the program sponsor, the apprentice will be given a completion of apprenticeship certificate recognizing him/her as a journeyman Operating Engineer.

Program Locations and Additional Information Sources

Montana Operating Engineers Joint Apprenticeship & Training Program
3100 Canyon Ferry Road
East Helena MT 59635
Phone: 406-227-5600
Email: mtoc@mt.net

International Union of Operating Engineers
www.iuoe.org

Montana Department of Labor & Industry
Apprenticeship & Training Program
P. O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website:
www.apprenticeship.dli.mt.gov

Youth Website:
www.exploreaapprenticeship.mt.gov

Nature of Work

The piledriver constructs, alters, and remodels structures primarily of concrete and steel—bridges, overpasses, dams and retaining walls to name a few. The work is heavy and frequently over water or high in the air. Jobsites are often in remote, undeveloped areas, requiring the ability to travel.

Entrance Requirements

Age: Minimum 18 years – May be required to furnish proof of age.

Health: Good health – Fit to perform the heavy work of the occupation; must be willing to furnish a doctor's certificate of examination if asked.

Aptitude: Applicants may be required to take and score a qualifying score on an Industry Aptitude Test provided by the IATC Training Director.

Education: Furnish certificate or transcripts of high school graduation or equivalent.

Term of Apprenticeship

Length of training: Four years or 5,200-8,000 hours.

Related classroom instruction: 160 hours per year.

Credit for previous experience: May be granted by program sponsor after being properly documented (letters from previous employers and transcripts of related instruction) and/or after evaluation by program sponsor.

Working Conditions

The apprentice piledriver works outdoors, and

in all kinds of weather. Construction areas are frequently muddy, dusty, dirty, and noisy. The apprentice must lift and carry building materials, climb ladders and scaffolding, stand, stoop, and often work in cramped or awkward positions. Generally work a forty-hour week. Work is seasonal in nature; expect nine months of regular work per year when the construction market is good.

Wages

Apprentices are paid a percentage of the Journey-level hourly wage rate with periodic increases (every six months) based on satisfactory performance on the job and in related instruction. Inquire with individual program sponsors for Journey-level wage rates.

Special Characteristics

Knowledge and abilities: Accuracy, ability to plan work sequence, mechanical, aptitude, form perception, and manual dexterity.

Interests: Working with hand tools and various materials, must want to make the trade his/her livelihood.

Temperament: Dependability; ability to work alone or with others.

Tools Used

Acetylene welding torch
Electric welding
Surveyor's instruments
Power tools
Hand tools
Pneumatic tools
Pile hammers
Pile augers



Suggested High School Subjects

Basic mathematics
Blueprint reading
Trigonometry
Basic communication
Architectural drawing
Plane geometry
Algebra
Shop courses

Potential Advancements

Apprentice: May be evaluated each six months, but at least once a year, (or 1,000 hours) for increases in wages and advancement in training.

Journey-level: Can become foreman, estimator, superintendent, employer, or contractor.

Employment Outlook

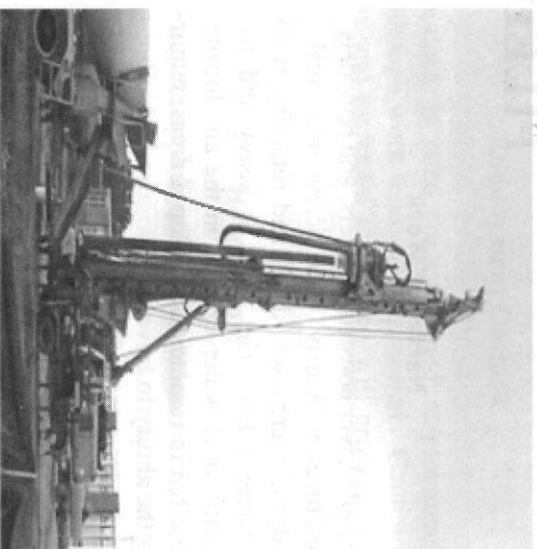
With increasing number of building projects and the natural turnover of piledrivers, there is need for new apprentices each year. Check with program sponsors for current openings and wage rates.

How to Apply

Secure from program sponsors and complete, an application. Pass entrance and oral interviews as necessary. Inquire with individual program sponsors for opening information and more specific entry requirements.

Completion Procedure

Upon successful completion of the apprenticeship program, and recommendation of the program sponsor, registered apprentices are awarded a Certificate of Completion by the Montana Department of Labor and Industry's Bureau of Apprenticeship and Training, and the United Brotherhood of Carpenters.



Piledriver

Program Locations and Additional Information Sources

Montana Carpenter Joint Apprenticeship and Training Committee
780 Carter Drive
Helena MT 59601
Phone: 406-443-3255

Billings Carpenters' JATC
530 South 27th Street
Billings MT 59101
Phone: 406-259-6911

United Brotherhood of Carpenters and Joiners of America
www.carpenters.org/apprenticeship

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreaapprenticeship.mt.gov

PLUMBER-PIPEFITTER

(Pipefitter-Steamfitter, Refrigeration Fitter and Gas-Fitter) (MONTANA PIPE TRADES EDUCATIONAL PROGRAM)

Nature of Work

The plumber is a licensed craftsman. Pipefitter-Steamfitters fabricate, assemble, lay, install and maintain piping systems for steam, hot water heating, cooling, transmission and lubrication systems and pipelines. Refrigeration fitters do contract and custom installation, maintenance, service and repair of refrigeration and refrigerated air conditioning units and systems. The Gas Fitter installs and maintains pipe systems, appliances and equipment using natural or propane gas. They study plans and drawings, plan work sequences, organize systems for cutting, assembling and joining pipes, fixtures and systems and install them.

Working Conditions

Work is both inside and outside. When on new construction, building is often open to the weather. In repair jobs, the worker may have to crawl under buildings and work in cramped positions or restricted areas. Building may be unheated; can be dirty, dark and damp. Hazards include falling from ladders or other elevated places, falling objects and burns from molten lead, hot pipes steam or excessive cold.

Generally work a forty-hour week. Work may be seasonal in nature when dealing with construction, but repair and maintenance are year round.

Wages

Apprentice pay is based on a percentage of journeyman wage rate beginning at 50% for the first year. Advancement is based on satisfactory work on the job and progress in related instruction. Advancements are made each year in wage and training assignments. At the fifth year period, the apprentice has been advanced to 90% of journeyman rate. Inquire with individual contractors for journeyman rates.

Special Characteristics

Knowledge and abilities: How to work, ability to plan work sequence, mechanical aptitude, manual dexterity.

Interests: Like mathematics and physical sciences, like to work with hands, hand tools.

Temperament: Cooperative, even tempered, can work alone.

Physical capacities: Heavy work, physical stamina, stand for prolonged periods.



Probationary period: One year.

Related classroom instruction: 1,230 hours or minimum 246 per year.

Length of training: Five years/8500 hours.

Term of Apprenticeship

Education: High School graduate or equivalent (GED) Transcripts of high school credits or an official report of GED test results must accompany the application.

Tools Used

Hand & power pipe wrenches
Welding equipment
Cutting torches
Measuring instruments and gauges
Cutters & threaders
Hoist & chain blocks.
Soldering torches
Brazing and soldering torches
Tapes and levels
Vises and clamps
Drilling and boring tools

Suggested High School Subjects

Mathematics
Blueprint reading
Mechanical drawing
Metal & wood shop
Chemistry
Welding
Basic communication

Potential for Advancement

Apprentice: Evaluated each year for advances in wages.
Journeyman: Can become foremen, superintendents, draftsmen, estimators, shop owners, partners, employers, or contractors.

Employment Outlook

Continuing construction provides opportunity for growing employment. Opportunities are available with both contractors and plumbing, heating and refrigeration service shops.

How to Apply

Contact the Apprenticeship Training Office for information and job possibilities. All applications (when given out) must be accompanied by a transcript of high school grades or GED test results; proof of date of birth (copy of birth certificate or copy of a valid drivers license). Applicants will be placed on applicant list and placed to work from said list when work becomes available.

Completion Procedure

Upon successful completion of apprenticeship, the registered apprenticeship will receive a certificate of completion from the Montana Department of Labor and Industry's Bureau of Apprenticeship and Training recognizing him/her as a journeyman. To receive a state plumber's license, the individual must pass a written and performance test before the State Licensing Board.

Program Locations and Additional Information Sources

Director of Training
Montana Pipe Trades Educational Program
P.O. Box 30616
Billings MT 59107
Phone: 406-252-9371
Local #41 Plumbing Trades JATC
P.O. Box 3172
Butte MT 59701
Phone: 406-723-6078

Missoula Plumbing Trade JATC
1026 South 5th Street West
Missoula MT 59801
Phone: 406-549-3479
Local #41-Great Falls
P.O. Box 1703
Great Falls MT 59403
Phone: 406-452-1973

www.umt-wy.com
Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreaapprenticeship.mt.gov

SHEET METAL WORKER

Nature of Work

Sheet metal workers fabricate, assemble and install metal products and equipment in buildings to control the temperature and environmental air quality for the comfort of the occupants. Sheet metal workers also build and install decorative metal components on the outside of buildings to protect them from the weather. They use hand and power tools, measuring instruments, unique calculators, and special machines to cut, bend, shape, form and fasten parts into units and assemblies. They use welding, soldering, brazing and riveting to assemble and install components. They inspect and service sheet metal installations, air handling equipment and indoor air quality equipment.

Entrance Requirements

Age: Be 18 years or older. Will be required to furnish proof of age.

Health: Must be physically fit to perform the work of the trade. May be required to furnish a doctor's certificate of examination.

Education: Must be a high school graduate or have earned a GED and furnish transcripts.

Other: Must have proof of current driver's license.

Terms of Apprenticeship

Length of training: Four years.

Related classroom training: The Montana State Sheet Metal Workers JATC has given credit for previous training and experience to anyone who can provide documented proof of training or experience.

Probationary Period: One year.

Working Conditions

Sheet metal workers are usually on a project when there is a structural framework to support the ductwork. Occasionally sheet metal workers are required to work in a trench assembling ductwork that will be buried under a concrete floor. They will also be on the outside of the building installing the architectural sheet metal to waterproof the building. This requires the sheet metal worker to be able to work in close, tight places as well as high open places.

Wages

Apprentices are paid a percentage of journeyman hourly pay scale. Contact SMWIA Local 103 for current scale.

Special Characteristics

Knowledge and abilities: Ability to plan a work sequence, mechanical and mathematical aptitude, and geometric form perception.

Interests: Should have mechanical aptitude and be willing to work with hand and power tools.

Temperament: Willingness to work with others and alone.

Physical capacities: Must be able to carry up to 50 lbs up a ladder.

Tools

Most hand tools used by sheet metal workers are highly specialized and must be purchased through contractor suppliers or the training center.

Suggested High School Courses

Algebra
Trigonometry
Geometry
Shop courses



Welding
Drafting
Computer Assisted Drafting

Potential Advancement

Apprentices: Pay increases of 5% occur every six months provided the apprentice has received at least 800 hours of training. This training can be a combination of good "On the Job" training, as evaluated by the employer, and classroom instruction in the training center or any training approved by the training committee.

Journeyman: Can become foreman, general foreman, estimator or contractor.

Employment Outlook

Montana State Sheet Metal Workers JATC has placed 10 to 12 new apprentices each year. Contact program sponsors for information.

How to Apply

The Montana State Sheet Metal Workers JATC maintains qualified applicant lists in Billings, Butte, Great Falls, Helena and Missoula. Requests for application can be made by mail to the address below or by phone. Applicants will be notified by mail of the time and place of interviews.

Completion Procedure

Upon completion of the program the apprentice will receive a Certificate of Completion from the Montana Department of Labor and Industry, Apprenticeship and Training Program. The Montana state Sheet Metal Workers JATC Apprentice Training Center has been accredited by the International Training Institute and completion of the program earns college credit recognized by the Ivy Tech State College in Indianapolis, Indiana.



Sheet metal worker

Program Locations and Additional Information Sources

Montana State Sheet Metal Workers JATC
PO Box 4048
Butte MT 59702-4048
Phone: 406-533-0112

SMWIA Local #103
5250 North Montana Ave.
Helena MT 59602
Phone: 406-458-3364

Montana Department of Labor & Industry
Apprenticeship & Training Program
P.O. Box 1728
Helena MT 59624-1728
Phone: 406-444-3998
Website: www.apprenticeship.dli.mt.gov
Youth Website:
www.exploreapprenticeship.mt.gov

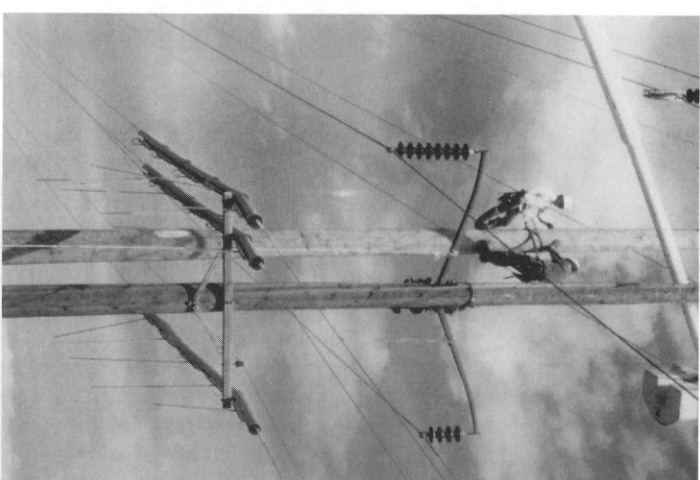
Sheet Metal Workers International Association
www.snmwia.org/careers/

Appendix A

Apprentice Retention

The Apprenticeship and Training Program in collaboration with the Research and Analysis Bureau, Department of Labor and Industry interfaced social security numbers of all apprentices successfully completing apprenticeship programs with UI wage earning data and the results are as follows:

- All apprentices successfully completing the program since 1997 were used for the report.
- The report revealed that 2,035 apprentices have graduated/completed apprenticeship programs since 1997.



Historical data indicates that the completing apprentices worked in 48 to 55 different apprenticeable occupations, with an estimated 87% of all completing apprentices working in construction related occupations, with the remaining 13% completed apprentices working in utility or service related occupations.

- Historical data also indicates that out of all of the completing apprentices, an estimated average of 52% work in independent employment, with 48% completing apprentices working with some form of union affiliation.
- The report revealed that out of the 2,035 apprentices completing the program since 1997, 1,524 or 75% were identified through UI data collection as wage earners in Montana through the end of the 2nd reporting quarter of 2008. The remaining 25% of completing apprentices are either not living in the state or are operating their own business or are not working due to occupational pay-offs.

- In summary, out of the 2,035 apprentices successfully completing the program since 1997, 1,524 or 75% have been verified as still working, supporting local economies and contributing back to Montana at a journeyman wage level.

Apprentices and the Economy of Montana

The Apprenticeship and Training Program also compiled data on the wages apprentices receive and how those



wages affect the Montana economy. They surveyed 1,438 apprentices as of May 30, 2008. The survey revealed the following information:

- The average 3rd year apprentice wage was \$18.22 per hour.

- Based on 40 hours per week and 52 weeks per year, the annual average gross earnings for a 3rd year apprentice amounted to \$37,745.60.

- The average 3rd year apprentice wages generated state and federal tax withholding of \$6,081.00 per apprentice per year. Multiplying the tax withholding amount by the number of apprentices, at 1,438, gives a total of \$8,744,478.00 generated by working registered apprentices into the State and Federal economies.

- Montana employers paid approximately \$54,497,748.00 in gross wages in registered Montana apprentices in 2008.

- The State of Montana expended \$456,000.00 to support apprenticeship training during fiscal year 2008. For every dollar the state invested in registered apprenticeship, employers paid \$119.51 in wages and apprentices contributed \$19.18 in taxes.

